AGED 539
Teacher Internship Program
Highland FFA

Lindsay Walsh Devaurs
Quality Criterion 1: Curriculum & Instruction
1a. Curriculum Component

- Copies of the Core and Core Cluster Curriculum can be found at Calaged.org. This curriculum is used as the base for lesson plans. *See Appendix A and B*

- Copies of course outlines are attached. *See Appendix C*

- A student cannot earn an A in the Agriculture course without earning the appropriate amount of "Activity Points" which provides evidence of FFA participation. This is clearly stated in the class syllabus for each course and an agreement is signed by every student and parent and kept in a binder. *See Appendix D*

- A student cannot earn an A in an Agriculture course without maintaining a Supervised Agriculture Experience (SAE) project. This is clearly stated in the class syllabus for each course and an agreement is signed by every student and parent and kept in a binder. *See Appendix D*

- All students have iRecordbooks and update them on a regular basis, either in class or on their personal time. *See Appendix E*

- A careers unit is taught in all Agriculture courses. *See Appendix D*

We offer three different pathways in the Agriculture Department curriculum:

**Agriculture Science**

Agriculture Natural Resources **
Agriculture Biology **
Environmental Horticulture/Floral Design **
Animal Science **
Agriculture Business¹

**Agriculture Mechanics²**

Agriculture Mechanics 1
Agriculture Mechanics 2

*See Appendix A, B, C, D, E, F*

¹ Class earns Government/Economics graduation credits
² This pathway is currently under development as we finish construction
** UC/CSU approved class
1b. Agriculture Curriculum Standards

- The standards can also be accessed on calaged.org, which are printed in this section of the binder.

- The class courses meet the California Department of Education Standards for the Agriculture and Core Curriculum.

*See Appendix A and B*

1c. Career Pathways

- **Agri-science Pathway**
  - Freshman – Ag Natural Resources (*College Prep Earth Science Credit, UC/CSU approved*)
  - Sophomore – Ag Biology (*College Prep UC/CSU approved Bio Credit*)
  - Junior – Animal Science (*BC Credit*) or Environmental Horticulture/Floral Design (*UC/CSU approved*)
  - Senior – Ag Business (*Government/Economics Credit*)

- **Agriculture Mechanics Pathway** *3*
  - Freshman – Ag Mechanics 1
  - Sophomore – Ag Mechanics 2
  - Junior – Ag Mechanics 3
  - Senior – Ag Mechanics 4

*See Appendix F*

1d. Course Sequences

- **Ag Natural Resources**
  - Ag Resources is a course that meets the graduation requirement of science and is the first phase for students interested in the agriculture education program. The purpose of this course is to introduce students to the world of agriculture through the exploration of earth science. Student enrolled in this course will gain a deep understanding of scientific investigation and experimentation while exploring such topics as Earth's place in the universe, dynamic earth process, energy in the earth's system, biochemical cycles, structure and composition of the atmosphere, as well as California Geology. This course will also focus on leadership development, business management through the principles of accounting and computer applications, and basic plant and animal husbandry techniques. Students enrolled in this course will be encouraged to participate in leadership training activities, public speaking events, and become active members in the FFA. Approved for Grade 9.

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*3 This program is currently under development, and course titles may change*
• **Ag Biology**
  - Ag Biology is a UC approved science course that meets the UC requirement for science. Students enrolled in this course also meet one lab science requirement for graduation. This course is the second phase for students interested in the agriculture education program. The purpose of this course is to introduce students to the world of agriculture through the exploration of life science biology. This course emphasizes detailed knowledge of the central concepts, principles, and basic factual material of the following topics: Scientific methodology, relationships between living organisms and their environment, biochemistry, cellular structure and function, homeostasis within the context of animal physiology, infection and immunity, molecular processes/ biotechnology, principals of genetics, the processes by which organisms change over time, and comparative animal anatomy/physiology. This course will also focus on leadership development, business management through the principles of accounting and computer applications, and basic plant and animal husbandry technique. Students enrolled in this course will be encouraged to participate in leadership training activities, public speaking events, and become active members in the FFA. Approved for Grade 10.

• **Animal Science**
  - Animal science is an UC/CSU approved elective that will provide students with an opportunity to investigate different aspects of the veterinarian and animal care field by forming a link between classroom instruction and field experience which will promote critical thinking through project based student learning. Students will combine teamwork, technology and integrated academics that will enable students to understand the animal anatomy and physiology in heath and disease. This course will focus on leadership development, business management through the principals of accounting and computer applications, and basic animal husbandry technique. Student enrolled in this course will be encouraged to participate in public speaking events, and become active members in the FFA. Approved for Grade 11.

• **Environmental Horticulture/Floral Design**
  - The Ornamental Horticulture course is an elective that will offer students a basic understanding of plant production and utilization of plants in a landscaping environment. Students will work on lesson plans related to the anatomy of a plant and work on the school farm laboratory with hands-on learning. Students will gain knowledge of career opportunities and the different pathways to colleges that can aid in making a decision in this career pathway. In addition, students will learn basic floristry principles, including simple floral arrangements and art elements and principles. This course will focus on leadership development, business management through the principals of accounting and computer applications, and basic plant husbandry technique. Student enrolled in this course will be encouraged to participate in public speaking events, and become active members in the FFA. Approved for Grade 11.

• **Agriculture Business**
  - Agriculture Business is our capstone class that utilizes the experiences gained in the previous classes to learn the essentials of running an effective business or organization. Laws and regulations will be taught pertaining to agriculture and the United States Government. Students will understand the role the government plays in our everyday lives,
and the consequences if the social contract is broken. Students enrolled in this class will be encouraged to take an active role in the FFA organization, and will also aid in the management of the Highland FFA Farmer’s Market, which should be operational in the spring of 2016.

- **Agriculture Mechanics 1**
  - Agriculture Mechanics is our introductory course for our Ag Mechanics pathway. For a student to take Ag Mechanics they must be enrolled in Ag earth science. This course covers fundamental basic skills in; Career choices, Safety, Wood working, Plumbing, Electrical, Masonry, Small engine, Cold metal working, and metallurgical processes. This course is designed to showcase vocational skills and jobs available to students as such there is a focus on FFA and leadership development. This course has a capstone project that incorporates all material covered throughout the year. This course leads directly into Agriculture Mechanics 2.

- **Agriculture Mechanics 2**
  - Agriculture Mechanics 2 is the second course for our Ag Mechanics pathway. For a student to take Ag Mechanics they must have taken Ag Mechanics 1 and be enrolled in Ag Biology. This course builds upon previously learned skills and knowledge and covers an in depth look in; Career choices, Safety, Wood working, Plumbing, Electrical, Masonry, Small engine, Cold metal working, and metallurgical processes. This course is designed to showcase vocational skills and jobs available to students as such the focus on FFA and leadership is increased and all students are required to participate in a CDE. This course leads directly into Agriculture Mechanics 3.

- **Agriculture Mechanics 3**
  - Agriculture Mechanics 3 (welding and Fabrication) is our third course for our Ag Mechanics pathway. For a student to take Ag Mechanics 3 they must have successfully completed Ag Mechanics 1 and Ag Mechanics 2. This course focuses on Career choices, Safety, Metallurgical processes and Fabrication. This course is primarily and independent work class where students under the supervision of the instructor create a project from their own design. The expectation FFA participation is increased and all students are required to participate in a CDE. Furthermore a quality SAE is mandatory for successful completion of this course. This course leads directly into Agriculture Mechanics 4 our capstone class.

- **Agriculture Mechanics 4**
  - Agriculture Mechanics 4 (Farm Power and Management) is our capstone course for our Ag Mechanics pathway. For a student to take Ag Mechanics 4 they must have successfully completed Ag Mechanics 1, Ag Mechanics 2, Ag Mechanics 3 and be concurrently enrolled in Ag Econ& Government. This course focuses on Career choices, Safety, Farm Management, Construction, and Farm Power. This course is primarily base on our farm laboratory where students under the supervision of the instructor create, update and maintain the schools agriculture facilities. The expectation FFA participation is increased and all students are required to participate in a CDE. Furthermore a quality SAE is mandatory for successful completion of this class. A Capstone project for this course requires the student to participate in a School Farm enhancement project.

See Appendix F
1e. Career Awareness

- Agriculture careers are taught at the beginning and ends of courses. Careers are also taught throughout the units when instruction is appropriate.

- Activities which expose students to career opportunities outside of the classroom include the Supervised Agricultural Experience Programs, local career fairs, Career Development Events, field trips to local agricultural business, and the Tulare Farm Show. Summer internships are also encouraged.

- A career project is completed in each class where students research and present information about a career in a field in agriculture which interests them.

- Completed resume` and cover letters are a required to be completed by each junior student in their agriculture class. They also complete mock job interviews.

See Appendix D

1f. Computer Hardware & Software

- 5 Student Computer Stations
- 3 LCD projectors
- 2 Smartboards
- 3 Document Cameras
- 1 Xerox Machine
- 2 Digital Cameras
- 1 Video Production Laboratory
- 10 microscopes
- 2 Color Laser Printers
- 3 Black and White Laser Printers
- 30 Student Dell Laptops and Laptop Cart
- iCEV Agriculture Curriculum kits

See Appendix G

1g. Computer Aided Instruction

- Labs and reports
- Classroom Lesson Plan Building
  - Ag in the Classroom
  - Fall Harvest Festival
- Research Papers
- Video Production
- Web Assignments
- iRecordBook/Agriculture Experience Tracker website
- Use of the internet to teach the class
- Chapter website for students to download conference and award applications
• Student presentations in all classes utilizing PowerPoint

See Appendix D and G

1h. Record Keeping

• Record Books are a required component of every class in the Agriculture Department

• Every student maintains an iRecord Book. Student files are maintained with applications and other relevant documents in a Student Records filing cabinet.

• All Supervised Agriculture Experience projects are recorded in the record book.

• Freshmen students are introduced to the Record Book at the beginning of the school year by inputting all FFA activities in the calendar, and determining how much they are worth by completing the Financial Statement. In January, they begin learning about the additional components such as the budget, business agreements, journal, etc.

• Freshmen students are provided with mock problems to learn about the Record Book.

See Appendix D, E, and H

1i. Maintaining Record Books

• All students must keep their record books up-to-date and they are checked periodically throughout the duration of each project. Students do not receive project credit unless the record books have been completed for the Annual Project Competition, held in the Spring Semester

• Graduate records will be kept in the storage file cabinets. After they have aged out for earning American degrees, best efforts will be made to return files to students

See Appendix D, E, and I

1j. Alternative Credit

See Appendix J
Quality Criterion 2:
Leadership & Citizenship Development
2a. FFA Charter

- Highland's Chapter Charter can be found framed and is currently located in room 12b

See Appendix K

2b. FFA Program of Work

- This is completed by the chapter reporter and historian by October 15 annually

See Appendix L

2c. Leadership Grade

- Inserted, you will find a parent letter sent to all parents of ag students and course information stating that it is a requirement for every student to be actively involved in the FFA

See Appendix D and M

2d. FFA Affiliation

- Any and all students enrolled in an agriculture education course are affiliated with the FFA. In addition, all graduates pursuing an American Degree are also affiliated. This affiliation is shown each year on the R-2 roster. It is due October 15 every year and is submitted electronically.

- Attached is the current R-2 Roster

See Appendix N

2e. FFA Activities

- FFA Activities check list is attached

- Due to Mr. Chuck Parker, San Joaquin Regional Supervisor, by December 15

See Appendix O

Continued on next page
2f. Student Leadership Participation

- Highland participates in at least 19 FFA activities per year, as noted on the FFA Activities checklist.

- 90% of members participate in 3 or more activities per year

- Participation is accounted for on the FFA Activities Points Chart posted in the back of each classroom.

- Students are listed by name and kept for each activity on the computer and in a master chart binder.

*See Appendix P*
Quality Criterion 3:
Practical Application of Agriculture Skills
3a. SAE Grading Criteria

- Every student will receive points for their SAE towards their 10% SAE Grade for each semester. A project is worth points depending on the scope of the project and a completed record book. Projects are required to have a minimum of 50 hours invested in the project. Students showing a livestock project at the Kern County Fair will also receive summer school miscellaneous credit through the Regional Occupational Center.

- Projects are required to be approved by the advisor(s) before the student commences with the project. In addition, the student must have a budget and business agreement completed.

*See Appendix D*

3b. First Year Students’ SAE Projects

- All first year students have projects. The students are involved with a garden project in the second semester as will keep accurate records of all hours worked.

*See Appendix Q*

- Students complete a Student Data Sheet which is kept in a binder located in the storage unit.

*See Appendix R*

- The record book also shows evidence of plans to have an SAE through the budget and calendar sections.

*See Appendix S*

3c. Continuing Students’ SAE Participation

- All students have an agriculture project of some sort that they manage in their Record Book. It is a requirement that they keep track of an SAE for the years they are enrolled in an agriculture class. All students are required to maintain an iRecordbook after their freshmen year.

- Those with limited resources might obtain a project for the classroom or a very small project for home will be created; students are also encouraged to volunteer at a local zoological society or animal shelters to gain experience and hours for their SAE projects.

- Every student has ownership of a Record Book and it is checked periodically, paying close attention at the beginning and end of the project. Time is allotted during class to work on Record Books; in addition, students with livestock projects are required to attend 3 meetings to update record books during the summer.

*See Appendix D, E and T*
3d. SAE Visitation

- SAE visits are made throughout the year as needed. Most visits are made during summer hours.

- Home visits are made with the student and parents and all recommendations are made with both the parent and student present.

- Home visits are made with freshmen students to ensure that families and students understand the requirements of being an agriculture student at Highland High School.

*See Appendix U and V*

3e. School Vehicles

- An agriculture truck is available to all three teachers on a daily basis. We will be acquiring a new truck in the spring of 2016.

- The fuel is paid by the Principals’ budget at Highland High School. The department is issued a gas card to purchase gas when out of town. When in town, we must use the district gas filling station.

- If a use a private vehicle we may be reimbursed provided that a Request to be Absent form was turned in prior to the vehicle usage.

*See Appendix W*
Quality Criterion 4:
Qualified & Professional Personnel
4a. Appropriate Credentials

Craig Davidson

- Professional Clear Single Subject Teaching Credential in Agriculture
- Professional Clear Specialist Instruction Credential in Agriculture
- CLAD – California Language Arts Development

Lindsay Devaurs

- Professional Clear Single Subject Teaching Credential in Agriculture
- Professional Clear Specialist Instruction Credential in Agriculture
- CLAD – California Language Arts Development

Michael Leishman

- Preliminary Single Subject Teaching Credential in Agriculture
- Professional Clear Specialist Instruction Credential in Agriculture
- CLAD – California Language Arts Development

See Appendix X

4b. Professional Development Activities

- See attached documentation

See Appendix Z

4c. Department Meeting Schedule

- The agriculture teachers meet with the Biology and Earth Science departments on a bi-weekly basis.

- The agriculture teachers meet with the Career Technical Education department on a bi-weekly basis. The agriculture program is now recognized as a separate entity (Agriculture Department)

- The Ag teachers meet on a regular basis, on Tuesday, to discuss upcoming activities and department goals.

See Appendix AA
4d. Department Meeting Minutes

- See the minutes from both the Agriculture Department and Science Departments

See Appendix AB

4e. Teachers' Reimbursement

- All teachers are reimbursed for personal expenses for FFA, SAE, and professional CATA activities

- A Request to be Absent Form must be submitted a minimum of 10 days before the activity takes place.

- Receipts must be kept and turned back in on a request for reimbursement form.

- It takes a minimum of 30 days to receive reimbursement

See Appendix W
Quality Criterion 5:
Facilities, Equipment, & Materials
5a. Special Population Modification

- Reconstruction of the school site took place in the summer of 2005, and the Agriculture Mechanics shop construction was finished in the fall semester of 2015.

- In the spring of 2006, room 12B was equipped with a state-of-the-art technological set-up which included surround sound for the hard-of-hearing, a Smartboard for the visually impaired, and a ceiling-mounted projector for instant access to the world-wide-web for the visual learners. All classrooms in the agriculture department have ceiling mounted projectors and document cameras to aid in student learning.

See Appendix G

5b. Adequate Storage

- During construction of the shop, room 12c was modified from a storage facility for the agriculture department into a classroom. We are going to be using the storage closet in 12a to make up for the lost storage in 12c. 12a will be used for learning materials and FFA activity paraphernalia.

- Storage is secured and can be locked when needed.

- Items that are appropriate to be stored on the farm are kept in storage C-trains.

See Appendix AC

5c. Laboratory Facilities

- We currently have classroom 12a, which has lab tables and a sink. Room 12b has lab tables, but lacks a sink. Teachers share the lab facility in 12a on an as-needed basis.

- The following laboratory facilities are available to students:
  - School farm including the following
    - Greenhouse
    - Shade house
    - Sheep, poultry, and rabbit units
    - Outside growing area, including orchards and vegetable gardens
    - Animal care laboratory

See Appendix AD
5d. Email

All instructors have access to and implement the usage of email.

- Craig Davidson: craig_davidson@kernhigh.org
- Lindsay Devaurs: lindsay_devaurs@kernhigh.org
- Michael Leishman: Michael_leishman@kernhigh.org

5e. Facilities Maintenance

- Broken or damaged materials are fixed by facilities planning and maintenance department. Teachers should contact the Assistant Principle of Facilities with an email request, outlining what the issue is and what needs to be done.

- Items are generally repaired quickly.

See Appendix AE
Quality Criterion 6:
Community, Business & Industry Involvement
6a. Advisory Committee Membership

- The Advisory Committee membership consists of 13 members which are found on the directory in this binder and in the Advisory Committee binder.

- Membership is based upon recommendations from the Advisory Committee Manual found on calaged.org

See Appendix AF

6b. Advisory Committee Minutes

- The Highland FFA Advisory Committee meets two to three times every year. Meetings are held in the evening, and dinner is served.

- The Advisory Committee Manual is the reference point for utilizing and efficient running of the advisory committee. This is found in the Advisory Committee binder and on calaged.org

- The advisory committee minutes are filled and located in the Advisory Committee binder

See Appendix AG

6c. Advisory Committee Assistance

- Over the last decade, the Highland Advisory Committee has given direction in several areas of the Comprehensive Program Plan. These areas include the hiring of a third agriculture instructor, career-oriented programs such as job shadowing, guest speakers, and field trips, and given input of financial needs and spending of grant money and donations. In addition, this team assisted in the initial idea for a CTE grant for the school farm laboratory. The idea was not implemented and the advisory committee discussed the next phase which was the designing of the Ag Mechanics shop.
Quality Criterion 7: 
Career Guidance
7a. Student Career Counseling

- Students are counseled regarding career opportunities in Agriculture and Agribusiness through a number of avenues such as Field Days throughout California, career days at local community colleges, field trips to local Agri-businesses, and guest speakers in the classroom.

See Appendix D

- Field days are generally done in the spring time with the implementation of Career Development Events, such as the Vegetable Crop judging team.

See Appendix L

- We also teach careers in the different units that are discussed in class; for example, the Animal Science course has a career project that focuses on opportunities in animal science, and the Environmental Horticulture/Floral Design class has a project that focuses on careers in that pathway.

See Appendix AH

- Student Data sheets are used to counsel students on careers they may choose to do. See the Student Data binder.

See Appendix R

- Counselors visit the classes and advise students on their career pathway

See Appendix R

7b. Student Data Sheets

- All students have a completed Student Data Sheet on file and it is located in the Student Data Sheet Binder. These are filled out at the beginning of the school year.

See Appendix R

7c. Articulation Agreement

- Currently, no courses are articulated with Bakersfield College
Quality Criterion 8:
Program Promotion
8a. Recruitment Brochure

- See the attached brochures. The brochures were created by students as part of their SAE project.

See Appendix A1

- Highland also provides an array of videos to incoming freshman at our Scots Preview Night and Registration.

8b. Financial Alternatives

- The Highland FFA has an FFA Alumni chapter, which is affiliated with the State and National FFA Alumni associations. The Alumni assists the program both financially and if we are in need of assistance with activities.

- Farm Credit West is currently the only loan provider for students who need financial assistance to start their SAE project.

See Appendix A1

- The Principal’s budget assists with fuel usage and some minor maintenance expenses.

8c. Recruitment Activities

- Highland Scots Preview Night is highly advertised for incoming freshmen and we receive a lot of sign-ups as a result of this evening. We showcase our hands-on activities as well as promotional videos during the event.

See Appendix A1

- Ag teachers volunteer at the 8th Grade registration recruitment event in order to inform incoming students about the agriculture program.

- Our kindergarten agriculture education event, Fall Harvest, is seen as a recruitment event because many of these students remember their experiences and enroll in agriculture when they get to high school.

- Furthermore, we have fostered great relationships with our local news stations. Highland FFA is regularly featured on local news programs.
Quality Criterion 9:
Program Accountability
&
Planning
9a. Comprehensive Program Plan

- Our Program Plan is on file and is updated by December 15 every year.

9b. Updates

- Updates are filed every year by December 15th. The Program Plan updates include Criterion H, I, J, N, and O and are sent to the Regional Supervisor.

9c. Follow-up System

- Graduate follow-up will be done each fall period and sent to the Regional Supervisor by Oct 15.

- A graduate follow-up form is used at the end of the senior year. The form we use is the form provided by the Kern High School District ROC program.

*See Appendix AL*

9d. Graduate Data

- The graduate follow up is posted prior to October 15, which is the deadline to post this information.

- A copy of this data is inserted in this binder.

*See Appendix AL*

9e. Retention

- Retention rate is analyzed using the R-2 Student Report found on calaged.org. The report for 2015 is located in this binder.

- Students are kept in the program through a variety of ways.
  - UC/CSU approved curriculum
  - Core academic graduation credit
  - The hands-on experiential learning.
  - Strong counselor and administrative support
  - Special FFA activities that the chapter provides students.
  - Fun teachers!
The retention rate at Highland has been excellent. The freshman classes go from 4 full periods of freshman to 3 full periods of sophomores. We believe there was an error in data input, because we show a significant decrease in the amount of juniors, and then an increase in senior membership. We have 7 periods of junior and senior level classes, so the r2 data would appear to be in error.
Quality Criterion 10:
Student-Teacher
Class Ratio
10a. Class Size

- The Highland Agriculture Department classes are above the maximum permitted students due to an increase in all classes throughout the campus.

10b. Student / Teacher Ratio

- Our average class size is 28.7 students per teacher
Quality Criterion 11:
Full Year Employment
11a. Extended Contract

- Currently, we do not have an official "extended contract"; however, the district provides 36 days of summer wages for teachers to supervise summer SAE projects.

11b. Supervision Period

- 0 period and 8th period are considered project supervision periods; however the district does not recognize or compensate them as such. This is the time at which we can tend to student projects.
Quality Criterion 12:
Program Achievement
Appendix A

Career Technical Education- Agriculture- Standards
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Sector Description

The Agriculture and Natural Resources sector is designed to provide a foundation in agriculture for all agriculture students in California. Students engage in an instructional program that integrates academic and technical preparation and focuses on career awareness, career exploration, and skill preparation in seven pathways. The pathways emphasize real-world, occupationally relevant experiences of significant scope and depth in Agricultural Business, Agricultural Mechanics, Agriscience, Animal Science, Forestry and Natural Resources, Ornamental Horticulture, and Plant and Soil Science. Integral components of classroom and laboratory instruction, supervised agricultural experience projects, and leadership and interpersonal skills development prepare students for continued training, advanced educational opportunities, or entry to a career.
1.0 Academics
Analyze and apply appropriate academic standards required for successful industry sector pathway completion leading to postsecondary education and employment. Refer to the Agriculture and Natural Resources academic alignment matrix for identification of standards.

2.0 Communications
Acquire and accurately use Agriculture and Natural Resources sector terminology and protocols at the career and college readiness level for communicating effectively in oral, written, and multimedia formats. (Direct alignment with LS 9-10, 11-12.6)

2.1 Recognize the elements of communication using a sender–receiver model.
2.2 Identify barriers to accurate and appropriate communication.
2.3 Interpret verbal and nonverbal communications and respond appropriately.
2.4 Demonstrate elements of written and electronic communication, such as accurate spelling, grammar, and format.
2.5 Communicate information and ideas effectively to multiple audiences using a variety of media and formats.
2.6 Advocate and practice safe, legal, and responsible use of digital media information and communications technologies.

3.0 Career Planning and Management
Integrate multiple sources of career information from diverse formats to make informed career decisions, solve problems, and manage personal career plans. (Direct alignment with SLS 11-12.2)

3.1 Identify personal interests, aptitudes, information, and skills necessary for informed career decision making.
3.2 Evaluate personal character traits, such as trust, respect, and responsibility, and understand the impact they can have on career success.
3.3 Explore how information and communication technologies are used in career planning and decision making.
3.4 Research the scope of career opportunities available and the requirements for education, training, certification, and licensure.
3.5 Integrate changing employment trends, societal needs, and economic conditions into career planning.
3.6 Recognize the role and function of professional organizations, industry associations, and organized labor in a productive society.
3.7 Recognize the importance of small business in the California and global economies.
3.8 Understand how digital media are used by potential employers and postsecondary agencies to evaluate candidates.
3.9 Develop a career plan that reflects career interests, pathways, and postsecondary options.
4.0 Technology
Use existing and emerging technology to investigate, research, and produce products and services, including new information, as required in the Agriculture and Natural Resources sector workplace environment. (Direct alignment with WS 11-12.6)

4.1 Use electronic reference materials to gather information and produce products and services.

4.2 Employ Web-based communications responsibly and effectively to explore complex systems and issues.

4.3 Use information and communication technologies to synthesize, summarize, compare, and contrast information from multiple sources.

4.4 Discern the quality and value of information collected using digital technologies, and recognize bias and intent of the associated sources.

4.5 Research past, present, and projected technological advances as they impact a particular pathway.

4.6 Assess the value of various information and communication technologies to interact with constituent populations as part of a search of the current literature or in relation to the information task.

4.7 Demonstrate the use of appropriate tools and technology used in the Agriculture and Natural Resources sector.

5.0 Problem Solving and Critical Thinking
Conduct short as well as more sustained research to create alternative solutions to answer a question or solve a problem unique to the Agriculture and Natural Resources sector, using critical and creative thinking, logical reasoning, analysis, inquiry, and problem-solving techniques. (Direct alignment with WS 11-12.7)

5.1 Identify and ask significant questions that clarify various points of view to solve problems.

5.2 Solve predictable and unpredictable work-related problems using various types of reasoning (inductive, deductive) as appropriate.

5.3 Use systems thinking to analyze how various components interact with each other to produce outcomes in a complex work environment.

5.4 Interpret information and draw conclusions, based on the best analysis, to make informed decisions.

6.0 Health and Safety
Demonstrate health and safety procedures, regulations, and personal health practices and determine the meaning of symbols, key terms, and domain-specific words and phrases as related to the Agriculture and Natural Resources sector workplace environment. (Direct alignment with RSTS 9-10, 11-12.4)

6.1 Locate, and adhere to, Material Safety Data Sheet (MSDS) instructions.

6.2 Interpret policies, procedures, and regulations for the workplace environment, including employer and employee responsibilities.
6.3 Use health and safety practices for storing, cleaning, and maintaining tools, equipment, and supplies.
6.4 Practice personal safety when lifting, bending, or moving equipment and supplies.
6.5 Demonstrate how to prevent and respond to work-related accidents or injuries; this includes demonstrating an understanding of ergonomics.
6.6 Maintain a safe and healthful working environment.
6.7 Be informed of laws/acts pertaining to the Occupational Safety and Health Administration (OSHA).

7.0 Responsibility and Flexibility
Initiate, and participate in, a range of collaborations demonstrating behaviors that reflect personal and professional responsibility, flexibility, and respect in the Agriculture and Natural Resources sector workplace environment and community settings. (Direct alignment with SLS 9-10, 11-12.1)
7.1 Recognize how financial management impacts the economy, workforce, and community.
7.2 Explain the importance of accountability and responsibility in fulfilling personal, community, and workplace roles.
7.3 Understand the need to adapt to changing and varied roles and responsibilities.
7.4 Practice time management and efficiency to fulfill responsibilities.
7.5 Apply high-quality techniques to product or presentation design and development.
7.6 Demonstrate knowledge and practice of responsible financial management.
7.7 Demonstrate the qualities and behaviors that constitute a positive and professional work demeanor, including appropriate attire for the profession.
7.8 Explore issues of global significance and document the impact on the Agriculture and Natural Resources sector.

8.0 Ethics and Legal Responsibilities
Practice professional, ethical, and legal behavior, responding thoughtfully to diverse perspectives and resolving contradictions when possible, consistent with applicable laws, regulations, and organizational norms. (Direct alignment with SLS 11-12.1d)
8.1 Access, analyze, and implement quality assurance standards of practice.
8.2 Identify local, district, state, and federal regulatory agencies, entities, laws, and regulations related to the Agriculture and Natural Resources industry sector.
8.3 Demonstrate ethical and legal practices consistent with Agriculture and Natural Resources sector workplace standards.
8.4 Explain the importance of personal integrity, confidentiality, and ethical behavior in the workplace.
8.5 Analyze organizational culture and practices within the workplace environment.
8.6 Adhere to copyright and intellectual property laws and regulations, and use and appropriately cite proprietary information.

8.7 Conform to rules and regulations regarding sharing of confidential information, as determined by Agriculture and Natural Resources sector laws and practices.

9.0 Leadership and Teamwork

Work with peers to promote divergent and creative perspectives, effective leadership, group dynamics, team and individual decision making, benefits of workforce diversity, and conflict resolution as practiced in the Future Farmers of America (FFA) career technical student organization. (Direct alignment with SLS 11-12.1b)

9.1 Define leadership and identify the responsibilities, competencies, and behaviors of successful leaders.

9.2 Identify the characteristics of successful teams, including leadership, cooperation, collaboration, and effective decision-making skills, as applied in groups, teams, and career technical student organization activities.

9.3 Understand the characteristics and benefits of teamwork, leadership, and citizenship in the school, community, and workplace setting.

9.4 Explain how professional associations and organizations and associated leadership development and competitive career development activities enhance academic preparation, promote career choices, and contribute to employability.

9.5 Understand that the modern world is an international community and requires an expanded global view.

9.6 Respect individual and cultural differences and recognize the importance of diversity in the workplace.

9.7 Participate in interactive teamwork to solve real Agriculture and Natural Resources sector issues and problems.

9.8 Define the characteristics and benefits of teamwork, leadership, and citizenship in the school, community, and workplace settings.

9.9 Identify the ways in which pre-professional associations, such as the Future Farmers of America (FFA), and competitive career development activities enhance academic skills, promote career choices, and contribute to employability.

9.10 Understand how to organize and structure work, individually and in teams, for effective performance and the attainment of goals.

9.11 Explain multiple approaches to conflict resolution and their appropriateness for a variety of situations in the workplace.

9.12 Demonstrate how to interact with others in ways that demonstrate respect for individual and cultural differences and for the attitudes and feelings of others.

9.13 Participate in group or team activities, including those offered by the student organization, that develop skills in leadership, cooperation, collaboration, and effective decision making.
10.0 Technical Knowledge and Skills
Apply essential technical knowledge and skills common to all pathways in the Agriculture and Natural Resources sector, following procedures when carrying out experiments or performing technical tasks. (Direct alignment with WS 11-12.6)

10.1 Interpret and explain terminology and practices specific to the Agriculture and Natural Resources sector.

10.2 Comply with the rules, regulations, and expectations of all aspects of the Agriculture and Natural Resources sector.

10.3 Construct projects and products specific to the Agriculture and Natural Resources sector requirements and expectations.

10.4 Collaborate with industry experts for specific technical knowledge and skills.

10.5 Interpret and explain the aims, purposes, history, and structure of the FFA student organization and know the opportunities it makes available.

10.6 Manage, and actively engage in, a career-related, supervised agricultural experience.

10.7 Understand the importance of maintaining and completing the California Agricultural Record Book.

10.8 Maintain and troubleshoot equipment used in the agricultural industry.

11.0 Demonstration and Application
Demonstrate and apply the knowledge and skills contained in the Agriculture and Natural Resources anchor standards, pathway standards, and performance indicators in classroom, laboratory, and workplace settings, and through the FFA career technical student organization.

11.1 Utilize work-based/workplace learning experiences to demonstrate and expand upon knowledge and skills gained during classroom instruction and laboratory practices specific to the Agriculture and Natural Resources sector program of study.

11.2 Demonstrate proficiency in a career technical pathway that leads to certification, licensure, and/or continued learning at the postsecondary level.

11.3 Demonstrate entrepreneurship skills and knowledge of self-employment options and innovative ventures.

11.4 Employ entrepreneurial practices and behaviors appropriate to Agriculture and Natural Resources sector opportunities.

11.5 Create a portfolio, or similar collection of work, that offers evidence through assessment and evaluation of skills and knowledge competency as contained in the anchor standards, pathway standards, and performance indicators.
Agriculture and Natural Resources
Pathway Standards

A. Agricultural Business Pathway
In the Agricultural Business pathway, students learn about agricultural business operation and management. Topics include accounting, finance, economics, business organization, marketing, and sales.

Sample occupations associated with this pathway:
- Agriculture Inspector
- Farm and Ranch Manager
- Sales Representative
- Business Controller
- Agricultural Credit Manager

A1.0 Demonstrate an understanding of decision-making processes within the American free-enterprise system.
  A1.1 Differentiate among the components of the American free-enterprise system and other forms of economic systems.
  A1.2 Distinguish among the main characteristics of individual proprietorships, partnerships, corporations, franchises, and cooperatives.
  A1.3 Compare the advantages and disadvantages of the types of business ownership.
  A1.4 Analyze appropriate decision-making tools and financial records to make key management decisions.
  A1.5 Analyze physical production relationships to determine optimum use levels.
  A1.6 Calculate the fixed and variable costs associated with the production of agricultural products and determine the output level that will yield maximum profit.

A2.0 Explain the fundamental economic principles of agribusiness and agricultural production.
  A2.1 Identify basic economic factors affecting agricultural production and agribusiness management decisions.
  A2.2 Communicate basic agricultural economic terminology.
  A2.3 Apply the law of supply and demand and evaluate its effect on price determination.
  A2.4 Assess how agriculture uses scarce resources to meet the needs and demands of its consumers.
  A2.5 Differentiate between elastic and inelastic supply and demand.
  A2.6 Predict how the law of diminishing returns impacts agricultural production.

A3.0 Explore the role of credit in agribusiness and agricultural production.
  A3.1 Analyze the factors that determine the cost of credit in order to select optimum credit sources (e.g., the advantages and disadvantages of borrowing from the various types of credit providers and sources for short-term, intermediate-term, and long-term credit).
A3.2 Research and discuss the criteria lenders use to evaluate repayment capacity.

A3.3 Evaluate balance sheets and cash-flow statements to determine the ability to repay loans.

A4.0 Use proper accounting principles and procedures to accomplish fiscal management and tax planning.

A4.1 Compare and contrast cash and accrual accounting systems.

A4.2 Demonstrate the use and describe the importance of budgets, income statements, balance sheets, and financial statements.

A4.3 Interpret the basis of taxation within the tax system and its impact on the economy, including the role of taxes in agribusiness.

A4.4 Analyze the role of depreciation and purchasing in tax planning and liability.

A4.5 Determine property values and complete a depreciation schedule.

A4.6 Formulate the tax obligations for an agribusiness.

A5.0 Manage risk and uncertainty.

A5.1 Explore environmental issues that impact agribusiness.

A5.2 Determine the meaning and importance of risk and uncertainty.

A5.3 Describe alternative approaches to reducing risk, including the use of insurance for product liability, property, production or income loss, and for personnel life and health.

A5.4 Maintain appropriate evidence (e.g., Point of Origin, pick/pack dates, production records) to support and defend risk management.

A5.5 Identify best practices and include in farm planning to reduce risk.

A5.6 Prepare a comprehensive risk management and contingency plan.

A6.0 Evaluate the role and value of agricultural organizations.

A6.1 Distinguish the benefits of private, public, and governmental organizations, including the value and impact of cooperatives.

A6.2 Understand how participation in organizations would be beneficial in supporting various agricultural operations.

A6.3 Identify, and electronically access, public and private agricultural organizations.

A7.0 Understand agricultural marketing systems.

A7.1 Explain how marketing functions in a free-market society.

A7.2 Compare the advantages and disadvantages of the various marketing options for agricultural products and services.

A7.3 Analyze how the law of comparative advantage affects agricultural production.

A7.4 Explore the impact of advertising, promotion, and data analysis on the marketing of agricultural products and services.
A7.5 Assess how promotion trends for agricultural products influence individuals.
A7.6 Develop a marketing plan for an agricultural product or service.

A8.0 Understand the sales of agricultural products and services.
A8.1 Determine the most effective methods for assessing customer needs and wants.
A8.2 Describe the stages in making a successful sale and the various techniques used to approach potential customers and overcome their objections.
A8.3 Examine the physiological and psychological factors that influence motivation to purchase, including the fundamental steps in making a purchase.

A9.0 Differentiate among local, national, and international agricultural markets and communicate how trade affects the economy.
A9.1 Describe how the importance of agricultural imports and exports affects state and national economies.
A9.2 Summarize how governmental, economic, and cultural factors affect international trade.
A9.3 Compare and contrast United States trade policies with those of other important trading partners.
A9.4 Research how biotechnology affects trade and global economies.
A9.5 Evaluate how different cultural values affect agricultural production and marketing.
A9.6 Explain how negotiations and bargaining agreements affect trade agreements.
A9.7 Analyze agricultural marketing strategies in other parts of the world.
B. Agricultural Mechanics Pathway

The Agricultural Mechanics pathway prepares students for careers related to the construction, operation, and maintenance of equipment used by the agriculture industry. Basic agricultural mechanics skills and safety, standards B1.0 through B8.0, cover woodworking, electrical systems, plumbing, cold metal work, concrete, and welding technology. Advanced topics, standards B9.0 through B12.0, deal with metal fabrication, small engines, agriculture power and technology, and agriculture construction.

Sample occupations associated with this pathway:

- Agriculture Equipment Operator
- Farm Equipment Mechanic and Service Technician
- Agricultural Engineer
- Welder
- Equipment Fabricator

B1.0 Implement personal and group safety practices.

B1.1 Practice the rules for personal and group safety while working in an agricultural mechanics environment.

B1.2 Integrate accepted shop management procedures and a safe working environment.

B1.3 Safely secure loads on a variety of vehicles.

B2.0 Apply the principles of basic woodworking.

B2.1 Identify common wood products, lumber types, and sizes.

B2.2 Measure and lay out lumber, calculating board feet and square feet.

B2.3 Identify, select, and implement basic fastening systems.

B2.4 Complete a woodworking project, including interpreting a plan, developing a bill of materials and cutting list, selecting materials, shaping, joining, and finishing.

B3.0 Demonstrate basic electricity principles and wiring practices commonly used in agriculture.

B3.1 Explain the relationship between voltage, amperage, resistance, and power in single-phase alternating current (AC) circuits.

B3.2 Use proper electrical test equipment for AC and direct current (DC) circuits.

B3.3 Analyze and correct basic circuit problems (e.g., open circuits, short circuits, incorrect grounding).

B3.4 Implement proper basic electrical circuit and wiring techniques using nonmetallic cable and conduit as defined by the National Electric Code (NEC).

B3.5 Interpret basic agricultural electrical plans.

B3.6 Complete an electrical project, including interpreting a plan, following NEC code, selecting materials and components, and completing a circuit.
B4.0 Select and apply plumbing system practices commonly used in agriculture.
B4.1 Match appropriate basic plumbing fitting skills with a variety of materials, such as copper, polyvinyl chloride (PVC), steel, polyethylene, and acrylonitrile butadiene styrene (ABS).
B4.2 Explain the environmental influences on plumbing and irrigation system choices (e.g., filter systems, water disposal, drip vs. flood).
B4.3 Research and communicate how various plumbing and irrigation systems are used in agriculture.
B4.4 Complete a plumbing project, including interpreting a plan, developing a bill of materials and cutting list, selecting materials, joining, and testing.

B5.0 Understand agricultural cold metal processes.
B5.1 Identify common metals, sizes, and shapes.
B5.2 Demonstrate basic tool-fitting skills.
B5.3 Properly lay out materials for a given project.
B5.4 Demonstrate basic cold metal processes (e.g., shearing, cutting, drilling, threading, bending).
B5.5 Complete a cold metal project, including interpreting a plan, developing a bill of materials, selecting materials, shaping, fastening, and finishing.

B6.0 Understand concrete and masonry practices commonly used in agriculture.
B6.1 Identify and explain the use of concrete and masonry tools and demonstrate proper handling of concrete materials.
B6.2 Practice bed preparation, concrete forms layout, and construction.
B6.3 Complete a concrete or masonry project, including calculating volume, developing a bill of materials, assembling, mixing, placing, and finishing.

B7.0 Understand oxy-fuel cutting and welding.
B7.1 Explain the role of heat and oxidation in the cutting process.
B7.2 Properly set up, adjust, shut down, and maintain an oxy-fuel system.
B7.3 Flame-cut metal with an oxy-fuel cutting torch.
B7.4 Fusion-weld mild steel with and without filler rod by using oxy-fuel equipment.
B7.5 Repair metal objects using a variety of techniques, such as brazing or hard surfacing.

B8.0 Understand electric arc welding processes.
B8.1 Select, properly adjust, safely employ, and maintain appropriate welding equipment (e.g., gas metal arc welding, shielded metal arc welding, gas tungsten arc welding).
B8.2 Read welding symbols and plans, select electrodes, fit-up joints, and control heat and distortion.
B8.3 Apply gas metal arc welding, shielded metal arc welding, or flux core arc welding processes to fusion-weld mild steel with appropriate welding electrodes and related equipment.

B8.4 Weld a variety of joints in various positions.

B9.0 Assimilate metallurgy principles and fabrication techniques.

B9.1 Define metallurgy principles, including distortion, hardening, tempering, and annealing.

B9.2 Operate and maintain various arc welding and cutting systems safely and appropriately.

B9.3 Operate and maintain fabrication tools and equipment safely and appropriately.

B9.4 Design project plans by using mechanical drawing techniques.

B9.5 Finish a metal project by implementing proper sequencing.

B9.6 Manipulate and finish metal by using a variety of tools, machines, and techniques (e.g., lathe, mill, CNC plasma, shears, press break, grinders, and sanders).

B9.7 Construct a welding project using any electric welding process, appropriate products, joints, and positions, which will include interpreting a plan, determining proper assembly sequence, developing a bill of materials and cutting list, selecting and acquiring materials, and developing a clear and concise fabrication contract.

B10.0 Understand small and compact engines.

B10.1 Understand and explain engine theory, including the application of mathematical and/or physical science laws for both two- and four-stroke cycle engines.

B10.2 Differentiate among types of small engines and their applications.

B10.3 Identify small-engine parts and explain the various systems (e.g., fuel, ignition, compression, cooling, and lubrication systems).

B10.4 Troubleshoot and solve problems with small engines.

B10.5 Disassemble, inspect, adjust, and reassemble a small engine.

B10.6 Look up and order parts, apply repair and maintenance recommendations from a repair manual, and complete appropriate forms, including work orders.

B11.0 Understand the principles and applications of various engines and machinery used in agriculture.

B11.1 Identify common agricultural machinery and implements.

B11.2 Calibrate, operate, and maintain equipment safely and efficiently.

B11.3 Summarize the theory, operation, and troubleshooting of various types of engines found on agricultural machinery, including cooling, fuel, and lubrication systems.

B11.4 Explain the theory, operation, and troubleshooting of hydraulic systems.

B11.5 Explain the theory, operation, and troubleshooting of power train and power take-off systems.

B11.6 Understand the theory and operation of 12-volt DC electronic and electrical systems (e.g., circuit design, starting, charging, and safety circuits).
B12.0 Apply land measurement and construction techniques commonly used in agriculture.

B12.1 Describe common surveying techniques used in agriculture (e.g., leveling, land measurement, building layout, GPS).

B12.2 Draw and interpret architectural plans.

B12.3 Install single- and three-phase wiring and control systems found in agricultural structures, pumps, and irrigation systems.

B12.4 Install plumbing in agricultural structures (e.g., potable water, sewer, irrigation).

B12.5 Form, place, and finish concrete or masonry (e.g., concrete block).

B12.6 Construct agricultural structures by using wood framing and steel framing systems (e.g., barns, shops, greenhouses, animal structures).

B12.7 Develop clear and concise agricultural construction contracts.
C. Agriscience Pathway

The Agriscience pathway helps students acquire a broad understanding of a variety of agricultural areas, develop an awareness of the many career opportunities in agriculture, participate in occupationally relevant experiences, and work cooperatively with a group to develop and expand leadership abilities. Students study California agriculture, agricultural business, agricultural technologies, natural resources, and animal, plant, and soil sciences.

Sample occupations associated with this pathway:

- Research Assistant/Associate
- Water Quality Specialist
- Plant Scientist
- Agriscience Teacher
- Entomologist

C1.0 Evaluate the role of agriculture in the California economy.

C1.1 Understand the history of the agricultural industry in California.

C1.2 Describe how California agriculture affects the quality of life.

C1.3 Analyze the interrelationship of California agriculture and society at the local, state, national, and international levels.

C1.4 Research the economic impact of leading California agricultural commodities.

C1.5 Assess the economic impact of major natural resources in California.

C1.6 Distinguish between the economic importance of major agricultural exports and imports.

C1.7 Explore factors that affect food safety and producers' responsibilities to consumers.

C2.0 Examine the interrelationship between agriculture and the environment.

C2.1 Identify important agricultural environmental impacts on soil, water, and air.

C2.2 Explain current environmental challenges related to agriculture.

C2.3 Summarize how natural resources are used in agriculture.

C2.4 Compare and contrast practices for conserving renewable and nonrenewable resources.

C2.5 Research how new energy sources are developed from agricultural products (e.g., gas-cogeneration and ethanol).

C3.0 Analyze the effects of technology on agriculture.

C3.1 Describe how technology affects the logistics of moving an agricultural commodity from producer to consumer.

C3.2 Understand how technology influences factors such as labor, efficiency, diversity, availability, mechanization, and communication.
C3.3 Communicate public concern for technological advancements in agriculture, such as genetically modified organisms.
C3.4 Research the laws and regulations concerning biotechnology.
C3.5 Integrate the use of technology when collecting and analyzing data.

C4.0 Determine the importance of animals, the domestication of animals, and the role of animals in modern society.
C4.1 Understand the evolution and roles of domesticated animals in society.
C4.2 Differentiate between domestication and natural selection.
C4.3 Compile the modern-day uses of animals and animal by-products.
C4.4 Defend various points of view regarding the use of animals.
C4.5 Research unique and alternative uses of animals (e.g., therapeutic riding programs and companion animals).

C5.0 Compare the structure and function of plants, animals, bacteria, and viruses.
C5.1 Identify the function of cells.
C5.2 Analyze the anatomy and physiology of cells.
C5.3 Understand various cell actions, such as osmosis and cell division.
C5.4 Compare and contrast plant and animal cells, bacteria, and viruses.

C6.0 Explore animal anatomy and systems.
C6.1 State the names, and find the locations, of the external anatomy of animals.
C6.2 Explain the anatomy and major functions of vertebrate systems, including digestive, reproductive, circulatory, nervous, muscular, skeletal, respiratory, and endocrine systems.

C7.0 Comprehend basic animal genetics.
C7.1 Differentiate between genotype and phenotype and describe how dominant and recessive genes function.
C7.2 Compare genetic characteristics among cattle, sheep, swine, and horse breeds.
C7.3 Predict phenotype and genotype ratios by using a Punnett Square.
C7.4 Explain the fertilization process.
C7.5 Distinguish between the purpose and processes of mitosis and meiosis.

C8.0 Understand fundamental animal nutrition and feeding.
C8.1 Identify types of nutrients required by farm animals (e.g., proteins, minerals, vitamins, carbohydrates, fats/oils, water).
C8.2 Analyze suitable common feed ingredients, including forages, roughages, concentrates, and supplements for ruminant, monogastric, equine, and avian digestive systems.
C8.3 Understand basic animal feeding guidelines and evaluate sample feeding programs for various species, including space requirements and economic considerations.
C9.0 Evaluate basic animal health.
   C9.1 Assess the appearance and behavior of a normal, healthy animal.
   C9.2 Explain the ways in which housing, sanitation, and nutrition influence animal health
       and behavior.
   C9.3 Analyze the causes and controls of common animal diseases.
   C9.4 Summarize effective techniques for controlling parasites and explain why controlling
       parasites is important.
   C9.5 Research the legal requirements for the procurement, storage, methods of application,
       and withdrawal times of animal medications, and know proper equipment handling and
       disposal techniques.

C10.0 Explain soil science principles.
   C10.1 Recognize the major soil components and types.
   C10.2 Summarize how soil texture, structure, pH, and salinity affect plant growth.
   C10.3 Assess water delivery and irrigation system options.
   C10.4 Differentiate among the types, uses, and applications of amendments and fertilizers.

C11.0 Analyze plant growth and development.
   C11.1 Understand the anatomy and functions of plant systems and structures.
   C11.2 Identify plant growth requirements.
   C11.3 Discern between annual, biennial, and perennial life cycles.
   C11.4 Examine sexual and asexual reproduction in plants.
   C11.5 Understand photosynthesis and the roles of the sun, chlorophyll, sugar, oxygen, carbon
       dioxide, and water in the process.
   C11.6 Summarize the respiration process in the breakdown of food and organic matter.

C12.0 Understand fundamental pest management.
   C12.1 Classify agricultural pests (e.g., insects, weeds, disease, and vertebrates).
   C12.2 Compare chemical, mechanical, cultural, and biological methods of plant pest control.
   C12.3 Analyze the major principles, advantages, and disadvantages of integrated pest
       management.

C13.0 Design agricultural experiments using the scientific method.
   C13.1 State the steps of the scientific method.
   C13.2 Analyze an agricultural problem and devise a solution based on the scientific method.
D. Animal Science Pathway

In the Animal Science pathway, students study large, small, and specialty animals. Students explore the necessary elements, such as diet, genetics, habitat, and behavior, to create humane, ecologically, and economically sustainable animal production systems. The pathway includes the study of animal anatomy and physiology, nutrition, reproduction, genetics, health and welfare, animal production, technology, and the management and processing of animal products and by-products.

Sample occupations associated with this pathway:
- Veterinarian Technician
- Animal Caretaker/Kennel Operator
- Animal Breeder
- Ranch Manager
- Feed Nutritionist

D1.0 Evaluate the necessary elements for proper animal housing and animal-handling equipment.

D1.1 Design an animal facility focusing on appropriate space and location requirements for habitat, housing, feed, and water.

D1.2 Select habitat and housing conditions and materials, such as indoor and outdoor housing, fencing materials, air flow/ventilation, and shelters, to meet the needs of various animal species.

D1.3 Interpret animal behaviors and execute protocols for safe handling of animals.

D1.4 Defend the purpose and the safe and humane use of animal husbandry tools, such as hoof trimmers, electric shears, elastrators, dehorning tools, and scales.

D2.0 Apply principles of animal nutrition to ensure the proper growth, development, reproduction, and economic production of animals.

D2.1 Assess the flow of nutrients from the soil, through the animal, and back to the soil.

D2.2 Explore the principles for providing proper, balanced rations for a variety of production stages in ruminants and monogastrics.

D2.3 Compare the digestive processes of the ruminant, monogastric, avian, and equine digestive systems.

D2.4 Distinguish how animal nutrition is affected by the digestive, endocrine, and circulatory systems.

D3.0 Apply principles of comparative anatomy and physiology to uses within various animal systems.

D3.1 Compare and contrast animal cells, tissues, organs, and body systems.

D3.2 Develop efficient procedures to produce consistently high-quality animals that are well suited for their intended purposes.

D3.3 Relate the importance of animal organs to the health, growth, and reproduction of animals.
D4.0 Demonstrate understanding of animal reproduction, including the function of reproductive organs.
D4.1 Illustrate animal conception, including estrus cycles, ovulation, and insemination.
D4.2 Research the gestation process and basic fetal development.
D4.3 Explain the parturition process, including the identification of potential problems and their solutions.
D4.4 Select animal breeding methods based on reproductive and economic efficiency.
D4.5 Select a breeding system based on the principles of genetics.

D5.0 Discuss animal inheritance and selection principles, including the structure and role of deoxyribonucleic acid (DNA).
D5.1 Evaluate a group of animals for desired qualities, and discern among them for breeding selection.
D5.2 Select animals, based on quantitative breeding values, for specific characteristics.
D5.3 Research and discuss current technology used to measure desirable traits.
D5.4 Predict phenotypic and genotypic results of a dominant and recessive gene pair.
D5.5 Research the role of mutations, both naturally occurring and artificially induced, and hybrids in animal genetics.

D6.0 Prescribe and implement a prevention treatment program for animal diseases, parasites, and other disorders.
D6.1 Evaluate the signs of normal health in contrast to illness and disease.
D6.2 Analyze the importance of animal behavior in diagnosing animal sickness and disease.
D6.3 Research common pathogens, vectors, and hosts that cause disease in animals.
D6.4 Evaluate preventative measures for controlling and limiting the spread of diseases, parasites, and disorders among animals.
D6.5 Discuss procedures used at the local, state, and national levels to ensure biosecurity of the animal industry.
D6.6 Explain the health risk of zoonotic diseases to humans, their historical influence, and future implications.
D6.7 Discuss the impacts on local, national, and global economies, as well as on consumers and producers, when animal diseases are not appropriately contained and eradicated.

D7.0 Explore common pasture and rangeland management practices and their impact on a balanced ecosystem.
D7.1 Evaluate a rangeland and identify methods of rangeland improvement used in an effective animal production program.
D7.2 Summarize how rangeland management practices affect pasture production, erosion control, and the general balance of the ecosystem.
D7.3 Develop a management plan for rangelands, including how to calculate carrying capacity, for a variety of animal species and locations.

D7.4 Evaluate a plan to balance rangeland use for animal grazing and for wildlife habitat.

D8.0 Explain challenges associated with animal waste management.

D8.1 Assess treatment and disposal management systems for animal waste.

D8.2 Compare various methods for using animal waste and the environmental impacts associated with each method.

D8.3 Research the health and safety regulations that are an integral part of properly managed animal waste systems.

D9.0 Assess animal welfare concerns and management practices that support animal welfare.

D9.1 Evaluate the early warning signs of animal distress and how to rectify the problem.

D9.2 Discuss consumer concerns with animal production practices relative to human health.

D9.3 Summarize federal and state animal welfare laws and regulations, such as those dealing with abandoned and neglected animals, animal fighting, euthanasia, and medical research.

D9.4 Research the regulations for humane transportation and harvesting of animals, such as those delineated by the U.S. Department of Agriculture (USDA) Food Safety and Inspection Service and the Humane Methods of Slaughter Act.

D10.0 Demonstrate understanding of the production of large animals (e.g., cattle, horses, swine, sheep, goats) and small animals (e.g., poultry, cavy, rabbits).

D10.1 Formulate and implement optimum requirements for diet, genetics, habitat, and behavior in the production of large and small animals.

D10.2 Develop, maintain, and use growth and management records for large or small animals to make data-driven management decisions.

D11.0 Demonstrate understanding of the production of specialty animals (e.g., fish, marine animals, llamas, and tall, flightless birds).

D11.1 Assess specialty animals' role in agriculture (e.g., fish farms, pack animals, working dogs).

D11.2 Explore the unique nutrition, health, and habitat requirements for specialty animals.

D11.3 Synthesize and implement optimum requirements for diet, genetics, habitat, and behavior in the production of specialty animals.

D11.4 Develop, maintain, and utilize growth and management records for specialty animals to make data-driven management decisions.
D12.0 Understand how animal products and by-products are processed and marketed.

D12.1 Research animal harvest, carcass inspection and grading, and meat processing safety regulations and practices and the removal and disposal of nonedible by-products, such as those outlined in Hazard Analysis and Critical Control Point, Sanitation Standard Operating Procedures, and good manufacturing practices documents.

D12.2 Compare the relative importance of the major meat, dairy, and egg classifications, including the per-capita consumption and nutritive value of those classifications.

D12.3 Discuss how meat-based, dairy, and egg retail products are produced.

D12.4 Describe how nonmeat products, such as wool, pelts, hides, and by-products, are harvested and processed.

D12.5 Evaluate how meat products and nonmeat products are marketed.

D12.6 Compare the value of animal by-products to nonagricultural industries.

D12.7 Apply point-of-origin safety and sanitation procedures in the production, harvest, handling, processing, and storing of meat products.
E. Forestry and Natural Resources Pathway

The Forestry and Natural Resources pathway helps students understand the relationships between California's natural resources and the environment. Topics include energy and nutrient cycles, water resources and management, soil conservation, wildlife preservation and management, forest and fire management, and lumber production. In addition, students study the outdoor recreation industry and multiple-use management.

Sample occupations associated with this pathway:
- Forestry Technician
- Park Ranger
- Fish Hatchery Technician
- Logging Operation Inspector
- Biological Science Technician

E1.0 Understand the importance of energy and energy cycles.
  - E1.1 Diagram the oxygen, carbon, nitrogen, and water cycles.
  - E1.2 Differentiate between renewable and nonrenewable energy sources.
  - E1.3 Differentiate between natural resource management conservation strategies and preservation strategies.
  - E1.4 Compare the effects on air and water quality of using different forms of energy.
  - E1.5 Analyze the way in which human activities influence energy cycles and natural resource management.

E2.0 Understand air and water use, their management practices, and conservation strategies.
  - E2.1 Explain the government's role in regulating air, soil, and water use management practices and conservation strategies.
  - E2.2 Research and discuss air and water conservation issues.
  - E2.3 Define appropriate water conservation measures.
  - E2.4 Interpret the component of a plan that monitors water quality.
  - E2.5 Interpret the component of a plan that monitors air quality.
  - E2.6 Analyze the way in which water management affects the environment and human needs.

E3.0 Explore soil composition and soil management.
  - E3.1 Demonstrate techniques used to classify soils.
  - E3.2 Explain the reasons for, and importance of, soil conservation.
  - E3.3 Analyze soils found in the different natural resource management areas.
E3.4 Develop and implement a soil management plan for a natural resource management area.

E3.5 Understand how to analyze existing soil surveys to develop effective management plans.

E4.0 Explore rangeland management.

E4.1 Map the locations of major U.S. and California rangeland areas.

E4.2 Summarize the interrelationship of rangeland management, the environment, wildlife management, and the livestock industry.

E4.3 Define practices used to improve rangeland quality.

E4.4 Analyze the carrying capacity in various rangelands for both wildlife species and domestic livestock.

E4.5 Distinguish among different browse and forage species in California rangelands.

E4.6 Evaluate a rangeland and develop a rangeland monitoring plan.

E4.7 Analyze the requirements and rights accompanying public land grazing permits and the government agencies involved (e.g., Bureau of Land Management and U.S. Forest Service) and abide by specific laws pertaining to natural resource systems.

E5.0 Investigate wildlife management and habitat.

E5.1 Describe the relationship between habitat and wildlife population.

E5.2 List habitat requirements for different species and identify factors that influence population dynamics.

E5.3 Determine existing wildlife species populations.

E5.4 Explain mammalian and avian reproductive processes and infer how nutrition and habitat affect reproduction and population.

E5.5 Differentiate among a variety of management practices used to manage wildlife populations for hunting and other recreational purposes.

E5.6 Analyze the economic and environmental significance of sport hunting and fishing industries.

E5.7 Research and report on the purpose, history, terminology, and challenges of the Endangered Species Act and current activities related to the Act.

E6.0 Understand aquatic resource use and management.

E6.1 Summarize the different types of aquatic resources.

E6.2 Identify and describe the major body parts, digestive systems, and reproductive organs of aquatic species.

E6.3 Determine the populations of existing aquatic species using a variety of methods.

E6.4 Analyze the relationship between water quality and aquatic species habitat.
E6.5 Explore a variety of management practices for managing aquatic species for sport fishing and other purposes.

E6.6 Make financial and production decisions and maintain growth and management records for a selected aquatic species.

E7.0 Understand the outdoor recreation industry.
E7.1 List the potential environmental impacts of recreational activities and describe how to manage the resources affected.
E7.2 Demonstrate basic survival skills and first aid procedures.
E7.3 Construct and maintain trails.
E7.4 Select appropriate recreational gear for trips of varying types and durations and how to use it safely and appropriately (for minimum environmental impact).
E7.5 Set up a campsite for minimum environmental impact.

E8.0 Explore basic plant physiology, anatomy, and taxonomy.
E8.1 Use scientific method to classify animals, including order, family, genus, and species.
E8.2 Use a dichotomous key to identify plants and animals.
E8.3 Identify local trees, shrubs, grasses, forbs, and wildlife species by common name.
E8.4 Recognize and explain the factors that influence plant growth, such as respiration, temperature, nutrients, and photosynthesis.

E9.0 Explore the role of fire in natural resource management.
E9.1 Differentiate between desirable and undesirable fire in forest and rangeland ecosystems.
E9.2 Explain the significance of each of the components of the “fire triangle.”
E9.3 Know appropriate wildland fire-suppression practices.
E9.4 Develop a fire-control plan.
E9.5 Use fire-control tools safely.
E9.6 Research and report on the training requirements for fire-suppression certification.

E10.0 Implement forest management practices.
E10.1 Describe how social, political, and economic factors can affect the use of forests.
E10.2 Discuss the California Forest Practice Act and the requirements for Timber Harvest and Habitat Conservation Plans.
E10.3 Analyze forest management systems (e.g., sustained yield, watershed management, ecosystem management, multiple-use management).
E10.4 Analyze harvest and renewability (e.g., reseeding and thinning) systems and identify the impact of each on the land.
E10.5 Explain silvicultural systems and skills and use appropriate related tools.

E10.6 Identify and diagnose damage from destructive insects, diseases, and weather and choose methods for their management.

E11.0 Understand the basic concepts of measurement, surveying, and mapping.
   E11.1 Describe the Public Land Survey System.
   E11.2 Use surveying equipment, including global positioning satellites, maps, and a compass, to determine area, boundaries, and elevation differences.
   E11.3 Apply timber-cruising and log-scaling skills to determine timber and log volume for management and marketing.
   E11.4 Create a management plan map that includes layer information and data points from global information systems.

E12.0 Produce, harvest, process, and market products from natural resource industries.
   E12.1 Explain the marketing processes and manufacturing standards for a variety of natural resource products, including mining, quarrying, and drilling.
   E12.2 Process natural resource products adhering to manufacturing standards.
   E12.3 Analyze the production of specialty and seasonal products from natural resources.
   E12.4 Compare different wood types and their uses.
   E12.5 Diagram lumber manufacturing processes.

E13.0 Understand public and private land issues.
   E13.1 Interpret the differences between publicly and privately held lands.
   E13.2 Explain the differences between public land designations (e.g., State Park, National Forest, wilderness areas, wild and scenic areas).
   E13.3 Compare the role of public and private property rights and how they affect agriculture.
   E13.4 Describe the role of government in managing public and private property rights.
F. Ornamental Horticulture Pathway
The Ornamental Horticulture pathway prepares students for careers in the nursery, landscaping, and floral industries. Topics include plant identification, plant physiology, soil science, plant reproduction, nursery production, and floriculture, as well as landscaping design, installation, and maintenance.

Sample occupations associated with this pathway:
- Florist/Floral Designer
- Landscape Design/Architect
- Hydroponics Grower
- Botanical Specialist
- Nursery/Greenhouse Manager

F1.0 Compare and contrast the hierarchical classification of plants.
  F1.1 Practice how to classify and identify plants by order, family, genus, and species.
  F1.2 Demonstrate how to identify plants by using a dichotomous key.
  F1.3 Illustrate how common plant parts are used to classify the plants.
  F1.4 Distinguish how to classify and identify plants by using botanical growth habits, landscape uses, and cultural requirements.
  F1.5 Identify and select plants for local landscape applications.

F2.0 Summarize plant physiology and growth principles.
  F2.1 Understand plant systems, nutrient transportation, structure, and energy storage.
  F2.2 Diagram the seed's essential parts and explain the functions of each.
  F2.3 Explain how primary, secondary, and trace elements are used in plant growth.
  F2.4 Experiment with the factors that influence plant growth, including water, nutrients, light, soil, air, and climate.
  F2.5 Differentiate the tissues seen in a cross section of woody and herbaceous plants.
  F2.6 Explore the factors that affect plant growth.

F3.0 Demonstrate plant propagation techniques.
  F3.1 Explain the different forms of sexual and asexual plant reproduction.
  F3.2 Demonstrate the various techniques for successful plant propagation (e.g., budding, grafting, cuttings, seeds).
  F3.3 Utilize and monitor plant reproduction for the development of a saleable product.

F4.0 Develop and implement a plan for basic integrated pest management.
  F4.1 Read and interpret pesticide labels and understand safe pesticide management practices.
F4.2 Research how pesticide regulations and government agencies affect agriculture.
F4.3 Identify common horticultural pests and diseases and methods of controlling them.
F4.4 Design an integrated approach to solving plant problems.

F5.0 Summarize water and soil (media) management practices.
F5.1 Explain how basic soil science and water principles affect plant growth.
F5.2 Illustrate basic irrigation design and installation methods.
F5.3 Prepare and amend soils, implement soil conservation methods, and compare results.
F5.4 Research major issues related to water sources and water quality.
F5.5 Explain the components of soilless media and test the use of those media in various types of containers.

F6.0 Apply ornamental plant nutrition practices.
F6.1 Analyze how primary and secondary nutrients and trace elements affect ornamental plants.
F6.2 Use basic nutrient testing procedures on soil and plant tissue.
F6.3 Analyze organic and inorganic fertilizers to understand their appropriate uses.
F6.4 Read and interpret labels to properly apply fertilizers.

F7.0 Develop a plan for the selection, installation, and maintenance of turf.
F7.1 Explain the selection and management of landscape and sports field turf.
F7.2 Demonstrate how to select, install, and maintain a designated turf grass area.
F7.3 Distinguish how the use of turf benefits the environment.

F8.0 Employ nursery production principles.
F8.1 Demonstrate the proper use of production facilities and common nursery equipment.
F8.2 Use common nursery production practices.
F8.3 Demonstrate how to propagate and maintain a horticultural crop to the point of sale.
F8.4 Design a marketing and merchandising strategy to use in nursery production.

F9.0 Demonstrate the proper use of containers and horticultural tools, equipment, and facilities.
F9.1 Use different types of containers and demonstrate how to maintain growing containers in controlled environments.
F9.2 Operate and maintain selected hand and power equipment safely and appropriately.
F9.3 Select proper tools for specific horticultural jobs.
F9.4 Install landscape components and electrical, land, and water features.
F10.0 Understand basic landscape planning, design, construction, and maintenance.
   F10.1 Utilize terms associated with landscape and design in appropriate context.
   F10.2 Produce a residential design, including how to render design to scale using design technology and principles.
   F10.3 Use proper landscape planting and maintenance practices.
   F10.4 Prune ornamental shrubs, trees, and fruit trees.
   F10.5 Produce clear and concise landscape business contracts.

F11.0 Understand basic floral design principles.
   F11.1 Demonstrate the use of plant materials and tools.
   F11.2 Apply basic design principles to products and designs.
   F11.3 Handle, prepare, and arrange cut flowers appropriately.
   F11.4 Develop a marketing and merchandising strategy to use in the floral industry.
G. Plant and Soil Science Pathway
The Plant and Soil Science pathway covers topics such as plant classification, physiology, reproduction, plant breeding, biotechnology, and pathology. In addition, students learn about soil management, water, pests, and equipment, as well as cultural and harvest practices.

Sample occupations associated with this pathway:
- Soil Conservationist
- Environmental Analyst
- Plant and Soil Scientist
- Crop Consultant
- Pest Control Advisor

G1.0 Apply plant classification principles.
- G1.1 Classify and identify plants by order, family, genus, and species.
- G1.2 Practice how to identify plants by using a dichotomous key.
- G1.3 Demonstrate how common plant parts are used to classify the plants.
- G1.4 Communicate the differences between, and uses of, native and nonnative plants.
- G1.5 Distinguish the differences between monocots and dicots.
- G1.6 Explain the differences between plants under production and weeds.

G2.0 Explore cell biology.
- G2.1 Compare differences between prokaryotic cells and plant and animal eukaryotic cells and how viruses differ from them in complexity and general structure.
- G2.2 Test plant cellular function reactions when plants are grown under different conditions.
- G2.3 Explain functions organelles play in the health of the cell.
- G2.4 Recognize the part of the cell that is responsible for the genetic information that controls plant growth and development.
- G2.5 Summarize plant inheritance principles, including the structure and role of DNA.
- G2.6 List which organelles in plant cells carry out photosynthesis.

G3.0 Understand plant physiology and growth principles.
- G3.1 Investigate plant systems, nutrient transportation, and energy storage.
- G3.2 Label the seed’s essential parts and describe their functions.
- G3.3 Discern how primary, secondary, and trace elements are used in plant growth.
- G3.4 Research the factors that influence plant growth, including water, nutrients, light, soil, air, and climate.
G3.5 Identify the tissues seen in a cross section of woody and herbaceous plants.
G3.6 Conduct experiment(s) testing the factors that affect plant growth and predict plant response.

G4.0 Demonstrate an understanding of sexual and asexual reproduction of plants.
G4.1 Explain the different forms of sexual and asexual plant reproduction.
G4.2 Demonstrate the various techniques for successful plant propagation (e.g., budding, grafting, cuttings, and seeds).
G4.3 Use the proper sterile technique used in tissue culture.

G5.0 Assess pest problems and management.
G5.1 Demonstrate how to categorize insects as pests, beneficial or neutral, and describe their roles.
G5.2 Explain the role of other pests, such as nematodes, molds, mildews, and weeds.
G5.3 Compare and contrast conventional, sustainable, and organic management methods to prevent or treat plant disease symptoms.
G5.4 Use integrated pest management to prevent, treat, and control plant disease symptoms (including conventional, sustainable, and organic management methods).
G5.5 Research how biotechnology can be used to manage pests.

G6.0 Assess the role of soils in plant production.
G6.1 Understand soil types, soil texture, structure, and bulk density and explain the U.S. Department of Agriculture (USDA) soil-quality rating procedure.
G6.2 Analyze soil properties necessary for successful plant production, including pH, electrical conductivity (EC), and essential nutrients.
G6.3 Explain soil biology and diagram the cycles in nature as related to the soil food chain.
G6.4 Research how soil biology affects the environment and natural resources.

G7.0 Integrate effective tillage and soil conservation management practices.
G7.1 Plan how to effectively manage and conserve soil through conventional, minimum, conservation, and no-tillage irrigation and through drainage and tillage practices.
G7.2 Assess how global positioning systems, surveying, laser leveling, and other tillage practices conserve soil.
G7.3 Use tools such as the USDA and the local Resource Conservation District soil survey maps to determine appropriate soil management practices.

G8.0 Evaluate effective water management practices.
G8.1 Summarize California water history, current issues, water rights, water law, and water transfer through different distribution projects throughout the state.
G8.2 Research and describe the local, state, and federal agencies that regulate water quality and availability in California.
G8.3 Define the definition of a watershed and explain how it is used to measure water quality.
G8.4 Explain effective water management and conservation practices, including the use of tailwater ponds.
G8.5 Use water-testing standards and perform bioassay and macro-invertebrate protocols to assess water quality.
G9.0 Explain the concept of an "agrosystem" approach to production.
G9.1 Identify and classify the plants and animals in an agricultural system (as producers, consumers, or decomposers).
G9.2 Compare and contrast the elements of conventional, sustainable, and organic production systems.
G9.3 Differentiate among the components of "whole-system management."
G10.0 Apply local crop management and production practices.
G10.1 Practice local cultural techniques, including monitoring, pruning, fertilization, planting, irrigation, harvest treatments, processing, and packaging practices for various tree, grain, hay, and vegetable classes.
G10.2 Explain common marketing and shipping characteristics of local commodities.
G10.3 Interpret general maturity and harvest-time guidelines for specific local plant products.
G10.4 Apply point-of-origin safety and sanitation procedures in the production, harvesting, handling, processing, and storing of edible plant products.
G11.0 Demonstrate competence in applications of scientific principles and techniques in plant science.
G11.1 Research how changing technology, such as micro-propagation, biological pest controls, and genetic engineering (including DNA extraction and gel electrophoresis), affects plant production, yields, and management.
G11.2 Explain the various technology advancements that affect plant and soil science, such as global positioning systems, global information systems, variable rate technology, and remote sensing.
G11.3 Assess how herbicide-resistant plant genes can affect the environment.
G11.4 Communicate how genetic engineering techniques have been used to improve crop yields.
G11.5 Compare and contrast the effects of agricultural biotechnology, including genetically modified organisms, on the agriculture industry and the larger society and the pros and cons of such use.
# Academic Alignment Matrix

## Agriculture and Natural Resources

### English Language Arts

<table>
<thead>
<tr>
<th>Reading Standards for Literacy in Science and Technical Subjects – RLST (Standard Area, Grade Level, Standard #)</th>
<th>PATHWAYS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Agricultural Business</strong></td>
<td>B. Agricultural Mechanics</td>
</tr>
<tr>
<td>9-10.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.</td>
<td>B1.0, B2.0, B3.0, B4.0, B5.0, B6.0, B7.0, B8.0, B9.0, B10.0, B11.0, B12.0</td>
</tr>
<tr>
<td>9-10.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics.</td>
<td>B1.0, B2.0, B3.0, B4.0, B5.0, B6.0, B7.0, B8.0, B9.0, B10.0, B11.0, B12.0</td>
</tr>
<tr>
<td>9-10.5 Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</td>
<td>A1.0, A2.0, A3.0, A4.0, A5.0, A6.0, A7.0, A8.0, A9.0</td>
</tr>
<tr>
<td>9-10.7 Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.</td>
<td>A3.0, A4.0, A6.0, A8.0</td>
</tr>
<tr>
<td>11-12.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.</td>
<td>B1.0, B2.0, B3.0, B4.0, B5.0, B6.0, B7.0, B8.0, B9.0, B10.0, 11.0, B12.0</td>
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### Academic Alignment Matrix

<table>
<thead>
<tr>
<th><strong>AGRICULTURE AND NATURAL RESOURCES</strong></th>
<th><strong>PATHWAYS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Agricultural Business</strong></td>
<td><strong>B. Agricultural Mechanics</strong></td>
</tr>
<tr>
<td><strong>Reading Standards for Literacy in Science and Technical Subjects – RLST (Standard Area, Grade Level, Standard #)</strong> (continued)</td>
<td></td>
</tr>
<tr>
<td>1-12.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.</td>
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</tr>
<tr>
<td><strong>Writing Standards – WS (Standard Area, Grade Level, Standard #)</strong></td>
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</tr>
<tr>
<td>9-10.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</td>
<td>A1.0, A2.0, A6.0, A7.0, A9.0</td>
</tr>
<tr>
<td>9-10.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.</td>
<td>A1.0, A2.0, A3.0, A4.0, A5.0, A6.0, A7.0, A8.0, A9.0</td>
</tr>
<tr>
<td>9-10.8 Gather relevant information from multiple authoritative print and digital sources (primary and secondary) using advanced searches effectively: assess the usefulness of each source in answering the research questions; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citations.</td>
<td>A1.0, A2.0, A5.0, A6.0, A7.0, A9.0</td>
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</table>
## Academic Alignment Matrix

### Agriculture and Natural Resources

<table>
<thead>
<tr>
<th>Writing Standards – WS (Standard Area, Grade Level, Standard #) (continued)</th>
<th>A. Agricultural Business</th>
<th>B. Agricultural Mechanics</th>
<th>C. Agriscience</th>
<th>D. Animal Science</th>
<th>E. Forestry and Natural Resources</th>
<th>F. Ornamental Horticulture</th>
<th>G. Plant and Soil Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–10.9. Draw evidence from literary or informational texts to support analysis, reflection, and research.</td>
<td>A1.0, A2.0, A3.0, A4.0, A5.0, A6.0, A7.0, A8.0, A9.0</td>
<td>B1.0, B2.0, B3.0, B4.0, B5.0, B6.0, B9.0, B10.0</td>
<td>C1.0, C2.0, C3.0, C4.0, C5.0, C6.0, C7.0, C8.0, C9.0, C10.0, C11.0, C12.0, C13.0</td>
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<td>G1.0, G2.0, G3.0, G4.0, G5.0, G6.0, G7.0, G8.0, G9.0, G10.0, G11.0</td>
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<tr>
<td>11–12.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</td>
<td>A1.0, A2.0, A3.0, A4.0, A5.0, A7.0, A9.0</td>
<td>B12.0</td>
<td>C13.0</td>
<td>D1.0</td>
<td>E3.0, E4.0, E5.0, E6.0, E7.0, E8.0, E9.0, E10.0, E11.0, E12.0</td>
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<td>11–12.7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.</td>
<td>A1.0, A2.0, A3.0, A4.0, A5.0, A6.0, A7.0, A8.0, A9.0</td>
<td>B1.0, B2.0, B3.0, B4.0, B5.0, B6.0, B9.0, B10.0, B12.0</td>
<td>C1.0, C2.0, C3.0, C4.0, C5.0, C6.0, C7.0, C8.0, C9.0, C10.0, C11.0, C12.0, C13.0</td>
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<td>G1.0, G2.0, G3.0, G4.0, G5.0, G6.0, G7.0, G8.0, G9.0, G10.0, G11.0</td>
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<td>11–12.9. Draw evidence from literary or informational texts to support analysis, reflection, and research.</td>
<td>A1.0, A2.0, A3.0, A4.0, A5.0, A6.0, A7.0, A8.0, A9.0</td>
<td>B1.0, B2.0, B3.0, B4.0, B5.0, B6.0, B9.0, B10.0</td>
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</tr>
<tr>
<td>11–12.10. Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.</td>
<td>A2.0, A5.0, A7.0, A9.0</td>
<td>B11.0, B12.0</td>
<td>C1.0, C2.0, C3.0, C4.0, C5.0, C6.0, C7.0, C8.0, C9.0, C10.0, C11.0, C12.0, C13.0</td>
<td>D1.0, D4.0, D5.0, D6.0, D7.0, D9.0</td>
<td>E2.0, E3.0, E5.0, E10.0, E13.0</td>
<td>F8.0, F11.0</td>
<td>G5.0, G6.0, G8.0, G11.0</td>
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### Academic Alignment Matrix

#### AGRICULTURE AND NATURAL RESOURCES

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#### Algebra - A-CED - Creating Equations

*Create equations that describe numbers or relationships*

1. Create equations and inequalities in one variable including ones with absolute value and use them to solve problems in and out of context, including equations arising from linear functions.

1.1 Judge the validity of an argument according to whether the properties of real numbers, exponents, and logarithms have been applied correctly at each step.

| C13.0 | E10.0 |

#### Algebra - A-APR - Arithmetic with Polynomials and Rational Expressions

*Perform arithmetic operations on polynomials*

1. Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication: add, subtract, and multiply polynomials, and divide polynomials by monomials. Solve problems in and out of context. (Common Core Standard A-APR-11)

| C13.0 |

#### Algebra - A-REI - Reasoning with Equations and Inequalities

*Solve equations and inequalities in one variable*

3. Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

3.1 Solve equations and inequalities involving absolute value. (CA Standard Algebra I - 3.0 and CA Standard Algebra II - 1.0)

| C13.0 | D5.0 | E10.0 |
### Academic Alignment Matrix

#### AGRICULTURE AND NATURAL RESOURCES

<table>
<thead>
<tr>
<th>PATHWAYS</th>
<th>A. Agricultural Business</th>
<th>B. Agricultural Mechanics</th>
<th>C. Agriscience</th>
<th>D. Animal Science</th>
<th>E. Forestry and Natural Resources</th>
<th>F. Ornamental Horticulture</th>
<th>G. Plant and Soil Science</th>
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</thead>
<tbody>
<tr>
<td><strong>Functions – F–IF – Interpreting Functions</strong></td>
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<tr>
<td>Interpret functions that arise in applications in terms of the context</td>
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<tr>
<td>4. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.</td>
<td>A1.0, A2.0</td>
<td></td>
<td>C13.0</td>
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<tr>
<td><strong>Geometry – G–CO – Congruence</strong></td>
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<tr>
<td>Make geometric constructions</td>
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<tr>
<td>12. Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). COPYING a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.</td>
<td>B6.0, B9.0, B12.0</td>
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<td>D1.0</td>
<td>E11.0</td>
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<td>F5.0, F10.0</td>
<td>G7.0</td>
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<td><strong>Geometry – G–MD – Geometric Measurement and Dimensions</strong></td>
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<td>Explain volume formulas and use them to solve problems</td>
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<tr>
<td>3. Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.</td>
<td>B6.0, B12.0</td>
<td></td>
<td>D1.0, D7.0</td>
<td>E4.0, E11.0</td>
<td></td>
<td>F5.0, F10.0</td>
<td>G7.0</td>
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<tr>
<td><strong>Geometry – G–MG – Modeling with Geometry</strong></td>
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<tr>
<td>Apply geometric concepts in modeling situations</td>
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<td>2. Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).</td>
<td>B4.0, B6.0, B11.0, B12.0</td>
<td></td>
<td>C8.0, C10.0</td>
<td>D1.0, D7.0</td>
<td>E4.0, E9.0, E11.0</td>
<td>F5.0, F7.0, F10.0, F11.0</td>
<td>G7.0</td>
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</table>
### Academic Alignment Matrix

#### Agriculture and Natural Resources

<table>
<thead>
<tr>
<th>Geometry – G-SRT – Similarity, Right Triangles, and Trigonometry</th>
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<tbody>
<tr>
<td>Define trigonometric ratios and solve problems involving right triangles</td>
</tr>
<tr>
<td>8. Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.</td>
</tr>
<tr>
<td>8.1 Know and use angle and side relationships in problems with special right triangles, such as 30°, 60°, and 90° triangles and 45°, 45°, and 90° triangles. (CA Standard Geometry – 20.0)</td>
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<tr>
<td>A. Agricultural Business</td>
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<tr>
<td>A1.0, A2.0</td>
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</tbody>
</table>

#### Statistics and Probability – S-IC – Making Inferences and Justifying Conclusions

<table>
<thead>
<tr>
<th>Understand and evaluate random processes underlying statistical experiments</th>
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</thead>
<tbody>
<tr>
<td>1. Understand statistics as a process for making inferences about population parameters based on a random sample from that population.</td>
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<tr>
<td>A1.0, A2.0</td>
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</tbody>
</table>

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<thead>
<tr>
<th>Make inferences and justify conclusions from sample surveys, experiments, and observational studies</th>
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<tbody>
<tr>
<td>3. Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.</td>
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<tr>
<td>A1.0, A2.0, A7.0</td>
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</tbody>
</table>

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<thead>
<tr>
<th>5. Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.</th>
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<tbody>
<tr>
<td>A1.0, A2.0</td>
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</tbody>
</table>
# Academic Alignment Matrix

## Agriculture and Natural Resources

### Statistics and Probability – S-ID – Interpreting Categorical and Quantitative Data

**Summarize, represent, and interpret data on a single count or measurement variable.**

1. Represent data with plots on the real number line (dot plots, histograms, and box plots).
   - A1.0, A2.0
   - C3.0
   - D11.0
   - E4.0, E5.0, E6.0
   - F5.0
   - G7.0

2. Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.
   - A1.0, A2.0
   - C3.0
   - D11.0
   - E4.0, E5.0, E6.0
   - F5.0
   - G7.0

**Interpret linear models**

7. Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.
   - A1.0, A2.0
   - C3.0
   - D11.0
   - E4.0, E5.0, E6.0
   - F5.0
   - G7.0

## Science

### Scientific and Engineering Practices – SEP

1. Asking questions (for science) and defining problems (for engineering)
   - B1.0, B2.0, B3.0, B4.0, B5.0, B6.0, B7.0, B8.0, B9.0, B10.0, B11.0, B12.0
   - C13.0
   - D1.0, D2.0, D3.0, D4.0, D5.0, D6.0, D7.0, D8.0, D9.0, D10.0, D11.0, D12.0
   - E1.0, E2.0, E3.0, E4.0, E5.0, E6.0, E7.0, E8.0, E9.0, E10.0, E11.0, E12.0, E13.0
   - F1.0, F2.0, F3.0, F4.0, F5.0, F6.0, F9.0, F10.0
   - G1.0, G2.0, G3.0, G5.0, G6.0, G7.0, G8.0, G9.0, G10.0, G11.0

2. Developing and using models
   - B1.0, B2.0, B3.0, B4.0, B5.0, B6.0, B7.0, B8.0, B9.0, B10.0, B11.0, B12.0
   - C2.0, C5.0, C6.0, C7.0, C13.0
   - D1.0, D2.0, D3.0, D4.0, D5.0, D6.0, D7.0, D8.0, D9.0, D10.0, D11.0, D12.0
   - E1.0, E2.0, E3.0, E4.0, E5.0, E6.0, E7.0, E8.0, E9.0, E10.0, E11.0, E12.0, E13.0
   - F1.0, F2.0, F3.0, F4.0, F5.0, F6.0, F10.0
   - G1.0, G2.0, G3.0, G5.0, G6.0, G7.0, G8.0, G9.0, G10.0, G11.0
# Academic Alignment Matrix

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Scientific and Engineering Practices – SEP (continued)</strong></td>
<td>B1.0, B2.0, B3.0, B4.0, B5.0, B6.0, B7.0, B9.0, B12.0</td>
<td>C2.0, C4.0, C5.0, C9.0, C12.0, C13.0</td>
<td>D1.0, D2.0, D6.0</td>
<td>E7.0</td>
<td>F2.0, F3.0, F4.0, F5.0, F6.0, F10.0</td>
<td>G2.0, G3.0, G5.0</td>
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<tr>
<td><strong>3. Planning and carrying out investigations</strong></td>
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<td><strong>4. Analyzing and interpreting data</strong></td>
<td>B1.0, B2.0, B3.0, B4.0, B5.0, B6.0, B7.0, B8.0, B9.0, B12.0</td>
<td>C1.0, C4.0, C5.0, C8.0, C12.0, C13.0</td>
<td>D1.0, D2.0, D3.0, D4.0, D5.0, D6.0, D7.0, D8.0, D9.0, D10.0, D11.0, D12.0</td>
<td>E1.0, E2.0, E3.0, E4.0, E5.0, E6.0, E7.0, E8.0, E9.0, E10.0, E11.0</td>
<td>F1.0, F2.0, F3.0, F4.0, F5.0, F6.0, F8.0, F10.0</td>
<td>G1.0, G2.0, G3.0, G5.0, G6.0, G7.0, G8.0, G9.0, G10.0, G11.0</td>
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<tr>
<td><strong>5. Using mathematics and computational thinking</strong></td>
<td>B1.0, B2.0, B3.0, B4.0, B5.0, B6.0, B7.0, B9.0, B12.0</td>
<td>C7.0, C13.0</td>
<td>D1.0, D2.0, D6.0, D10.0, D11.0, D12.0</td>
<td>E5.0, E6.0, E7.0, E10.0, E12.0, E13.0</td>
<td>F2.0, F3.0, F4.0, F5.0, F6.0, F10.0</td>
<td>G2.0, G3.0, G5.0, G6.0, G7.0, G8.0, G9.0, G11.0</td>
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<tr>
<td><strong>6. Constructing explanations (for science) and designing solutions (for engineering)</strong></td>
<td>B1.0, B2.0, B3.0, B4.0, B5.0, B6.0, B7.0, B8.0, B9.0, B10.0, B11.0, B12.0</td>
<td>C13.0</td>
<td>D1.0, D2.0, D3.0, D4.0, D5.0, D6.0, D10.0, D11.0, D12.0</td>
<td>E5.0, E6.0, E7.0, E10.0, E12.0, E13.0</td>
<td>F1.0, F2.0, F3.0, F4.0, F5.0, F6.0, F7.0, F8.0, F9.0, F10.0, F11.0</td>
<td>G1.0, G2.0, G3.0, G5.0, G6.0, G7.0, G8.0, G9.0, G10.0, G11.0</td>
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<tr>
<td><strong>7. Engaging in argument from evidence</strong></td>
<td>B1.0, B2.0, B3.0, B4.0, B5.0, B6.0, B7.0, B8.0, B9.0, B10.0, B11.0, B12.0</td>
<td>C2.0, C4.0, C13.0</td>
<td>D1.0, D2.0, D6.0, D8.0, D10.0, D11.0, D12.0</td>
<td>E1.0, E2.0, E3.0, E4.0, E5.0, E6.0, E7.0, E8.0, E9.0, E10.0, E12.0, E13.0</td>
<td>F1.0, F2.0, F3.0, F4.0, F5.0, F6.0, F7.0, F8.0, F9.0, F10.0, F11.0</td>
<td>G1.0, G2.0, G3.0, G5.0, G6.0, G7.0, G8.0, G9.0, G10.0, G11.0</td>
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<tr>
<td><strong>8. Obtaining, evaluating, and communicating information</strong></td>
<td>B1.0, B2.0, B3.0, B4.0, B5.0, B6.0, B7.0, B8.0, B9.0, B10.0, B11.0, B12.0</td>
<td>C3.0, C13.0</td>
<td>D1.0, D2.0, D3.0, D4.0, D5.0, D6.0, D7.0, D8.0, D10.0, D11.0, D12.0</td>
<td>E1.0, E2.0, E3.0, E4.0, E5.0, E6.0, E7.0, E9.0, E10.0, E11.0, E12.0, E13.0</td>
<td>F1.0, F2.0, F3.0, F4.0, F5.0, F6.0, F7.0, F8.0, F9.0, F10.0, F11.0</td>
<td>G1.0, G2.0, G3.0, G5.0, G6.0, G7.0, G8.0, G9.0, G10.0, G11.0</td>
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<tr>
<td><strong>Crosscutting Concept – CC</strong></td>
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<tr>
<td>1. Patterns</td>
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<td>B2.0, B3.0, B4.0,</td>
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<td>C7.0, C13.0</td>
<td>D1.0, D2.0, D3.0,</td>
<td>E1.0, E2.0, E3.0, E4.0, E5.0, E6.0, E7.0, E8.0, E9.0, E10.0, E11.0, E12.0, E13.0, F1.0, F2.0, F3.0, F4.0, F5.0, F6.0, F7.0, F8.0, F9.0, F10.0, F11.0, G1.0, G2.0, G3.0, G4.0, G5.0, G6.0, G7.0, G8.0, G9.0, G10.0, G11.0</td>
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<td>B5.0, B6.0, B7.0,</td>
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<td>B11.0, B12.0</td>
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<td>2. Cause and effect: Mechanism and explanation</td>
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<td>3. Scale, proportion, and quantity</td>
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<td>D1.0, D2.0, D3.0,</td>
<td>E1.0, E2.0, E3.0, E4.0, E5.0, E6.0, E7.0, E8.0, E9.0, E10.0, E11.0, F1.0, F2.0, F3.0, F4.0, F5.0, F6.0, F7.0, F8.0, F9.0, F10.0, G1.0, G2.0, G3.0, G4.0, G5.0, G6.0, G7.0, G8.0, G9.0, G10.0, G11.0</td>
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<td>E1.0, E2.0, E3.0, E4.0, E5.0, E6.0, E7.0, E8.0, E9.0, E10.0, E11.0, E12.0, E13.0, F1.0, F2.0, F3.0, F4.0, F5.0, F6.0, F7.0, F8.0, F9.0, F10.0, G1.0, G2.0, G3.0, G4.0, G5.0, G6.0, G7.0, G8.0, G9.0, G10.0, G11.0</td>
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<td>B4.0, B5.0, B6.0,</td>
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<td>B7.0, B8.0, B9.0,</td>
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<tr>
<td>5. Energy and matter: Flows, cycles, and conservation</td>
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<td>B3.0, B4.0, B5.0,</td>
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<td>C2.0, C13.0</td>
<td>D1.0, D2.0, D6.0,</td>
<td>E1.0, E2.0, E3.0, E4.0, E5.0, E6.0, E7.0, E8.0, E9.0, E10.0, E11.0, F2.0, F9.0, F10.0, G2.0, G3.0, G4.0, G5.0, G6.0, G7.0, G8.0, G9.0, G11.0</td>
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<td>B6.0, B7.0, B8.0,</td>
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<td>B9.0, B12.0</td>
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<td>6. Structure and function</td>
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## Academic Alignment Matrix

### AGRICULTURE AND NATURAL RESOURCES

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<th>B. Agricultural Mechanics</th>
<th>C. Agriscience</th>
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<th>G. Plant and Soil Science</th>
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#### Crosscutting Concept – CC (continued)

| 7. Stability and change | B2.0, B3.0, B4.0, B5.0, B6.0, B7.0, B8.0, B9.0, B10.0, B11.0, B12.0 | C13.0 | D1.0, D2.0, D5.0, D6.0, D7.0, D8.0, D9.0, D10.0, D11.0, D12.0 | E1.0, E2.0, E3.0, E4.0, E5.0, E6.0, E7.0, E8.0, E9.0, E10.0, E11.0 | F2.0, F5.0, F6.0, F7.0, F8.0, F9.0, F10.0 | G2.0, G3.0, G5.0, G6.0, G8.0, G9.0, G10.0, G11.0 |

#### Physical Sciences – PS

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<tr>
<th>PS2: Motion and Stability: Forces and Interactions</th>
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<th>PS2.B: Types of interactions</th>
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<th>PS4.A: Wave Properties</th>
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| B12.0 | }
### Academic Alignment Matrix

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<td>LS1.B: Growth and Development of Organisms</td>
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<td>LS1.C: Organization for Matter and Energy Flow in Organisms</td>
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<td>LS1.D: Information Processing</td>
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<td>LS2.B: Cycles of Matter and Energy Transfer in Ecosystems</td>
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<td>LS2.C: Ecosystems Dynamics, Functioning, and Resilience</td>
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<td>LS2.D: Social Interactions and Group Behavior</td>
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<td>LS3: Heredity: Inheritance and Variation of Traits</td>
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<td>LS3.B: Variation of Traits</td>
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## Academic Alignment Matrix

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### Earth and Space Sciences – ESS

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### Engineering, Technology, and the Applications of Science – ETS

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<td>ETS1.C: Optimizing the Design Solution</td>
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42 ANR California Career Technical Education Model Curriculum Standards
## Academic Alignment Matrix

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<tr>
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<td>ETS2.A: Interdependence of Science, Engineering, and Technology</td>
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<td>ETS2.B: Influence of Engineering, Technology, and Science on Society and the Natural World</td>
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</table>

### HISTORY/SOCIAL SCIENCE

#### Principles of Economics – PE

12.1 Students understand common economic terms and concepts and economic reasoning.

12.1.1. Examine the causal relationship between scarcity and the need for choices.  
A2.0

12.1.2. Explain opportunity cost and marginal benefit and marginal cost.  
A2.0

12.1.3. Identify the difference between monetary and non-monetary incentives and how changes in incentives cause changes in behavior.  
A2.0

12.1.4. Evaluate the role of private property as an incentive in conserving and improving scarce resources, including renewable and nonrenewable natural resources.  
A2.0  
E2.0, E13.0

12.2 Students analyze the elements of America's market economy in a global setting.  
A2.0

12.2.1. Understand the relationship of the concept of incentives to the law of supply and the relationship of the concept of incentives and substitutes to the law of demand.  
A2.0
<table>
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<tr>
<th>PATHWAYS</th>
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<th>Principles of Economics – PE (continued)</th>
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<tr>
<td>A. Agricultural Business</td>
<td>A1.0, A2.0</td>
<td>12.2.2. Discuss the effects of changes in supply and demand on the relative scarcity, price, and quantity of particular products.</td>
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<tr>
<td>B. Agricultural Mechanics</td>
<td>A1.0, A2.0, A3.0</td>
<td>12.2.3. Explain the roles of property rights, competition, and profit in a market economy.</td>
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<tr>
<td>C. Agriscience</td>
<td>A4.0, A5.0, A7.0, A8.0, A9.0</td>
<td>12.2.4. Explain how prices reflect the relative scarcity of goods and services and perform the allocative function in a market economy.</td>
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<tr>
<td>D. Animal Science</td>
<td>A2.0, A7.0, A9.0</td>
<td>12.2.5. Understand the process by which competition among buyers and sellers determines a market price.</td>
</tr>
<tr>
<td>E. Forestry and Natural Resources</td>
<td>A2.0, A7.0</td>
<td>12.2.6. Describe the effect of price controls on buyers and sellers.</td>
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<tr>
<td>F. Ornamental Horticulture</td>
<td>A1.0, A2.0, A7.0</td>
<td>12.2.7. Analyze how domestic and international competition in a market economy affects goods and services produced and the quality, quantity, and price of those products.</td>
</tr>
<tr>
<td>G. Plant and Soil Science</td>
<td>A1.0, A2.0, A7.0</td>
<td>12.2.8. Explain the role of profit as the incentive to entrepreneurs in a market economy.</td>
</tr>
<tr>
<td>A. Agricultural Business</td>
<td>A1.0, A2.0, A7.0</td>
<td>12.2.9. Discuss the economic principles that guide the location of agricultural production and industry and the spatial distribution of transportation and retail facilities.</td>
</tr>
<tr>
<td>B. Agricultural Mechanics</td>
<td>A2.0</td>
<td>12.2.10. Discuss wage differences among jobs and professions, using the laws of demand and supply and the concept of productivity.</td>
</tr>
</tbody>
</table>
| C. Agriscience | A2.0 | 12.2.11. Explain the effects of international mobility of capital and labor on the U.S. economy.
<table>
<thead>
<tr>
<th>Principles of Economics – PE (continued)</th>
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<tbody>
<tr>
<td>12.6 Students analyze issues of international trade and explain how the U.S. economy affects, and is affected by, economic forces beyond the United States’ borders.</td>
</tr>
<tr>
<td>12.6.1. Identify the gains in consumption and production efficiency from trade, with emphasis on the main products and changing geographic patterns of twentieth-century trade among countries in the Western Hemisphere.</td>
</tr>
<tr>
<td>A9.0</td>
</tr>
<tr>
<td>12.6.2. Compare the reasons for and the effects of trade restrictions during the Great Depression compared with present-day arguments among labor, business, and political leaders over the effects of free trade on the economic and social interests of various groups of Americans.</td>
</tr>
<tr>
<td>A9.0</td>
</tr>
<tr>
<td>12.6.3. Understand the changing role of international political borders and territorial sovereignty in a global economy.</td>
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<tr>
<td>A9.0</td>
</tr>
<tr>
<td>12.6.4. Explain foreign exchange, the manner in which exchange rates are determined, and the effects of the dollar’s gaining (or losing) value relative to other currencies.</td>
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<tr>
<td>A9.0</td>
</tr>
<tr>
<td>12.7 Students analyze and compare the powers and procedures of the national, state, tribal, and local governments.</td>
</tr>
<tr>
<td>12.7.5. Explain how public policy is formed, including the setting of the public agenda and implementation of it through regulations and executive orders.</td>
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<tr>
<td>E2.0</td>
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<tr>
<td>PATHWAYS</td>
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<td>-------------------------------</td>
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<tr>
<td><strong>AGRICULTURE AND NATURAL RESOURCES</strong></td>
</tr>
<tr>
<td><strong>U.S. History and Geography – US</strong></td>
</tr>
<tr>
<td>11.6 Students analyze the different explanations for the Great Depression and how the New Deal fundamentally changed the role of the federal government.</td>
</tr>
<tr>
<td>11.6.3. Discuss the human toll of the Depression, natural disasters, and unwise agricultural practices and their effects on the depopulation of rural regions and on political movements of the left and right, with particular attention to the Dust Bowl refugees and their social and economic impacts in California.</td>
</tr>
<tr>
<td>11.11 Students analyze the major social problems and domestic policy issues in contemporary American society.</td>
</tr>
<tr>
<td>11.11.5. Trace the impact of, need for, and controversies associated with environmental conservation, expansion of the national park system, and the development of environmental protection laws, with particular attention to the interaction between environmental protection advocates and property rights advocates.</td>
</tr>
<tr>
<td>11.11.7. Explain how the federal, state, and local governments have responded to demographic and social changes such as population shifts to the suburbs, racial concentrations in the cities, Frostbelt-to-Sunbelt migration, international migration, decline of family farms, increases in out-of-wedlock births, and drug abuse.</td>
</tr>
</tbody>
</table>
Appendix: CTE Model Curriculum Standards Contributors

Agriculture and Natural Resources

Bob Heuvel, Administrator, California Department of Education
Hugh Mooney, Education Consultant, California Department of Education

*Standards Review Team*
- Don Borges, Director, Agricultural Education Tech Prep, Modesto Junior College
- Glen Casey, Professor, California Polytechnic State University, San Luis Obispo
- Karen Dalton-Wemp, Owner, Mission Vineyard Sheep
- Bill Loveridge, Retired Instructor
- Cindy Rohde, Instructor, Pierce Joint Unified School District
- Mike Rourke, Instructor, Trinity County Office of Education
- Rosco Vaughn, Professor, California State University, Fresno

*Standards Writing Team*
- Karen Dalton-Wemp, Owner, Mission Vineyard Sheep
- Jill Sperling, Instructor, Kingsburg Joint Union High School District
Appendix B

Next Generation Science Standards

(For Ag. Earth Science and Ag. Biology)
Next Generation Science Standards for California Public Schools, Kindergarten through Grade Twelve

Alternative Discipline Specific Course
Grade Six – Earth and Space Sciences

California Department of Education
Clarification statements were created by the writers of NGSS to supply examples or additional clarification to the performance expectations and assessment boundary statements.

*The performance expectations marked with an asterisk integrate traditional science content with engineering through a Practice or Disciplinary Core Idea.

**California clarification statements, marked with double asterisks, were incorporated by the California Science Expert Review Panel.

***Multiple DCIs show supplemental DCIs with three asterisks at the end of the DCI description. These are core ideas from other science disciplines that are important to understanding the DCI.


**MS-ESS1 Earth’s Place in the Universe**

**MS-ESS1 Earth’s Place in the Universe**

**Students who demonstrate understanding can:**

**MS-ESS1-1. Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons. [Clarification Statement: Examples of models can be physical, graphical, or conceptual.]**

**MS-ESS1-2. Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system. [Clarification Statement: Emphasis for the model is on gravity as the force that holds together the solar system and Milky Way galaxy and controls orbital motions within them. Examples of models can be physical (such as the analogy of distance along a football field or computer visualizations of elliptical orbits) or conceptual (such as mathematical proportions relative to the size of familiar objects such as their school or state).] [Assessment Boundary: Assessment does not include Kepler's Laws of orbital motion or the apparent retrograde motion of the planets as viewed from Earth.]**

**MS-ESS1-3. Analyze and interpret data to determine scale properties of objects in the solar system. [Clarification Statement: Emphasis is on the analysis of data from Earth-based instruments, space-based telescopes, and spacecraft to determine similarities and differences among solar system objects. Examples of scale properties include the sizes of an object's layers (such as crust and atmosphere), surface features (such as volcanoes), and orbital radius. Examples of data include statistical information, drawings and photographs, and models.] [Assessment Boundary: Assessment does not include recalling facts about properties of the planets and other solar system bodies.]**

**MS-ESS1-4. Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth’s 4.6-billion-year-old history. [Clarification Statement: Emphasis is on how analyses of rock formations and the fossils they contain are used to establish relative ages of major events in Earth's history. Examples of Earth's major events could range from being very recent (such as the last Ice Age or the earliest fossils of homo...**
California's Next Generation Science Standards (NGSS) for K–12
Alternative Discipline Specific Course
Grade Six – Earth and Space Sciences

The performance expectations above were developed using the following elements from the NRC document *A Framework for K–12 Science Education*:

<table>
<thead>
<tr>
<th>Science and Engineering Practices</th>
<th>Disciplinary Core Ideas</th>
<th>Crosscutting Concepts</th>
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<tbody>
<tr>
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<td>ESS1.A: The Universe and Its Stars</td>
<td>Patterns</td>
</tr>
<tr>
<td>Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.</td>
<td>Patterns of the apparent motion of the sun, the moon, and stars in the sky can be observed, described, predicted, and explained with models. (MS-ESS1-1)</td>
<td>Patterns can be used to identify cause-and-effect relationships. (MS-ESS1-1)</td>
</tr>
<tr>
<td>- Develop and use a model to describe phenomena. (MS-ESS1-1), (MS-ESS1-2)</td>
<td>Earth and its solar system are part of the Milky Way galaxy, which is one of many galaxies in the universe. (MS-ESS1-2)</td>
<td>Scale, Proportion, and Quantity</td>
</tr>
<tr>
<td>Analyzing and Interpreting Data</td>
<td>***Supplemental DCI PS2.B</td>
<td>- Time, space, and energy phenomena can be observed at various scales using models to study systems that are too large or too small. (MS-ESS1-3), (MS-ESS1-4)</td>
</tr>
<tr>
<td>Analyzing data in 6–8 builds on K–5 experiences and progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis.</td>
<td>ESS1.B: Earth and the Solar System</td>
<td>Systems and System Models</td>
</tr>
<tr>
<td>- Analyze and interpret data to determine similarities and differences in findings. (MS-ESS1-3)</td>
<td>The solar system consists of the sun and a collection of objects, including planets, their moons, and asteroids that are held in orbit around the sun by its gravitational pull on them. (MS-ESS1-2), (MS-ESS1-3)</td>
<td>Models can be used to represent systems and their interactions—such as inputs, processes and outputs—and energy, matter, and information flows within systems. (MS-ESS1-2)</td>
</tr>
<tr>
<td>Constructing Explanations and</td>
<td>***Supplemental DCI PS2.B</td>
<td>Connections to Engineering, Technology, and Applications of Science</td>
</tr>
<tr>
<td><em>This model of the solar system can</em></td>
<td><strong>This model of the solar system can</strong></td>
<td></td>
</tr>
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## Designing Solutions
Constructing explanations and designing solutions in 6–8 builds on K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories.

- Construct a scientific explanation based on valid and reliable evidence obtained from sources (including the students' own experiments) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future. (MS-ESS1-4)

- Explain eclipses of the sun and the moon. Earth's spin axis is fixed in direction over the short-term but tilted relative to its orbit around the sun. The seasons are a result of that tilt and are caused by the differential intensity of sunlight on different areas of Earth across the year. (MS-ESS1-1)
- The solar system appears to have formed from a disk of dust and gas, drawn together by gravity. (MS-ESS1-2)

### ESS1.C: The History of Planet Earth
- The geologic time scale interpreted from rock strata provides a way to organize Earth's history. Analyses of rock strata and the fossil record provide only relative dates, not an absolute scale. (MS-ESS1-4)

**Supplemental DCI LS4.A**

## Interdependence of Science, Engineering, and Technology
- Engineering advances have led to important discoveries in virtually every field of science and scientific discoveries have led to the development of entire industries and engineered systems. (MS-ESS1-3)

### Connections to Nature of Science

## Scientific Knowledge Assumes an Order and Consistency in Natural Systems
- Science assumes that objects and events in natural systems occur in consistent patterns that are understandable through measurement and observation. (MS-ESS1-1), (MS-ESS1-2)

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**PS2.B** is a supplemental DCI to DCI ESS1.A when addressing Performance Expectation MS-ESS1-2

**LS4.A** is a supplemental DCI to DCI ESS1.C when addressing Performance Expectation MS-ESS1-4

Connections to other DCIs in this grade-band: **MS.PS2.A** (MS-ESS1-1), (MS-ESS1-2); **MS.PS2.B** (MS-ESS1-1), (MS-ESS1-2); **MS.LS4.A** (MS-ESS1-4); **MS.LS4.C** (MS-ESS1-4); **MS.ESS2.A** (MS-ESS1-3)

Articulation of DCIs across grade-bands: **3.PS2.A** (MS-ESS1-1), (MS-ESS1-2); **3.LS4.A** (MS-ESS1-4); **3.LS4.C** (MS-ESS1-4); **3.LS4.D** (MS-ESS1-4); **4.ESS1.C** (MS-ESS1-4); **5.PS2.B** (MS-ESS1-1), (MS-ESS1-2); **5.ESS1.A** (MS-ESS1-2); **5.ESS1.B** (MS-ESS1-1), (MS-ESS1-2), (5-ESS1-3); **HS.PS1.C** (MS-ESS1-4); **HS.PS2.A** (MS-ESS1-1), (MS-ESS1-2); **HS.PS2.B** (MS-ESS1-1), (MS-ESS1-2)

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California's Next Generation Science Standards (NGSS) for K–12  
Alternative Discipline Specific Course  
Grade Six – Earth and Space Sciences

|--------|----------------------|----------------------|----------------------|---------------------------------|----------------------|----------------------|

**California Common Core State Standards Connections:**

**ELA/Literacy –**

**RST.6–8.1**  
Cite specific textual evidence to support analysis of science and technical texts. (MS-ESS1-3),(MS-ESS1-4)

**RST.6–8.7**  
Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). (MS-ESS1-3)

**WHST.6–8.2.a–f**  
Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. (MS-ESS1-4)

**SL.8.5**  
Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points. (MS-ESS1-1),(MS-ESS1-2)

**Mathematics –**

**MP.2**  
Reason abstractly and quantitatively. (MS-ESS1-3)

**MP.4**  
Model with mathematics. (MS-ESS1-1),(MS-ESS1-2)

**6.RP.1**  
Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. (MS-ESS1-1),(MS-ESS1-2),(MS-ESS1-3)

**7.RP.2.a-d**  
Recognize and represent proportional relationships between quantities. (MS-ESS1-1),(MS-ESS1-2),(MS-ESS1-3)

**6.EE.6**  
Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. (MS-ESS1-2),(MS-ESS1-4)

**7.EE.4.a-d**  
Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. (MS-ESS1-2),(MS-ESS1-4)

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**MS-ESS2 Earth's Systems**

<table>
<thead>
<tr>
<th>MS-ESS2-1. Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Clarification Statement: Emphasis is on the processes of melting, crystallization, weathering, deformation, and sedimentation, which act together to form minerals and rocks through the cycling of Earth’s materials.] [Assessment Boundary: Assessment does not include the identification and naming of minerals.]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MS-ESS2-2. Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Clarification Statement: Emphasis is on how processes change Earth's surface at time and spatial scales that can be large (such as slow plate motions or the uplift of large mountain ranges) or small (such as rapid landslides or microscopic geochemical reactions), and how many geoscience processes (such as earthquakes, volcanoes, and meteor impacts) usually behave gradually but are punctuated by catastrophic events. Examples of geoscience processes include surface weathering and deposition by the movements of water, ice, and wind. Emphasis is on geoscience processes that shape local geographic features, where appropriate.]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MS-ESS2-3. Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Clarification Statement: Examples of data include similarities of rock and fossil types on different continents, the shapes of the continents (including continental shelves), and the locations of ocean structures (such as ridges, fracture zones, and trenches.)] [Assessment Boundary: Paleomagnetic anomalies in oceanic and continental crust are not assessed.]</td>
</tr>
</tbody>
</table>

The performance expectations above were developed using the following elements from the NRC document *A Framework for K–12 Science Education*:

<table>
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<th>Crosscutting Concepts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing and Using Models</td>
<td>ESS1.C: The History of Planet Earth</td>
<td>Patterns</td>
</tr>
<tr>
<td>Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and revise models.</td>
<td>• Tectonic processes continually generate new ocean sea floor at ridges and destroy old sea floor at trenches.</td>
<td>• Patterns in rates of change and other numerical relationships can provide information about natural and human systems.</td>
</tr>
</tbody>
</table>

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| predict more abstract phenomena and design systems. |
| Develop and use a model to describe phenomena. (MS-ESS2-1) |

**Analyzing and Interpreting Data**
Analyzing data in 6–8 builds on K–5 experiences and progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis.
- Analyze and interpret data to provide evidence for phenomena. (MS-ESS2-3)

**Constructing Explanations and Designing Solutions**
Constructing explanations and designing solutions in 6–8 builds on K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories.
- Construct a scientific explanation based on valid and reliable evidence obtained from sources (including the students' own experiments) and the assumption that theories and laws that describe

| (HS.ESS1.C GBE) (secondary to MS-ESS2-3) |
| **ESS2.A: Earth's Materials and Systems** |
| All Earth processes are the result of energy flowing and matter cycling within and among the planet's systems. This energy is derived from the sun and Earth's hot interior. The energy that flows and matter that cycles produce chemical and physical changes in Earth's materials and living organisms. (MS-ESS2-1) |
| ***Supplemental DCI PS1.A** |
| The planet's systems interact over scales that range from microscopic to global in size, and they operate over fractions of a second to billions of years. These interactions have shaped Earth's history and will determine its future. (MS-ESS2-2) |

| **ESS2.B: Plate Tectonics and Large-Scale System Interactions** |
| Maps of ancient land and water patterns, based on investigations of rocks and fossils, make clear how Earth's plates have moved great distances, collided, and spread apart. |

| designed systems. (MS-ESS2-3) |
| **Scale Proportion and Quantity** |
| Time, space, and energy phenomena can be observed at various scales using models to study systems that are too large or too small. (MS-ESS2-2) |

| **Stability and Change** |
| Explanations of stability and change in natural or designed systems can be constructed by examining the changes over time and forces at different scales. (MS-ESS2-1) |

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### California’s Next Generation Science Standards (NGSS) for K–12
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#### Connections to Nature of Science

**Scientific Knowledge is Open to Revision in Light of New Evidence**
- Science findings are frequently revised and/or reinterpreted based on new evidence. (MS-ESS2-3)

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| Connections to other DCIs in this grade-band: | MS.PS1.A (MS-ESS2-1); MS.PS1.B (MS-ESS2-1),(MS-ESS2-2); MS.PS3.B (MS-ESS2-1); MS.LS2.B (MS-ESS2-1),(MS-ESS2-2); MS.LS2.C (MS-ESS2-1); MS.LS4.A (MS-ESS2-3); MS.ESS3.C (MS-ESS2-1) |
| Articulation of DCIs across grade-bands: | 3.LS4.A (MS-ESS2-3); 3.ESS3.B (MS-ESS2-3); 4.PS3.B (MS-ESS2-1); 4.ESS1.C (MS-ESS2-2),(MS-ESS2-3); 4.ESS2.A (MS-ESS2-1),(MS-ESS2-2); 4.ESS2.B (MS-ESS2-3); 4.ESS2.E (MS-ESS2-2); 4.ESS3.B (MS-ESS2-3); 5.ESS2.A (MS-ESS2-1),(MS-ESS2-2); HS.PS1.B (MS-ESS2-1); HS.PS3.B (MS-ESS2-1); HS.PS3.D (MS-ESS2-2); HS.LS1.C (MS-ESS2-1); HS.LS2.B (MS-ESS2-1),(MS-ESS2-2); HS.LS4.A (MS-ESS2-3); HS.LS4.C (MS-ESS2-3); HS.ESS1.C (MS-ESS2-2),(MS-ESS2-3); HS.ESS2.A (MS-ESS2-1),(MS-ESS2-2),(MS-ESS2-3); HS.ESS2.B (MS-ESS2-2),(MS-ESS2-3); HS.ESS2.C (MS-ESS2-1),(MS-ESS2-2); HS.ESS2.D (MS-ESS2-2); HS.ESS2.E (MS-ESS2-1),(MS-ESS2-2); HS.ESS3.D (MS-ESS2-2) |

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**California Common Core State Standards Connections:**

**ELA/Literacy –**

- **RST.6–8.1** Cite specific textual evidence to support analysis of science and technical texts. (MS-ESS2-2),(MS-ESS2-3)
- **RST.6–8.7** Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). (MS-ESS2-3)
- **RST.6–8.9** Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic. (MS-ESS2-3)

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#### Alternative Discipline Specific Course
#### Grade Six – Earth and Space Sciences

<table>
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<tr>
<td>WHST.6–8.2.a–f</td>
<td>Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. (MS-ESS2-2)</td>
</tr>
<tr>
<td>SL.8.5</td>
<td>Integrate multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points. (MS-ESS2-1),(MS-ESS2-2)</td>
</tr>
<tr>
<td><strong>Mathematics</strong> – MP.2</td>
<td>Reason abstractly and quantitatively. (MS-ESS2-2),(MS-ESS2-3)</td>
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<td>6.EE.6</td>
<td>Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. (MS-ESS2-2),(MS-ESS2-3)</td>
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Alternative Discipline Specific Course
Grade Six – Earth and Space Sciences

**MS-ESS2 Earth’s Systems**

Students who demonstrate understanding can:

**MS-ESS2-4.** Develop a model to describe the cycling of water through Earth’s systems driven by energy from the sun and the force of gravity. [Clarification Statement: Emphasis is on the ways water changes its state as it moves through the multiple pathways of the hydrologic cycle. Examples of models can be conceptual or physical.] [Assessment Boundary: A quantitative understanding of the latent heats of vaporization and fusion is not assessed.]

**MS-ESS2-5.** Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions. [Clarification Statement: Emphasis is on how air masses flow from regions of high pressure to low pressure, causing weather (defined by temperature, pressure, humidity, precipitation, and wind) at a fixed location to change over time, and how sudden changes in weather can result when different air masses collide. Emphasis is on how weather can be predicted within probabilistic ranges. Examples of data can be provided to students (such as weather maps, diagrams, and visualizations) or obtained through laboratory experiments (such as with condensation).] [Assessment Boundary: Assessment does not include recalling the names of cloud types or weather symbols used on weather maps or the reported diagrams from weather stations.]

**MS-ESS2-6.** Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates. [Clarification Statement: Emphasis is on how patterns vary by latitude, altitude, and geographic land distribution. Emphasis of atmospheric circulation is on the sunlight-driven latitudinal banding, the Coriolis effect, and resulting prevailing winds; emphasis of ocean circulation is on the transfer of heat by the global ocean convection cycle, which is constrained by the Coriolis effect and the outlines of continents. Examples of models can be diagrams, maps and globes, or digital representations.] [Assessment Boundary: Assessment does not include the dynamics of the Coriolis effect.]

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<td>ESS2.C: The Roles of Water in Earth’s</td>
<td>Cause and Effect</td>
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### Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.
- Develop and use a model to describe phenomena. (MS-ESS2-6)
- Develop a model to describe unobservable mechanisms. (MS-ESS2-4)

### Planning and Carrying Out Investigations
Planning and carrying out investigations in 6–8 builds on K–5 experiences and progresses to include investigations that use multiple variables and provide evidence to support explanations or solutions.
- Collect data to produce data to serve as the basis for evidence to answer scientific questions or test design solutions under a range of conditions. (MS-ESS2-5)

### Surface Processes
- Water continually cycles among land, ocean, and atmosphere via transpiration, evaporation, condensation and crystallization, and precipitation, as well as downhill flows on land. (MS-ESS2-4)
  - **Supplemental DCI PS1.A**
- The complex patterns of the changes and the movement of water in the atmosphere, determined by winds, landforms, and ocean temperatures and currents, are major determinants of local weather patterns. (MS-ESS2-5)
- Global movements of water and its changes in form are propelled by sunlight and gravity. (MS-ESS2-4)
- Variations in density due to variations in temperature and salinity drive a global pattern of interconnected ocean currents. (MS-ESS2-6)

### ESS2.D: Weather and Climate
- Weather and climate are influenced by interactions involving sunlight, the ocean, the atmosphere, ice, landforms, and living things. These interactions vary with latitude, altitude, and local and regional geography.
- Cause and effect relationships may be used to predict phenomena in natural or designed systems. (MS-ESS2-5)

### Systems and System Models
- Models can be used to represent systems and their interactions—such as inputs, processes and outputs—and energy, matter, and information flows within systems. (MS-ESS2-6)

### Energy and Matter
- Within a natural or designed system, the transfer of energy drives the motion and/or cycling of matter. (MS-ESS2-4)

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all of which can affect oceanic and atmospheric flow patterns. (MS-ESS2-6)
- Because these patterns are so complex, weather can only be predicted probabilistically. (MS-ESS2-5)
- The ocean exerts a major influence on weather and climate by absorbing energy from the sun, releasing it over time, and globally redistributing it through ocean currents. (MS-ESS2-6)

Connections to other DCIs in this grade-band: **MS.PS1.A** (MS-ESS2-4),(MS-ESS2-5); **MS.PS2.A** (MS-ESS2-5),(MS-ESS2-6); **MS.PS2.B** (MS-ESS2-4); **MS.PS3.A** (MS-ESS2-4),(MS-ESS2-5); **MS.PS3.B** (MS-ESS2-5),(MS-ESS2-6); **MS.PS3.D** (MS-ESS2-4);

Articulation of DCIs across grade-bands: **3.PS2.A** (MS-ESS2-4),(MS-ESS2-6); **3.ESS2.D** (MS-ESS2-5),(MS-ESS2-6); **4.PS3.B** (MS-ESS2-4); **5.PS2.B** (MS-ESS2-4); **5.ESS2.A** (MS-ESS2-5),(MS-ESS2-6); **5.ESS2.C** (MS-ESS2-4); **HS.PS2.B** (MS-ESS2-4),(MS-ESS2-6); **HS.PS3.B** (MS-ESS2-4),(MS-ESS2-6); **HS.PS4.B** (MS-ESS2-4); **HS.ESS1.B** (MS-ESS2-6); **HS.ESS2.A** (MS-ESS2-4),(MS-ESS2-6); **HS.ESS2.C** (MS-ESS2-4),(MS-ESS2-6); **HS.ESS2.D** (MS-ESS2-4),(MS-ESS2-5); **HS.ESS2.D** (MS-ESS2-4),(MS-ESS2-5); **HS.ESS2.D** (MS-ESS2-4),(MS-ESS2-6);

California Common Core State Standards Connections:

**ELA/Literacy –**

**RST.6–8.1** Cite specific textual evidence to support analysis of science and technical texts. (MS-ESS2-5)
**RST.6–8.9** Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic. (MS-ESS2-5)

**WHST.6–8.8** Gather relevant information from multiple print and digital sources (primary and secondary), using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. CA (MS-ESS2-5)

**SL.8.5** Integrate multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points. (MS-ESS2-6)

**Mathematics –**

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| 6.NS.5 | Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. (MS-ESS2-5) |  |  |  |  |
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**MS-ESS3 Earth and Human Activity**

Students who demonstrate understanding can:

**MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth’s mineral, energy, and groundwater resources are the result of past and current geoscience processes.** [Clarification Statement: Emphasis is on how these resources are limited and typically non-renewable, and how their distributions are significantly changing as a result of removal by humans. Examples of uneven distributions of resources as a result of past processes include but are not limited to petroleum (locations of the burial of organic marine sediments and subsequent geologic traps), metal ores (locations of past volcanic and hydrothermal activity associated with subduction zones), and soil (locations of active weathering and/or deposition of rock).]

**MS-ESS3-2. Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.** [Clarification Statement: Emphasis is on how some natural hazards, such as volcanic eruptions and severe weather, are preceded by phenomena that allow for reliable predictions, but others, such as earthquakes, occur suddenly and with no notice, and thus are not yet predictable. Examples of natural hazards can be taken from interior processes (such as earthquakes and volcanic eruptions), surface processes (such as mass wasting and tsunamis), or severe weather events (such as hurricanes, tornadoes, and floods). Examples of data can include the locations, magnitudes, and frequencies of the natural hazards. Examples of technologies can be global (such as satellite systems to monitor hurricanes or forest fires) or local (such as building basements in tornado-prone regions or reservoirs to mitigate droughts).]

The performance expectations above were developed using the following elements from the NRC document *A Framework for K–12 Science Education*:

<table>
<thead>
<tr>
<th>Science and Engineering Practices</th>
<th>Disciplinary Core Ideas</th>
<th>Crosscutting Concepts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyzing and Interpreting Data</td>
<td>ESS3.A: Natural Resources</td>
<td>Patterns</td>
</tr>
<tr>
<td>Analyzing data in 6–8 builds on K–5 and progresses to extending quantitative analysis to investigations, distinguishing</td>
<td>• Humans depend on Earth’s land, ocean, atmosphere, and biosphere for many different resources. Minerals, fresh</td>
<td>▪ Graphs, charts, and images can be used to identify patterns in data. (MS-ESS3-2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Cause and Effect</strong></td>
</tr>
</tbody>
</table>

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**California clarification statements, marked with double asterisks, were incorporated by the California Science Expert Review Panel
***Multiple DCIs show supplemental DCIs with three asterisks at the end of the DCI description. These are core ideas from other science disciplines that are important to understanding the DCI.


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<table>
<thead>
<tr>
<th>Constructing Explanations and Designing Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructing explanations and designing solutions in 6–8 builds on K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories.</td>
</tr>
<tr>
<td>Construct a scientific explanation based on valid and reliable evidence obtained from sources (including the students’ own experiments) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future. (MS-ESS3-1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ESS3.B: Natural Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mapping the history of natural hazards in a region, combined with an understanding of related geologic forces can help forecast the locations and likelihoods of future events. (MS-ESS3-2)</td>
</tr>
</tbody>
</table>

| Cause and effect relationships may be used to predict phenomena in natural or designed systems. (MS-ESS3-1) |

Connections to Engineering, Technology, and Applications of Science

Influence of Science, Engineering, and Technology on Society and the Natural World

| All human activity draws on natural resources and has both short and long-term consequences, positive as well as negative, for the health of people and the natural environment. (MS-ESS3-1) |
| The uses of technologies and any limitations on their use are driven by individual or societal needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions. Thus technology use varies from region to region and over time. (MS-ESS3-2) |

Connections to other DCIs in this grade-band: MS.PS1.A (MS-ESS3-1); MS.PS1.B (MS-ESS3-1); MS.ESS2.D (MS-ESS3-1)

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Revised March 2015
Articulation of DCIs across grade-bands: 3.ESS3.B (MS-ESS3-2); 4.PS3.D (MS-ESS3-1); 4.ESS3.A (MS-ESS3-1); 4.ESS3.B (MS-ESS3-2); HS.PS3.B (MS-ESS3-1); HS.LS1.C (MS-ESS3-1); HS.ESS2.A (MS-ESS3-1); HS.ESS2.B (MS-ESS3-1),(MS-ESS3-2); HS.ESS2.C (MS-ESS3-1); HS.ESS2.D (MS-ESS3-2); HS.ESS3.A (MS-ESS3-1); HS.ESS3.B (MS-ESS3-2); HS.ESS3.D (MS-ESS3-2)

California Common Core State Standards Connections:

ELA/Literacy –

RST.6–8.1  Cite specific textual evidence to support analysis of science and technical texts. (MS-ESS3-1),(MS-ESS3-2)
RST.6–8.7  Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). (MS-ESS3-2)
WHST.6–8.2.a-f Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. (MS-ESS3-1)
WHST.6–8.9 Draw evidence from informational texts to support analysis, reflection, and research. (MS-ESS3-1)

Mathematics –

MP.2 Reason abstractly and quantitatively. (MS-ESS3-2)
6.EE.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. (MS-ESS3-1),(MS-ESS3-2)
7.EE.a,b Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. (MS-ESS3-1),(MS-ESS3-2)

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**MS-ESS3 Earth and Human Activity**

Students who demonstrate understanding can:

**MS-ESS3-4. Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth’s systems.** [Clarification Statement: Examples of evidence include grade-appropriate databases on human populations and the rates of consumption of food and natural resources (such as freshwater, mineral, and energy). Examples of impacts can include changes to the appearance, composition, and structure of Earth’s systems as well as the rates at which they change. The consequences of increases in human populations and consumption of natural resources are described by science, but science does not make the decisions for the actions society takes.]

The performance expectations above were developed using the following elements from the NRC document *A Framework for K–12 Science Education:*

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**Science and Engineering Practices**
- Engaging in Argument from Evidence.

Engaging in argument from evidence in 6–8 builds on K–5 experiences and progresses to constructing a convincing argument that supports or refutes claims for either explanations or solutions about
the natural and designed world(s).
  - Construct, use, and/or present an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to

**Disciplinary Core Ideas**

ESS3.C: Human Impacts on Earth Systems

- Typically as human populations and per-capita consumption of natural resources increase, so do the negative impacts on Earth unless the activities and technologies involved are engineered otherwise. (MS-ESS3-4)

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**Crosscutting Concepts**

- **Cause and Effect**
  - Cause and effect relationships may be used to predict phenomena in natural or designed systems. (MS-ESS3-4)

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*Connections to Engineering, Technology, and Applications of Science*

- **Influence of Science, Engineering, and Technology on Society and the Natural World**
  - All human activity draws on natural

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a problem. (MS-ESS3-4)

resources and has both short and long-term consequences, positive as well as negative, for the health of people and the natural environment. (MS-ESS3-4)

Connections to Nature of Science

Science Addresses Questions About the Natural and Material World
- Science knowledge can describe consequences of actions but does not necessarily prescribe the decisions that society takes. (MS-ESS3-4)

Connections to other DCIs in this grade-band: MS.LS2.A (MS-ESS3-4); MS.LS2.C (MS-ESS3-4); MS.LS4.D (MS-ESS3-4)

Articulation of DCIs across grade-bands: 3.LS2.C (MS-ESS3-4); 3.LS4.D (MS-ESS3-4); 5.ESS3.C (MS-ESS3-4); HS.LS2.A (MS-ESS3-4); HS.LS2.C (MS-ESS3-4); HS.LS4.C (MS-ESS3-4); HS.LS4.D (MS-ESS3-4); HS.ESS2.E (MS-ESS3-4); HS.ESS3.A (MS-ESS3-4); HS.ESS3.C (MS-ESS3-4);

California Common Core State Standards Connections:
ELA/Literacy –
RST.6–8.1 Cite specific textual evidence to support analysis of science and technical texts. (MS-ESS3-4)
WHST.6–8.1.a-f Write arguments focused on discipline content. (MS-ESS3-4)
WHST.6–8.9 Draw evidence from informational texts to support analysis, reflection, and research. (MS-ESS3-4)
Mathematics –
6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. (MS-ESS3-4)
7.RP.2.a-d Recognize and represent proportional relationships between quantities. (MS-ESS3-4)

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6.EE.6  Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. (MS-ESS3-4)

7.EE.4.a,b  Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. (MS-ESS3-4)

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**MS-ESS3 Earth and Human Activity**

Students who demonstrate understanding can:

**MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.** [Clarification Statement: Examples of the design process include examining human environmental impacts, assessing the kinds of solutions that are feasible, and designing and evaluating solutions that could reduce that impact. Examples of human impacts can include water usage (such as the withdrawal of water from streams and aquifers or the construction of dams and levees), land usage (such as urban development, agriculture, or the removal of wetlands), and pollution (such as of the air, water, or land).]

**MS-ESS3–5. Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.** [Clarification Statement: Examples of factors include human activities (such as fossil fuel combustion, cement production, and agricultural activity) and natural processes (such as changes in incoming solar radiation or volcanic activity). Examples of evidence can include tables, graphs, and maps of global and regional temperatures, atmospheric levels of gases such as carbon dioxide and methane, and the rates of human activities. Emphasis is on the major role that human activities play in causing the rise in global temperatures.]

The performance expectations above were developed using the following elements from the NRC document *A Framework for K–12 Science Education:*

**Science and Engineering Practices**

**Asking Questions and Defining Problems**

Asking questions and defining problems in grades 6–8 builds on grades K–5 experiences and progresses to specifying relationships between variables, clarifying arguments and models.

- Ask questions to identify and clarify

**ESS3.C: Human Impacts on Earth Systems**

- Human activities have significantly altered the biosphere, sometimes damaging or destroying natural habitats and causing the extinction of other species. But changes to Earth’s environments can have different

**Crosscutting Concepts**

**Cause and Effect**

- Relationships can be classified as causal or correlational, and correlation does not necessarily imply causation. (MS-ESS3-3)

**Connections to Engineering, Technology, and Applications of Science**

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**Constructing Explanations and Designing Solutions**
Constructing explanations and designing solutions in 6–8 builds on K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories.

- Apply scientific principles to design an object, tool, process or system. (MS-ESS3-3)
- Impacts (negative and positive) for different living things. (MS-ESS3-3)

**ESS3.D: Global Climate Change**
- Human activities, such as the release of greenhouse gases from burning fossil fuels, are major factors in the current rise in Earth's mean surface temperature (global warming).
- Reducing the level of climate change and reducing human vulnerability to whatever climate changes do occur depend on the understanding of climate science, engineering capabilities, and other kinds of knowledge, such as understanding of human behavior and on applying that knowledge wisely in decisions and activities. (MS-ESS3-3)

**Influence of Science, Engineering, and Technology on Society and the Natural World**
- The uses of technologies and any limitations on their use are driven by individual or societal needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions. Thus technology use varies from region to region and over time. (MS-ESS3-3)

<table>
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<tr>
<th>Connections to other DCIs in this grade-band:</th>
<th>MS.PS3.A (MS-ESS3-5); MS.LS2.A (MS-ESS3-3); MS.LS2.C (MS-ESS3-3); MS.LS4.D (MS-ESS3-3)</th>
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</tr>
<tr>
<td>California Common Core State Standards Connections:</td>
<td>ELA/Literacy – RST.6–8.1 Cite specific textual evidence to support analysis of science and technical texts. (MS-ESS3–5)</td>
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| WHST.6–8.7 | Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. (MS-ESS3-3) |
| WHST.6–8.8 | Gather relevant information from multiple print and digital sources (primary and secondary), using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. CA (MS-ESS3-3) |

**Mathematics –**

| MP.2 | Reason abstractly and quantitatively. (MS-ESS3–5) |
| 6.RP.1 | Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. (MS-ESS3-3) |
| 6.EE.6 | Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. (MS-ESS3-3),(MS-ESS3–5) |

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## Alternative Discipline Specific Course

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**MS-ETS1 Engineering Design**

<table>
<thead>
<tr>
<th>Students who demonstrate understanding can:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MS-ETS1-1.</strong> Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</td>
</tr>
<tr>
<td><strong>MS-ETS1-2.</strong> Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.</td>
</tr>
<tr>
<td><strong>MS-ETS1-3.</strong> Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.</td>
</tr>
<tr>
<td><strong>MS-ETS1-4.</strong> Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.</td>
</tr>
</tbody>
</table>

The performance expectations above were developed using the following elements from the NRC document *A Framework for K–12 Science Education:*

### Science and Engineering Practices

**Asking Questions and Defining Problems**

- Asking questions and defining problems in grades 6–8 builds on grades K–5 experiences and progresses to specifying relationships between variables, clarify arguments and models.
- Define a design problem that can be solved through the development of an object, tool, process or system and includes multiple criteria and constraints.

### Disciplinary Core Ideas

**ETS1.A: Defining and Delimiting Engineering Problems**

- The more precisely a design task’s criteria and constraints can be defined, the more likely it is that the designed solution will be successful. Specification of constraints includes consideration of scientific principles and other relevant knowledge that are likely to limit possible solutions. (MS-ETS1-1)

**ETS1.B: Developing Possible Solutions**

### Crosscutting Concepts

**Influence of Science, Engineering, and Technology on Society and the Natural World**

- All human activity draws on natural resources and has both short and long-term consequences, positive as well as negative, for the health of people and the natural environment. (MS-ETS1-1)
- The uses of technologies and limitations on their use are driven by individual or societal needs, desires, and values; by

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The section entitled "Disciplinary Core Ideas" is reproduced verbatim from *A Framework for K–12 Science Education: Practices, Cross-Cutting Concepts, and Core Ideas.*

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<table>
<thead>
<tr>
<th>Developing and Using Models</th>
<th>Analyzing and Interpreting Data</th>
<th>ETS1.C: Optimizing the Design Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems. (MS-ETS1-4)</td>
<td>Analyzing data in 6–8 builds on K–5 experiences and progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis. (MS-ETS1-3)</td>
<td>Although one design may not perform the best across all tests, identifying the characteristics of the design that performed the best in each test can provide useful information for the redesign process—that is, some of those characteristics may be incorporated into the new design. (MS-ETS1-3)</td>
</tr>
<tr>
<td>▪ Develop a model to generate data to test ideas about designed systems, including those representing inputs and outputs. (MS-ETS1-4)</td>
<td>▪ Analyze and interpret data to determine similarities and differences in findings. (MS-ETS1-3)</td>
<td>▪ The iterative process of testing the most promising solutions and modifying what is proposed on the basis of the test</td>
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| for either explanations or solutions about the natural and designed world.  
- Evaluate competing design solutions based on jointly developed and agreed-upon design criteria. (MS-ETS1-2) | results leads to greater refinement and ultimately to an optimal solution. (MS-ETS1-4) |  

**Connections to MS-ETS1.A: Defining and Delimiting Engineering Problems include:**

**Physical Science:** MS-PS3-3

**Connections to MS-ETS1.B: Developing Possible Solutions Problems include:**

**Physical Science:** MS-PS1-6, MS-PS3-3, **Life Science:** MS-LS2-5

**Connections to MS-ETS1.C: Optimizing the Design Solution include:**

**Physical Science:** MS-PS1-6

**Articulation of DCIs across grade-bands:** 3–5.ETS1.A (MS-ETS1-1),(MS-ETS1-2),(MS-ETS1-3); 3–5.ETS1.B (MS-ETS1-2),(MS-ETS1-3),(MS-ETS1-4); 3–5.ETS1.C (MS-ETS1-2),(MS-ETS1-3),(MS-ETS1-4); **HS.ETS1.A** (MS-ETS1-1),(MS-ETS1-2); **HS.ETS1.B** (MS-ETS1-1),(MS-ETS1-2),(MS-ETS1-3),(MS-ETS1-4); **HS.ETS1.C** (MS-ETS1-3),(MS-ETS1-4)

**California Common Core State Standards Connections:**

**ELA/Literacy –**

RST.6–8.1 Cite specific textual evidence to support analysis of science and technical texts. (MS-ETS1-1),(MS-ETS1-2),(MS-ETS1-3)

RST.6–8.7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). (MS-ETS1-3)

RST.6–8.9 Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic. (MS-ETS1-2),(MS-ETS1-3)

WHST.6–8.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. (MS-ETS1-1),(MS-ETS1-1)

WHST.6–8.8 Gather relevant information from multiple print and digital sources (primary and secondary), using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions

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WHST.6–8.9
Draw evidence from informational texts to support analysis, reflection, and research. (MS-ETS1-2)
SL.8.5
Integrate multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points. (MS-ETS1-4)

Mathematics –
MP.2
Reason abstractly and quantitatively. (MS-ETS1-1),(MS-ETS1-2),(MS-ETS1-3),(MS-ETS1-4)

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**MS-ETS1 Engineering Design**

Students who demonstrate understanding can:

**MS-ETS1-1.** Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

**MS-ETS1-2.** Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

**MS-ETS1-3.** Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

**MS-ETS1-4.** Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

The performance expectations above were developed using the following elements from the NRC document *A Framework for K–12 Science Education*:

**Science and Engineering Practices**

**Asking Questions and Defining Problems**

Asking questions and defining problems in grades 6–8 builds on grades K–5 experiences and progresses to specifying relationships between variables, clarify arguments and models.

- Define a design problem that can be solved through the development of an object, tool, process or system and includes multiple criteria and constraints.

**Disciplinary Core Ideas**

**ETS1.A: Defining and Delimiting Engineering Problems**

- The more precisely a design task's criteria and constraints can be defined, the more likely it is that the designed solution will be successful. Specification of constraints includes consideration of scientific principles and other relevant knowledge that are likely to limit possible solutions. (MS-ETS1-1)

**ETS1.B: Developing Possible Solutions**

**Crosscutting Concepts**

**Influence of Science, Engineering, and Technology on Society and the Natural World**

- All human activity draws on natural resources and has both short and long-term consequences, positive as well as negative, for the health of people and the natural environment. (MS-ETS1-1)

- The uses of technologies and limitations on their use are driven by individual or societal needs, desires, and values; by

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**California clarification statements, marked with double asterisks, were incorporated by the California Science Expert Review Panel.

***Multiple DCIs show supplemental DCIs with three asterisks at the end of the DCI description. These are core ideas from other science disciplines that are important to understanding the DCI.

The section entitled "Disciplinary Core Ideas" is reproduced verbatim from *A Framework for K–12 Science Education: Practices, Cross-Cutting Concepts, and Core Ideas.*

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### California's Next Generation Science Standards (NGSS) for K–12

**Alternative Discipline Specific Course**

**Grade Six – Earth and Space Sciences**

<table>
<thead>
<tr>
<th>including scientific knowledge that may limit possible solutions. (MS-ETS1-1)</th>
<th>A solution needs to be tested, and then modified on the basis of the test results, in order to improve it. (MS-ETS1-4)</th>
<th>the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions. (MS-ETS1-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Developing and Using Models</strong> Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems. - Develop a model to generate data to test ideas about designed systems, including those representing inputs and outputs. (MS-ETS1-4)</td>
<td>- There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem. (MS-ETS1-2), (MS-ETS1-3) - Sometimes parts of different solutions can be combined to create a solution that is better than any of its predecessors. (MS-ETS1-3)</td>
<td></td>
</tr>
<tr>
<td><strong>Analyzing and Interpreting Data</strong> Analyzing data in 6–8 builds on K–5 experiences and progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis. - Analyze and interpret data to determine similarities and differences in findings. (MS-ETS1-3)</td>
<td><strong>ETS1.C: Optimizing the Design Solution</strong> - Although one design may not perform the best across all tests, identifying the characteristics of the design that performed the best in each test can provide useful information for the redesign process—that is, some of those characteristics may be incorporated into the new design. (MS-ETS1-3) - The iterative process of testing the most promising solutions and modifying what is proposed on the basis of the test</td>
<td></td>
</tr>
<tr>
<td><strong>Engaging in Argument from Evidence</strong> Engaging in argument from evidence in 6–8 builds on K–5 experiences and progresses to constructing a convincing argument that supports or refutes claims</td>
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</tr>
</tbody>
</table>

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for either explanations or solutions about the natural and designed world.
  - Evaluate competing design solutions based on jointly developed and agreed-upon design criteria. (MS-ETS1-2)

results leads to greater refinement and ultimately to an optimal solution. (MS-ETS1-4)

**Connections to MS-ETS1.A: Defining and Delimiting Engineering Problems include:**
  - **Physical Science:** MS-PS3-3

**Connections to MS-ETS1.B: Developing Possible Solutions Problems include:**
  - **Physical Science:** MS-PS1-6, MS-PS3-3, **Life Science:** MS-LS2-5

**Connections to MS-ETS1.C: Optimizing the Design Solution include:**
  - **Physical Science:** MS-PS1-6

**Articulation of DCIs across grade-bands:**
- **3–5.ETS1.A (MS-ETS1-1),(MS-ETS1-2),(MS-ETS1-3); 3–5.ETS1.B (MS-ETS1-2),(MS-ETS1-3),(MS-ETS1-4); 3–5.ETS1.C (MS-ETS1-2),(MS-ETS1-3),(MS-ETS1-4); HS.ETS1.A (MS-ETS1-1),(MS-ETS1-2); HS.ETS1.B (MS-ETS1-1),(MS-ETS1-2),(MS-ETS1-3),(MS-ETS1-4); HS.ETS1.C (MS-ETS1-3),(MS-ETS1-4)**

**California Common Core State Standards Connections:**

**ELA/Literacy –**

- **RST.6–8.1** Cite specific textual evidence to support analysis of science and technical texts. (MS-ETS1-1),(MS-ETS1-2),(MS-ETS1-3)
- **RST.6–8.7** Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). (MS-ETS1-3)
- **RST.6–8.9** Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic. (MS-ETS1-2),(MS-ETS1-3)
- **WHST.6–8.7** Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. (MS-ETS1-1),(MS-ETS1-1)
- **WHST.6–8.8** Gather relevant information from multiple print and digital sources (primary and secondary), using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions

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California's Next Generation Science Standards (NGSS) for K–12
Alternative Discipline Specific Course
Grade Six – Earth and Space Sciences

<table>
<thead>
<tr>
<th>WHST.6–8.9</th>
<th>Draw evidence from informational texts to support analysis, reflection, and research. (MS-ETS1-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL.8.5</td>
<td>Integrate multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points. (MS-ETS1-4)</td>
</tr>
<tr>
<td>Mathematics – MP.2</td>
<td>Reason abstractly and quantitatively. (MS-ETS1-1),(MS-ETS1-2),(MS-ETS1-3),(MS-ETS1-4)</td>
</tr>
</tbody>
</table>

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California Department of Education

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Appendix C

Course Outlines
TITLE OF COURSE: Floral Design I P  

CODE: 5540

TEXTBOOK(S) AND CORE READING MATERIALS:


ADDITIONAL READING MATERIALS:

- Roberts Rules of Order
- California FFA Record Book

VIDEOS AND OTHER INSTRUCTIONAL MATERIALS:

- Fresh-cut flowers
- Arrangement tools and equipment
- Powerpoint presentations
- School Farm Laboratory
- Computer Lab

ASSESSMENT:

The objectives may be measured by one or more of the following:
  a. common unit pre/post assessments
  b. teachers' tests
  c. class assignments, activities, and research projects
  d. FFA participation
  e. students writings and/or portfolios
  f. homework
  g. audio-visual media presentations
  h. authentic laboratory assessment

Grading: Grades are based on a percentage (90-100=A, 80-89=B, 70-79=C, 60-69=D, 0-59=F)

- 15% Class Participation / Behavior
- 10% FFA Participation and SAE Project
- 25% Classroom Assignments
- 50% Projects/ Labs
District Wide Course of Study Title:

Floral Design #1 (CP)

A. COURSE INFORMATION

Grade Level: 9-12
Length of Course: One Year
Maximum Credit: 10
Type: Fine Arts (F)
Recommendation for Enrollment: Freshmen enrollment is subject to site approval in accordance with the school site career pathways.

B. COURSE DESCRIPTION (Include a brief explanation of the course; mention any prerequisites, including standardized test scores; and indicate whether the course satisfies a specific graduation requirement.)

The Art of Floral Design is intended to introduce the student to theories and principles of artistic design and their influence on floral artistry. The course emphasizes the knowledge and skills needed to understand artistic perception, creative expression, historical and cultural context(s); aesthetic valuing, and practical application of the visual arts. Students will analyze, interpret, create and judge various types of artwork and apply what is learned to floral art. Students will be introduced to the basic elements of visual art such as line, balance, color and form and apply this knowledge to floral designs as well as two dimensional projects using other art media. Through hands on practice the student will become familiar with material selection, design mechanics, maintenance and design evaluation. Students will achieve this through creating, designing, identifying, explaining and evaluating their own work. Other projects will include two and three dimensional design that serve to reinforce the students’ instruction in historical and cultural influence, color theory and creative expression. Concepts will be reinforced by using appropriate design vocabulary in conjunction with development of technical skills in floral art, cut flower identification and care and will serve as a foundation for more complex works such as multi-part floral design, design challenges and creating art based on client specifications.
C. **INSTRUCTIONAL MATERIALS** (List the basic text – include title, edition, author, and copyright – and other essential supplementary materials or instructional resources/materials used in the course.)

**BOARD-ADOPTED TEXTBOOKS**
*The Art of Floral Design*, by Norah T. Hunter; pub Delmar

**SUPPLEMENTARY INSTRUCTIONAL MATERIALS**
- Art Talk, by Rosalina Ragans; pub Glencoe & McGraw-Hill
- Fifty Centuries of Art, Pamela Taylor, Francis Henry Taylor
- Paint, Brush & Palette, Harvey Weiss
- Fast Flower Arranging, Jane Packer, DK Publishing
- Art in Everyday Life, Goldsteins, The MacMillan Company
- Color, Ruth Heller, The Putnam & Grosset Group
- *A Concise History of Painting from Prehistory to the Thirteenth Century*, David Talbot Rice,
- *Floriculture:From Greenhouse Production to Floral Design*, Delmar Publishing
- *California Department of Education Career Technical Standards*
- *California Department of Education Content Standards Visual & Performing Arts*
- Basic Floral Design Workbook
- *Discovering Art History*, by Gerald F. Bromer; pub Davis
- *Exploring Visual Design: The Elements & Principles*; pub Davis
- The Visual Experience; pub Delmar
- *Essential Impressionist*; pub Parragon
- The Natural Way to Draw, by Kimon Nicolaides
- *Elements of Design* (video); pub Crystal Productions
- *Fresh Cut Florist Flowers- Interactive CD-ROM*
- Delmar’s Handbook of Flower, Foliage and Creative Design- Norah Hunter

D. **COURSE OUTLINE** (List the major content areas of the course and divide them according to the semester in which they fall. Designate the approximate amount of time given to each of the content areas. Suggested length: one page.)

<table>
<thead>
<tr>
<th>Unit of Instruction/Objectives</th>
<th>VPA Standards</th>
<th>CTE Standards</th>
<th>Key Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit I: Introduction to Art</strong></td>
<td><strong>Aesthetic Valuing</strong>&lt;br&gt;4.1, 4.3</td>
<td><strong>Agriscience</strong>&lt;br&gt;C1.2</td>
<td>• Students will write an art evaluation on one of the below:&lt;br&gt;Ikebana Design, Vincent Van Gogh, Pablo Picasso, Edouard Monet, Klaus Wagner, Gregor Lersch, Els and George Hazenberg, Georgia O’Keeffe, Pierre Renoir</td>
</tr>
<tr>
<td><strong>A. The Variety of Art</strong></td>
<td><strong>Connections, Relationships, Applications</strong>&lt;br&gt;5.4</td>
<td></td>
<td>• Students will create an Interactive Notebook that will contain: class notes from</td>
</tr>
<tr>
<td>1. Artistic perception</td>
<td></td>
<td></td>
<td>}</td>
</tr>
<tr>
<td>Unit of Instruction/Objectives</td>
<td>VPA Standards</td>
<td>CTE Standards</td>
<td>Key Assignments</td>
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<td>-------------------------------------------------------------------</td>
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<td>-----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Unit I: Introduction to Art-continued</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Floral Symbolism</td>
<td>Artistic</td>
<td>Agriscience C</td>
<td>• Students will research and write a description of the historical symbolism of specific flowers and foliage.</td>
</tr>
<tr>
<td>1. Identify flowers and foliage and their symbolism in art.</td>
<td>Perception</td>
<td>1.1, 1.3, 11.1</td>
<td>• Students will choose a flower or foliage, find the symbolism and from it create a floral design.</td>
</tr>
<tr>
<td>a. Historical and modern works of art</td>
<td>1.5</td>
<td>OH11.1</td>
<td>• Add information, lecture notes, and drawings to <em>Interactive Notebook</em> on historical flower symbolism</td>
</tr>
<tr>
<td>b. Cultural</td>
<td>Historical &amp;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Design</td>
<td>Cultural Context</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Ikebana</td>
<td>3.1, 3.3, 3.4</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Aesthetic</td>
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<tr>
<td></td>
<td>Valuing</td>
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<tr>
<td></td>
<td>4.1</td>
<td></td>
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<tr>
<td><strong>Unit II: Historical Contributions and Cultural Dimensions</strong></td>
<td></td>
<td>Agriscience C</td>
<td>Evaluation of art examples from various time periods</td>
</tr>
<tr>
<td>A. Interpretation</td>
<td>Artistic</td>
<td>1.1, 1.4</td>
<td>Create a visual presentation on history of Floral Design</td>
</tr>
<tr>
<td>2. The meaning of art</td>
<td>Perception</td>
<td>OH F11.1,</td>
<td>Project on floral art history and specific art periods including: European Period, Impressionistic Era, Oriental Influence, and American Styles</td>
</tr>
<tr>
<td>3. Elements of Art History</td>
<td>1.3, 1.5, 1.6</td>
<td>11.2, 11.4</td>
<td>Create a two and three dimensional visual display of floral art: Freeform Expression, Geometric Mass, Art Deco, Art Noveau, and Modern Contemporary through the use of various media</td>
</tr>
<tr>
<td>B. History of Floral Art</td>
<td>Creative</td>
<td></td>
<td>• Practicum using a</td>
</tr>
<tr>
<td>1. The Floral Art Designs of Ancient Civilizations</td>
<td>Expression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Floral visual art design styles and their origination</td>
<td>2.4, 2.5, 2.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Research the influences of Floral Artists of the 20th and 21st Century</td>
<td>Historical &amp;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Styles and techniques</td>
<td>Cultural Context</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Artistic Inspirations</td>
<td>3.1, 3.2, 3.3, 3.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Visual themes used in various cultures</td>
<td>Aesthetic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Artistic components of various time periods and cultures</td>
<td>Valuing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Time periods in floral art history</td>
<td>4.1, 4.2, 4.3, 4.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Historical style and periods</td>
<td>Connections,</td>
<td></td>
<td></td>
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<tr>
<td>7. Floral art design: culture, ethnicity, time periods, and media</td>
<td>Relationships,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Cultural Themes: religious, holiday, funeral and wedding</td>
<td>Applications</td>
<td></td>
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</tr>
<tr>
<td>9. Cultural Design</td>
<td>5.2</td>
<td></td>
<td></td>
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<tr>
<td>10. Design alternatives</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Unit of Instruction/Objectives</td>
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<td>CTE Standards</td>
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</tr>
</tbody>
</table>
| **Unit III: Aesthetic Valuing and Making Judgments on Individual Works of Art** | Creative Expression 2.2, 2.5, 2.6 | • Foundation 1.1, 1.3  
• Agriscience C1.1  
• AgBusiness A7.4, A7.5, A8.1 | • Complete a floral art three-dimensional Critique Sheet for historical periods  
• Create floral design arrangements with emphasis on elements and principles of design  
• Create verbal and written reflections for floral design project utilizing student’s Interactive Notebook  
• Develop a portfolio including two-dimensional drawings, three-dimensional sculptures, and artworks’ critiques. Minimum of five pieces required.  
• Demonstrate knowledge of influential art periods through a cultural and historical 3-5 page research paper.  
• Analyze and interpret student and others’ work through critiques and rubrics.  
• Develop and convey floral art knowledge using visual art terminology in an oral presentation for floral art. |
| **A. Works of Art and Aesthetic Value** | Connections, Relationships, Applications 5.3, 5.4 | | |
| 1. Critique works of art using appropriate visual arts terms | | | |
| 2. Analyze art works in terms of art elements and design principles | | | |
| 3. Apply sensory qualities to works of floral art | | | |
| 4. Explores various styles and periods of viewed art | | | |
| 5. Evaluate and critique art elements and art principles used in others and own works of art | | | |
| **Unit IV: Art Elements of Design** | Creative Expression 2.3, 2.6 | • Foundation 11.0  
• OH-F1.4 | • Complete worksheet for elements and principles of design |
| **A. Lines** | | | |
District Wide Course of Study Title:

Environmental Horticulture Academy I

A. **COURSE INFORMATION**

Grade Level: 10, 11, or 12 depending on school pathway

Length of Course: 1 yr

Maximum Credit: 10

Type: UC Approved Area D

Recommendation for Enrollment:
Prior completion of Ag Science 1 or Ag Resources
Enrollment in Environmental Horticulture
Academy
Algebra I.

Co-prerequisites: English, ELD 3/4, History, and Floriculture

B. **BRIEF DESCRIPTION OF THE COURSE** Students will learn theories, principles, and standards related to environmental horticulture sciences. Curriculum will focus on sustainable organic farming and composting science. Course of study will incorporate biological standards as it applies to environmental plant and soil science. Students will use investigative techniques to study aspects of the botanical world including plant anatomy and physiology, plant nutrition, plant genetics, plant reproduction and development, plant ecology, plant evolution, and plant taxonomy.

C. **BOARD – ADOPTED TEXTBOOKS**


**SUPPLEMENTARY INSTRUCTIONAL MATERIALS**

Items listed below are commonly used as supplementary materials and are coordinated with the adopted course objectives:


University of California, Santa Cruz (2003-2005). Teaching Organic Farming and Gardening. Center for Agro-Ecology and Sustainable Food Systems, Santa Cruz, Ca

CDE Biological, Environmental Horticulture, and Plant and Soil Science Content Standards.
D. **BRIEF OUTLINE OF COURSE CONTENT**

A. Human Effects on Environment:
   1. Students will explore natural resources and environmental issues
   2. Students will identify sustainable environmental practices
   3. Students will explain resource conservation
   4. Students will investigate how biology is incorporated into the environment
   5. Students will demonstrate an understanding between plants, society, and the rest of our environment
   6. Students how the human population threatens many plants and organizations

B. Environmental Career Research:
   1. Students will explore environmental industry
   2. Students will analyze current environmental needs
   3. Students will identify and describe agencies and organizations in environmental science and technology
   4. Students will develop a personal portfolio

C. Introduction to Plants:
   1. Students will discuss the taxonomic systems
   2. Students will describe the binomial system for naming plants
   3. Students will understand the difference between monocots and dicots
   4. Students will investigate the importance to all plant germ plasmas
   5. Students will identify and describe the reproductive parts of plants
   6. Students will recognize the three functions of roots and stems
   7. Students will identify all parts of a typical leaf
   8. Students will explain and identify the difference between an incomplete and complete flower
   9. Students will discuss how plant structure is used to classify plants
  10. Students will identify all parts of a typical seed
  11. Students will describe the basic chemical composition of cells
  12. Students will compare eukaryotes with prokaryotes
  13. Students will describe the function on the parts of a cell
  14. Students will identify four types of permanent tissue
  15. Students will describe the function of xylem and phloem
  16. Students will identify plant tissues and describe how they are organized
  17. Students will describe the anatomy of the primary root, stems, and leaves
  18. Students will identify six steps in normal cell division and what happens in each step

D. Fundamentals of Soil Science:
   1. Students will discuss what soil is and where it comes from
   2. Students will describe soil layers and how they differ
   3. Students will discuss how plants depend on soil for growth
   4. Students will describe the horizons of the soil profile
   5. Students will classify soils based on texture
   6. Students will identify the chemical properties of soil
7. Students will discuss how the physical and chemical properties of soil effect plant growth
8. Students will explain the relationship between field capacity water and the permanent wilting point
9. Students will identify the ph of neutral, acidic, and alkaline soils
10. Students will name the essential plant nutrients and describe their role in plant growth
11. Students will identify the sixteen elements essential for plant growth
12. Students will explain the nitrogen cycle
13. Students will discuss how soil ph influences availability of nutrients

E. Fundamentals of Plant Growth and Propagation:

1. Students will discuss the effect temperature on plants
2. Students will explain absorption and reflection
3. Students will define photoperiodism
4. Students will describe the general process of carbon fixing by plants
5. Students will explain the difference between light and dark reactions
6. Students will describe the difference between C3 and C4 pathways in photosynthesis
7. Students will explain the general chemical reaction for photosynthesis
8. Students will discuss why plants are considered at carbon sink
9. Students will describe the steps of respiration
10. Students will compare respiration with photosynthesis
11. Students will identify the three biochemical pathways involved in respiration
12. Students will explain how respiration influences crop production
13. Students will define aerobic and anaerobic
14. Students will identify function of cells
15. Students will describe the structure of DNA
16. Students will explain how DNA directs the growth of plants
17. Students will discuss the relationship between DNA genes and chromosomes
18. Students will describe the sequence and basis of DNA
19. Students will discuss the relationship between DNA and RNA
20. Students will explain how plant growth regulators and hormones act
21. Students will identify the three stages of plant development
22. Students will identify the six steps for germination to occur
23. Students will explain seed dormancy
24. Students will identify the role of water and germination
25. Students will discuss the difference between sexual and asexual plant propagation
26. Students will describe the production of gametes and process of pollutants and fertilizer
27. Students will recognize the difference between self-fertilization and cross-fertilization
28. Students will describe micropropagation
29. Students will explain the basic principles of genetics
30. Students will explain how plants produce seeds

F. Sustainable Organic Plant and Soil Science (The purpose of this unit is to provide a sustainable agriculture system for the production of environmentally friendly food source. This system will be utilized for field experiments in propagation, vegetable, flowering, and fruit production.)

1. Students will explore environmental concerns associated with the use of agriculture chemicals
2. Students will describe the goals of sustainable fertility management program
3. Students will describe soil tillage and sustainable agriculture
4. Students will discuss the roll of cover crops in sustainable agriculture
5. Students will describe the relationship among soil fertility, plant health, and the resistance and resilience of crop plants to pest and pathogens
6. Students will explain a certified organic production system
7. Students will be able to identify tillage and planting equipment
8. Students will describe preconditions for seed germination
9. Students will investigate conditions needed for successful germination
10. Students will describe the optimal environmental conditions for germination and growth for annual vegetables
11. Students will identify environmental management conditions during germination, development, and seedling maturation
12. Students will describe the advantages of having a propagation facility
13. Students will understand soils and soil physical properties
14. Students will understand soil chemistry and fertility
15. Students will describe irrigation principles and practices
16. Students will examine propagation crops and greenhouse management practices
17. Students will understand hydroponic systems and management practices

G. Organic Composting

1. Students will describe composting systems
2. Students will understand waste as a resource
3. Students will describe thermophilic composting
4. Students will examine mechanisms of heat loss, aeration, and moisture
5. Students will investigate composting biology, microorganisms, invertebrates, and earthworms
6. Students will identify composting bioreactors and bins
7. Students will understand the proper carbon to nitrogen ratios in composting
8. Students will understand proper monitoring procedures for the composting process

H. Organic Product Marketing

1. Students will research and develop organic products
2. Students will understand market needs
3. Students will develop a business plan
4. Students will intern with local industry partners
5. Students will understand the management of labor
6. Students will understand costs involved in organic farming
7. Students will learn about supply and demand
8. Students will create a fresh organic produce stand

I. FFA Leadership

1. All students enrolled will also be members of Future Farmers of America
2. Students will compete in agricultural business competitions
3. Students will compete in speaking competitions
4. Students will have "supervised agriculture experience" in organic farming and composting
5. Students will develop communication and critical thinking skills

E. COURSE OBJECTIVES

Students will understand sustainable agriculture practices as it relates to the environment. This course will provide students with standard based learning in biology. Students will become proficient in
academic foundation standards, agriculture career standards, and biology standards and will be reinforced thru the California Partnership Academy model. Students who take this course will be prepared to enter college with the background knowledge needed to be successful in the agriculture field. Projected outcomes of this class; higher test scores in biology due to hands on learning in the life science laboratory and increased enrollment in higher education in agri-sciences.

NOTE: Students who are in the Environmental Horticulture Academy will apply biological standards as sophomores in academy classes ENV/HORT I, as juniors in ENV/HORT II, and as seniors in ENV/HORT III.

**Foundation Standards**

_B. The Foundation standards are covered throughout the course work through many different units._

_C. 1.0 Academics_

Students understand the academic content required for entry into postsecondary education and employment in the Agriculture and Natural Resources sector.

_(The standards listed below retain in parentheses the numbering as specified in the mathematics, science, and history-social science content standards adopted by the State Board of Education.)_

### 1.1 Mathematics

Specific applications of Algebra I standards (grades eight through twelve):

(10.0) Students add, subtract, multiply, and divide monomials and polynomials. Students solve multistep problems, including word problems, by using these techniques.

(12.0) Students simplify fractions with polynomials in the numerator and denominator by factoring both and reducing them to the lowest terms.

(13.0) Students add, subtract, multiply, and divide rational expressions and functions. Students solve both computationally and conceptually challenging problems by using these techniques.

(15.0) Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.

Specific applications of Geometry standards (grades eight through twelve):

(8.0) Students know, derive, and solve problems involving the perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures.

(10.0) Students compute areas of polygons, including rectangles, scalene triangles, equilateral triangles, rhombi, parallelograms, and trapezoids.

(11.0) Students determine how changes in dimensions affect the perimeter, area, and volume of common geometric figures and solids.

(12.0) Students find and use measures of sides and of interior and exterior angles of triangles and polygons to classify figures and solve problems.

Specific applications of Probability and Statistics standards (grades eight through twelve):

(8.0) Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

### 1.2 Science

Specific applications of Investigation and Experimentation standards (grades nine through twelve):

(1.a) Select and use appropriate tools and technology (such as computer-linked probes, spreadsheets, and graphing calculators) to perform tests, collect data, analyze relationships, and display data.
(1.c) Identify possible reasons for inconsistent results, such as sources of error or uncontrolled conditions.
(1.d) Formulate explanations by using logic and evidence.
(1.f) Distinguish between hypothesis and theory as scientific terms.
(1.j) Recognize the issues of statistical variability and the need for controlled tests.
(1.l) Analyze situations and solve problems that require combining and applying concepts from more than one area of science.
(1.m) Investigate a science-based societal issue by researching the literature, analyzing data, and communicating the findings. Examples of issues include irradiation of food, cloning of animals by somatic cell nuclear transfer, choice of energy sources, and land and water use decisions in California.

1.3 History–Social Science
Specific applications of Principles of Economics standards (grade twelve):
(12.2) Students analyze the elements of America's market economy in a global setting.
(12.2.2) Discuss the effects of changes in supply and/or demand on the relative scarcity, price, and quantity of particular products.
(12.2.3) Explain the roles of property rights, competition, and profit in a market economy.
(12.2.5) Understand the process by which competition among buyers and sellers determines a market price.
(12.2.6) Describe the effect of price controls on buyers and sellers.
(12.2.7) Analyze how domestic and international competition in a market economy affects goods and services produced and the quality, quantity, and price of those products.
(12.2.10) Discuss the economic principles that guide the location of agricultural production and industry and the spatial distribution of transportation and retail facilities.

12.4) Students analyze the elements of the U.S. labor market in a global setting.
(12.4.3) Discuss wage differences among jobs and professions, using the laws of demand and supply and the concept of productivity.

D. 2.0 Communications
Students understand the principles of effective oral, written, and multimedia communication in a variety of formats and contexts.
(The standards listed below retain in parentheses the numbering as specified in the English–language arts content standards adopted by the State Board of Education.)

2.1 Reading
Specific applications of Reading Comprehension standards (grades nine and ten):
(2.1) Analyze the structure and format of functional workplace documents, including the graphics and headers, and explain how authors use the features to achieve their purposes.
(2.2) Prepare a bibliography of reference materials for a report using a variety of consumer, workplace, and public documents.
(2.3) Generate relevant questions about readings on issues that can be researched.
(2.6) Demonstrate use of sophisticated learning tools by following technical directions (e.g., those found with graphic calculators and specialized software programs and in access guides to World Wide Web sites on the Internet).
(2.7) Critique the logic of functional documents by examining the sequence of information and procedures in anticipation of possible reader misunderstandings.
(2.8) Evaluate the credibility of an author’s argument or defense of a claim by critiquing the relationship between generalizations and evidence, the comprehensiveness of evidence, and the way in which the author’s intent affects the structure and tone of the text (e.g., in professional journals, editorials, political speeches, primary source material).
Specific applications of Reading Comprehension standards (grades eleven and twelve):

(2.1) Analyze both the features and the rhetorical devices of different types of public documents (e.g., policy statements, speeches, debates, platforms) and the way in which authors use those features and devices.

(2.3) Verify and clarify facts presented in other types of expository texts by using a variety of consumer, workplace, and public documents.

(2.4) Make warranted and reasonable assertions about the author’s arguments by using elements of the text to defend and clarify interpretations.

2.2 Writing

Specific applications of Writing Strategies and Applications standards (grades nine and ten):

(1.1) Establish a controlling impression or coherent thesis that conveys a clear and distinctive perspective on the subject and maintain a consistent tone and focus throughout the piece of writing.

(1.2) Use precise language, action verbs, sensory details, appropriate modifiers, and the active rather than the passive voice.

(1.3) Use clear research questions and suitable research methods (e.g., library, electronic media, personal interview) to elicit and present evidence from primary and secondary sources.

(1.5) Synthesize information from multiple sources and identify complexities and discrepancies in the information and the different perspectives found in each medium (e.g., almanacs, microfiche, news sources, in-depth field studies, speeches, journals, technical documents).

(2.3) Write expository compositions, including analytical essays and research reports:

a. Marshal evidence in support of a thesis and related claims, including information on all relevant perspectives.

b. Convey information and ideas from primary and secondary sources accurately and coherently.

c. Make distinctions between the relative value and significance of specific data, facts, and ideas.

d. Include visual aids by employing appropriate technology to organize and record information on charts, maps, and graphs.

e. Anticipate and address readers’ potential misunderstandings, biases, and expectations.

f. Use technical terms and notations accurately.

(2.5) Write business letters:

a. Provide clear and purposeful information and address the intended audience appropriately.

b. Use appropriate vocabulary, tone, and style to take into account the nature of the relationship with, and the knowledge and interests of, the recipients.

c. Highlight central ideas or images.

d. Follow a conventional style with page formats, fonts, and spacing that contribute to the documents’ readability and impact.

(2.6) Write technical documents (e.g., a manual on rules of behavior for conflict resolution, procedures for conducting a meeting, minutes of a meeting):

a. Report information and convey ideas logically and correctly.

b. Offer detailed and accurate specifications.

c. Include scenarios, definitions, and examples to aid comprehension (e.g., troubleshooting guide).

d. Anticipate readers’ problems, mistakes, and misunderstandings.

Specific applications of Writing Strategies and Applications standards (grades eleven and twelve):
(1.3) Structure ideas and arguments in a sustained, persuasive, and sophisticated way and support them with precise and relevant examples.

(1.6) Develop presentations by using clear research questions and creative and critical research strategies (e.g., field studies, oral histories, interviews, experiments, electronic sources).

(1.7) Use systematic strategies to organize and record information (e.g., anecdotal scripting, annotated bibliographies).

(1.8) Integrate databases, graphics, and spreadsheets into word-processed documents.

(2.5) Write job applications and résumés:
   a. Provide clear and purposeful information and address the intended audience appropriately.
   b. Use varied levels, patterns, and types of language to achieve intended effects and aid comprehension.
   c. Modify the tone to fit the purpose and audience.
   d. Follow the conventional style for that type of document (e.g., résumé, memorandum) and use page formats, fonts, and spacing that contribute to the readability and impact of the document.

(2.6) Deliver multimedia presentations:
   a. Combine text, images, and sound and draw information from many sources (e.g., television broadcasts, videos, films, newspapers, magazines, CD-ROMs, the Internet, electronic media-generated images).
   b. Select an appropriate medium for each element of the presentation.
   c. Use the selected media skillfully, editing appropriately and monitoring for quality.
   d. Test the audience’s response and revise the presentation accordingly.

2.3 Written and Oral English Language Conventions

Specific applications of English Language Conventions standards (grades eleven and twelve):

(1.1) Demonstrate control of grammar, diction, and paragraph and sentence structure and an understanding of English usage.

(1.2) Produce legible work that shows accurate spelling and correct punctuation and capitalization.

(1.3) Reflect appropriate manuscript requirements in writing.

2.4 Listening and Speaking

Specific applications of Listening and Speaking Strategies and Applications standards (grades nine and ten):

(1.1) Formulate judgments about the ideas under discussion and support those judgments with convincing evidence.

(1.7) Use props, visual aids, graphs, and electronic media to enhance the appeal and accuracy of presentations.

(2.2) Deliver expository presentations:
   a. Marshal evidence in support of a thesis and related claims, including information on all relevant perspectives.
   b. Convey information and ideas from primary and secondary sources accurately and coherently.
   c. Make distinctions between the relative value and significance of specific data, facts, and ideas.
   d. Include visual aids by employing appropriate technology to organize and display information on charts, maps, and graphs.
   e. Anticipate and address the listener’s potential misunderstandings, biases, and expectations.
   f. Use technical terms and notations accurately.
(2.3) Apply appropriate interviewing techniques:
   a. Prepare and ask relevant questions.
   b. Make notes of responses.
   c. Use language that conveys maturity, sensitivity, and respect.
   d. Respond correctly and effectively to questions.
   e. Demonstrate knowledge of the subject or organization.
   f. Compile and report responses.
   g. Evaluate the effectiveness of the interview.

Specific applications of Listening and Speaking Strategies and Applications standards (grades eleven and twelve):

(1.8) Use effective and interesting language, including:
   a. Informal expressions for effect
   b. Standard American English for clarity
   c. Technical language for specificity

(1.14) Analyze the techniques used in media messages for a particular audience and evaluate their effectiveness (e.g., Orson Welles’ radio broadcast “War of the Worlds”).

(2.4) Deliver multimedia presentations:
   a. Combine text, images, and sound by incorporating information from a wide range of media, including films, newspapers, magazines, CD-ROMs, online information, television, videos, and electronic media-generated images.
   b. Select an appropriate medium for each element of the presentation.
   c. Use the selected media skillfully, editing appropriately and monitoring for quality.
   d. Test the audience’s response and revise the presentation accordingly

E. 3.0 Career Planning and Management
Students understand how to make effective decisions, use career information, and manage personal career plans:

3.1 Know the personal qualifications, interests, aptitudes, information, and skills necessary to succeed in careers.
3.2 Understand the scope of career opportunities and know the requirements for education, training, and licensure.
3.3 Develop a career plan that is designed to reflect career interests, pathways, and postsecondary options.
3.4 Understand the role and function of professional organizations, industry associations, and organized labor in a productive society.
3.5 Understand the past, present, and future trends that affect careers, such as technological developments and societal trends, and the resulting need for lifelong learning.
3.6 Know important strategies for self-promotion in the hiring process, such as job applications, résumé writing, interviewing skills, and preparation of a portfolio.

F. 4.0 Technology
Students know how to use contemporary and emerging technological resources in diverse and changing personal, community, and workplace environments:

4.1 Understand past, present, and future technological advances as they relate to a chosen pathway.
4.2 Understand the use of technological resources to gain access to, manipulate, and produce information, products, and services.
4.3 Understand the influence of current and emerging technology on selected segments of the economy.
4.4 Understand geographic information systems (G.I.S.).
4.5 Determine the validity of the content and evaluate the authenticity, reliability, and bias of electronic and other resources.
4.6 Differentiate among, select, and apply appropriate tools and technology.

G. 5.0 Problem Solving and Critical Thinking
Students understand how to create alternative solutions by using critical and creative thinking skills, such as logical reasoning, analytical thinking, and problem-solving techniques:

5.1 Apply appropriate problem-solving strategies and critical thinking skills to work-related issues and tasks.
5.2 Understand the systematic problem-solving models that incorporate input, process, outcome, and feedback components.
5.3 Use critical thinking skills to make informed decisions and solve problems.

H. 6.0 Health and Safety
Students understand health and safety policies, procedures, regulations, and practices, including the use of equipment and handling of hazardous materials:

6.1 Know policies, procedures, and regulations regarding health and safety in the workplace, including employers’ and employees’ responsibilities.
6.2 Understand critical elements of health and safety practices related to storing, cleaning, and maintaining tools, equipment, and supplies.
6.3 Understand how to locate important information on a material safety data sheet.
6.4 Maintain safe and healthful working conditions.
6.5 Use tools and machines safely and appropriately.
6.6 Know how to both prevent and respond to accidents in the agricultural industry.

I. 7.0 Responsibility and Flexibility
Students know the behaviors associated with the demonstration of responsibility and flexibility in personal, workplace, and community settings:

7.1 Understand the qualities and behaviors that constitute a positive and professional work demeanor.
7.2 Understand the importance of accountability and responsibility in fulfilling personal, community, and workplace roles.
7.3 Understand the need to adapt to varied roles and responsibilities.
7.4 Understand that individual actions can affect the larger community.
7.5 Understand the importance of time management to fulfill responsibilities.
7.6 Know how to apply high-quality craftsmanship to a product or presentation and continually refine and perfect it.

J. 8.0 Ethics and Legal Responsibilities
Students understand professional, ethical, and legal behavior consistent with applicable laws, regulations, and organizational norms:

8.1 Know the major local, district, state, and federal regulatory agencies and entities that affect the industry and how they enforce laws and regulations.
8.2 Understand the concept and application of ethical and legal behavior consistent with workplace standards.
8.3 Understand the role of personal integrity and ethical behavior in the workplace.
8.4 Understand how to access, analyze, and implement quality assurance information.

K. 9.0 Leadership and Teamwork
Students understand effective leadership styles, key concepts of group dynamics, team and individual decision making, the benefits of workforce diversity, and conflict resolution:

9.1 Understand the characteristics and benefits of teamwork, leadership, and citizenship in the school, community, and workplace settings.
9.2 Understand the ways in which preprofessional associations, such as the Future Farmers of America (FFA), and competitive career development activities enhance academic skills, promote career choices, and contribute to employability.

9.3 Understand how to organize and structure work individually and in teams for effective performance and the attainment of goals.

9.4 Know multiple approaches to conflict resolution and their appropriateness for a variety of situations in the workplace.

9.5 Understand how to interact with others in ways that demonstrate respect for individual and cultural differences and for the attitudes and feelings of others.

9.6 Understand leadership, cooperation, collaboration, and effective decision-making skills applied in group or team activities, including the student organization.

L. 10.0 Technical Knowledge and Skills

Students understand the essential knowledge and skills common to all pathways in the Agriculture and Natural Resources sector:

10.1 Understand the aims, purposes, history, and structure of the FFA student organization, and know the opportunities it makes available.

10.2 Manage and actively engage in a career-related, supervised agricultural experience.

10.3 Understand the importance of maintaining and completing the California Agricultural Record Book.

10.4 Maintain and troubleshoot equipment used in the agricultural industry.

M. 11.0 Demonstration and Application

Students demonstrate and apply the concepts contained in the foundation and pathway standards.

Plant and Soil Science Pathway

G1.0 Students understand plant classification principles:

G1.1 Understand how to classify and identify plants by order, family, genus, and species.
G1.2 Understand how to identify plants by using a dichotomous key.
G1.3 Understand how common plant parts are used to classify the plants.
G1.4 Understand the differences between and uses of native and nonnative plants.
G1.5 Understand the differences between monocots and dicots.
G1.6 Understand the differences between plants under production and weeds.

G2.0 Students understand cell biology:

G2.1 Understand the differences between prokaryotic cells and plant and animal eukaryotic cells and how viruses differ from them in complexity and general structure.
G2.2 Understand plant cellular function reactions when plants are grown under different conditions.
G2.3 Understand what functions organelles play in the health of the cell.
G2.4 Understand the part of the cell that is responsible for the genetic information that controls plant growth and development.
G2.5 Understand plant inheritance principles, including the structure and role of DNA.
G2.6 Understand which organelles in plant cells carry out photosynthesis.

G3.0 Students understand plant physiology and growth principles:

G3.1 Understand plant systems, nutrient transportation, structure, and energy storage.
G3.2 Understand the seed’s essential parts and functions.
G3.3 Understand how primary, secondary, and trace elements are used in plant growth.
G3.4 Understand the factors that influence plant growth, including water, nutrients, light, soil, air, and climate.
G3.5 Understand the tissues seen in a cross section of woody and herbaceous plants.
G3.6 Understand the factors that affect plant growth and predict plant response.

G4.0 Students understand sexual and asexual reproduction of plants:
G4.1 Understand the different forms of sexual and asexual plant reproduction.
G4.2 Understand the various techniques for successful plant propagation (e.g., budding, grafting, cuttings, and seeds).
G4.3 Understand the proper sterile technique used in tissue culture.

G5.0 Students understand pest problems and management:
G5.1 Understand how to categorize insects as pests, beneficial, or neutral and their roles.
G5.2 Understand the role of other pests, such as nematodes, molds, mildews, and weeds.
G5.3 Know conventional, sustainable, and organic management methods to prevent or treat plant disease symptoms.
G5.4 Understand integrated pest management to prevent, treat, and control plant disease symptoms (including conventional, sustainable, and organic management methods).
G5.5 Understand how biotechnology can be used to manage pests.

G6.0 Students understand soils and plant production:
G6.1 Understand soil types, soil texture, structure, and bulk density and explain the U.S. Department of Agriculture (USDA) soil-quality rating procedure.
G6.2 Understand soil properties necessary for successful plant production, including pH, EC, and essential nutrients.
G6.3 Understand soil biology and diagram the soil food chain.
G6.4 Understand how soil biology affects the environment and natural resources.

G7.0 Students understand effective tillage and soil conservation management practices:
G7.1 Understand how to effectively manage and conserve soil through conventional, minimum, conservation, and no-till irrigation and through drainage and tillage practices.
G7.2 Understand how global positioning systems, surveying, laser leveling, and other tillage practices conserve soil.
G7.3 Use tools such as the USDA and the local Resource Conservation District soil survey maps to determine appropriate soil management practices.

G8.0 Students understand effective water management practices:
G8.1 Understand California water history, current issues, water rights, water law, and water transfer through different distribution projects throughout the state.
G8.2 Understand the local, state, and federal agencies that regulate water quality and availability in California.
G8.3 Understand the definition of a watershed and how it is used to measure water quality.
G8.4 Understand effective water management and conservation practices, including the use of tailwater ponds.
G8.5 Know water-testing standards and perform bioassay and macro-invertebrate protocols to assess water quality.

G9.0 Students understand the concept of an “agrosystem” approach to production:
G9.1 Understand how to identify and classify the plants and animals in an agricultural system (as producers, consumers, or decomposers).
G9.2 Understand the elements of conventional, sustainable, and organic production systems.
G9.3 Understand the components of “whole-system management.”

G10.0 Students understand local crop management and production practices:
G10.1 Understand local cultural techniques, including monitoring, pruning, fertilization, planting, irrigation, harvest treatments, processing, and packaging practices for various tree, grain, hay, and vegetable classes.
G10.2 Understand common marketing and shipping characteristics of local commodities.
G10.3 Understand general maturity and harvest-time guidelines for specific local plant products.

G11.0 Students understand plant biotechnology:

G11.1 Understand how changing technology—such as micropropagation, biological pest controls, and genetic engineering (including DNA extraction and gel electrophoresis)—affects plant production, yields, and management.

G11.2 Understand the various technology advancements that affect plant and soil science (such as global positioning systems, global information systems, variable rate technology, and remote sensing).

G11.3 Know how herbicide-resistant plant genes can affect the environment.

G11.4 Understand how genetic engineering techniques have been used to improve crop yields.

G11.5 Understand the effects of agricultural biotechnology, including genetically modified organisms, on the agriculture industry and the larger society and the pros and cons of such use.

Cell Biology

1. The fundamental life processes of plants and animals depend on a variety of chemical reactions that occur in specialized areas of the organism’s cells. As a basis for understanding this concept:
   a. Students know cells are enclosed within semipermeable membranes that regulate their interaction with their surroundings.
   b. Students know enzymes are proteins that catalyze biochemical reactions without altering the reaction equilibrium and the activities of enzymes depend on the temperature, ionic conditions, and the pH of the surroundings.
   c. Students know how prokaryotic cells, eukaryotic cells (including those from plants and animals), and viruses differ in complexity and general structure.
   d. Students know the central dogma of molecular biology outlines the flow of information from transcription of ribonucleic acid (RNA) in the nucleus to translation of proteins on ribosomes in the cytoplasm.
   e. Students know the role of the endoplasmic reticulum and Golgi apparatus in the secretion of proteins.
   f. Students know usable energy is captured from sunlight by chloroplasts and is stored through the synthesis of sugar from carbon dioxide.
   g. Students know the role of the mitochondria in making stored chemical-bond energy available to cells by completing the breakdown of glucose to carbon dioxide.
   h. Students know most macromolecules (polysaccharides, nucleic acids, proteins, lipids) in cells and organisms are synthesized from a small collection of simple precursors.
   i. Students know how chemiosmotic gradients in the mitochondria and chloroplast store energy for ATP production.
   j. Students know how eukaryotic cells are given shape and internal organization by a cytoskeleton or cell wall or both.

Genetics

2. Mutation and sexual reproduction lead to genetic variation in a population. As a basis for understanding this concept:
   a. Students know meiosis is an early step in sexual reproduction in which the pairs of chromosomes separate and segregate randomly during cell division to produce gametes containing one chromosome of each type.
   b. Students know only certain cells in a multicellular organism undergo meiosis.
   c. Students know how random chromosome segregation explains the probability that a particular allele will be in a gamete.
d. *Students know* new combinations of alleles may be generated in a zygote through the fusion of male and female gametes (fertilization).

e. *Students know* why approximately half of an individual’s DNA sequence comes from each parent.

f. *Students know* the role of chromosomes in determining an individual’s sex.

g. *Students know* how to predict possible combinations of alleles in a zygote from the genetic makeup of the parents.

3. A multicellular organism develops from a single zygote, and its phenotype depends on its genotype, which is established at fertilization. As a basis for understanding this concept:

a. *Students know* how to predict the probable outcome of phenotypes in a genetic cross from the genotypes of the parents and mode of inheritance (autosomal or X-linked, dominant or recessive).

b. *Students know* the genetic basis for Mendel’s laws of segregation and independent assortment.

c. *Students know* how to predict the probable mode of inheritance from a pedigree diagram showing phenotypes.

d. *Students know* how to use data on frequency of recombination at meiosis to estimate genetic distances between loci and to interpret genetic maps of chromosomes.

**Ecology**

6. Stability in an ecosystem is a balance between competing effects. As a basis for understanding this concept:

a. *Students know* biodiversity is the sum total of different kinds of organisms and is affected by alterations of habitats.

b. *Students know* how to analyze changes in an ecosystem resulting from changes in climate, human activity, introduction of nonnative species, or changes in population size.

c. *Students know* how fluctuations in population size in an ecosystem are determined by the relative rates of birth, immigration, emigration, and death.

d. *Students know* how water, carbon, and nitrogen cycle between abiotic resources and organic matter in the ecosystem and how oxygen cycles through photosynthesis and respiration.

e. *Students know* a vital part of an ecosystem is the stability of its producers and decomposers.

f. *Students know* at each link in a food web some energy is stored in newly made structures but much energy is dissipated into the environment as heat. This dissipation may be represented in an energy pyramid.

g. *Students know* how to distinguish between the accommodation of an individual organism to its environment and the gradual adaptation of a lineage of organisms through genetic change.

**Biogeochemical Cycles**

7. Each element on Earth moves among reservoirs, which exist in the solid earth, in oceans, in the atmosphere, and within and among organisms as part of biogeochemical cycles. As a basis for understanding this concept:

a. *Students know* the carbon cycle of photosynthesis and respiration and the nitrogen cycle.

b. *Students know* the global carbon cycle: the different physical and chemical forms of carbon in the atmosphere, oceans, biomass, fossil fuels, and the movement of carbon among these reservoirs.

c. *Students know* the movement of matter among reservoirs is driven by Earth’s internal and external sources of energy.

d. *Students know* the relative residence times and flow characteristics of carbon in
and out of its different reservoirs.

**California Geology**

The geology of California underlies the state’s wealth of natural resources as well as its natural hazards. As a basis for understanding this concept: *Students know* the importance of water to society, the origins of California’s fresh water, and the relationship between supply and need.

**G. ASSESSMENT PROCEDURES**

- Homework/Class work **
- Supervised Agriculture Experience Program **
- FFA – Leadership **
- Assessments **
- Participation **

**Weighting is based on individual school sites.**

**SEMESTER BREAKDOWN:**

- Semester 1 40%
- Semester 2 40%
- Final 20%

**Weighting/categories may vary according to school site.**
District Wide Course of Study Title:

Ag Mechanics 1

A. COURSE INFORMATION

Grade Level: 9-10
Length of Course: One Year
Maximum Credit: 10
Type: Misc.
Recommendation for Enrollment: None

B. COURSE DESCRIPTION (Include a brief explanation of the course; mention any prerequisites, including standardized test scores; and indicate whether the course satisfies a specific graduation requirement.)

Ag Mechanics I (Beginning Ag Mechanics) is a course designed to fulfill the student's elective requirements from KHSD. The course is a year long course which is designed to introduce the student to basic shop skill necessary to develop a well rounded agricultural mechanics program. The course is also a pre-requisite to Ag Mechanics 2.

C. INSTRUCTIONAL MATERIALS (List the basic text – include title, author, and copyright – and other essential supplementary materials or instructional resources/materials used in the course.)

Basic Text:

_Agriculture Mechanics, Fundamentals and Application 5th Edition_, Cooper, 1996

2nd and 5th editions acceptable

SUPPLEMENTARY INSTRUCTIONAL MATERIALS (List the basic text – include title, author, and copyright – and other essential supplementary materials or instructional resources/materials used in the course.)

Farm Shop, Wakeman and McCoy, McMillan.


Wiring Simplified, H.P. Richter, et. al.

Leveling and Land Management Practices for Agriculture, Agriculture Education Dept., University of Arizona or Hobar Publications.

E. **BRIEF OUTLINE OF COURSE CONTENT**

A. FFA – 1 week
   1. History, Leadership, Involvement
   2. SAEs

B. Exploring Careers in Agricultural Mechanics – 1 week
   1. Mechanics in the World of Agriculture
   2. Career Options in Ag. Mechanics

C. Using the Ag. Mech. Shop – 4 weeks
   1. Shop Orientation and Procedures
   4. Shop Clean-up and Orientation
   5. Measurements

D. Woodworking– 3 weeks
   1. Hand tools, fasteners and hardware
   2. Layout, tools, measurement and procedures
   3. Selecting, cutting, and shaping wood
   4. Fastening wood
   5. Finishing wood
   6. Woodworking with power tools
   7. Preparing wood and metal for painting
   8. Selecting and applying coating materials

E. Tool Fitting – 1 week
   1. Repairing and reconditioning tools
   2. Sharpening tools

F. Metal Working – 3 weeks
   1. Hand tools, fasteners and hardware
   2. Layout, tools and procedures
   3. Selecting, cutting, and shaping metal
   4. Fastening metal
   5. Finishing metal
6. Identifying, marking, cutting, and bending metal
7. Fastening metal
8. Metal working with power tools
9. Preparing metal for painting
10. Selecting and applying coating materials

G. Gas Heating, Cutting, Brazing and Welding – 3 weeks
   1. Using Oxyacetylene
   2. Gas welding joints
   3. Brazing joints
   4. Oxy-fuel cutting

H. Electric Welding & Cutting Processes – 5 weeks
   1. Selecting and using arc welding
   2. SMAW welding mild steel
   3. SMAW welding positions
   4. SMAW welding joints
   5. MIG welding
   6. TIG welding
   7. Plasma Arc Cutting

I. Electricity – 3 weeks
   1. Electrical principles and wiring material
   2. Installing branch circuits

J. Plumbing – 3 weeks
   1. Plumbing materials and tools
   2. Irrigation and sprinkler systems
   3. Household plumbing

K. Concrete and Masonry – 1 week
   1. Concrete and masonry

L. Rope Work – 1 week
   1. Knots and hitches

M. Surveying – 1 week
   1. Surveying skill
   2. GPS and laser leveling

N. Construction of Personal Projects – 8 weeks
   1. Project selection and planning
   2. Bill of material and cost estimation
   3. Project construction

**F. Behavioral Objectives for Beginning Ag Mechanics (standards)**

**Foundation Standards**

1.0 Academics - Students understand the academic content required for entry into postsecondary education and employment in the Agriculture and Natural Resources sector. (The standards listed below retain in parentheses the numbering as specified in the mathematics, science, and history-social science content standards adopted by the State Board of Education.)
1.1 Mathematics: Specific applications of Algebra I standards (grades eight through twelve):

(10.0) Students add, subtract, multiply, and divide monomials and polynomials. Students solve multistep problems, including word problems, by using these techniques.

(12.0) Students simplify fractions with polynomials in the numerator and denominator by factoring both and reducing them to the lowest terms.

(13.0) Students add, subtract, multiply, and divide rational expressions and functions. Students solve both computationally and conceptually challenging problems by using these techniques.

(15.0) Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.

Specific applications of Geometry standards (grades eight through twelve):

(8.0) Students know, derive, and solve problems involving the perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures.

(10.0) Students compute areas of polygons, including rectangles, scalene triangles, equilateral triangles, rhombi, parallelograms, and trapezoids.

(11.0) Students determine how changes in dimensions affect the perimeter, area, and volume of common geometric figures and solids.

(12.0) Students find and use measures of sides and of interior and exterior angles of triangles and polygons to classify figures and solve problems.

Specific applications of Probability and Statistics standards (grades eight through twelve):

(8.0) Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

1.2 Science: Specific applications of Investigation and Experimentation standards (grades nine through twelve):

(1.a) Select and use appropriate tools and technology (such as computer-linked probes, spreadsheets, and graphing calculators) to perform tests, collect data, analyze relationships, and display data.

(1.c) Identify possible reasons for inconsistent results, such as sources of error or uncontrolled conditions.

(1.d) Formulate explanations by using logic and evidence.

(1.f) Distinguish between hypothesis and theory as scientific terms.

(1.l) Analyze situations and solve problems that require combining and applying concepts from more than one area of science.

1.3 History–Social Science: Specific applications of Principles of Economics standards (grade twelve):

(12.2.2) Discuss the effects of changes in supply and/or demand on the relative scarcity, price, and quantity of particular products.

(12.2.3) Explain the roles of property rights, competition, and profit in a market economy.

(12.2.5) Understand the process by which competition among buyers and sellers determines a market price.

(12.2.6) Describe the effect of price controls on buyers and sellers.

(12.2.7) Analyze how domestic and international competition in a market economy affects goods and services produced and the quality, quantity, and price of those products.

(12.2.10) Discuss the economic principles that guide the location of agricultural production and industry and the spatial distribution of transportation and retail facilities.

(12.4) Students analyze the elements of the U.S. labor market in a global setting.

(12.4.3) Discuss wage differences among jobs and professions, using the laws of demand and supply and the concept of productivity.

2.0 Communications: Students understand the principles of effective oral, written, and multimedia communication in a variety of formats and contexts. (The standards listed below retain in parentheses the numbering as specified in the English–language arts content standards adopted by the State Board of Education.)

2.1 Reading: Specific applications of Reading Comprehension standards (grades nine and ten):

(2.3) Generate relevant questions about readings on issues that can be researched.
(2.6) Demonstrate use of sophisticated learning tools by following technical directions (e.g., those found with graphic calculators and specialized software programs and in access guides to World Wide Web sites on the internet).

(2.7) Critique the logic of functional documents by examining the sequence of information and procedures in anticipation of possible reader misunderstandings.

(2.8) Evaluate the credibility of an author's argument or defense of a claim by critiquing the relationship between generalizations and evidence, the comprehensiveness of evidence, and the way in which the author's intent affects the structure and tone of the text (e.g., in professional journals, editorials, political speeches, primary source material).

**Specific applications of Reading Comprehension standards (grades eleven and twelve):**

(2.3) Verify and clarify facts presented in other types of expository texts by using a variety of consumer, workplace, and public documents.

(2.4) Make warranted and reasonable assertions about the author's arguments by using elements of the text to defend and clarify interpretations.

**2.2 Writing:** Specific applications of Writing Strategies and Applications standards (grades 9-10)

(1.3) Use clear research questions and suitable research methods (e.g., library, electronic media, personal interview) to elicit and present evidence from primary and secondary sources.

(2.6) Write technical documents (e.g., a manual on rules of behavior for conflict resolution, procedures for conducting a meeting, minutes of a meeting):

a. Report information and convey ideas logically and correctly.

b. Offer detailed and accurate specifications.

c. Include scenarios, definitions, and examples to aid comprehension (e.g., troubleshooting guide).

d. Anticipate readers’ problems, mistakes, and misunderstandings.

**Specific applications of Writing Strategies and Applications standards (grades eleven and twelve):**

(2.5) Write job applications and résumés:

a. Provide clear and purposeful information and address the intended audience appropriately.

b. Use varied levels, patterns; and types of language to achieve intended effects and aid comprehension.

c. Modify the tone to fit the purpose and audience.

d. Follow the conventional style for that type of document (e.g., résumé, memorandum) and use page formats, fonts, and spacing that contribute to the readability and impact of the document.

**2.3 Written and Oral English Language Conventions:** Specific applications of English Language Conventions standards (grades eleven and twelve):

(1.1) Demonstrate control of grammar, diction, and paragraph and sentence structure and an understanding of English usage.

(1.2) Produce legible work that shows accurate spelling and correct punctuation and capitalization.

**2.4 Listening and Speaking:** Specific applications of Listening and Speaking Strategies and Applications standards (grades nine and ten):

(1.1) Formulate judgments about the ideas under discussion and support those judgments with convincing evidence.

(1.7) Use props, visual aids, graphs, and electronic media to enhance the appeal and accuracy of presentations.

(2.2) Deliver expository presentations:

a. Marshal evidence in support of a thesis and related claims, including information on all relevant perspectives.

b. Make distinctions between the relative value and significance of specific data, facts, and ideas.

c. Include visual aids by employing appropriate technology to organize and display information on charts, maps, and graphs.

d. Anticipate and address the listener's potential misunderstandings, biases, and expectations.

e. Use technical terms and notations accurately.

(2.3) Apply appropriate interviewing techniques:

a. Prepare and ask relevant questions.

b. Make notes of responses.
c. Use language that conveys maturity, sensitivity, and respect.
d. Respond correctly and effectively to questions.
e. Demonstrate knowledge of the subject or organization.
f. Compile and report responses.
g. Evaluate the effectiveness of the interview.

**Specific applications of Listening and Speaking Strategies and Applications standards (grades 11-12)**

(1.8) Use effective and interesting language, including:
   a. Informal expressions for effect
   b. Standard American English for clarity
   c. Technical language for specificity
   c. Use the selected media skillfully, editing appropriately and monitoring for quality.
   d. Test the audience's response and revise the presentation accordingly

**3.0 Career Planning and Management**

Students understand how to make effective decisions, use career information, and manage personal career plans:

3.1 Know the personal qualifications, interests, aptitudes, information, and skills necessary to succeed in careers.
3.2 Understand the scope of career opportunities and know the requirements for education, training, and licensure.
3.3 Develop a career plan that is designed to reflect career interests, pathways, and postsecondary options.
3.4 Understand the role and function of professional organizations, industry associations, and organized labor in a productive society.
3.5 Understand the past, present, and future trends that affect careers, such as technological developments and societal trends, and the resulting need for lifelong learning.
3.6 Know important strategies for self-promotion in the hiring process, such as job applications, résumé writing, interviewing skills, and preparation of a portfolio.

**4.0 Technology: Students know how to use contemporary and emerging technological resources in diverse and changing personal, community, and workplace environments:**

4.1 Understand past, present, and future technological advances as they relate to a chosen pathway.
4.2 Understand the use of technological resources to gain access to, manipulate, and produce information, products, and services.
4.3 Understand the influence of current and emerging technology on selected segments of the economy.
4.4 Understand geographic information systems (G.I.S.).
4.5 Determine the validity of the content and evaluate the authenticity, reliability, and bias of electronic and other resources.
4.6 Differentiate among, select, and apply appropriate tools and technology.

**5.0 Problem Solving and Critical Thinking:** Students understand how to create alternative solutions by using critical and creative thinking skills, such as logical reasoning, analytical thinking, and problem-solving techniques:

5.1 Apply appropriate problem-solving strategies and critical thinking skills to work-related issues and tasks.
5.2 Understand the systematic problem-solving models that incorporate input, process, outcome, and feedback components.
5.3 Use critical thinking skills to make informed decisions and solve problems.

**6.0 Health and Safety:** Students understand health and safety policies, procedures, regulations, and practices, including the use of equipment and handling of hazardous materials:

6.1 Know policies, procedures, and regulations regarding health and safety in the workplace, including employers' and employees' responsibilities.
6.2 Understand critical elements of health and safety practices related to storing, cleaning, and maintaining tools, equipment, and supplies.
6.3 Understand how to locate important information on a material safety data sheet.
6.4 Maintain safe and healthful working conditions.
6.5 Use tools and machines safely and appropriately.
6.6 Know how to both prevent and respond to accidents in the agricultural industry.

7.0 Responsibility and Flexibility: Students know the behaviors associated with the demonstration of responsibility and flexibility in personal, workplace, and community settings:
7.1 Understand the qualities and behaviors that constitute a positive and professional work demeanor.
7.2 Understand the importance of accountability and responsibility in fulfilling personal, community, and workplace roles.
7.3 Understand the need to adapt to varied roles and responsibilities.
7.4 Understand that individual actions can affect the larger community.
7.5 Understand the importance of time management to fulfill responsibilities.
7.6 Know how to apply high-quality craftsmanship to a product or presentation and continually refine and perfect it.

8.0 Ethics and Legal Responsibilities: Students understand professional, ethical, and legal behavior consistent with applicable laws, regulations, and organizational norms:
8.1 Know the major local, district, state, and federal regulatory agencies and entities that affect the industry and how they enforce laws and regulations.
8.2 Understand the concept and application of ethical and legal behavior consistent with workplace standards.
8.3 Understand the role of personal integrity and ethical behavior in the workplace.
8.4 Understand how to access, analyze, and implement quality assurance information.

9.0 Leadership and Teamwork: Students understand effective leadership styles, key concepts of group dynamics, team and individual decision making, the benefits of workforce diversity, and conflict resolution:
9.1 Understand the characteristics and benefits of teamwork, leadership, and citizenship in the school, community, and workplace settings.
9.2 Understand the ways in which preprofessional associations, such as the Future Farmers of America (FFA), and competitive career development activities enhance academic skills, promote career choices, and contribute to employability.
9.3 Understand how to organize and structure work individually and in teams for effective performance and the attainment of goals.
9.4 Know multiple approaches to conflict resolution and their appropriateness for a variety of situations in the workplace.
9.5 Understand how to interact with others in ways that demonstrate respect for individual and cultural differences and for the attitudes and feelings of others.
9.6 Understand leadership, cooperation, collaboration, and effective decision-making skills applied in group or team activities, including the student organization.

10.0 Technical Knowledge and Skills: Students understand the essential knowledge and skills common to all pathways in the Agriculture and Natural Resources sector:
10.1 Understand the aims, purposes, history, and structure of the FFA student organization, and know the opportunities it makes available.
10.2 Manage and actively engage in a career-related, supervised agricultural experience.
10.3 Understand the importance of maintaining and completing the California Agricultural Record Book.
10.4 Maintain and troubleshoot equipment used in the agricultural industry.

11.0 Demonstration and Application: Students demonstrate and apply the concepts contained in the foundation and pathway standards.

Agricultural Mechanics Pathway: The Agricultural Mechanics Pathway prepares students for careers related to the construction, operation, and maintenance of equipment used by the agriculture industry. Basic agricultural mechanics skills and safety, standards B1.0 through B8.0, cover woodworking, electrical systems, plumbing, cold metal work, concrete, and welding technology. Advanced topics, standards B9.0 through B12.0, deal with metal fabrication, small engines, agriculture power and technology, and agriculture construction.
B1.0 Students understand personal and group safety:
   B1.1 Practice the rules for personal and group safety while working in an agricultural mechanics environment.
B1.2 Know the relationship between accepted shop management procedures and a safe working environment.
B1.3 Know how to safely secure loads on a variety of vehicles.

B2.0 Students understand the principles of basic woodworking:
B2.1 Know how to identify common wood products, lumber types, and sizes.
B2.2 Know how to calculate board feet, lumber volume, and square feet.
B2.3 Know how to identify, select, and implement basic fastening systems.
B2.4 Complete a woodworking project, including interpreting a plan, developing a bill of materials and cutting list, selecting materials, shaping, joining, and finishing.

B3.0 Students understand the basic electricity principles and wiring practices commonly used in agriculture:
B3.1 Understand the relationship between voltage, amperage, resistance, and power in single-phase alternating current (AC) circuits.
B3.2 Know how to use proper electrical test equipment for AC and direct current (DC).
B3.3 Analyze and correct basic circuit problems (e.g., open circuits, short circuits, incorrect grounding).
B3.4 Understand proper basic electrical circuit and wiring techniques with nonmetallic cable and conduit as defined by the National Electric Code.
B3.5 Interpret basic agricultural electrical plans.

B4.0 Students understand plumbing system practices commonly used in agriculture:
B4.1 Know basic plumbing fitting skills with a variety of materials, such as copper, PVC (polyvinyl chloride), steel, polyethylene, and ABS (acrylonitrile butadiene styrene).
B4.2 Understand the environmental influences on plumbing system choices (e.g., filter systems, water disposal).
B4.3 Know how various plumbing and irrigation systems are used in agriculture.
B4.4 Complete a plumbing project, including interpreting a plan, developing a bill of materials and cutting list, selecting materials, joining, and testing.

B5.0 Students understand agricultural cold metal processes:
B5.1 Know how to identify common metals, sizes, and shapes.
B5.2 Know basic tool-fitting skills.
B5.3 Know layout skills.
B5.4 Know basic cold metal processes (e.g., shearing, cutting, drilling, threading, bending).
B5.5 Complete a cold metal project, including interpreting a plan, developing a bill of materials, selecting materials, shaping, fastening, and finishing.

B6.0 Students understand concrete and masonry practices commonly used in agriculture:
B6.1 Understand how to accurately calculate volume, materials needed, and project costs for a concrete or masonry project.
B6.2 Know proper bed preparation, concrete forms layout, and construction.
B6.3 Complete a concrete or masonry project, including developing a bill of materials, assembling, mixing, placing, and finishing.

B7.0 Students understand oxy-fuel cutting and welding:
B7.1 Understand the role of heat and oxidation in the cutting process.
B7.2 Know how to properly set up, adjust, shut down, and maintain an oxy-fuel system.
B7.3 Know how to flame-cut metal with an oxy-fuel cutting torch.
B7.4 Know how to fusion-weld mild steel with and without filler rod by using oxy-fuel equipment.
B7.5 Know basic repair skills using a variety of techniques, such as brazing or hard surfacing.

B8.0 Students understand electric arc welding processes:
B8.1 Know how to select, properly adjust, safely employ, and maintain appropriate welding equipment (e.g., gas metal arc welding, shielded metal arc welding, gas tungsten arc welding).
B8.2 Apply gas metal arc welding, shielded metal arc welding, or flux core arc welding processes to fusion-weld mild steel with appropriate welding electrodes and related equipment.
B8.3 Weld a variety of joints in various positions.
B8.4 Know how to read welding symbols and plans, select electrodes, fit-up joints, and control heat and distortion.

B9.0 Students understand advanced metallurgy principles and fabrication techniques:
B9.1 Understand metallurgy principles, including distortion, hardening, tempering, and annealing.
B9.2 Operate and maintain various arc welding and cutting systems safely and appropriately.
B9.3 Operate and maintain fabrication tools and equipment safely and appropriately.
B9.4 Understand how to design project plans by using mechanical drawing techniques.
B9.5 Understand how to finish a metal project by implementing proper sequencing.
B9.6 Know how to manipulate and finish metal by using a variety of machines and techniques (e.g., lathe, mill, CNC plasma, shears, press break).
B9.7 Construct a welding project (using any electric welding process, appropriate products, joints, and positions), including interpreting a plan, developing a bill of materials, selecting materials, and developing a clear and concise fabrication contract.

B10.0 Students understand small and compact engines:
B10.1 Understand engine theory for both two- and four-stroke cycle engines.
B10.2 Know different types of small engines and their applications.
B10.3 Know small engine parts and explain the various systems (e.g., fuel, ignition, compression, cooling, lubrication systems).
B10.4 Know how to troubleshoot and solve problems with small engines.
B10.5 Know how to disassemble, inspect, adjust, and reassemble a small engine.
B10.6 Know how to look up parts, apply repair and maintenance recommendations from a repair manual, and complete appropriate forms, including work orders.

B11.0 Students understand the principles and applications of various engines and machinery used in agriculture:
B11.1 Understand how to identify common agricultural machinery.
B11.2 Operate and maintain equipment safely and efficiently.
B11.3 Know the various types of engines found on agricultural machinery and understand the theory and safe operation of their systems (e.g., cooling, electrical, fuel).
B11.4 Know the theory and operation of mobile hydraulic systems and power take-off systems.
B11.5 Troubleshoot common problems with engines and agricultural equipment.
B11.6 Understand the theory and operation of 12-volt DC electronic and electrical systems (e.g., circuit design, starting, charging, and safety circuits).

B12.0 Students understand land measurement and construction techniques commonly used in agriculture:
B12.1 Understand common surveying techniques used in agriculture (e.g., leveling, land measurement, building layout).
B12.2 Know how to draw and interpret architectural plans.
B12.3 Know how to install single- and three-phase wiring and control systems found in agricultural structures, pumps, and irrigation systems.
B12.4 Install plumbing in agricultural structures (e.g., potable water, sewer, irrigation).
B12.5 Form, place, and finish concrete or masonry (e.g., concrete block).
B12.6 Understand how to construct agricultural structures by using wood framing and steel framing systems (e.g., barns, shops, greenhouses, animal structures).
B12.7 Develop clear and concise agricultural construction contracts.

G. ASSESSMENT PROCEDURES

The criteria on which students will be graded in the course will be based on tests and student evaluations which include:

1. Essay type or subjective tests 15%
2. Objective tests 10%
3. Actual test of ability in shop skills 15%
4. Shop performance and cleanup 10%
5. Project completion and quality 40%
6. Participation in co-curricular activities (FFA) 10%

The following range is used to determine what grade a student will receive at the quarter and semester.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range 1</th>
<th>Range 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90%</td>
<td>100%</td>
</tr>
<tr>
<td>B</td>
<td>80%</td>
<td>89%</td>
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<tr>
<td>C</td>
<td>70%</td>
<td>79%</td>
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<tr>
<td>D</td>
<td>60%</td>
<td>69%</td>
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<tr>
<td>F</td>
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<td>59%</td>
</tr>
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</table>
District Wide Course of Study Title:

Agriculture Economics

A. COURSE INFORMATION

Grade Level: 12

Length of Course: 1 Semester

Maximum Credit: 5

Type:
Recommendation for Enrollment: Students should have completed 2-3 years of agriculture courses in their designated agriculture career pathway, OR they should receive the consent of the instructor.

COURSE DESCRIPTION This class is a survey and basic understanding of the economics of the agriculture industry. It is an introduction to the economic aspects of agriculture and their implications to the agricultural producer, consumer and the food system. The management principles encountered in the day to day operation of an agricultural enterprise are stressed as they relate to the decision making process. Students will study and discuss agricultural issues and what role economic systems play in the agricultural industry.

B. INSTRUCTIONAL MATERIALS

Economics Principles in Action: Prentice Hall 2001

Supplemental Materials
The U.S. Farm Bill latest revised Edition
Exploring Farm Cooperatives Agric. Council of CA 2003

C. COURSE OUTLINE

Ag. Economics

A) Definition of Economics
1) Economic goods and services
2) Opportunity costs
3) Goals of the American Economy

B) Role of Economics
1) Historical development of the role of agricultural economic policy in the U.S.
2) Relationships of the agricultural economy to the general U.S. economy

C) Introduction to Economics, Agricultural Economics, and Economic Growth
1) Scarcity
2) Role of labor  
3) Role of Capital  
4) Role of technology  

D) Role of Natural Resources in Economic Growth  
1) Land  
2) Water  
3) Minerals  

E) Production Principles  
1) Elements of the production process  
2) Differences between agriculture and industrial production  
3) Efficiency  

F) Economic Systems  
1) Market  
2) Traditional  
3) Command  
   a) Influences on the system  
   b) Technology  
   c) Values  
   d) Population  
   e) Government Policy  

G) Microeconomics  
1) Demand  
   a) Utility  
   b) Consumer Behavior  
   c) Food Products  
2) Supply  
   a) Types of input costs  
   b) Effect of technology on costs  
   c) Revenue considerations  
3) Business Organization  
   a) Single Proprietorship  
   b) Partnerships  
   c) Corporations  
   d) Cooperatives  
4) Markets and Their Structure  
   a) Commodities  
   b) Futures  
5) Distribution of Income  
   a) Differences  
   b) Determining Factors  
   c) Governmental role  
6) Market Structure  
   a) Monopolistic competition  
   b) Perfect competition  
   c) Role of government  
   d) Planning and zoning  

H) Macroeconomics  
1) Indicators  
   a) Consumer price index  
   b) Gross Nat’l product deflator  
   c) Employment  
   d) Cost of living  
   e) Inflation  
   f) Trade Balance
2) Government Programs and Policies
   a) Budget process
   b) Spending/taxing
   c) Monetary policy
      (1) money
      (2) Federal Reserve
   d) Financial Intermediaries/
   e) Agriculture Programs
      (1) loans
      (2) subsidies
      (3) alternatives
I) International Economics
   1) Agriculture trade and economic development
   2) Foreign trade policy
   3) Tariffs
      a) Quotas
      b) Food as a weapon
J) Importance of exports
   1) Goals of policy
   2) Criteria of policy formulation
   3) Problem solving environment
   4) Problem solving approach
K) The problem solving approach and policy formulation
L) Problems in Resources Development
   1) United States
      a) Rural
      b) Urban
   2) Developing countries

D. COURSE OBJECTIVES FOR
After completion of this course students will:
   1. Understand the activities that lead to the development of our government, the evolution of the
      Constitution, and the essential principles of the structure of our government.
   2. Students will be able to distinguish between the branches of government and identify the duties
      of each branch.
   3. Students will be able to identify the social context and public opinion of our government system.
   4. Students will be able to outline the process of election.
   5. Students will understand the Bill of Rights and explain the meaning and implication of each right
      in our society.
   6. Students will be able to distinguish between the powers of state government and the national
      government.
   7. Students will recognize the role of tariffs and quotas as they relate to international agriculture
      trade and economic development.
   8. Students understand how government organizations affect agriculture and the characteristics of
      and differences between national and international trade.
   9. Students understand how government organizations affect agriculture and the characteristics of
      and differences between national and international trade.
10. Students will understand economic principles as they relate to agribusiness.
11. Students will be able to make management decisions based on their analysis and interpretation of
    economic information using the appropriate technology.
12. Student should be able to distinguish the differences between agricultural and industrial
    production.
13. Students will recognize the role of tariffs and quotas as they relate to international agriculture trade and economic development.
14. Students will distinguish between rural and urban problems in resource development.

1.1 Mathematics: Specific applications of Algebra I standards (grades eight through twelve):

(10.0) Students add, subtract, multiply, and divide monomials and polynomials. Students solve multistep problems, including word problems, by using these techniques.
(12.0) Students simplify fractions with polynomials in the numerator and denominator by factoring both and reducing them to the lowest terms.
(13.0) Students add, subtract, multiply, and divide rational expressions and functions. Students solve both computationally and conceptually challenging problems by using these techniques.
(15.0) Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.

Specific applications of Geometry standards (grades eight through twelve):

(8.0) Students know, derive, and solve problems involving the perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures.
(10.0) Students compute areas of polygons, including rectangles, scalene triangles, equilateral triangles, rhombi, parallelograms, and trapezoids.
(11.0) Students determine how changes in dimensions affect the perimeter, area, and volume of common geometric figures and solids.
(12.0) Students find and use measures of sides and of interior and exterior angles of triangles and polygons to classify figures and solve problems.

Specific applications of Probability and Statistics standards (grades eight through twelve):

(8.0) Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

1.2 Science: Specific applications of Investigation and Experimentation standards (grades nine through twelve):

(1.a) Select and use appropriate tools and technology (such as computer-linked probes, spreadsheets, and graphing calculators) to perform tests, collect data, analyze relationships, and display data.
(1.c) Identify possible reasons for inconsistent results, such as sources of error or uncontrolled conditions.
(1.d) Formulate explanations by using logic and evidence.
(1.f) Distinguish between hypothesis and theory as scientific terms.
(1.j) Recognize the issues of statistical variability and the need for controlled tests.
(1.l) Analyze situations and solve problems that require combining and applying concepts from more than one area of science.
(1.m) Investigate a science-based societal issue by researching the literature, analyzing data, and communicating the findings. Examples of issues include irradiation of food, cloning of animals by somatic cell nuclear transfer, choice of energy sources, and land and water use decisions in California.

1.3 History-Social Science: Specific applications of Principles of Economics standards (grade twelve):

(12.2) Students analyze the elements of America's market economy in a global setting.
(12.2.2) Discuss the effects of changes in supply and/or demand on the relative scarcity, price, and quantity of particular products.
(12.2.3) Explain the roles of property rights, competition, and profit in a market economy.
(12.2.5) Understand the process by which competition among buyers and sellers determines a market price.
(12.2.6) Describe the effect of price controls on buyers and sellers.
(12.2.7) Analyze how domestic and international competition in a market economy affects goods and services produced and the quality, quantity, and price of those products.
(12.2.10) Discuss the economic principles that guide the location of agricultural production and industry and the spatial distribution of transportation and retail facilities.
(12.4) Students analyze the elements of the U.S. labor market in a global setting.
(12.4.3) Discuss wage differences among jobs and professions, using the laws of demand and supply and the concept of productivity.
2.0 Communications: Students understand the principles of effective oral, written, and multimedia communication in a variety of formats and contexts. (The standards listed below retain in parentheses the numbering as specified in the English-language arts content standards adopted by the State Board of Education.)

1 Reading: Specific applications of Reading Comprehension standards (grades nine and ten):
(2.1) Analyze the structure and format of functional workplace documents, including the graphics and headers, and explain how authors use the features to achieve their purposes.
(2.2) Prepare a bibliography of reference materials for a report using a variety of consumer, workplace, and public documents.
(2.3) Generate relevant questions about readings on issues that can be researched.
(2.6) Demonstrate use of sophisticated learning tools by following technical directions (e.g., those found with graphic calculators and specialized software programs and in access guides to World Wide Web sites on the Internet).
(2.7) Critique the logic of functional documents by examining the sequence of information and procedures in anticipation of possible reader misunderstandings.
(2.8) Evaluate the credibility of an author's argument or defense of a claim by critiquing the relationship between generalizations and evidence, the comprehensiveness of evidence, and the way in which the author's intent affects the structure and tone of the text (e.g., in professional journals, editorials, political speeches, primary source material).

Specific applications of Reading Comprehension standards (grades eleven and twelve):
(2.1) Analyze both the features and the rhetorical devices of different types of public documents (e.g., policy statements, speeches, debates, platforms) and the way in which authors use those features and devices.
(2.3) Verify and clarify facts presented in other types of expository texts by using a variety of consumer, workplace, and public documents.
(2.4) Make warranted and reasonable assertions about the author's arguments by using elements of the text to defend and clarify interpretations.

2 Writing: Specific applications of Writing Strategies and Applications standards (grades 9-10)
(1.1) Establish a controlling impression or coherent thesis that conveys a clear and distinctive perspective on the subject and maintain a consistent tone and focus throughout the piece of writing.
(1.2) Use precise language, action verbs, sensory details, appropriate modifiers, and the active rather than the passive voice.
(1.3) Use clear research questions and suitable research methods (e.g., library, electronic media, personal interview) to elicit and present evidence from primary and secondary sources.
(1.5) Synthesize information from multiple sources and identify complexities and discrepancies in the information and the different perspectives found in each medium (e.g., almanacs, microfiche, news sources, in-depth field studies, speeches, journals, technical documents).
(2.3) Write expository compositions, including analytical essays and research reports:
   a. Marshal evidence in support of a thesis and related claims, including information on all relevant perspectives.
   b. Convey information and ideas from primary and secondary sources accurately and coherently.
   c. Make distinctions between the relative value and significance of specific data, facts, and ideas.
   d. Include visual aids by employing appropriate technology to organize and record information on charts, maps, and graphs.
   e. Anticipate and address readers' potential misunderstandings, biases, and expectations.
   f. Use technical terms and notations accurately.
(2.5) Write business letters:
   a. Provide clear and purposeful information and address the intended audience appropriately.
   b. Use appropriate vocabulary, tone, and style to take into account the nature of the relationship with, and the knowledge and interests of, the recipients.
   c. Highlight central ideas or images.
   d. Follow a conventional style with page formats, fonts, and spacing that contribute to the documents' readability and impact.
(2.6) Write technical documents (e.g., a manual on rules of behavior for conflict resolution, procedures for conducting a meeting, minutes of a meeting):
   a. Report information and convey ideas logically and correctly.
   b. Offer detailed and accurate specifications.
   c. Include scenarios, definitions, and examples to aid comprehension (e.g., troubleshooting guide).
   d. Anticipate readers’ problems, mistakes, and misunderstandings.

Specific applications of Writing Strategies and Applications standards (grades eleven and twelve):
(1.3) Structure ideas and arguments in a sustained, persuasive, and sophisticated way and support them with precise and relevant examples.
(1.6) Develop presentations by using clear research questions and creative and critical research strategies (e.g., field studies, oral histories, interviews, experiments, electronic sources).
(1.7) Use systematic strategies to organize and record information (e.g., anecdotal scripting, annotated bibliographies).
(1.8) Integrate databases, graphics, and spreadsheets into word-processed documents.
(2.5) Write job applications and résumés:
   a. Provide clear and purposeful information and address the intended audience appropriately.
   b. Use varied levels, patterns, and types of language to achieve intended effects and aid comprehension.
   c. Modify the tone to fit the purpose and audience.
   d. Follow the conventional style for that type of document (e.g., résumé, memorandum) and use page formats, fonts, and spacing that contribute to the readability and impact of the document.
(2.6) Deliver multimedia presentations:
   a. Combine text, images, and sound and draw information from many sources (e.g., television broadcasts, videos, films, newspapers, magazines, CD-ROMs, the Internet, electronic media-generated images).
   b. Select an appropriate medium for each element of the presentation.
   c. Use the selected media skillfully, editing appropriately and monitoring for quality.
   d. Test the audience’s response and revise the presentation accordingly.

2.3 Written and Oral English Language Conventions: Specific applications of English Language Conventions standards (grades eleven and twelve):
(1.1) Demonstrate control of grammar, diction, and paragraph and sentence structure and an understanding of English usage.
(1.2) Produce legible work that shows accurate spelling and correct punctuation and capitalization.
(1.3) Reflect appropriate manuscript requirements in writing.

2.4 Listening and Speaking: Specific applications of Listening and Speaking Strategies and Applications standards (grades nine and ten):
(1.1) Formulate judgments about the ideas under discussion and support those judgments with convincing evidence.
(1.7) Use props, visual aids, graphs, and electronic media to enhance the appeal and accuracy of presentations.
(2.2) Deliver expository presentations:
   a. Marshal evidence in support of a thesis and related claims, including information on all relevant perspectives.
   b. Convey information and ideas from primary and secondary sources accurately and coherently.
   c. Make distinctions between the relative value and significance of specific data, facts, and ideas.
   d. Include visual aids by employing appropriate technology to organize and display information on charts, maps, and graphs.
   e. Anticipate and address the listener’s potential misunderstandings, biases, and expectations.
   f. Use technical terms and notations accurately.
(2.3) Apply appropriate interviewing techniques:
   a. Prepare and ask relevant questions.
   b. Make notes of responses.
   c. Use language that conveys maturity, sensitivity, and respect.
   d. Respond correctly and effectively to questions.
   e. Demonstrate knowledge of the subject or organization.
   f. Compile and report responses.
   g. Evaluate the effectiveness of the interview.
Specific applications of Listening and Speaking Strategies and Applications standards (grades 11-12)

(1.8) Use effective and interesting language, including:
   a. Informal expressions for effect
   b. Standard American English for clarity
   c. Technical language for specificity

(1.14) Analyze the techniques used in media messages for a particular audience and evaluate their effectiveness (e.g., Orson Welles’ radio broadcast “War of the Worlds”).

(2.4) Deliver multimedia presentations:
   a. Combine text, images, and sound by incorporating information from a wide range of media, including films, newspapers, magazines, CD-ROMs, online information, television, videos, and electronic media-generated images.
   b. Select an appropriate medium for each element of the presentation.
   c. Use the selected media skillfully, editing appropriately and monitoring for quality.
   d. Test the audience’s response and revise the presentation accordingly

3.0 Career Planning and Management
Students understand how to make effective decisions, use career information, and manage personal career plans:
3.1 Know the personal qualifications, interests, aptitudes, information, and skills necessary to succeed in careers.
3.2 Understand the scope of career opportunities and know the requirements for education, training, and licensure.
3.3 Develop a career plan that is designed to reflect career interests, pathways, and postsecondary options.
3.4 Understand the role and function of professional organizations, industry associations, and organized labor in a productive society.
3.5 Understand the past, present, and future trends that affect careers, such as technological developments and societal trends, and the resulting need for lifelong learning.
3.6 Know important strategies for self-promotion in the hiring process, such as job applications, résumé writing, interviewing skills, and preparation of a portfolio.

4.0 Technology: Students know how to use contemporary and emerging technological resources in diverse and changing personal, community, and workplace environments:
4.1 Understand past, present, and future technological advances as they relate to a chosen pathway.
4.2 Understand the use of technological resources to gain access to, manipulate, and produce information, products, and services.
4.3 Understand the influence of current and emerging technology on selected segments of the economy.
4.4 Understand geographic information systems (G.I.S.).
4.5 Determine the validity of the content and evaluate the authenticity, reliability, and bias of electronic and other resources.
4.6 Differentiate among, select, and apply appropriate tools and technology.

5.0 Problem Solving and Critical Thinking: Students understand how to create alternative solutions by using critical and creative thinking skills, such as logical reasoning, analytical thinking, and problem-solving techniques:
5.1 Apply appropriate problem-solving strategies and critical thinking skills to work-related issues and tasks.
5.2 Understand the systematic problem-solving models that incorporate input, process, outcome, and feedback components.
5.3 Use critical thinking skills to make informed decisions and solve problems.

6.0 Health and Safety: Students understand health and safety policies, procedures, regulations, and practices, including the use of equipment and handling of hazardous materials:
6.1 Know policies, procedures, and regulations regarding health and safety in the workplace, including employers’ and employees’ responsibilities.
6.2 Understand critical elements of health and safety practices related to storing, cleaning, and maintaining tools, equipment, and supplies.
6.3 Understand how to locate important information on a material safety data sheet.
6.4 Maintain safe and healthful working conditions.
6.5 Use tools and machines safely and appropriately.
6.6 Know how to both prevent and respond to accidents in the agricultural industry.

7.0 Responsibility and Flexibility: Students know the behaviors associated with the demonstration of responsibility and flexibility in personal, workplace, and community settings:
7.1 Understand the qualities and behaviors that constitute a positive and professional work demeanor.
7.2 Understand the importance of accountability and responsibility in fulfilling personal, community, and workplace roles.
7.3 Understand the need to adapt to varied roles and responsibilities.
7.4 Understand that individual actions can affect the larger community.
7.5 Understand the importance of time management to fulfill responsibilities.
7.6 Know how to apply high-quality craftsmanship to a product or presentation and continually refine and perfect it.

8.0 Ethics and Legal Responsibilities: Students understand professional, ethical, and legal behavior consistent with applicable laws, regulations, and organizational norms:
8.1 Know the major local, district, state, and federal regulatory agencies and entities that affect the industry and how they enforce laws and regulations.
8.2 Understand the concept and application of ethical and legal behavior consistent with workplace standards.
8.3 Understand the role of personal integrity and ethical behavior in the workplace.
8.4 Understand how to access, analyze, and implement quality assurance information.

9.0 Leadership and Teamwork: Students understand effective leadership styles, key concepts of group dynamics, team and individual decision making, the benefits of workforce diversity, and conflict resolution:
9.1 Understand the characteristics and benefits of teamwork, leadership, and citizenship in the school, community, and workplace settings.
9.2 Understand the ways in which preprofessional associations, such as the Future Farmers of America (FFA), and competitive career development activities enhance academic skills, promote career choices, and contribute to employability.
9.3 Understand how to organize and structure work individually and in teams for effective performance and the attainment of goals.
9.4 Know multiple approaches to conflict resolution and their appropriateness for a variety of situations in the workplace.
9.5 Understand how to interact with others in ways that demonstrate respect for individual and cultural differences and for the attitudes and feelings of others.
9.6 Understand leadership, cooperation, collaboration, and effective decision-making skills applied in group or team activities, including the student organization.

10.0 Technical Knowledge and Skills: Students understand the essential knowledge and skills common to all pathways in the Agriculture and Natural Resources sector:
10.1 Understand the aims, purposes, history, and structure of the FFA student organization, and know the opportunities it makes available.
10.2 Manage and actively engage in a career-related, supervised agricultural experience.
10.3 Understand the importance of maintaining and completing the California Agricultural Record Book.
10.4 Maintain and troubleshoot equipment used in the agricultural industry.

11.0 Demonstration and Application: Students demonstrate and apply the concepts contained in the foundation and pathway standards.

Agricultural Business Pathway: In the Agricultural Business Pathway, students learn about agricultural business operation and management. Topics include accounting, finance, economics, business organization, marketing, and sales.

A1.0 Students understand decision-making processes within the American free enterprise system:
A1.1 Differentiate among the components of the American free enterprise system and other forms of economic systems.
A1.2 Distinguish among the main characteristics of individual proprietorships, partnerships, corporations, and cooperatives.
A1.3 Understand the advantages and disadvantages of the four types of business ownership.
A1.4 Analyze appropriate decision-making tools and financial records to make key management decisions.
A1.5 Analyze physical production relationships to determine optimum use levels.
A1.6 Understand how to calculate the fixed and variable costs associated with the production of agricultural products and determine the output level that will yield maximum profit.

A2.0 Students understand the fundamental economic principles of agribusiness and agricultural production:
A2.1 Understand how basic economic factors affect agricultural production and agribusiness management decisions.
A2.2 Know basic agricultural economic terminology.
A2.3 Understand the law of supply and demand as it affects price determination.
A2.4 Analyze how agriculture uses scarce resources to meet the needs and demands of its consumers.
A2.5 Differentiate between elastic and inelastic supply and demand.
A2.6 Understand the law of diminishing returns and its impact on agricultural production.

A3.0 Students understand the role of credit in agribusiness and agricultural production:
A3.1 Analyze the factors that determine the cost of credit in order to select optimum credit sources (e.g., the advantages and disadvantages of borrowing from the various types of credit providers and sources for short-, intermediate-, and long-term credit).
A3.2 Know the criteria lenders use to evaluate repayment capacity.
A3.3 Analyze balance sheets and cash-flow statements to determine the ability to repay loans.

A4.0 Students understand proper accounting principles and procedures used in business management and tax planning:
A4.1 Understand the differences between cash and accrual accounting systems.
A4.2 Understand the use and importance of budgets, income statements, balance sheets, and financial statements.
A4.3 Understand the basis of taxation within the tax system and its impact on the economy, including the role of taxes in agribusiness.
A4.4 Analyze the role of depreciation and purchasing in tax planning and liability.
A4.5 Understand how to determine property values and how to complete a depreciation schedule.
A4.6 Understand how to determine the tax obligations for an agribusiness.

A5.0 Students understand basic risk management principles and their impact on economic viability:
A5.1 Understand environmental responsibility and its impact on agribusiness.
A5.2 Understand the concept of liability and the economic impact of being held liable.
A5.3 Understand the concept and process of risk management, including the use of risk management tools such as insurance.
A5.4 Understand how recordkeeping, farm plans, and an analysis of best practices affect risk management decisions.
A5.5 Understand the role of contingency plans in risk management.

A6.0 Students understand the role and value of agricultural organizations:
A6.1 Understand the benefits of private, public, and governmental organizations, including the value and impact of cooperatives.
A6.2 Understand how participation within organizations would be beneficial in supporting various agricultural operations.
A6.3 Understand how to identify and electronically access public and private agricultural organizations.

A7.0 Students understand agricultural marketing systems:
A7.1 Understand how marketing functions in a free market society.
A7.2 Understand the advantages and disadvantages of the various marketing options for agricultural products and services.
A7.3 Understand how the law of comparative advantage affects agricultural production.
A7.4 Understand the impact of advertising and promotion on the marketing of agricultural products and services.
A7.5 Understand how promotion trends for agricultural products influence individuals.
A7.6 Understand how to develop a marketing plan for an agricultural product or service.

A8.0 Students understand the sales of agricultural products and services:
A8.1 Determine the most effective methods for assessing customer needs and wants.
A8.2 Understand the stages in making a successful sale and the various techniques used to approach potential customers and overcome their objections.
A8.3 Examine the physiological and psychological factors that influence motivation to purchase, including the fundamental steps in making a purchase.

A9.0 Students understand local, national, and international agricultural markets and how trade affects the economy:

A9.1 Understand how the importance of agricultural imports and exports affects state and national economies.
A9.2 Know how governmental, economic, and cultural factors affect international trade.
A9.3 Compare and contrast United States trade policies with those of other important trading partners.
A9.4 Understand how biotechnology affects trade and global economies.
A9.5 Understand how different cultural values affect agricultural production and marketing.
A9.6 Understand how negotiations and bargaining agreements affect trade agreements.
A9.7 Analyze agricultural marketing strategies in other parts of the world.

C. Agriscience Pathway

C1.0 Students understand the role of agriculture in the California economy:
C1.1 Understand the history of the agricultural industry in California.
C1.3 Understand the interrelationship of California agriculture and society at the local, state, national, and international levels.
C2.1 Understand important agricultural environmental impacts on soil, water, and air.
C2.2 Understand current agricultural environmental challenges.
C3.2 Understand how technology influences factors such as labor, efficiency, diversity, availability, mechanization, communication, and so forth.
C3.4 Understand the laws and regulations concerning biotechnology.
C4.4 Understand various points of view regarding the use of animals.

E. Forestry and Natural Resources Pathway

E1.4 Compare the effects on air and water quality of using different forms of energy.
E2.0 Students understand air and water use, management practices, and conservation strategies:
E2.1 Understand the government’s role in regulating air, soil, and water use management practices and conservation strategies.
E13.3 Understand the role of public and private property rights and how they affect agriculture.
E13.4 Understand the role of government in managing public and private property rights.

G. Plant and Soil Science Pathway

G8.1 Understand California water history, current issues, water rights, water law, and water transfer through different distribution projects throughout the state.
G8.2 Understand the local, state, and federal agencies that regulate water quality and availability in California.

Principles of American Democracy

12.1 Students explain the fundamental principles and moral values of American democracy as expressed in the U.S. Constitution and other essential documents of American democracy.

1. Analyze the influence of ancient Greek, Roman, English, and leading European political thinkers such as John Locke, Charles-Louis Montesquieu, Niccolò Machiavelli, and William Blackstone on the development of American government.
2. Discuss the character of American democracy and its promise and perils as articulated by Alexis de Tocqueville.
3. Explain how the U.S. Constitution reflects a balance between the classical republican concern with promotion of the public good and the classical liberal concern with protecting individual rights; and discuss how the basic premises of liberal constitutionalism and democracy are joined in the Declaration of Independence as "self-evident truths."
4. Explain how the Founding Fathers' realistic view of human nature led directly to the establishment of a constitutional system that limited the power of the governors and the governed as articulated in the Federalist Papers.
5. Describe the systems of separated and shared powers, the role of organized interests (Federalist Paper Number 10), checks and balances (Federalist Paper Number 51), the importance of an independent
judiciary (Federalist Paper Number 78), enumerated powers, rule of law, federalism, and civilian control of the military.

6. Understand that the Bill of Rights limits the powers of the federal government and state governments.

2.2 Students evaluate and take and defend positions on the scope and limits of rights and obligations as democratic citizens, the relationships among them, and how they are secured.

1. Discuss the meaning and importance of each of the rights guaranteed under the Bill of Rights and how each is secured (e.g., freedom of religion, speech, press, assembly, petition, privacy).
2. Explain how economic rights are secured and their importance to the individual and to society (e.g., the right to acquire, use, transfer, and dispose of property; right to choose one's work; right to join or not join labor unions; copyright and patent).
3. Discuss the individual's legal obligations to obey the law, serve as a juror, and pay taxes.
4. Understand the obligations of civic-mindedness, including voting, being informed on civic issues, volunteering and performing public service, and serving in the military or alternative service.
5. Describe the reciprocity between rights and obligations; that is, why enjoyment of one's rights entails respect for the rights of others.
6. Explain how one becomes a citizen of the United States, including the process of naturalization (e.g., literacy, language, and other requirements).

12.3 Students evaluate and take and defend positions on what the fundamental values and principles of civil society are (i.e., the autonomous sphere of voluntary personal, social, and economic relations that are not part of government), their interdependence, and the meaning and importance of those values and principles for a free society.

1. Explain how civil society provides opportunities for individuals to associate for social, cultural, religious, economic, and political purposes.
2. Explain how civil society makes it possible for people, individually or in association with others, to bring their influence to bear on government in ways other than voting and elections.
3. Discuss the historical role of religion and religious diversity.
4. Compare the relationship of government and civil society in constitutional democracies to the relationship of government and civil society in authoritarian and totalitarian regimes.

12.4 Students analyze the unique roles and responsibilities of the three branches of government as established by the U.S. Constitution.

1. Discuss Article I of the Constitution as it relates to the legislative branch, including eligibility for office and lengths of terms of representatives and senators; election to office; the roles of the House and Senate in impeachment proceedings; the role of the vice president; the enumerated legislative powers; and the process by which a bill becomes a law.
2. Explain the process through which the Constitution can be amended.
3. Identify their current representatives in the legislative branch of the national government.
4. Discuss Article II of the Constitution as it relates to the executive branch, including eligibility for office and length of term, election to and removal from office, the oath of office, and the enumerated executive powers.
5. Discuss Article III of the Constitution as it relates to judicial power, including the length of terms of judges and the jurisdiction of the Supreme Court.
6. Explain the processes of selection and confirmation of Supreme Court justices.

12.5 Students summarize landmark U.S. Supreme Court interpretations of the Constitution and its amendments.

1. Understand the changing interpretations of the Bill of Rights over time, including interpretations of the basic freedoms (religion, speech, press, petition, and assembly) articulated in the First Amendment and the due process and equal-protection-of-the-law clauses of the Fourteenth Amendment.
2. Analyze judicial activism and judicial restraint and the effects of each policy over the decades (e.g., the Warren and Rehnquist courts).
3. Evaluate the effects of the Court's interpretations of the Constitution in Marbury v. Madison, McCulloch v. Maryland, and United States v. Nixon, with emphasis on the arguments espoused by each side in these cases.

12.6 Students evaluate issues regarding campaigns for national, state, and local elective offices.
1. Analyze the origin, development, and role of political parties, noting those occasional periods in which there was only one major party or were more than two major parties.
2. Discuss the history of the nomination process for presidential candidates and the increasing importance of primaries in general elections.
3. Evaluate the roles of polls, campaign advertising, and the controversies over campaign funding.
4. Describe the means that citizens use to participate in the political process (e.g., voting, campaigning, lobbying, filing a legal challenge, demonstrating, petitioning, picketing, running for political office).
5. Discuss the features of direct democracy in numerous states (e.g., the process of referendums, recall elections).
6. Analyze trends in voter turnout; the causes and effects of reapportionment and redistricting, with special attention to spatial districting and the rights of minorities; and the function of the Electoral College.

12.7 Students analyze and compare the powers and procedures of the national, state, tribal, and local governments.
1. Explain how conflicts between levels of government and branches of government are resolved.
2. Identify the major responsibilities and sources of revenue for state and local governments.
3. Discuss reserved powers and concurrent powers of state governments.
4. Discuss the Ninth and Tenth Amendments and interpretations of the extent of the federal government's power.
5. Explain how public policy is formed, including the setting of the public agenda and implementation of it through regulations and executive orders.
6. Compare the processes of lawmaking at each of the three levels of government, including the role of lobbying and the media.
7. Identify the organization and jurisdiction of federal, state, and local (e.g., California) courts and the interrelationships among them.
8. Understand the scope of presidential power and decision making through examination of case studies such as the Cuban Missile Crisis, passage of Great Society legislation, War Powers Act, Gulf War, and Bosnia.

12.8 Students evaluate and take and defend positions on the influence of the media on American political life.
1. Discuss the meaning and importance of a free and responsible press.
2. Describe the roles of broadcast, print, and electronic media, including the Internet, as means of communication in American politics.
3. Explain how public officials use the media to communicate with the citizenry and to shape public opinion.

12.9 Students analyze the origins, characteristics, and development of different political systems across time, with emphasis on the quest for political democracy, its advances, and its obstacles.
1. Explain how the different philosophies and structures of feudalism, mercantilism, socialism, fascism, communism, monarchies, parliamentary systems, and constitutional liberal democracies influence economic policies, social welfare policies, and human rights practices.
2. Compare the various ways in which power is distributed, shared, and limited in systems of shared powers and in parliamentary systems, including the influence and role of parliamentary leaders (e.g., William Gladstone, Margaret Thatcher).
3. Discuss the advantages and disadvantages of federal, con federal, and unitary systems of government.
4. Describe for at least two countries the consequences of conditions that gave rise to tyrannies during certain periods (e.g., Italy, Japan, Haiti, Nigeria, Cambodia).
5. Identify the forms of illegitimate power that twentieth-century African, Asian, and Latin American dictators used to gain and hold office and the conditions and interests that supported them.
6. Identify the ideologies, causes, stages, and outcomes of major Mexican, Central American, and South American revolutions in the nineteenth and twentieth centuries.
7. Describe the ideologies that give rise to Communism, methods of maintaining control, and the movements to overthrow such governments in Czechoslovakia, Hungary, and Poland, including the roles of individuals (e.g., Alexander Solzhenitsyn, Pope John Paul II, Lech Walesa, Vaclav Havel).

8. Identify the successes of relatively new democracies in Africa, Asia, and Latin America and the ideas, leaders, and general societal conditions that have launched and sustained, or failed to sustain, them.

12.10 Students formulate questions about and defend their analyses of tensions within our constitutional democracy and the importance of maintaining a balance between the following concepts: majority rule and individual rights; liberty and equality; state and national authority in a federal system; civil disobedience and the rule of law; freedom of the press and the right to a fair trial; the relationship of religion and government.

Principles of Economics

12.1 Students understand common economic terms and concepts and economic reasoning.
   1. Examine the causal relationship between scarcity and the need for choices.
   2. Explain opportunity cost and marginal benefit and marginal cost.
   3. Identify the difference between monetary and non-monetary incentives and how changes in incentives cause changes in behavior.
   4. Evaluate the role of private property as an incentive in conserving and improving scarce resources, including renewable and nonrenewable natural resources.
   5. Analyze the role of a market economy in establishing and preserving political and personal liberty (e.g., through the works of Adam Smith).

12.2 Students analyze the elements of America's market economy in a global setting.
   1. Understand the relationship of the concept of incentives to the law of supply and the relationship of the concept of incentives and substitutes to the law of demand.
   2. Discuss the effects of changes in supply and/ or demand on the relative scarcity, price, and quantity of particular products.
   3. Explain the roles of property rights, competition, and profit in a market economy.
   4. Explain how prices reflect the relative scarcity of goods and services and perform the allocative function in a market economy.
   5. Understand the process by which competition among buyers and sellers determines a market price.
   6. Describe the effect of price controls on buyers and sellers.
   7. Analyze how domestic and international competition in a market economy affects goods and services produced and the quality, quantity, and price of those products.
   8. Explain the role of profit as the incentive to entrepreneurs in a market economy.
   9. Describe the functions of the financial markets.
   10. Discuss the economic principles that guide the location of agricultural production and industry and the spatial distribution of transportation and retail facilities.

12.3 Students analyze the influence of the federal government on the American economy.
   1. Understand how the role of government in a market economy often includes providing for national defense, addressing environmental concerns, defining and enforcing property rights, attempting to make markets more competitive, and protecting consumers' rights.
   2. Identify the factors that may cause the costs of government actions to outweigh the benefits.
   3. Describe the aims of government fiscal policies (taxation, borrowing, spending) and their influence on production, employment, and price levels.
   4. Understand the aims and tools of monetary policy and their influence on economic activity (e.g., the Federal Reserve).

12.4 Students analyze the elements of the U.S. labor market in a global setting.
   1. Understand the operations of the labor market, including the circumstances surrounding the establishment of principal American labor unions, procedures that unions use to gain benefits for their members, the effects of unionization, the mini-mum wage, and unemployment insurance.
   2. Describe the current economy and labor market, including the types of goods and services produced, the types of skills workers need, the effects of rapid technological change, and the impact of international competition.
3. Discuss wage differences among jobs and professions, using the laws of demand and supply and the concept of productivity.

4. Explain the effects of international mobility of capital and labor on the U.S. economy.

12.5 Students analyze the aggregate economic behavior of the U.S. economy.

1. Distinguish between nominal and real data.

2. Define, calculate, and explain the significance of an unemployment rate, the number of new jobs created monthly, an inflation or deflation rate, and a rate of economic growth.

3. Distinguish between short-term and long-term interest rates and explain their relative significance.

12.6 Students analyze issues of international trade and explain how the U.S. economy affects, and is affected by, economic forces beyond the United States's borders.

1. Identify the gains in consumption and production efficiency from trade, with emphasis on the main products and changing geographic patterns of twentieth-century trade among countries in the Western Hemisphere.

2. Compare the reasons for and the effects of trade restrictions during the Great Depression compared with present-day arguments among labor, business, and political leaders over the effects of free trade on the economic and social interests of various groups of Americans.

3. Understand the changing role of international political borders and territorial sovereignty in a global economy.

4. Explain foreign exchange, the manner in which exchange rates are determined, and the effects of the dollar's gaining (or losing) value relative to other currencies.

E. **STUDENT EVALUATION STANDARDS**

Homework/Class work **

Supervised Agriculture Experience Program **

FFA – Leadership **

Quizzes & Tests **

Participation/Career Readiness **

**Weighting is based on individual school sites.

**SEMESTER BREAKDOWN:**

Quarter 1 = 40%

Quarter 2 = 40%

Final = 20%

F. **SUGGESTED INSTRUCTIONAL ACTIVITIES**

Prepared By: Elizabeth Bledsoe, Clay Freeman, Amy Mertz
A. **COURSE INFORMATION**

Grade Level: 12

Length of Course: 1 Semester

Maximum Credit: 5

Type:
Recommendation for Enrollment: Students should have completed 2-3 years of agriculture courses in their designated agriculture career pathway, OR they should receive the consent of the instructor.

**COURSE DESCRIPTION**
This course is designed to familiarize students with the structure and processes of the United States Government system. Students will learn about the responsibilities and rights of citizenship, voting, political, parties, elections, campaigns, the Constitution, the branches of government, and the Bill of Rights. Students will also learn about state powers as it compares to the national government powers, and be introduced to world leadership. Students will study and discuss agricultural issues and what role the government system plays in the agricultural industry.

B. **INSTRUCTIONAL MATERIALS**
*Magruder's American Government*, Prentice Hall
*We the People: Center for Civic Education* 2009

**Supplemental Materials**
*The Federalist Papers*. New American Library/Mentor
The U.S. Farm Bill latest revised Edition
*Exploring Farm Cooperatives* Agric. Council of CA 2003
C. **COURSE OUTLINE**

**Ag Government**

A) The Constitution

1) Development of Government
   a) Civic Republicanism
   b) Religious tolerance
   c) Spirit of individualism
   d) Philosophy of natural rights
   e) Established church
   f) Wide ownership of land
   g) Rural society

2) Evolution of the Constitution
   a) Majority rule/Minority rights
   b) Large state/Small states
   c) Popular rule/knowledgeable elite rule
   d) Essential Principles
   e) Separation of power
   f) Checks /Balances
   g) Feceralism
   h) Equal representation
   i) Due process
   j) Popular sovereignty
   k) Individual rights/responsibilities
   l) Common shared values

3) American Government

  1) Structure
  2) Congress
  3) Presidency
  4) Bureaucracy
  5) Judiciary
  6) Other political parties

C) Mechanics of Congressional Bills

  1) From an Idea to Law
  2) Responsibilities of the Speaker of the House
  3) Parliamentary Procedure

D) Civil Liberties

  1) Social context
     a) Socioeconomic status
     b) Race
     c) Sex
     d) Religion
     e) Age
     f) Region

  2) Public Opinion
     a) Party identification
     b) Political ideology
     c) Attitudes

  3) Elections
     a) Nomination process
     b) Voting
     c) Volunteerism
     d) Democratic features
e) Funding

4) Bill of Rights
   a) Freedom of speech
   b) Freedom of press
   c) Right to assembly
   d) Freedom of religion
   e) Due process
   f) Limit of power

5) Individual Freedoms/Public Necessity
   a) Crime
   b) Discrimination
   c) Eminent domain
   d) Taxes
   e) Defense
   f) Schooling

E) Federalism
   1) Structure
      a) Federal government officers
      b) State government officers
      c) Local government officers
      d) Functions
      e) Court systems
      f) Law enforcement
   2) Federal/State Government
      a) Reserve powers
      b) Incorporation
      c) Jurisdiction
      d) Resources
   3) Federal/State Legal System
      a) Criminal/Civil matters
      b) Family/Juvenile Law
   4) Role of Local Government
      a) Education
      b) Crime
      c) Taxes
         (1) Regulation
   5) Agribusiness Taxation
   6) Introduction to Taxes
   7) Income Tax Management

F) Agriculture Policy
   1) Domestic International Issues
   2) Preoccupation with security
   3) Government influence

G) Agriculture Law
   1) Historical & Current Sources of Law
   2) Regulatory Agencies
   3) Laws Affecting Ag Enterprises
   4) Labor Law
   5) Ag. Property Rights
   6) Farm Leases
   7) Ag. Liability Laws
   8) Air and Water

H) Global Marketing and Trade
   1) World government
D. COURSE OBJECTIVES FOR

After completion of this course students will:
1. Understand the activities that lead to the development of our government, the evolution of the Constitution, and the essential principles of the structure of our government.
2. Students will be able to distinguish between the branches of government and identify the duties of each branch.
3. Students will be able to identify the social context and public opinion of our government system.
4. Students will be able to outline the process of election.
5. Students will understand the Bill of Rights and explain the meaning and implication of each right in our society.
6. Students will be able to distinguish between the powers of state government and the national government.
7. Students will recognize the role of tariffs and quotas as they relate to international agriculture trade and economic development.
8. Students understand how government organizations affect agriculture and the characteristics of and differences between national and international trade.
9. Students understand how government organizations affect agriculture and the characteristics of and differences between national and international trade.
10. Students will understand economic principles as they relate to agribusiness.
11. Students will be able to make management decisions based on their analysis and interpretation of economic information using the appropriate technology.
12. Student should be able to distinguish the differences between agricultural and industrial production.
13. Students will recognize the role of tariffs and quotas as they relate to international agriculture trade and economic development.
14. Students will distinguish between rural and urban problems in resource development.

Foundation Standards

1.1 Mathematics: Specific applications of Algebra I standards (grades eight through twelve):

10.0 Students add, subtract, multiply, and divide monomials and polynomials. Students solve multistep problems, including word problems, by using these techniques.
12.0 Students simplify fractions with polynomials in the numerator and denominator by factoring both and reducing them to the lowest terms.
13.0 Students add, subtract, multiply, and divide rational expressions and functions. Students solve both computationally and conceptually challenging problems by using these techniques.
15.0 Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.

Specific applications of Geometry standards (grades eight through twelve):

18.0 Students know, derive, and solve problems involving the perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures.
(10.0) Students compute areas of polygons, including rectangles, scalene triangles, equilateral triangles, rhombi, parallelograms, and trapezoids.
(11.0) Students determine how changes in dimensions affect the perimeter, area, and volume of common geometric figures and solids.
(12.0) Students find and use measures of sides and of interior and exterior angles of triangles and polygons to classify figures and solve problems.

**Specific applications of Probability and Statistics standards (grades eight through twelve):**
(8.0) Students organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line and bar graphs, stem-and-leaf displays, scatterplots, and box-and-whisker plots.

**1.2 Science:** Specific applications of Investigation and Experimentation standards (grades nine through twelve):
(1.a) Select and use appropriate tools and technology (such as computer-linked probes, spreadsheets, and graphing calculators) to perform tests, collect data, analyze relationships, and display data.
(1.c) Identify possible reasons for inconsistent results, such as sources of error or uncontrolled conditions.
(1.d) Formulate explanations by using logic and evidence.
(1.f) Distinguish between hypothesis and theory as scientific terms.
(1.j) Recognize the issues of statistical variability and the need for controlled tests.
(1.l) Analyze situations and solve problems that require combining and applying concepts from more than one area of science.
(1.m) Investigate a science-based societal issue by researching the literature, analyzing data, and communicating the findings. Examples of issues include irradiation of food, cloning of animals by somatic cell nuclear transfer, choice of energy sources, and land and water use decisions in California.

**1.3 History–Social Science:** Specific applications of Principles of Economics standards (grade twelve):
(12.2) Students analyze the elements of America’s market economy in a global setting.
(12.2.2) Discuss the effects of changes in supply and/or demand on the relative scarcity, price, and quantity of particular products.
(12.2.3) Explain the roles of property rights, competition, and profit in a market economy.
(12.2.5) Understand the process by which competition among buyers and sellers determines a market price.
(12.2.6) Describe the effect of price controls on buyers and sellers.
(12.2.7) Analyze how domestic and international competition in a market economy affects goods and services produced and the quality, quantity, and price of those products.
(12.2.10) Discuss the economic principles that guide the location of agricultural production and industry and the spatial distribution of transportation and retail facilities.
(12.4) Students analyze the elements of the U.S. labor market in a global setting.
(12.4.3) Discuss wage differences among jobs and professions, using the laws of demand and supply and the concept of productivity.

**2.0 Communications:** Students understand the principles of effective oral, written, and multimedia communication in a variety of formats and contexts. (The standards listed below retain in parentheses the numbering as specified in the English–language arts content standards adopted by the State Board of Education.)

**2.1 Reading:** Specific applications of Reading Comprehension standards (grades nine and ten):
(2.1) Analyze the structure and format of functional workplace documents, including the graphics and headers, and explain how authors use the features to achieve their purposes.
(2.2) Prepare a bibliography of reference materials for a report using a variety of consumer, workplace, and public documents.
(2.3) Generate relevant questions about readings on issues that can be researched.
(2.6) Demonstrate use of sophisticated learning tools by following technical directions (e.g., those found with graphic calculators and specialized software programs and in access guides to World Wide Web sites on the Internet).
(2.7) Critique the logic of functional documents by examining the sequence of information and procedures in anticipation of possible reader misunderstandings.
(2.8) Evaluate the credibility of an author’s argument or defense of a claim by critiquing the relationship between generalizations and evidence, the comprehensiveness of evidence, and the way in which the author’s
intent affects the structure and tone of the text (e.g., in professional journals, editorials, political speeches, primary source material).

**Specific applications of Reading Comprehension standards (grades eleven and twelve):**

(2.1) Analyze both the features and the rhetorical devices of different types of public documents (e.g., policy statements, speeches, debates, platforms) and the way in which authors use those features and devices.

(2.3) Verify and clarify facts presented in other types of expository texts by using a variety of consumer, workplace, and public documents.

(2.4) Make warranted and reasonable assertions about the author’s arguments by using elements of the text to defend and clarify interpretations.

**2.2 Writing:** Specific applications of Writing Strategies and Applications standards (grades 9-10)

(1.1) Establish a controlling impression or coherent thesis that conveys a clear and distinctive perspective on the subject and maintain a consistent tone and focus throughout the piece of writing.

(1.2) Use precise language, action verbs, sensory details, appropriate modifiers, and the active rather than the passive voice.

(1.3) Use clear research questions and suitable research methods (e.g., library, electronic media, personal interview) to elicit and present evidence from primary and secondary sources.

(1.5) Synthesize information from multiple sources and identify complexities and discrepancies in the information and the different perspectives found in each medium (e.g., almanacs, microfiche, news sources, in-depth field studies, speeches, journals, technical documents).

(2.3) Write expository compositions, including analytical essays and research reports:

- a. Marshal evidence in support of a thesis and related claims, including information on all relevant perspectives.
- b. Convey information and ideas from primary and secondary sources accurately and coherently.
- c. Make distinctions between the relative value and significance of specific data, facts, and ideas.
- d. Include visual aids by employing appropriate technology to organize and record information on charts, maps, and graphs.
- e. Anticipate and address readers’ potential misunderstandings, biases, and expectations.
- f. Use technical terms and notations accurately.

(2.5) Write business letters:

- a. Provide clear and purposeful information and address the intended audience appropriately.
- b. Use appropriate vocabulary, tone, and style to take into account the nature of the relationship with, and the knowledge and interests of, the recipients.
- c. Highlight central ideas or images.
- d. Follow a conventional style with page formats, fonts, and spacing that contribute to the documents’ readability and impact.

(2.6) Write technical documents (e.g., a manual on rules of behavior for conflict resolution, procedures for conducting a meeting, minutes of a meeting):

- a. Report information and convey ideas logically and correctly.
- b. Offer detailed and accurate specifications.
- c. Include scenarios, definitions, and examples to aid comprehension (e.g., troubleshooting guide).
- d. Anticipate readers’ problems, mistakes, and misunderstandings.

**Specific applications of Writing Strategies and Applications standards (grades eleven and twelve):**

(1.3) Structure ideas and arguments in a sustained, persuasive, and sophisticated way and support them with precise and relevant examples.

(1.6) Develop presentations by using clear research questions and creative and critical research strategies (e.g., field studies, oral histories, interviews, experiments, electronic sources).

(1.7) Use systematic strategies to organize and record information (e.g., anecdotal scripting, annotated bibliographies).

(1.8) Integrate databases, graphics, and spreadsheets into word-processed documents.

(2.5) Write job applications and résumés:

- a. Provide clear and purposeful information and address the intended audience appropriately.
- b. Use varied levels, patterns, and types of language to achieve intended effects and aid comprehension.
- c. Modify the tone to fit the purpose and audience.
d. Follow the conventional style for that type of document (e.g., résumé, memorandum) and use page formats, fonts, and spacing that contribute to the readability and impact of the document.

(2.6) Deliver multimedia presentations:
  a. Combine text, images, and sound and draw information from many sources (e.g., television broadcasts, videos, films, newspapers, magazines, CD-ROMs, the Internet, electronic media-generated images).
  b. Select an appropriate medium for each element of the presentation.
  c. Use the selected media skillfully, editing appropriately and monitoring for quality.
  d. Test the audience’s response and revise the presentation accordingly.

2.3 Written and Oral English Language Conventions: Specific applications of English Language Conventions standards (grades eleven and twelve):
(1.1) Demonstrate control of grammar, diction, and paragraph and sentence structure and an understanding of English usage.
(1.2) Produce legible work that shows accurate spelling and correct punctuation and capitalization.
(1.3) Reflect appropriate manuscript requirements in writing.

2.4 Listening and Speaking: Specific applications of Listening and Speaking Strategies and Applications standards (grades nine and ten):
(1.1) Formulate judgments about the ideas under discussion and support those judgments with convincing evidence.
(1.7) Use props, visual aids, graphs, and electronic media to enhance the appeal and accuracy of presentations.
(2.2) Deliver expository presentations:
  a. Marshal evidence in support of a thesis and related claims, including information on all relevant perspectives.
  b. Convey information and ideas from primary and secondary sources accurately and coherently.
  c. Make distinctions between the relative value and significance of specific data, facts, and ideas.
  d. Include visual aids by employing appropriate technology to organize and display information on charts, maps, and graphs.
  e. Anticipate and address the listener’s potential misunderstandings, biases, and expectations.
  f. Use technical terms and notations accurately.
(2.3) Apply appropriate interviewing techniques:
  a. Prepare and ask relevant questions.
  b. Make notes of responses.
  c. Use language that conveys maturity, sensitivity, and respect.
  d. Respond correctly and effectively to questions.
  e. Demonstrate knowledge of the subject or organization.
  f. Compile and report responses.
  g. Evaluate the effectiveness of the interview.

Specific applications of Listening and Speaking Strategies and Applications standards (grades 11-12)
(1.8) Use effective and interesting language, including:
  a. Informal expressions for effect
  b. Standard American English for clarity
  c. Technical language for specificity
(1.14) Analyze the techniques used in media messages for a particular audience and evaluate their effectiveness (e.g., Orson Welles’ radio broadcast “War of the Worlds”).
(2.4) Deliver multimedia presentations:
  a. Combine text, images, and sound by incorporating information from a wide range of media, including films, newspapers, magazines, CD-ROMs, online information, television, videos, and electronic media-generated images.
  b. Select an appropriate medium for each element of the presentation.
  c. Use the selected media skillfully, editing appropriately and monitoring for quality.
  d. Test the audience’s response and revise the presentation accordingly.

3.0 Career Planning and Management
Students understand how to make effective decisions, use career information, and manage personal career plans:
3.1 Know the personal qualifications, interests, aptitudes, information, and skills necessary to succeed in careers.
3.2 Understand the scope of career opportunities and know the requirements for education, training, and licensure.
3.3 Develop a career plan that is designed to reflect career interests, pathways, and postsecondary options.
3.4 Understand the role and function of professional organizations, industry associations, and organized labor in a productive society.
3.5 Understand the past, present, and future trends that affect careers, such as technological developments and societal trends, and the resulting need for lifelong learning.
3.6 Know important strategies for self-promotion in the hiring process, such as job applications, résumé writing, interviewing skills, and preparation of a portfolio.

4.0 Technology: Students know how to use contemporary and emerging technological resources in diverse and changing personal, community, and workplace environments:
4.1 Understand past, present, and future technological advances as they relate to a chosen pathway.
4.2 Understand the use of technological resources to gain access to, manipulate, and produce information, products, and services.
4.3 Understand the influence of current and emerging technology on selected segments of the economy.
4.4 Understand geographic information systems (G.I.S.).
4.5 Determine the validity of the content and evaluate the authenticity, reliability, and bias of electronic and other resources.
4.6 Differentiate among, select, and apply appropriate tools and technology.

5.0 Problem Solving and Critical Thinking: Students understand how to create alternative solutions by using critical and creative thinking skills, such as logical reasoning, analytical thinking, and problem-solving techniques:
5.1 Apply appropriate problem-solving strategies and critical thinking skills to work-related issues and tasks.
5.2 Understand the systematic problem-solving models that incorporate input, process, outcome, and feedback components.
5.3 Use critical thinking skills to make informed decisions and solve problems.

6.0 Health and Safety: Students understand health and safety policies, procedures, regulations, and practices, including the use of equipment and handling of hazardous materials:
6.1 Know policies, procedures, and regulations regarding health and safety in the workplace, including employers' and employees’ responsibilities.
6.2 Understand critical elements of health and safety practices related to storing, cleaning, and maintaining tools, equipment, and supplies.
6.3 Understand how to locate important information on a material safety data sheet.
6.4 Maintain safe and healthful working conditions.
6.5 Use tools and machines safely and appropriately.
6.6 Know how to both prevent and respond to accidents in the agricultural industry.

7.0 Responsibility and Flexibility: Students know the behaviors associated with the demonstration of responsibility and flexibility in personal, workplace, and community settings:
7.1 Understand the qualities and behaviors that constitute a positive and professional work demeanor.
7.2 Understand the importance of accountability and responsibility in fulfilling personal, community, and workplace roles.
7.3 Understand the need to adapt to varied roles and responsibilities.
7.4 Understand that individual actions can affect the larger community.
7.5 Understand the importance of time management to fulfill responsibilities.
7.6 Know how to apply high-quality craftsmanship to a product or presentation and continually refine and perfect it.

8.0 Ethics and Legal Responsibilities: Students understand professional, ethical, and legal behavior consistent with applicable laws, regulations, and organizational norms:
8.1 Know the major local, district, state, and federal regulatory agencies and entities that affect the industry and how they enforce laws and regulations.
8.2 Understand the concept and application of ethical and legal behavior consistent with workplace standards.
8.3 Understand the role of personal integrity and ethical behavior in the workplace.
8.4 Understand how to access, analyze, and implement quality assurance information.

9.0 Leadership and Teamwork: Students understand effective leadership styles, key concepts of group dynamics, team and individual decision making, the benefits of workforce diversity, and conflict resolution:
9.1 Understand the characteristics and benefits of teamwork, leadership, and citizenship in the school, community, and workplace settings.
9.2 Understand the ways in which preprofessional associations, such as the Future Farmers of America (FFA), and competitive career development activities enhance academic skills, promote career choices, and contribute to employability.
9.3 Understand how to organize and structure work individually and in teams for effective performance and the attainment of goals.
9.4 Know multiple approaches to conflict resolution and their appropriateness for a variety of situations in the workplace.
9.5 Understand how to interact with others in ways that demonstrate respect for individual and cultural differences and for the attitudes and feelings of others.
9.6 Understand leadership, cooperation, collaboration, and effective decision-making skills applied in group or team activities, including the student organization.

10.0 Technical Knowledge and Skills: Students understand the essential knowledge and skills common to all pathways in the Agriculture and Natural Resources sector:
10.1 Understand the aims, purposes, history, and structure of the FFA student organization, and know the opportunities it makes available.
10.2 Manage and actively engage in a career-related, supervised agricultural experience.
10.3 Understand the importance of maintaining and completing the California Agricultural Record Book.
10.4 Maintain and troubleshoot equipment used in the agricultural industry.

11.0 Demonstration and Application: Students demonstrate and apply the concepts contained in the foundation and pathway standards.

Agricultural Business Pathway: In the Agricultural Business Pathway, students learn about agricultural business operation and management. Topics include accounting, finance, economics, business organization, marketing, and sales.

A1.0 Students understand decision-making processes within the American free enterprise system:
   A1.1 Differentiate among the components of the American free enterprise system and other forms of economic systems.
   A1.2 Distinguish among the main characteristics of individual proprietorships, partnerships, corporations, and cooperatives.
   A1.3 Understand the advantages and disadvantages of the four types of business ownership.
   A1.4 Analyze appropriate decision-making tools and financial records to make key management decisions.
   A1.5 Analyze physical production relationships to determine optimum use levels.
   A1.6 Understand how to calculate the fixed and variable costs associated with the production of agricultural products and determine the output level that will yield maximum profit.

A2.0 Students understand the fundamental economic principles of agribusiness and agricultural production:
   A2.1 Understand how basic economic factors affect agricultural production and agribusiness management decisions.
   A2.2 Know basic agricultural economic terminology.
   A2.3 Understand the law of supply and demand as it effects price determination.
   A2.4 Analyze how agriculture uses scarce resources to meet the needs and demands of its consumers.
   A2.5 Differentiate between elastic and inelastic supply and demand.
   A2.6 Understand the law of diminishing returns and its impact on agricultural production.

A3.0 Students understand the role of credit in agribusiness and agricultural production:
   A3.1 Analyze the factors that determine the cost of credit in order to select optimum credit sources (e.g., the advantages and disadvantages of borrowing from the various types of credit providers and sources for short-, intermediate-, and long-term credit).
   A3.2 Know the criteria lenders use to evaluate repayment capacity.
   A3.3 Analyze balance sheets and cash-flow statements to determine the ability to repay loans.

A4.0 Students understand proper accounting principles and procedures used in business management and tax planning:
A4.1 Understand the differences between cash and accrual accounting systems.
A4.2 Understand the use and importance of budgets, income statements, balance sheets, and financial statements.
A4.3 Understand the basis of taxation within the tax system and its impact on the economy, including the role of taxes in agribusiness.
A4.4 Analyze the role of depreciation and purchasing in tax planning and liability.
A4.5 Understand how to determine property values and how to complete a depreciation schedule.
A4.6 Understand how to determine the tax obligations for an agribusiness.

A5.0 Students understand basic risk management principles and their impact on economic viability:
A5.1 Understand environmental responsibility and its impact on agribusiness.
A5.2 Understand the concept of liability and the economic impact of being held liable.
A5.3 Understand the concept and process of risk management, including the use of risk management tools such as insurance.
A5.4 Understand how recordkeeping, farm plans, and an analysis of best practices affect risk management decisions.
A5.5 Understand the role of contingency plans in risk management.

A6.0 Students understand the role and value of agricultural organizations:
A6.1 Understand the benefits of private, public, and governmental organizations, including the value and impact of cooperatives.
A6.2 Understand how participation within organizations would be beneficial in supporting various agricultural operations.
A6.3 Understand how to identify and electronically access public and private agricultural organizations.

A7.0 Students understand agricultural marketing systems:
A7.1 Understand how marketing functions in a free market society.
A7.2 Understand the advantages and disadvantages of the various marketing options for agricultural products and services.
A7.3 Understand how the law of comparative advantage affects agricultural production.
A7.4 Understand the impact of advertising and promotion on the marketing of agricultural products and services.
A7.5 Understand how promotion trends for agricultural products influence individuals.
A7.6 Understand how to develop a marketing plan for an agricultural product or service.

A8.0 Students understand the sales of agricultural products and services:
A8.1 Determine the most effective methods for assessing customer needs and wants.
A8.2 Understand the stages in making a successful sale and the various techniques used to approach potential customers and overcome their objections.
A8.3 Examine the physiological and psychological factors that influence motivation to purchase, including the fundamental steps in making a purchase.

A9.0 Students understand local, national, and international agricultural markets and how trade affects the economy:
A9.1 Understand how the importance of agricultural imports and exports affects state and national economies.
A9.2 Know how governmental, economic, and cultural factors affect international trade.
A9.3 Compare and contrast United States trade policies with those of other important trading partners.
A9.4 Understand how biotechnology affects trade and global economies.
A9.5 Understand how different cultural values affect agricultural production and marketing.
A9.6 Understand how negotiations and bargaining agreements affect trade agreements.
A9.7 Analyze agricultural marketing strategies in other parts of the world.

C. Agriscience Pathway
C1.0 Students understand the role of agriculture in the California economy:
C1.1 Understand the history of the agricultural industry in California.
C1.3 Understand the interrelationship of California agriculture and society at the local, state, national, and international levels.
C2.1 Understand important agricultural environmental impacts on soil, water, and air.
C2.2 Understand current agricultural environmental challenges.
C3.2 Understand how technology influences factors such as labor, efficiency, diversity, availability, mechanization, communication, and so forth.
C3.4 Understand the laws and regulations concerning biotechnology.
C4.4 Understand various points of view regarding the use of animals.

E. Forestry and Natural Resources Pathway
E1.4 Compare the effects on air and water quality of using different forms of energy.
E2.0 Students understand air and water use, management practices, and conservation strategies:
E2.1 Understand the government’s role in regulating air, soil, and water use management practices and conservation strategies.
E13.3 Understand the role of public and private property rights and how they affect agriculture.
E13.4 Understand the role of government in managing public and private property rights.

G. Plant and Soil Science Pathway
G8.1 Understand California water history, current issues, water rights, water law, and water transfer through different distribution projects throughout the state.
G8.2 Understand the local, state, and federal agencies that regulate water quality and availability in California.

Principles of American Democracy
12.1 Students explain the fundamental principles and moral values of American democracy as expressed in the U.S. Constitution and other essential documents of American democracy.
   1. Analyze the influence of ancient Greek, Roman, English, and leading European political thinkers such as John Locke, Charles-Louis Montesquieu, Niccolò Machiavelli, and William Blackstone on the development of American government.
   2. Discuss the character of American democracy and its promise and perils as articulated by Alexis de Toqueville.
   3. Explain how the U.S. Constitution reflects a balance between the classical republican concern with promotion of the public good and the classical liberal concern with protecting individual rights; and discuss how the basic premises of liberal constitutionalism and democracy are joined in the Declaration of Independence as "self-evident truths."
   4. Explain how the Founding Fathers' realistic view of human nature led directly to the establishment of a constitutional system that limited the power of the governors and the governed as articulated in the Federalist Papers.
   5. Describe the systems of separated and shared powers, the role of organized interests (Federalist Paper Number 10), checks and balances (Federalist Paper Number 51), the importance of an independent judiciary (Federalist Paper Number 78), enumerated powers, rule of law, federalism, and civilian control of the military.
   6. Understand that the Bill of Rights limits the powers of the federal government and state governments.

12.2 Students evaluate and take and defend positions on the scope and limits of rights and obligations as democratic citizens, the relationships among them, and how they are secured.
   1. Discuss the meaning and importance of each of the rights guaranteed under the Bill of Rights and how each is secured (e.g., freedom of religion, speech, press, assembly, petition, privacy).
   2. Explain how economic rights are secured and their importance to the individual and to society (e.g., the right to acquire, use, transfer, and dispose of property; right to choose one's work; right to join or not join labor unions; copyright and patent).
   3. Discuss the individual's legal obligations to obey the law, serve as a juror, and pay taxes.
   4. Understand the obligations of civic-mindedness, including voting, being informed on civic issues, volunteering and performing public service, and serving in the military or alternative service.
   5. Describe the reciprocity between rights and obligations; that is, why enjoyment of one's rights entails respect for the rights of others.
   6. Explain how one becomes a citizen of the United States, including the process of naturalization (e.g., literacy, language, and other requirements).
12.3 Students evaluate and take and defend positions on what the fundamental values and principles of civil society are (i.e., the autonomous sphere of voluntary personal, social, and economic relations that are not part of government), their interdependence, and the meaning and importance of those values and principles for a free society.

   1. Explain how civil society provides opportunities for individuals to associate for social, cultural, religious, economic, and political purposes.
   2. Explain how civil society makes it possible for people, individually or in association with others, to bring their influence to bear on government in ways other than voting and elections.
   3. Discuss the historical role of religion and religious diversity.
   4. Compare the relationship of government and civil society in constitutional democracies to the relationship of government and civil society in authoritarian and totalitarian regimes.

12.4 Students analyze the unique roles and responsibilities of the three branches of government as established by the U.S. Constitution.

   1. Discuss Article I of the Constitution as it relates to the legislative branch, including eligibility for office and lengths of terms of representatives and senators; election to office; the roles of the House and Senate in impeachment proceedings; the role of the vice president; the enumerated legislative powers; and the process by which a bill becomes a law.
   2. Explain the process through which the Constitution can be amended.
   3. Identify their current representatives in the legislative branch of the national government.
   4. Discuss Article II of the Constitution as it relates to the executive branch, including eligibility for office and length of term, election to and removal from office, the oath of office, and the enumerated executive powers.
   5. Discuss Article III of the Constitution as it relates to judicial power, including the length of terms of judges and the jurisdiction of the Supreme Court.
   6. Explain the processes of selection and confirmation of Supreme Court justices.

12.5 Students summarize landmark U.S. Supreme Court interpretations of the Constitution and its amendments.

   1. Understand the changing interpretations of the Bill of Rights over time, including interpretations of the basic freedoms (religion, speech, press, petition, and assembly) articulated in the First Amendment and the due process and equal-protection-of-the-law clauses of the Fourteenth Amendment.
   2. Analyze judicial activism and judicial restraint and the effects of each policy over the decades (e.g., the Warren and Rehnquist courts).
   3. Evaluate the effects of the Court's interpretations of the Constitution in *Marbury v. Madison*, *McCulloch v. Maryland*, and *United States v. Nixon*, with emphasis on the arguments espoused by each side in these cases.

12.6 Students evaluate issues regarding campaigns for national, state, and local elective offices.

   1. Analyze the origin, development, and role of political parties, noting those occasional periods in which there was only one major party or were more than two major parties.
   2. Discuss the history of the nomination process for presidential candidates and the increasing importance of primaries in general elections.
   3. Evaluate the roles of polls, campaign advertising, and the controversies over campaign funding.
   4. Describe the means that citizens use to participate in the political process (e.g., voting, campaigning, lobbying, filing a legal challenge, demonstarting, petitioning, picketing, running for political office).
   5. Discuss the features of direct democracy in numerous states (e.g., the process of referendums, recall elections).
   6. Analyze trends in voter turnout; the causes and effects of reapportionment and redistricting, with special attention to spatial districting and the rights of minorities; and the function of the Electoral College.

12.7 Students analyze and compare the powers and procedures of the national, state, tribal, and local governments.

   1. Explain how conflicts between levels of government and branches of government are resolved.
   2. Identify the major responsibilities and sources of revenue for state and local governments.
3. Discuss reserved powers and concurrent powers of state governments.
4. Discuss the Ninth and Tenth Amendments and interpretations of the extent of the federal government's power.
5. Explain how public policy is formed, including the setting of the public agenda and implementation of it through regulations and executive orders.
6. Compare the processes of lawmaking at each of the three levels of government, including the role of lobbying and the media.
7. Identify the organization and jurisdiction of federal, state, and local (e.g., California) courts and the interrelationships among them.
8. Understand the scope of presidential power and decision making through examination of case studies such as the Cuban Missile Crisis, passage of Great Society legislation, War Powers Act, Gulf War, and Bosnia.

12.8 Students evaluate and take and defend positions on the influence of the media on American political life.
1. Discuss the meaning and importance of a free and responsible press.
2. Describe the roles of broadcast, print, and electronic media, including the Internet, as means of communication in American politics.
3. Explain how public officials use the media to communicate with the citizenry and to shape public opinion.

12.9 Students analyze the origins, characteristics, and development of different political systems across time, with emphasis on the quest for political democracy, its advances, and its obstacles.
1. Explain how the different philosophies and structures of feudalism, mercantilism, socialism, fascism, communism, monarchies, parliamentary systems, and constitutional liberal democracies influence economic policies, social welfare policies, and human rights practices.
2. Compare the various ways in which power is distributed, shared, and limited in systems of shared powers and in parliamentary systems, including the influence and role of parliamentary leaders (e.g., William Gladstone, Margaret Thatcher).
3. Discuss the advantages and disadvantages of federal, con federal, and unitary systems of government.
4. Describe for at least two countries the consequences of conditions that gave rise to tyrannies during certain periods (e.g., Italy, Japan, Haiti, Nigeria, Cambodia).
5. Identify the forms of illegitimate power that twentieth-century African, Asian, and Latin American dictators used to gain and hold office and the conditions and interests that supported them.
6. Identify the ideologies, causes, stages, and outcomes of major Mexican, Central American, and South American revolutions in the nineteenth and twentieth centuries.
7. Describe the ideologies that give rise to Communism, methods of maintaining control, and the movements to overthrow such governments in Czechoslovakia, Hungary, and Poland, including the roles of individuals (e.g., Alexander Solzhenitsyn, Pope John Paul II, Lech Walesa, Vaclav Havel).
8. Identify the successes of relatively new democracies in Africa, Asia, and Latin America and the ideas, leaders, and general societal conditions that have launched and sustained, or failed to sustain, them.

12.10 Students formulate questions about and defend their analyses of tensions within our constitutional democracy and the importance of maintaining a balance between the following concepts: majority rule and individual rights; liberty and equality; state and national authority in a federal system; civil disobedience and the rule of law; freedom of the press and the right to a fair trial; the relationship of religion and government.

**Principles of Economics**
12.1 Students understand common economic terms and concepts and economic reasoning.
1. Examine the causal relationship between scarcity and the need for choices.
2. Explain opportunity cost and marginal benefit and marginal cost.
3. Identify the difference between monetary and non monetary incentives and how changes in incentives cause changes in behavior.
4. Evaluate the role of private property as an incentive in conserving and improving scarce resources, including renewable and nonrenewable natural resources.
5. Analyze the role of a market economy in establishing and preserving political and personal liberty (e.g., through the works of Adam Smith).

12.2 Students analyze the elements of America's market economy in a global setting.
1. Understand the relationship of the concept of incentives to the law of supply and the relationship of the concept of incentives and substitutes to the law of demand.
2. Discuss the effects of changes in supply and/or demand on the relative scarcity, price, and quantity of particular products.
3. Explain the roles of property rights, competition, and profit in a market economy.
4. Explain how prices reflect the relative scarcity of goods and services and perform the allocative function in a market economy.
5. Understand the process by which competition among buyers and sellers determines a market price.
6. Describe the effect of price controls on buyers and sellers.
7. Analyze how domestic and international competition in a market economy affects goods and services produced and the quality, quantity, and price of those products.
8. Explain the role of profit as the incentive to entrepreneurs in a market economy.
9. Describe the functions of the financial markets.
10. Discuss the economic principles that guide the location of agricultural production and industry and the spatial distribution of transportation and retail facilities.

12.3 Students analyze the influence of the federal government on the American economy.
1. Understand how the role of government in a market economy often includes providing for national defense, addressing environmental concerns, defining and enforcing property rights, attempting to make markets more competitive, and protecting consumers' rights.
2. Identify the factors that may cause the costs of government actions to outweigh the benefits.
3. Describe the aims of government fiscal policies (taxation, borrowing, spending) and their influence on production, employment, and price levels.
4. Understand the aims and tools of monetary policy and their influence on economic activity (e.g., the Federal Reserve).

12.4 Students analyze the elements of the U.S. labor market in a global setting.
1. Understand the operations of the labor market, including the circumstances surrounding the establishment of principal American labor unions, procedures that unions use to gain benefits for their members, the effects of unionization, the minimum wage, and unemployment insurance.
2. Describe the current economy and labor market, including the types of goods and services produced, the types of skills workers need, the effects of rapid technological change, and the impact of international competition.
3. Discuss wage differences among jobs and professions, using the laws of demand and supply and the concept of productivity.
4. Explain the effects of international mobility of capital and labor on the U.S. economy.

12.5 Students analyze the aggregate economic behavior of the U.S. economy.
1. Distinguish between nominal and real data.
2. Define, calculate, and explain the significance of an unemployment rate, the number of new jobs created monthly, an inflation or deflation rate, and a rate of economic growth.
3. Distinguish between short-term and long-term interest rates and explain their relative significance.

12.6 Students analyze issues of international trade and explain how the U.S. economy affects, and is affected by, economic forces beyond the United States's borders.
1. Identify the gains in consumption and production efficiency from trade, with emphasis on the main products and changing geographic patterns of twentieth-century trade among countries in the Western Hemisphere.
2. Compare the reasons for and the effects of trade restrictions during the Great Depression compared with present-day arguments among labor, business, and political leaders over the effects of free trade on the economic and social interests of various groups of Americans.
3. Understand the changing role of international political borders and territorial sovereignty in a global economy.
4. Explain foreign exchange, the manner in which exchange rates are determined, and the effects of the dollar's gaining (or losing) value relative to other currencies.
Appendix D

Course Syllabi
I. **Course Information**

A. Course Title: Introduction to Agriculture Earth Science
B. Instructor: Mr. Leishman
C. Contact Info: Email: michael_leishman@khsd.k12.ca.us
D. Grade Level: 9

II. **Course Description**

Introduction to Agricultural Earth Sciences is an introductory course that explores a wide variety of Agriculture industries. The goals of the course are to provide the students with a foundation for the higher levels of the Highland High School agriculture program.

Students will use scientific and mathematical applications through relevant scientific and agricultural topics. In addition, students will complete numerous lab-based and project-based activities that will give students the opportunity to develop an understanding of the scientific process and increase hand-eye coordination and motor skills. Areas of study in this course include careers in agriculture, Environmental safety and hazards, Nature Cycles, Scientific Method, Animals an society, and Plants. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration, and reinforcement of academic concepts.

Career opportunities in agriculture will be addressed and students will be encouraged to participate in a Supervised Agricultural Experience Program which will give students hands-on experience in a particular agricultural industry. The California Agriculture content standards will be taught as mandated by the California department of education.

Students will also be involved in the largest high school organization in America – The FFA. The FFA will give students opportunities to serve the community in many ways, develop leadership skills, develop public speaking skills, be an entrepreneur, and travel throughout the nation in many competitions, to say a few.

This course is more arduous and involved than the other electives. As such it is imperative that the student does not miss any class time due to the limited amount allotted to us. If the student is present, participates and involved then they will successfully pass this course.

III. **Evaluation of Student Performance**

A. The student will be expected to demonstrate knowledge and skill competence in a variety of ways:
   1. Quizzes
   2. Unit exams
   3. Semester exams
   4. Homework
5. Participation and class discussions
6. Special assignments and class projects
7. Demonstrations
8. SAE Project

B. Ten (10) percent of the student’s grade will be based on FFA participation

- **Final Examination:** The final examination at the end of both semesters will consist of multiple parts:
  - A comprehensive Agriculture Examination
  - Work on the school farm laboratory
  - A class binder with all work from the semester and year
  - Project Showcase

IV. **Classroom Routines**

A. Respect

1. Respect is the key to a successful year in class. Respect has become so cliché so let’s take a few moments to learn what that means in our class.

   1. First, every student will be treated the way you would like to be treated. There will be no name-calling or put-downs, profanity, or any other language which is deemed unacceptable at school. This includes being defiant with the teacher and talking when you are not supposed to be talking.

   2. Second, respect means assuming the best for someone. If someone is in need, help them, and so on.

   3. Third, I, the teacher want to help you. I want you to learn about agriculture and have a good time doing so. I want you to earn and A in the class and succeed to your fullest potential. You are in this class because you want to be. Therefore, doing all assignments and turning them in on time is a sign of respect. Not doing so tells me that you don’t care about the hard work I have put into preparing for the lesson.

B. Defiance or poor behavior

1. If a student is found to be defiant or displays poor behavior or lack of respect, the instructor has the right to assign work-detail on the school farm. It is the belief of the instructor that every student needs to be held responsible for every action he/she takes. These actions may be good or bad but responsibility, leadership, and respect will be key characteristics taught in this class.
C. Effort
   1. Effort is the key to success in this class. If you do not complete an assignment, a zero will be given. If effort is put in to everything in this class, you will be rewarded with a good grade. This will also be considered when inputting the final grades at the semester.

D. Class Binder
   1. Each student will be responsible for maintaining his/her own class binder. The student needs to purchase a white 1½ inch 3-ring binder and must have a clear slip on the front cover to put a cover page in. This binder will be used for the entirety of the class and each student is responsible for keeping all work in this folder. It is imperative to maintain this binder because often times we will refer back to past work. A grade will be given for maintaining this binder.

E. Attendance
   1. It is required to attend and be on-time every day to class. This is related to the respect previously discussed. Cuts and tardies will not be tolerated and will lower the final grade in the class considerably.
      1. Cuts can be made up by participating on the work-days throughout the semester. The student will provide labor on the school farm.

F. Assignments
   1. Assignments will be turned in via the “in-box” and when they are graded, they will be returned via the “out-box”. It is the responsibility of the student to keep all returned assignments in his/her class binder.
   2. Late work will be accepted but the student will receive 50% credit.

G. Borrowing stuff
   1. When items are borrowed from the teacher, a deposit needs to be given, such as your ID card, key, etc. which will be returned upon returning the borrowed item.

H. Grade remediation
   1. If a student receives a D or an F in the class, he/she may have the opportunity to bring the grade up by working an allotted amount of hours on the school farm throughout the summer. Keep in mind, the summers are very hot and days may be long. Also, keep in mind that cuts and tardies will contribute to your poor grade.
Philosophies and Grading Standards

The primary goal of the Highland high School Agriculture Department provide each student with an opportunity for the best possible education in keeping with the student’s interest and abilities. This opportunity is available so long as the student benefits do not interfere with other student’s rights to receive an education. The Highland High School Agriculture Program recognizes that individual differences exist among students. The Ag program is planned to develop a strong educational foundation, career and educational development skills, personal growth, worthy attitudes, and interest of all students enrolled.

The following grading system has been developed in order to be fair and equitable when assigning grades to students and is consistent with the philosophy and polices of the Kern High School District.

- **Class Participation and Behavior**: Effort is the key to success in the class. Students who show up every day and do all their work will receive a good grade in this class. It is not easy to receive an A in Ag, contrary to some belief. Effort will go a long way. The instructor will also consider perfect attendance and how much effort a student puts in to their work at the end of the semester.

- **Grading**: Grades are based on a percentage (90-100=A, 80-89=B, 70-79=C, 60-69=D, 0-59=F)
  
  10%  Class Participation  
  10%  FFA Participation  
  10%  SAE Project  
  25%  Tests / Quizzes  
  45%  Classroom Assignments

- **FFA Participation**: All of the Highland High School Agriculture courses fall under the California State Agriculture Curriculum. The courses/ curriculum include an “intra-curricular” format engaging classroom, SAE Projects, and FFA instruction/involvement. 10% of a student’s grades in all the agriculture courses are designed to encourage activity/involvement beyond the classroom. Activities include official school, local, and state sponsored FFA activities, meetings, school projects, and community services. Our staff is always willing to work with any student in fulfilling this requirement. Our staff ensures there are numerous opportunities available for students to achieve this goal.
  - Freshman must earn 30 points first semester and 35 points second semester.
- **SAE Project**: The Supervised Agricultural Experience Project will consist of the student working at least 50 hours on a project. The project must be related to agriculture and the student will maintain all records in the California FFA Record Book which will be provided and will turn in 5 distinctly different photographs of him/her working. The student can work for someone or start their own project. Research experiments are also permitted, as long as they meet the minimum hours and they are agricultural in nature. The project is worth 10% of the student’s grade and will be showcased at the end of both semesters in the Project Competition as part of their final exam grade.

- **Project Showcase**:
  - Every student will create a tri-fold science board that will showcase their project over the past semester to a year. The student will set up the presentation and will be judged in the Highland Project Competition. Students will be graded on the following, but limited to:
    - Effort of the project
    - Effort on the presentation
    - Skills they learned
    - Creativity and scope of the project

- **Text Message Notifications**
  - In order to better communicate with the students and remind them of upcoming events and deadlines for this class, we ask all students and parents to sign up for alerts by texting the appropriate text below:
    - General FFA Updates Text "scottyscot" to 81010
    - 2nd Period: Text "@secondbest" to 81010
    - 3rd Period: Text "@thirdnerd" to 81010
    - 5th Period Text "@fourthnot5" to 81010
    - 6th & 7th Period Text "@trojanag" to 81010
Parents: Please read, sign, and have student return this form to the Agriculture Department.

I have read the syllabus and understand what the course will entail. I also understand the expectations from the instructor, including the understanding that my son/daughter must be involved in FFA, and I will do my best to make sure this year is successful and enjoyable.

Consequences for inappropriate behavior include (but not limited to) a verbal warning, removal from class, referral, Ag Dept Work Duty on the farm, parent contact and/or HHS administration action.

I have signed up to receive text message alerts related to the classroom activities/deadlines and the FFA program.

We have discussed the information above, and throughout this packet in class. Please take the time to discuss the information with your son/daughter. Sign and return this form to the Agriculture Department. If you have any questions, please don’t hesitate to contact any of the instructors at 872-2777.

Student Name (Print)

Student Signature ____________________________ Date ______

Parent Signature ____________________________ Date ______
Parents: Please read, sign, and have student return this form to the Agriculture Department.

Highland High School Agriculture Department
Safety Policy

It is our policy that the safety and health of our instructors and students is equal in importance to the quality of our instructional program. We, as agriculture educators and students, take great pride in NOT ONLY meeting minimum safety and health standards in our school laboratories (classrooms, shops, greenhouses, and our school farm), BUT ALSO in providing the environment for the development of those safety concepts and habits which will guide the actions of each student throughout their life.
It is our policy that every instructor and student is entitled to a safe and healthful place to learn.

When a student enters our agriculture program, he or she has a right to expect a safe place in which to learn, as well as proper facilities, machines, and tools with which to learn, and that the student will be able to devote his or her energies to those studies without undue danger.

It is a basic responsibility for all to make SAFETY a part of their daily concern. This responsibility must be accepted by everyone who is involved with our agriculture programs, regardless of capacity.

Students are expected to use safety equipment provided. Rules of conduct and rules of SAFETY shall be observed. Proper steps and protocols must be followed at all times, to ensure all safety measures are met. SAFETY equipment must not be destroyed or abused. The SAFETY concept and habits developed in our agriculture program will prepare students to cope with obvious and presumed hazards in the world of work. The Joint cooperation of instructors and students in the observance of this policy will provide safe learning conditions and accident-free performance to our mutual advantage. We ask your full cooperation in making this policy effective.

Student Name (Print)

Student Signature ___________________________ Date ___________

Parent Signature ___________________________ Date ___________
I. **Course Information**

A. Course Title: Introduction to Agricultural Mechanics  
B. Instructor: Mr. Leishman  
C. Contact Info: Email: michael_leishman@khsd.k12.ca.us  
D. Grade Level 9

II. **Course Description**

Introduction to Agricultural Mechanics is an introductory course that explores a wide variety of mechanical processes. The goals of the course are to provide the students with a foundation for the higher levels of the Highland High School agriculture program.

Students will use scientific and mathematical applications through relevant mechanical topics. In addition, students will complete numerous lab-based and project-based activities that will give students the opportunity to develop an understanding of the scientific process and increase hand-eye coordination and motor skills. Areas of study in this course include careers in agriculture mechanics, mechanical safety and hazards, hand and power tools. Topic clusters in this course include electricity, plumbing, small engines, welding and metal work, wood construction, masonry and concrete work, and mechanical technology. Participation in FFA student organization activities and Supervised Agricultural Experience (SAE) projects is an integral course component for leadership development, career exploration, and reinforcement of academic concepts.

Career opportunities in agriculture will be addressed and students will be encouraged to participate in a Supervised Agricultural Experience Program which will give students hands-on experience in a particular agricultural industry. The California Agriculture content standards will be taught as mandated by the California department of education.

Students will also be involved in the largest high school organization in America – The FFA. The FFA will give students opportunities to serve the community in many ways, develop leadership skills, develop public speaking skills, be an entrepreneur, and travel throughout the nation in many competitions, to say a few.

This course is more arduous and involved than the other electives. As such it is imperative that the student does not miss any class time due to the limited amount allotted to us. If the student is present, participates and involved then they will successfully pass this course.

III. **Evaluation of Student Performance**

A. The student will be expected to demonstrate knowledge and skill competence in a variety of ways:
   1. Quizzes
   2. Unit exams
   3. Semester exams
4. Homework
5. Participation and class discussions
6. Special assignments and class projects
7. Demonstrations
8. SAE Project

B. Ten (10) percent of the student’s grade will be based on FFA participation

- Final Examination: The final examination at the end of both semesters will consist of multiple parts:
  - A comprehensive Agriculture Examination
  - Work on the school farm laboratory
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IV. Classroom Routines

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    - Creativity and scope of the project

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      - 5th Period Text "@fourthnot5" to 81010
      - 6th & 7th Period Text "@trojanag" to 81010
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Student Signature Date

Parent Signature Date
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Students are expected to use safety equipment provided. Rules of conduct and rules of SAFETY shall be observed. Proper steps and protocols must be followed at all times, to ensure all safety measures are met. SAFETY equipment must not be destroyed or abused. The SAFETY concept and habits developed in our agriculture program will prepare students to cope with obvious and presumed hazards in the world of work. The Joint cooperation of instructors and students in the observance of this policy will provide safe learning conditions and accident-free performance to our mutual advantage. We ask your full cooperation in making this policy effective.

Student Name (Print)____________________________________

Student Signature____________________________________Date______________

Parent Signature____________________________________Date______________
I. **Course Information**

A. Course Title: Environmental Horticulture and Floral  
B. Instructor: Mr. Davidson  
C. Contact Info: Email: craig_davidson@khsd.k12.ca.us  
D. Grade Level: 9

II. **Course Description**

**Course Description**
This course covers the fundamentals of the horticulture industry and the science behind plant production. Plant ID and floral design will also be taught. Students will learn theories, principles, and standards related to environmental horticulture sciences. Curriculum will focus on sustainable organic farming and composting science. Course of study will incorporate biological standards as it applies to environmental plant and soil science. Students will use investigative techniques to study aspects of the botanical world including plant anatomy and physiology, plant nutrition, plant genetics, plant reproduction and development, plant ecology, plant evolution, and plant taxonomy.

Career opportunities in the agriculture and animal science industry will be addressed and students will be encouraged to participate in a Supervised Agriculture Experience Program (SAEP) which will give students hands-on experience.

Students will also be involved in the largest student organization in America- the FFA. The FFA will give students opportunities to serve the community in many ways, through developing their leadership skills, develop their public speaking competency, be an entrepreneur, and travel throughout the state and nation- and these are just a few things that your student can do!!!

**Evaluation of Student Performance**
The student will be expected to demonstrate their knowledge and skills through several different ways:
- Quizzes
- Unit exams
- Semester exams
- Homework
- Participation in class discussion/activities
- Special assignments and class projects
- Demonstrations
- Supervised Agriculture Experience Project (SAEP) (10%)
- FFA participation (10%)

**Final Examination:** The final examination at the end of both semesters will consist of multiple parts:
- A comprehensive Earth Science Examination
- Work on the school farm laboratory
- A class binder with all work from the semester and year
- Project Showcase

Seniors in the class must work 20 hours of community service in order to pass the class. These hours must be worked in excess to any FFA activities he/she may get credit for.

III. Classroom Routines

A. Respect

1. Respect is the key to a successful year in class. Respect has become so cliché so let’s take a few moments to learn what that means in our class.

   1. First, every student will be treated the way you would like to be treated. There will be no name-calling or put-downs, profanity, or any other language which is deemed unacceptable at school. This includes being defiant with the teacher and talking when you are not supposed to be talking.

   2. Second, respect means assuming the best for someone. If someone is in need, help them, and so on.

   3. Third, I, the teacher want to help you. I want you to learn about agriculture and have a good time doing so. I want you to earn an A in the class and succeed to your fullest potential. You are in this class because you want to be. Therefore, doing all assignments and turning them in on time is a sign of respect. Not doing so tells me that you don’t care about the hard work I have put into preparing for the lesson.

B. Defiance or poor behavior

1. If a student is found to be defiant or displays poor behavior or lack of respect, the instructor has the right to assign work-detail on the school farm. It is the belief of the instructor that every student needs to be held responsible for every action he/she takes. These actions may be good or bad but responsibility, leadership, and respect will be key characteristics taught in this class.

C. Effort

1. Effort is the key to success in this class. If you do not complete an assignment, a zero will be given. If effort is put in to everything in this class, you will be rewarded with a good grade. This will also be considered when inputting the final grades at the semester.
D. Class Binder
   1. Each student will be responsible for maintaining his/her own class binder. The student needs to purchase a white 1 ½ inch 3-ring binder and must have a clear slip on the front cover to put a cover page in. This binder will be used for the entirety of the class and each student is responsible for keeping all work in this folder. It is imperative to maintain this binder because often times we will refer back to past work. A grade will be given for maintaining this binder.

E. Attendance
   1. It is required to attend and be on-time every day to class. This is related to the respect previously discussed. Cuts and tardies will not be tolerated and will lower the final grade in the class considerably.
      1. Work missed for not being in class may be made up by working ½ hr on the farm for tardies and 1 hr on the farm for each cut. If you owe 2 hours or more, it will be a grade reduction for each 2 hours if not worked off.

F. Assignments
   1. Assignments will be turned in via the “in-box” and when they are graded, they will be returned via the “out-box”. It is the responsibility of the student to keep all returned assignments in his/her class binder.
   2. Late work will be accepted but the student will receive 50% credit.

G. Borrowing stuff
   1. When items are borrowed from the teacher, a deposit needs to be given, such as your ID card, key, etc. which will be returned upon returning the borrowed item.

H. Grade remediation
   1. If a student receives a D or an F in the class, he/she may have the opportunity to bring the grade up by working an allotted amount of hours on the school farm throughout the summer. Keep in mind, the summers are very hot and days may be long. Also, keep in mind that cuts and tardies will contribute to your poor grade.
Philosophies and Grading Standards

The primary goal of the Highland high School Agriculture Department provide each student with an opportunity for the best possible education in keeping with the student’s interest and abilities. This opportunity is available so long as the student benefits do not interfere with other student’s rights to receive an education. The Highland High School Agriculture Program recognizes that individual differences exist among students. The Ag program is planned to develop a strong educational foundation, career and educational development skills, personal growth, worthy attitudes, and interest of all students enrolled.

The following grading system has been developed in order to be fair and equitable when assigning grades to students and is consistent with the philosophy and polices of the Kern High School District.

- **Class Participation and Behavior:** Effort is the key to success in the class. Students who show up every day and do all their work will receive a good grade in this class. It is not easy to receive an A in Ag, contrary to some belief. Effort will go a long way. The instructor will also consider perfect attendance and how much effort a student puts in to their work at the end of the semester.

- **Grading:** Grades are based on a percentage (90-100=A, 80-89=B, 70-79=C, 60-69=D, 0-59=F)
  
  10% Class Participation
  10% FFA Participation
  10% SAE Project
  25% Tests / Quizzes
  45% Classroom Assignments

- **FFA Participation:** All of the Highland High School Agriculture courses fall under the California State Agriculture Curriculum. The courses/curriculum include an “intra-curricular” format engaging classroom, SAE Projects, and FFA instruction/involvement. 10% of a student’s grades in all the agriculture courses are designed to encourage activity/involvement beyond the classroom. Activities include official school, local, and state sponsored FFA activities, meetings, school projects, and community services. Our staff is always willing to work with any student in fulfilling this requirement. Our staff ensures there are numerous opportunities available for students to achieve this goal.
  - Freshman must earn 30 points first semester and 35 points second semester.
- **SAE Project:** The Supervised Agricultural Experience Project will consist of the student working at least 50 hours on a project. The project must be related to agriculture and the student will maintain all records in the California FFA Record Book which will be provided and will turn in 5 distinctly different photographs of his/her working. The student can work for someone or start their own project. Research experiments are also permitted, as long as they meet the minimum hours and they are agricultural in nature. The project is worth 10% of the student’s grade and will be showcased at the end of both semesters in the Project Competition as part of their final exam grade.

- **Project Showcase:**
  - Every student will create a tri-fold science board that will showcase their project over the past semester to a year. The student will set up the presentation and will be judged in the Highland Project Competition. Students will be graded on the following, but limited to:
    - Effort of the project
    - Effort on the presentation
    - Skills they learned
    - Creativity and scope of the project

- **Text Message Notifications**
  - In order to better communicate with the students and remind them of upcoming events and deadlines for this class, we ask all students and parents to sign up for alerts by texting the appropriate text below:
    - Hort/Floral Period 3: @ohper to 81010
    - Hort/Floral Period 5: @ohperi to 81010
    - Hort/Floral Period 6: @ohperio to 81010
Parents: Please read, sign, and have student return this form to the Agriculture Department.

I have read the syllabus and understand what the course will entail. I also understand the expectations from the instructor, including the understanding that my son/daughter must be involved in FFA, and I will do my best to make sure this year is successful and enjoyable.

Consequences for inappropriate behavior include (but not limited to) a verbal warning, removal from class, referral, Ag Dept Work Duty on the farm, parent contact and/or HHS administration action.

I have signed up to receive text message alerts related to the classroom activities/deadlines and the FFA program.

We have discussed the information above, and throughout this packet in class. Please take the time to discuss the information with your son/daughter. Sign and return this form to the Agriculture Department. If you have any questions, please don’t hesitate to contact any of the instructors at 872-2777.

Student Name (Print) __________________________________________

Student Signature ___________________________________________ Date ______

Parent Signature _____________________________________________ Date ______
I. **Course Information**

A. Course Title: Ag Gov't / Econ  
B. Instructor: Mr. Davidson  
C. Contact Info: Email: craig_davidson@khsd.k12.ca.us  
D. Grade Level: 12  
E. Length of Course: 1 Year  
F. Prerequisites: 2-3 years of prior ag classes or consent of Instructor

II. **Course Description**

*Government:* This course is designed to familiarize students with the structure and processes of the United States Government system. Students will learn about the responsibilities and rights of citizenship, voting, political, parties, elections, campaigns, the Constitution, the branches of government, and the Bill of Rights. Students will also learn about state powers as it compares to the national government powers, and be introduced to world leadership. Students will study and discuss agricultural issues and what role the government system plays in the agricultural industry.

*Economics:* This course is designed to familiarize students with the structure and processes of the United States Government system. Students will learn about the responsibilities and rights of citizenship, voting, political, parties, elections, campaigns, the Constitution, the branches of government, and the Bill of Rights. Students will also learn about state powers as it compares to the national government powers, and be introduced to world leadership. Students will study and discuss agricultural issues and what role the government system plays in the agricultural industry.

Students will be encouraged to participate in a Supervised Agricultural Experience Program which will give students hands-on experience in a particular agricultural industry. They will show off their projects at the project competition during the second semester.

Students will also be involved in the largest high school organization in America – The FFA. The FFA will give students opportunities to serve the community in many ways, develop leadership skills, develop public speaking skills, be an entrepreneur, and travel throughout the nation in many competitions, to say a few.
III. **Evaluation of Student Performance**

A. The student will be expected to demonstrate knowledge and skill competence in a variety of ways:
   1. Quizzes
   2. Unit exams
   3. Semester exams
   4. Homework
   5. Participation and class discussions
   6. Special assignments and class projects
   7. Demonstrations
   8. SAE Project
   9. Community Service in excess of FFA points

B. Ten (10) percent of the student’s grade will be based on FFA participation

C. Students must work a minimum of 20 hours community service each semester in order to pass the class. Community service hours should be approved before you begin working.

- **Final Examination:** The final examination at the end of both semesters will consist of multiple parts:
  - A comprehensive Exam
  - Work on the school farm laboratory
  - A class binder with all work from the semester and year
  - Project Showcase

IV. **Classroom Routines**

A. Respect
   1. Respect is the key to a successful year in class. Respect has become so cliché so let’s take a few moments to learn what that means in our class.

   1. First, every student will be treated the way you would like to be treated. There will be no name-calling or put-downs, profanity, or any other language which is deemed unacceptable at school. This includes being defiant with the teacher and talking when you are not supposed to be talking.

   2. Second, respect means assuming the best for someone. If someone is in need, help them, and so on.

   3. Third, I, the teacher want to help you. I want you to learn about agriculture and have a good time doing so. I want you to
earn and A in the class and succeed to your fullest potential. You are in this class because you want to be. Therefore, doing all assignments and turning them in on time is a sign of respect. Not doing so tells me that you don’t care about the hard work I have put into preparing for the lesson.

B. Defiance or poor behavior

1. If a student is found to be defiant or displays poor behavior or lack of respect, the instructor has the right to assign work-detail on the school farm. It is the belief of the instructor that every student needs to be held responsible for every action he/she takes. These actions may be good or bad but responsibility, leadership, and respect will be key characteristics taught in this class.

C. Effort

1. Effort is the key to success in this class. If you do not complete an assignment, a zero will be given. If effort is put into everything in this class, you will be rewarded with a good grade. This will also be considered when inputting the final grades at the semester.

D. Class Binder

1. Each student will be responsible for maintaining his/her own class binder. The student needs to purchase a white 1½ inch 3-ring binder and must have a clear slip on the front cover to put a cover page in. This binder will be used for the entirety of the class and each student is responsible for keeping all work in this folder. It is imperative to maintain this binder because often times we will refer back to past work. A grade will be given for maintaining this binder.

E. Attendance

1. It is required to attend and be on-time every day to class. This is related to the respect previously discussed. Cuts and tardies will not be tolerated and will lower the final grade in the class considerably.

   1. Cuts can be made up by participating on the work-days throughout the semester. The student will provide labor on the school farm.

F. Assignments

1. Assignments will be turned in via the “in-box” and when they are graded, they will be returned via the “out-box”. It is the responsibility of the student to keep all returned assignments in his/her class binder.

2. Late work will be accepted but the student will receive 50% credit.
G. Borrowing stuff
   1. When items are borrowed from the teacher, a deposit needs to be
      given, such as your ID card, key, etc. which will be returned upon
      returning the borrowed item.

H. Grade remediation
   1. If a student receives a D or an F in the class, he/she may have the
      opportunity to bring the grade up by working an allotted amount of
      hours on the school farm throughout the summer. Keep in mind, the
      summers are very hot and days may be long. Also, keep in mind that
      cuts and tardies will contribute to your poor grade.

**Philosophies and Grading Standards**

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student with an opportunity for the best possible education in keeping with the student’s
interest and abilities. This opportunity is available so long as the student benefits do not
interfere with other student’s rights to receive an education. The Highland High School
Agriculture Program recognizes that individual differences exist among students. The Ag
program is planned to develop a strong educational foundation, career and educational
development skills, personal growth, worthy attitudes, and interest of all students
enrolled.

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  Students who show up every day and do all their work will receive a good grade
  in this class. It is not easy to receive an A in Ag, contrary to some belief. Effort
  will go a long way. The instructor will also consider perfect attendance and how
  much effort a student puts in to their work at the end of the semester.

- **Grading**: Grades are based on a percentage (90-100=A, 80-89=B, 70-79=C, 60-
  69=D, 0-59=F)

  - 10% Class Participation
  - 10% FFA Participation
  - 10% SAE Project
  - 25% Tests / Quizzes
  - 45% Classroom Assignments
- **FFA Participation:** All of the Highland High School Agriculture courses fall under the California State Agriculture Curriculum. The courses/curriculum include an "intra-curricular" format engaging classroom, SAE Projects, and FFA instruction/involvement. 10% of a student’s grades in all the agriculture courses are designed to encourage activity/involvement beyond the classroom. Activities include official school, local, and state sponsored FFA activities, meetings, school projects, and community services. Our staff is always willing to work with any student in fulfilling this requirement. Our staff ensures there are numerous opportunities available for students to achieve this goal.
  - Students must earn 30 points during the first semester and 35 during the second semester.

- **SAE Project:** The Supervised Agricultural Experience Project will consist of the student working at least 50 hours on a project. The project must be related to agriculture and the student will maintain all records in the California FFA Record Book which will be provided and will turn in 5 distinctly different photographs of him/her working. The student can work for someone or start their own project. Research experiments are also permitted, as long as they meet the minimum hours and they are agricultural in nature. The project is worth 10% of the student’s grade and will be showcased at the end of both semesters in the Project Competition as part of their final exam grade.

- **Project Showcase:**
  - Every student will create a tri-fold science board that will showcase their project over the past semester to a year. The student will set up the presentation and will be judged in the Highland Project Competition. Students will be graded on the following, but limited to:
    - Effort of the project
    - Effort on the presentation
    - Skills they learned
    - Creativity and scope of the project

- **Text Message Notifications**
  - In order to better communicate with the students and remind them of upcoming events and deadlines for this class, we ask all students and parents to sign up for alerts by texting the appropriate text below:
    - Animal Science, Period 2: @anscid to 469-518-3417
    - Ag Earth, Period 3: @agearth3 to 469-518-3417.
    - Ag Econ/Gov’t, Period 4: @agecond to 469-518-3417.
    - Ag Earth, Period 6: @agearthurd6 to 469-518-3417.
    - Ag Earth, Period 7: @agearthd7 to 469-518-3417.
Parents: Please read, sign, and have student return this form to the Agriculture Department.

I have read the syllabus and understand what the course will entail. I also understand the expectations from the instructor, including the understanding that my son/daughter must be involved in FFA, and I will do my best to make sure this year is successful and enjoyable.

Consequences for inappropriate behavior include (but not limited to) a verbal warning, removal from class, referral, Ag Dept Work Duty on the farm, parent contact and/or HHS administration action.

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We have discussed the information above, and throughout this packet in class. Please take the time to discuss the information with your son/daughter. Sign and return this form to the Agriculture Department. If you have any questions, please don’t hesitate to contact any of the instructors at 872-2777.

Student Name (Print)  

Student Signature  Date

Parent Signature  Date
I. **Course Information**

A. Course Title: Animal Science  
B. Instructor: Mr. Davidson  
C. Contact Info: Email: craig_davidson@khsd.k12.ca.us  
D. Grade Level: 9

II. **Course Description**

**Course Description**  
This course covers the fundamentals of animal science and livestock management. Instruction is offered in animal sciences as well as basic livestock management and handling. FFA participation and student agriculture projects are an integral part of this class. The goals of the course are to provide the student with a foundation for the more advanced classes in the Highland High School Agriculture Department.

Career opportunities in the agriculture and animal science industry will be addressed and students will be encouraged to participate in a Supervised Agriculture Experience Program (SAEP) which will give students hands-on experience.

Students will also be involved in the largest student organization in America- the FFA. The FFA will give students opportunities to serve the community in many ways, through developing their leadership skills, develop their public speaking competency, be an entrepreneur, and travel throughout the state and nation- and these are just a few things that your student can do!!!

**Evaluation of Student Performance**  
The student will be expected to demonstrate their knowledge and skills through several different ways:

- Quizzes  
- Unit exams  
- Semester exams  
- Homework  
- Participation in class discussion/activities  
- Special assignments and class projects  
- Demonstrations  
- Supervised Agriculture Experience Project (SAEP) (10%)  
- FFA participation (10%)  

- **Final Examination:** The final examination at the end of both semesters will consist of multiple parts:
  - A comprehensive Earth Science Examination  
  - Work on the school farm laboratory  
  - A class binder with all work from the semester and year  
  - Project Showcase
Seniors in the class must work 20 hours of community service in order to pass the class. These hours must be worked in excess to any FFA activities he/she may get credit for.

III. Classroom Routines

A. Respect
   1. Respect is the key to a successful year in class. Respect has become so cliché so let’s take a few moments to learn what that means in our class.

   1. First, every student will be treated the way you would like to be treated. There will be no name-calling or put-downs, profanity, or any other language which is deemed unacceptable at school. This includes being defiant with the teacher and talking when you are not supposed to be talking.

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  10%  Class Participation  
  10%  FFA Participation  
  10%  SAE Project  
  25%  Tests / Quizzes  
  45%  Classroom Assignments

- **FFA Participation**: All of the Highland High School Agriculture courses fall under the California State Agriculture Curriculum. The courses/curriculum include an “intra-curricular” format engaging classroom, SAE Projects, and FFA instruction/involvement. 10% of a student’s grades in all the agriculture courses are designed to encourage activity/involvement beyond the classroom. Activities include official school, local, and state sponsored FFA activities, meetings, school projects, and community services. Our staff is always willing to work with any student in fulfilling this requirement. Our staff ensures there are numerous opportunities available for students to achieve this goal.
  
  - Freshman must earn 30 points first semester and 35 points second semester.
- **SAE Project:** The Supervised Agricultural Experience Project will consist of the student working at least 50 hours on a project. The project must be related to agriculture and the student will maintain all records in the California FFA Record Book which will be provided and will turn in 5 distinctly different photographs of him/her working. The student can work for someone or start their own project. Research experiments are also permitted, as long as they meet the minimum hours and they are agricultural in nature. The project is worth 10% of the student’s grade and will be showcased at the end of both semesters in the Project Competition as part of their final exam grade.

- **Project Showcase:**
  - Every student will create a tri-fold science board that will showcase their project over the past semester to a year. The student will set up the presentation and will be judged in the Highland Project Competition. Students will be graded on the following, but limited to:
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    - Effort on the presentation
    - Skills they learned
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    - Ag Econ/Gov’t, Period 4: @agecond to 469-518-3417.
    - Ag Earth, Period 6: @ageartha6 to 469-518-3417.
    - Ag Earth, Period 7: @ageartha7 to 469-518-3417.
**Parents:** Please read, sign, and have student return this form to the Agriculture Department.

I have read the syllabus and understand what the course will entail. I also understand the expectations from the instructor, including the understanding that my son/daughter must be involved in FFA, and I will do my best to make sure this year is successful and enjoyable.

Consequences for inappropriate behavior include (but not limited to) a verbal warning, removal from class, referral, Ag Dept Work Duty on the farm, parent contact and/or HHS administration action.

I have signed up to receive text message alerts related to the classroom activities/deadlines and the FFA program.

We have discussed the information above, and throughout this packet in class. Please take the time to discuss the information with your son/daughter. Sign and return this form to the Agriculture Department. If you have any questions, please don’t hesitate to contact any of the instructors at 872-2777.

Student Name (Print)  

Student Signature  Date  

Parent Signature  Date
Welcome to Agriculture Biology! Please review the following information to ensure a successful and enjoyable school year.

**Contact Information**
If you need to contact me, the best way to get a hold of me is through email: lindsay_devours@kernhigh.org. I post all assignments onto the class website on Synergy.

If you would like to get reminders about upcoming assignments and other relevant class information, please subscribe to my text message updates through the Remind101 app. **Send a text to this number 81010 with this message @agbiohhs**

**Course Description**
This course covers the fundamentals of both agriculture and biology. It is a college preparatory class. Instruction is offered in plant and animal sciences, as well as basic livestock management and handling, and horticulture/nursery management. FFA participation and student agriculture projects are an integral part of this class. The goals of the course are to provide the student with a foundation for the more advanced classes in the Highland High School Agriculture Department.

Each passing student will receive biology credit for the KHSD Biology requirements, thus much of the class time will be learning about the science aspect of the agriculture industry. Because this is an agriculture class, the material will be taught in a relevant way relating agriculture to biology. Career opportunities in the agriculture industry will be addressed and students will be encouraged to participate in a Supervised Agriculture Experience Program (SAEP) which will give students hands-on experience. The California Biology content standards will be taught as mandated by the California Department of Education.

Students will also be involved in the largest student organization in America- the FFA. The FFA will give students opportunities to serve the community in many ways, through developing their leadership skills, develop their public speaking competency, be an entrepreneur, and travel throughout the state and nation- and these are just a few things that your student can do!!!

**Evaluation of Student Performance**
The student will be expected to demonstrate their knowledge and skills through several different ways:
- Quizzes
- Unit exams
- Semester exams
- Homework
- Participation in class discussion/activities
- Special assignments and class projects
- Demonstrations
- Supervised Agriculture Experience Project (SAEP) (10%)
- FFA participation (10%)

The final exams for both fall and spring semesters will consist of the following:
1. A comprehensive Biology exam
2. Work on the school farm laboratory
3. A class binder with ALL work from the semester
4. A proficiency award (fall semester) and a project showcase (spring semester)
Classroom Routines

 ✓ **Respect!!!**: treat your classmates and teacher the way you want to be treated. Show respect to your teacher by being polite and turning in assignments and projects completed neatly and in timely manner.

 ✓ **Defiance or poor behavior will have consequences**: you will either be “stepped” on a behavior contract or have to work on the school farm. We are all responsible for the consequences of our behavior, and negative behavior elicits a negative consequence. Responsibility, leadership and respect are key characteristics taught in this class.

 ✓ **Always try your hardest**: The only sure way to fail is to not try. If you do not complete an assignment, you will earn a “0”. If you put effort into everything you do, you will be rewarded with a grade that reflects that- if you try, you will learn.

 ✓ **Bring a class binder and a writing utensil**: Each student will be responsible for keeping an organized binder with all class materials. You are responsible for providing a WHITE, 2 inch three ring binder, which must have a clear slip on the front so you can put in a cover page. This binder will be kept for the entire school year, and all of your assignments will be kept in this folder. This binder is part of your grade.

 ✓ **Attendance is crucial**: Showing up and showing up on time ensures that you will always know what is going on and have access to material taught in class. Cuts and tardies are not tolerated. Tardies will go through the “step” behavior contract, or can be made up by working on work days on the school farm throughout the semester. Cuts can also be made up by working on work days on the school farm throughout the semester. If you have 6 or more tardies or cuts in a semester that have not been worked off, you may earn a “U” citizenship grade.

 ✓ **Assignments should be turned in on time**: Assignments will be turned into the inbox, and will be returned to the student when graded. Students must keep ALL of their assignments in this binder in a neat, organized manner. Late assignments will lose 5% each day the assignment is late, with a maximum deduction of 25% (so a student will earn a maximum of 75% credit for late assignments).

Philosophies and Grading Standards
The primary goal of the Highland High School Agriculture Department is to provide each student with the opportunity for the best possible education in keeping with the student’s interests and abilities. This opportunity is available so long as the student benefits do not interfere with other student’s right to receive and education. The HHS Agriculture Program recognizes that individual differences exist among students. The Agriculture Program is planned to develop a strong educational foundation, career and educational development skills, personal growth, worthy attitudes, and interest of all students enrolled.

The following grading system has been developed in order to be fair and equitable when assigning grades to students and is consistent with the philosophy and policies of the Kern High School District.

 ✓ **Class participation and behavior**: effort is the key to success in the class. Students who show up every day on time and do all their work will be able to learn the material and not distract others in their learning- these students will receive a grade that reflects this. Contrary to what some may believe, is is not necessarily easy to earn an A in Ag. Effort goes a long way.

 ✓ **Grading**: Grades are based on a percentage (90-100%=A, 80-89%=B, 70-79%=C, 60-69%= C, below 59%=F.)
  o 10% FFA participation
  o 10% Supervised Agriculture Experience Project/record book
  o 10% Career Readiness (attendance, promptness, etc.)
  o 15% Tests/Quizzes
  o 55% Classwork/Projects
- **About FFA Participation:** All HHS agriculture classes fall under the California State Agriculture Curriculum. The courses/curriculum include an "intra-curricular" format engaging classroom, SAEP, and FFA participation. The 10% FFA participation grade is designed to encourage students to participate in activities beyond the classroom. Activities may include official school, local, and state sponsored FFA activities, meetings, school projects, community service, contests, and conferences. Our staff is always willing to work with any student in fulfilling this requirement, and there are multiple opportunities for students to achieve their full FFA participation grade. Each activity is assigned a point value, and students must earn the following points (based on their class year):
  - Freshman must earn 30 points their first semester, and 35 their second semester
  - Sophomores, juniors, and seniors must earn 40 points their first semester, and 45 points their second semester.

- **About SAEP:** The Supervised Agriculture Experience Project will consist of the student working at least 50 hours total on a project. The project must be related to agriculture and the student will maintain records in an FFA Record Book which is provided for them; they must also submit 5 distinctly different photos of he or she working on the project. The project is worth 10% of their grade. If you need ideas, please don't hesitate to contact Mrs. Devalars!

- **About Proficiency Awards/Project Showcase:** Every sophomore, junior and senior will be expected to complete a Proficiency Award application as part of their fall semester final. The application will be available in class and will be explained more thoroughly during class time. The project showcase will be due at the end of the spring semester. Each student will create a tri-fold science fair board that showcases their project over the past year. The student will set up their project and will be judged in the Highland Project Competition. Students will graded on the following:
  - **Effort of the project**
  - **Effort on the presentation**
  - *Skills learned*
  - **Creativity and scope of the project**

**Class Attendance & Behavior Policy**

1. If a student is found to be defiant or displays poor behavior or lack of respect, the instructor has the right to assign work-detail on the school farm. It is the belief of the instructor that every student needs to be held responsible for every action he/she takes. These actions may be good or bad, but responsibility, leadership, and respect will be key characteristics taught in this class.

2. It is required to **attend and be on-time** every day to class. This creates a better learning environment and is an important leadership trait. To make up for time lost for not being in class, the student will have work assigned on the farm.
   a. The following are the assignments to be worked as make-up.
      i. 1 tardies = ½ hour on the farm
      ii. 1 cut = 1 hour on the farm
         ** Hours not worked off on the farm will affect the student's grade. For every 2 hours not worked off, there will be 1 grade reduction.
         *** Cuts are absences that are not cleared by the parent through the attendance office. School activities are not considered cuts.
Supplies needed for Class
Please ensure you have the following supplies by __________________________. They will help you become successful in this class!
- A white 2 inch 3-ring binder
- 4 dividers- labeled and in this order:
  - WARM UP QUESTIONS
  - ASSIGNMENTS
  - QUIZZES/TESTS
  - PROJECTS
- 5 plastic page protectors
- Lined paper (have available at all times)
- Pencils and pens (have available at all times)

Class Website Through Synergy
All assignments and key class documents are posted on the class website through Synergy. See your counselor for account access.

Parents/Guardians: Please read, sign and have your student return this form to the Agriculture Department

I have read the syllabus and understand what this course entails. I also understand the expectations from the instructor, including understanding that my son/daughter must be involved in FFA, and I will do my best to ensure this year is successful and enjoyable.

Consequences for inappropriate behavior include (but are not limited to) verbal warnings, removal from class, referrals, parent/student/teacher conferences, Ag. Department work duty on the farm, or HHS administration action.

We have discussed the information above, and throughout the packet in class. Please take the time to discuss this information with your student. Please sign and return this form to the Agriculture Department, and please don’t hesitate to contact the instructors- (661) 872-2777.

Student Name: (Print)__________________________________________

Student Signature: ___________________________ Date______________

Parent Name: (Print)__________________________________________

Parent Signature: ___________________________ Date______________
Appendix E

Student iRecordbook
Welcome to the iRecordbook. Please note you must have some activity every 15 min or the iRecordbook will forget who you are and give you errors. If this happens, just log in again.

Announcements

Last Backup: NEVER  Click Here to backup now.

<table>
<thead>
<tr>
<th>Date</th>
<th>Announcement</th>
<th>By</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/17/2015</td>
<td>Please update your record books on a weekly basis. Journal entries are hard to remember weeks back!</td>
<td>6/30/15</td>
</tr>
<tr>
<td>2/19/2015</td>
<td>Please complete your enterprise descriptions and business agreement today. I will be Mrs. Devaurs checking today during class to be sure they are complete.</td>
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Calendar

Tasks

<table>
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<tr>
<th>Task</th>
<th>Due</th>
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<tr>
<td>Setup an enterprise. See: Setup</td>
<td>Enterprises</td>
</tr>
<tr>
<td>Check your settings. See: Setup</td>
<td>Settings</td>
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</tbody>
</table>

iRecordbook Version 1.2c. Site developed and maintained by the California FFA Association.

Page last modified: 1/16/2015
Ownership Enterprise Agreement

This agreement is entered into this 20th day of March, 2015 until 9/20/2015, by and between Trevor Moore and Highland High School covers the student's enterprise in: Hog.

This agreement must contain statements concerning what each party is responsible to provide and/or benefits he/she will receive. Items that must be addressed are: equipment, land, buildings, capital (money), management, and profit or loss.

I, Trevor Moore, will use my money from my savings account to purchase my hog. I will house my hog in a pen at the Recreational Occupation Center. I will feed my animal and clean the pen twice a day. I will practice my showmanship skills daily. I will be responsible for purchasing my own equipment and feed but Highland High School will provide minor medications. Medications outside the realm of Highland FFA will be purchased by myself. Any money lost will be my responsibility and any money earned will go directly to me. After selling my animal at the Kern County Fair, I will give the buyers a thank-you letter and I will complete my record book. I understand I will not receive my check until the record book and thank-you letters are completed.

Signatures of Parties Involved

____________________________________________________

____________________________________________________

____________________________________________________
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<th>Tran ID</th>
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<td></td>
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<td>Hog</td>
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<td>36</td>
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<td>$0.00</td>
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<tr>
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<td>3</td>
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<td>$0.00</td>
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<td>10/1/2015</td>
<td>sell hog</td>
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<td>1760</td>
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**TOTAL** $559.00 $1,760.00 131

Net Income (income-expenses): $1,201.00
Appendix F
Highland Agriculture Course Pathways
Highland High School Agricultural Department Course Pathways
Appendix G

Department Technology Inventory
Highland Agriculture Department

Technology Inventory

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
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<tr>
<td>3</td>
<td>teacher computer workstations</td>
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<tr>
<td>1</td>
<td>laser color printer</td>
</tr>
<tr>
<td>2</td>
<td>black and white printers</td>
</tr>
<tr>
<td>30</td>
<td>student Dell laptop computers</td>
</tr>
<tr>
<td>1</td>
<td>laptop cart</td>
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<tr>
<td>3</td>
<td>document cameras</td>
</tr>
<tr>
<td>1</td>
<td>Cannon Rebel camera/video</td>
</tr>
<tr>
<td>1</td>
<td>video production workstation</td>
</tr>
<tr>
<td>4</td>
<td>student computer workstations</td>
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Appendix H

Project Competition Support Documents
Supervised Agriculture Experience Project Competition
10% of overall class grade- SAE Component

Your Ag Project (SAE) is a showcase of your hands-on learning in an agriculture-related position over the past seven months. Now you have an opportunity to show off what you have done with your other classmates, Highland Staff, parents, and community members. Additionally, prizes will be passed out to students who have excelled in their project areas at our chapter banquet.

Date: May 2nd. Boards, proficiency awards, and record books are due on Thursday 21st April.

Location: Highland High School Gymnasium

Awards will be given to students in the following project areas:

- Animal Science
- Plant Science
- Ag Mechanics
- Entrepreneurship / Ag Business
- Placement
- Food Processing
- Natural Resources

Students will be required to showcase their project using the following format:

1. 5 distinctly different photos of you working with your project. Your face must be visible.
2. A tri-fold bulletin board with at least the following information
   a. Description of your project
   b. Number of hours worked
   c. A minimum of 5 skills you learned
   d. Photos (5 distinctly different photos with your face visible)
   e. Money Earned and Spent
   f. A reflection of your project – what was good, bad, and what you would do differently. (1 paragraph, minimum)
   g. The board should be colorful, have eye appeal, and be easy to read
3. Artifacts from your project, if applicable

A maximum of 200 Points will be earned for this project which will be based on the following

- 100 points for the project competition presentation
  o Followed the format of the project guidelines
  o Effort was put in to the presentation
- 100 points for completion of the project
  o 50 hours was completed over a 3-4 month period
  o Agriculture related

Note: A zero score for the project will be earned for not having a completed record book or proficiency application.
Project Competition Judging Rubric – Highland High School

Student Name ________________________________

Project Title ________________________________

Project area: (please circle)
Animal Science  Plant Science  Ag. Mechanics,
Ag. Business/Entrepreneurship, Placement, Food Processing,
Natural Resources

Grading Scale:
0 = No effort 1 = An attempt was made
2 = moderately good job 3 = very good job
4 = Professional, well-done job.

Qualification
The project was agriculturally related. If No, stop and do not score. Circle one   Yes  No

Display presentation
Was thought and effort put into the display? 0 1 2 3 4
Are there supplements, handouts, or hands-on components? (not required, but suggested)

Is information displayed in a well-organized fashion? 0 1 2 3 4
If applicable, take into account whether or not they use colorful, easy-to-read graphs, chart, etc. However,
unnecessary over-use of color and graphics may be considered a distraction.

Skills Learned
Does s/he show skills were attained 0 1 2 3 4

Photographs
Does s/he show 5 photographs showing distinctively different skills being learned? 0 1 2 3 4

Information
Does the student show expenditures, income, hours worked, and a reflection of the project? 0 1 2 3 4

Effort
The student has shown effort in terms of realistic hours and length on the project 0 1 2 3 4

Type of Project
The student showed creativity with the project instead of selecting a project that took little effort, time, and ease. The student chose a project that was creative, interesting, and possessed the “wow” factor. 0 1 2 3 4

Total ______/28

Hours
1 point per hour
Number of hours _______ = Points _____ (50 max)

Total ________________/ 78

Judge Signature ________________________________

2015
Appendix I

Student Files
Appendix J

Alternative Credit for Courses
Appendix K
Highland FFA Charter
Highland FFA Charter located in 12b
Appendix L
Highland FFA Program of Work
Highland FFA
Program of Work
2015-2016
Table of Contents

Page 2  Introduction
Page 3  President’s Greetings
Page 4  History of the Highland Agriculture Program
Page 5  Budget
Page 8  Standing Committees Overview
Page 9  Student Committee
Page 10  Chapter Committee
Page 11  Community Committee
Page 12  Chapter Constitution
Page 20  Chapter Applications
Page 32  FFA History
Page 33  SAE Projects
Introduction

The Highland FFA program we care for two main priorities, the agriculture education and developing of student leadership. This year we are proud to say we have many new and exciting opportunities such as our first student-run farmers market and our new courses, Ag Mechanics and Environmental Horticulture. Our program has gone from one class of 16 now to 7 classes with at least 350 members. This year will be one of the best years for Highland FFA. "Growing Knowledge, Harvesting Leaders" Also this year chapter theme is it’s amazing how much Highland FFA has grown throughout the years and we are all excited for what’s to come because every year our program gets bigger and etter.
President’s Greetings

Dear reader,

Welcome to the Highland FFA program! My name is Chyanne Hughes and I am the 2015-2016 Chapter President. I am thrilled to have the opportunity to serve our chapter this year. It is, my fellow officers, mine, and the FFA organization's sole purpose to make a positive difference in the lives of students by developing their potential for premier leadership, personal growth and career success through agricultural education. Highland FFA is here for its students to foster their greatest potential. There is a myriad of exciting activities for the members and community to be involved in. Whether its public speaking, showing livestock, community service or social events, our chapter has an activity for everyone. Our officer team creates events and opportunities for members to get involved as we progress throughout the school year.

This year, our chapters theme is "Growing Knowledge, Harvesting Leaders". Our goals are to help members get out of there comfort zone and become an active inspiring leader in our community.

So without further ado, I invite you to explore our wonderful exciting program.

Sincerely,

Chyanne Hughes

2015-2016 Chapter President
History of the Highland Agriculture Program

The Highland FFA Agriculture Department was created in the fall of 1985. At this point, there was one class of sixteen students and one agriculture teacher, Mr. Lemucchi. Today, in 2015, Highland FFA c has over 350 members in seven different agriculture classes. These classes include Ag Earth Science for freshman, Agriculture Biology for sophomores, Floral Design, Animal Science, Ag Mechanics, Environmental Horticulture/Floral Design, and Agriculture Economics/Government. Since the 1980’s, our program has grown by offering more activities our chapter participates in at the section level and above, such as the Kern County Fair, Kern Inyo Section Officers, MFE/ALA, State Convention, National Convention, speaking contests, community service, monthly FFA activities and much, much more.

Highland's school farm was built in 1986 and the farm shifted into hands-on learning with the students in 1987. The farm's first business project was held in 1993 with 10 lambs at the farm, which were shown at the Kern County Fair. Today the farm can house up to 30-40 lambs, along with rabbits and poultry. Our farm today is very productive, as it contains a greenhouse and a shade house, and an area for seasonal crops.

The Highland FFA chapter has grown every year, and each year we make more progress towards achieving our chapter goals. Two main goals made when the department was created was offering students a great agriculture education and growing leadership within our students. Those two main goals are still our priority today. We live by the the FFA motto “Learning to Do, Doing to Learn, Earning to Live, & Living to Serve,” to ensure that we live up to the legacy of Highland Agriculture Program.
## Budget

The Executive Officer Team approves all calendar activities and expenditures.

Approved = Y
Not Approved = N
Undecided = U (Push to next meeting)

### Calendar Activities

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<th>Budget ($)</th>
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<td>Kern County Fair work day</td>
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<tr>
<td>COLC (Officer Team)</td>
<td>3</td>
<td>300 (or matching)</td>
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<table>
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<td>COLC</td>
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<td>300</td>
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<tr>
<td>KC Fair (See Business Projects)</td>
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<td>Event</td>
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<td>Ind. Competitions (Earn next level)</td>
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<td>pending</td>
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<tr>
<td>Greenhand Initiation</td>
<td>5 am and 2pm</td>
<td>200</td>
</tr>
<tr>
<td>Poinsettia Sale</td>
<td>2-7</td>
<td>9000 (upfront)</td>
</tr>
<tr>
<td>Business Project (with Record Book)</td>
<td>10 pending</td>
<td></td>
</tr>
<tr>
<td>Leadership Conf (day or overnight)</td>
<td>3</td>
<td>2000</td>
</tr>
<tr>
<td>Proficiency Awards</td>
<td>3-10</td>
<td>0</td>
</tr>
<tr>
<td>Chapter Fun Activities (ex. Bowling)</td>
<td>3</td>
<td>200</td>
</tr>
<tr>
<td>Sectional Fun Activities (ex. Skating)</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>College or Educational Tour</td>
<td>3</td>
<td>100-200</td>
</tr>
<tr>
<td>Sectional Awards Dinner</td>
<td>10</td>
<td>100-200</td>
</tr>
<tr>
<td>Fundraisers (excl. poinsettias) (upfront)</td>
<td>3</td>
<td>1000</td>
</tr>
<tr>
<td>Ice Cream Social (all)</td>
<td>3</td>
<td>200/event</td>
</tr>
<tr>
<td>Work Days</td>
<td>1 hr = 1 pt</td>
<td>300</td>
</tr>
<tr>
<td>Awards Night (i.e. scholarship)</td>
<td>3</td>
<td>10 / student</td>
</tr>
<tr>
<td>Banquet</td>
<td>6-12</td>
<td>3000 gross</td>
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</tbody>
</table>

**Additional Pre-Approved Items**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowes</td>
<td>Ag Field Maintenance</td>
<td>$2000</td>
</tr>
<tr>
<td>Smart and Final</td>
<td>Miscellaneous activities not mentioned above $500</td>
<td></td>
</tr>
<tr>
<td>Feed Stores</td>
<td>Animal Projects (school year and summer)</td>
<td>$1000</td>
</tr>
<tr>
<td>Sullivans</td>
<td>Animal Project Equipment</td>
<td>$1000</td>
</tr>
<tr>
<td>National FFA</td>
<td>Banquet Items and Misc FFA Supplies</td>
<td>$2000</td>
</tr>
<tr>
<td>Nasco</td>
<td>Animal Project supplies</td>
<td>$500</td>
</tr>
<tr>
<td>KC Fair</td>
<td>KC Fair Expenses</td>
<td>$100</td>
</tr>
<tr>
<td>Blade Sharpening</td>
<td>Sheep Blades and clipper servicing</td>
<td>$300</td>
</tr>
<tr>
<td>Livestock Insurance</td>
<td>California FFA</td>
<td>$1000</td>
</tr>
<tr>
<td>FFA Yearbooks</td>
<td>Reimbursement to Advisor</td>
<td>$500</td>
</tr>
<tr>
<td>T-Shirt Sales</td>
<td>FFA T-shirts purchase and sell</td>
<td>$2000</td>
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</table>
--- Open/Close Contest  Registration Fees  $200
--- Coupon Books  Fundraiser  $2000 (upfront)
--- Party City  Banquet Supplies  $500
--- Mayesh  Floral Arrangement Supplies  $500

**Sources of Funds:**

- Ag Incentive Grant  Approx. $20,000
- Perkins  Approx. $10,000
- ASB FFA Account  Approx $15,000

***Note: Funding has not been issued yet so these are estimated income based on previous year.***
Standing Committees

Highland FFA believes that the involvement of committees in our chapter is not only a useful tool but also a way to bring a sense of ownership and belonging to our program.

Student Committee:

This committee is composed of students from Highlands FFA Chapter. These students are selected to be a part of this specific committee by demonstrating good leadership qualities, along with being eager to assist whenever needed.

Chapter Committee:

The Chapter Committee consists of students who are members of the Highland FFA Chapter. These members are selected by being active members of the FFA chapter, demonstrating leadership qualities, and are involved with large events, such as our end of the year banquet.

Community Committee:

Members of the Community Committee can be anyone who is not a student or a current member of Highland’s FFA Chapter. This committee consists of parents, sponsors, and any other community member willing to assist in the overall success of the program.
Student Committee

The student committee is made up of four FFA members in our school. Our committee objective is in student leadership. Some goals we want to achieve for our committee is to encourage more members to be involved with above the chapter level events. Also a plan to do so is in more advertising for these events like promoting the activity by making videos and putting posters up in Ag classrooms. There are three members on this committee: Harrison McAuliffe, Jeanine Procell and Michael Tapia. Overall the student committee is a great benefactor for our chapter because of the amazing help they’re giving to our to our FFA program.
Chapter Committee

Chapter Activities are some of our most important opportunities given to the FFA members. It is important that these activities go off smooth and they are at their best standards. Chapter Committees are made up by members to help create events and to get involved. One Chapter Committee we have is for our end of the year banquet. Committees are formed and used to set up and take down decorations and different things. These Committees are very helpful and significant to many Chapter Activities. They are three members on this committee: Lisa Lowrie, Lisa Jimenez and Joseph Ballard. Also, this committee helps with overall chapter events from the members and it also gives them a leadership role in our chapter.
Community Committee

Members of the Community Committee can be anyone who is not a student or current member of Highlands FFA Chapter. This committee consists of parents, sponsors, and any other community member willing to assist in the overall success of the program. There are two student members on this committee: Madelyn Lara, and Lauren Caya.
CHAPTER CONSTITUTION

Revised July 2013

Article I
Highland FFA Chapter

Section A: The name of this organization shall be the Highland Future Farmers of America, Chapter No. 439; Established Fall of 1984.

Section B: The purposes for which this chapter is formed are as follows:

To develop competent urban and rural leaders that supports the FFA and the agricultural leadership.

To participate in worthy undertakings for the improvement of agriculture.

To develop an appreciation for small businesses by encouraging FFA students to participate SAE projects.

To encourage others, and to learn to be a productive citizen.

Article II
Organization

Section A: The Highland Chapter of the Future Farmers of America is a chartered local entity of the Kern Section of the California Association made up of local members.

Section B: This chapter accepts in full the provisions in the Constitution and bylaws of the California Association, Future Farmers of America, the San Joaquin Region Constitution as well as those of the national organization of Future Farmers of America.

Article III
Membership

Section A: Membership in this organization shall be Active, Alumni, and Honorary.

Section B: Membership is limited to students enrolled in agriculture education at Highland High School.

Section C: Alumni members is limited to students that were active members their 12th year and graduated from high school.

Section D: Active members in good standings may vote on all business brought before the chapter. An Active member shall be considered in good standing when their annual dues are paid and they part-take in Chapter activities.
Section E: Paid FFA members are required to participate in chapter activities as a portion of their grade.

Section F: Membership dues must be paid by December 15 to stay in good standings with the chapter. The amount of dues shall be set by a majority vote of the FFA Executive Committee. (See Article VIII, Expenditures for more details.)

Article IV
Officers

Section A: The chapter officers of the Highland FFA program will be President, First Vice President, Secretary, Treasurer, Reporter, and Sentinel.

Section B: A Historian, Parliamentarian, and up to three Chapter Representatives will be offered as positions at the discretion of the nominating committee.

Section C: All elected chapter officers shall hold their office position for one year. The annual officer tenure is Banquet to Banquet.

Section D: All elected Sectional and Regional officers shall hold, but not limited to, the office of Second Vice President with our Chapter.

It is to be understood, that all Sectional and Regional officers will have the responsibility of their office position first; however, they cannot forget their loyalty to the Chapter Officer Team.

See Section H regarding removal.

Section E: All officers will partake in 100% of our chapter meetings unless a valid reason is provided. Notification of not being able to attend should be made to an advisor before the meeting.

Section F: All officers are required to fulfill officer contract.

Section G: Recognition of officers at our annual banquet will depend on the completion of the officer contract and the discretion of the advisor. See Section K, Incomplete Contracts.

Section H: Process of voting for chapter officers is as follows:

Members will vote for 6 to 8 candidates per ballot.

Once votes are counted, the candidates with the highest cumulative scores become the Officer Team. The scores will include: interview, speech, votes, applications, posters, G.P.A and turning in the contract on time.

The Officer Team will then vote themselves into their desired office positions.
In the event of a tie, the second Vice President(s) will be allowed to vote. If there is no second Vice President(s) or there is still a tie, the candidate with the highest cumulative score will take the position.

The number of Chapter Representatives (with no minimum but a maximum of three) will be at the discretion of the Chapter Officer Election Committee based on the number and quality of chapter officer candidates.

*Note: The representatives must have been part of the first election group.

**Section H:** Officer Removal/Implement:

The removal of an officer will be carried out when the officer is showing neglect or irresponsibility towards their office position.

The officer will be removed at the discretion of the advisor.

Some Reasons for Removal:

*Student breaks a major rule regarding the chapter or KHSD policies.
*Section D & E are not completed.
*Student cannot maintain a 2.5 GPA in all their subject areas.
*Student must be able to maintain a “C” in the Ag Class.
*Student abusing the FFA Code of Ethics.

**Section I:** When an officer position becomes void prior to the termination of its contract, a perspective candidate for that position may temporarily assume the responsibilities of that position. If the prospective candidate fulfills the contract of the office he/she is substituting for a period of two months, he/she will be granted that position. These positions will be appointed by the advisor.

In order for the perspective candidate to commence the offered substitution, he/she must receive a simple majority (50% plus one) from the Officer Team.

**Section J:** Officer duties will be specified by a contract as developed by the advisor(s). They will be in a contract form and require three signatures – the officer, their parent, and the advisor.

**Section K:** Incomplete Contracts:

The purpose of the contract is to discipline the officer and make them responsible for the commitment that the officer has made, choosing to be a leader of the Highland FFA Chapter.
The minimum requirement for an officer to be recognized at the annual banquet is to complete their chair requirement and attend all chapter meetings.

Article V
Executive Committee

Section A: The Chapter Officers shall belong to the Executive Committee.

Section B: The Advisor(s) shall be non-voting member unless it concerns impeachment.

Section C: The duties of the Executive Committee shall be as follows:

Meet the first Wednesday of the month at 6:30 a.m. unless changed.

To meet before a chapter or booster meeting.

Enforce the constitution and by-laws.

Recommend members for Greenhand and Chapter FFA degrees based on their applications.

To amend the chapter constitution; a paid member may submit or propose a resolution but it must first receive a majority vote from the executive committee.

Section D: The President has the power to call special meetings.

Article VI
Fairs and Contests

Fairs

Section A: A student must be a paid member (Art. III, Sec. D) enrolled in the Highland Agriculture Program.

He/she must be an active member on the Highland Activity Chart.

Section B: A student is required to have a completed record book, maintain a 2.0 GPA and a “C” grade in their Ag Class. A student purchasing an animal where these standards are not met will NOT exclude them from the requirements set in this constitution. Probation is a consideration and the decision will be made by the advisor.

Section C: A student will follow the rules set by the KHSD and the State Fair By-laws. Removal from the fair is the consequence.
Section D: A student will follow the rules set by the Highland FFA Chapter at the September meeting. An effort to attend all fair meetings is required.

Section E: This is a school function, if the rules are not followed. A one-day suspension will take place or removal from the fair.

Section F: A transfer student is allowed to show for the Highland FFA provided these factors are considered:

Must be in good standing with the school Ag program that he/she is leaving from.

Record books are up-to-date.

Maintaining a 2.0 GPA or better.

Section G: An alumni student may not show for the Highland FFA provided factors are considered:

Left as a paid member with a 2.0 GPA overall.

Record books are completed and/or up-to-date.

Wears the Highland FFA Chapter Jacket during market and showmanship classes (alumni-Defined as a graduated senior).

Section H: If a student enrolls in the program and then drops out of the classroom at the end of the school year, spring or in the fall before fair, they lose their privilege to show for the Highland FFA Chapter.

Contests

Section I: A student will follow the same rules as stated in Art. VI, Sec. A.

Section J: With all day trips or overnight trips, both the KHSD and Highland Rules will be enforced.

Section K: To receive full points on the activity chart, the student must be an active participant in the practices and contest.

Section L: Partial points will be based on teacher discretion. However, partial points should be discouraged.

Section M: A member will sign a contract for each competition.
Section N: All winning members that take first place or receive a plaque is entitled to points on the activity chart. Open/Close is excluded because double points are already given for participation.

Article VII
Classroom/Farm laboratory

Classroom

Section A: The goal of the classroom is to teach students an appreciation of what agriculture is and how it affects our daily lives.

Section B: The goal of the FFA is to teach students an appreciation of leadership. The FFA is an integral part of the grading that takes place in the classroom.

Section C: Overall grading will be based on classroom, FFA, and outside performance on the two acre site, and extra credit.

Section D: The agriculture program is an elective. It is by choice that a student decides to take this class. If a student does not wish to abide by the rules of the KHSD and the by-laws of the Highland Ag Program, then they lose the liberty of returning the following year (or semester).

Section E: In this program, rules will be used when liberties are being abused.

Section F: The name of the two acre site located on the North-East corner of Highland High School will be called Scots Land.

Section G: The two acre site will be used as a hands-on learning facility and will be an integral part of the overall grading.

Section H: The goal is to create a fun and safe learning environment that can be utilized by the agriculture students and serve as a teaching tool for all grade levels that visit the facility.

Section I: Rules set by the KHSD and the Highland Chapter FFA will be used.

Article VIII
Degrees & Merits

Section A: An award system has been set up, giving all members, who are in good standing, the opportunity to receive recognition for their achievement(s).

Section B: Awards will be based on applications(s), completed records books, placing in competition, classroom disciplines, and overall involvement in the FFA.
Section C: Evaluations will be made by the executive committee, and/or Ag Advisors.

Article IX
Expenditures

Section A: It will be the decision of the executive committee on how money will be raised and spent each year.

Section B: Annual dues need to be collected to offset the expenses of increasing packets, awards for the banquet, and instructional and facility costs.

*See Article III, Membership for more details.

Section C: Annual dues will be based on the chapter needs and will be paid by the 15th of December each year.

Article X
Amendments

Section A: To amend the constitution, a two-thirds (2/3) vote of all active members or by the executive committee (officer team) is required.

Section B: A resolution is the process that will be used to make amendment changes or additions to the constitution; it must be submitted to the executive committee and voted upon at the next officer meeting.

*Note: A special meeting maybe called by the Chapter President or Advisor to expedite constitutional changes.

Section C: Once the resolution has passed, there will be a 30-day grace period for the amendment to become active.

Section D: A petition is a form that can be used in protest of an amendment, voting procedure, etc... The petition needs to fulfill all of the following criteria:

FFA advisor must be made aware of the protest before the protest commences.

The protest must be submitted in written form.

The petition must contain the signatures of the majority of the executive committee (the majority of the officers and/or paid FFA members).

A majority is defined by and must be achieved through one of the two following ways:
The signatures of 50% of the executive board plus one more.

The signatures of 50% of the paid members plus one more.

At the final stage, the petition will be put to vote in a special meeting only after the previous three criteria have been met. This special meeting will be held for the purpose of voting on the petition.

The petition is considered passed if it receives the votes of at least two-thirds (2/3) of the members present.

Once the petition has been passed, a 15-day grace period from the day the vote took place will be observed before the protest is adopted.

**Article XI**

Ratification of the Constitution

**Section A:** This constitution shall become effective when passed by a two-thirds (2/3) vote of the voting members.
Chapter Applications
Highland High School
Chapter FFA Officer Application

General Information:
Name of Applicant: ________________________________
4 Digit #: _______ GPA: _______
Year you received your Greenhand Degree, or will you receive it this year at the banquet?
________________________

Short Answer – Essay Form

1. Why do you desire to become a Chapter Officer?

2. Do you have an SAE Project? If so explain it.

List (Short one line explanation(s))

1. What is your community service involvement? (Ex. FFA, Church, etc.)
   a. ____________________________
   b. ____________________________
   c. ____________________________

2. What FFA Leadership activities have you been involved in? (Ex. Office positions, Conferences, Chairperson, SAE project, Delegate, etc.)
   a. ____________________________
   b. ____________________________
   c. ____________________________
   d. ____________________________
   e. ____________________________
3. What different FFA contests have you competed in since entering the FFA? (Ex: open/close, judging teams, speaking, banking, etc.)
   a. 
   b. 
   c. 

4. What other chapter activities have you been involved with during your years in the FFA? (Ex. BBQ’s, Bowling, Skating, etc.)
   a. 
   b. 
   c. 

5. What other activities have you been involved in other than the FFA? (Ex. Sport, ASB, clubs, etc.)
   a. 
   b. 
   c. 

**Contract Agreement**

Candidate: *I fully understand the responsibility of upholding my office position as a Highland High School Chapter Officer. I am to be at all chapter meetings and to complete my responsibility as the chairperson of my assigned activity.*

________________________________________
Signature of Applicant:

*I support my child’s decision to run for a chapter office and realize the requirements of him/her. I will make sure that he/she attends all events if possible.*

________________________________________
Signature of Parent/Guardian:
# CHAPTER OFFICE SCORING AND REQUIREMENTS

<table>
<thead>
<tr>
<th></th>
<th>Points</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sign Up</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Showing Interest and setting up interview time</td>
<td></td>
</tr>
<tr>
<td>2. Application</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Turn in by the due date</td>
<td></td>
</tr>
<tr>
<td>3. Speech</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. A rehearsed speech</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. Turn in speech at least by the day before you speak</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. Must speak in two different classes. (minimum)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>i. Remember – Freshmen can pull in a lot of votes</td>
<td></td>
</tr>
<tr>
<td>4. Posters / Flyers</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>5. Grades</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. 4.0 or better</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>b. 3.0 – 3.9</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>c. 2.0 – 2.9</td>
<td>1</td>
</tr>
<tr>
<td>6. Interview</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Prepared questions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. Imprompt questions</td>
<td></td>
</tr>
<tr>
<td>• Possible points obtained before the voting begins</td>
<td>57</td>
<td></td>
</tr>
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</table>

7. Delegate Votes
   a. It will include all classes

- We Want The Committed -
INTERVIEW SCORING

NAME

EVALUATION

- Unprepared 0
- Some effort 1 2 3 4 5
- Nervous, but gave effort 6 7 8 9 10
- Knowledgeable 11 12 13 14 15
- Confident Leader for the program 16 17 18 19 20
- Aced it! 25

Final Score

Comments

Judges...

Consider these factors in to your calculations:

1) How are they dressed?
2) Confidence
3) Eye Contact
4) Strong voice
5) Questions
MADE FOR EXCELLENCE AND
ADVANCED LEADERSHIP ACADEMY APPLICATION

Attach a separate sheet if necessary. Please write neatly.

Name ____________________________  Grade in Ag ____________

6-Digit Student ID # ________________  Year in school __________

1. What activities have you been involved in this school year?
   a. ________________________________
   b. ________________________________
   c. ________________________________
   d. ________________________________

2. Why do you want to attend this conference?

3. What are your goals in the FFA?

4. Do you plan on being in an agriculture class next year?

5. You are asked to pay $50 for this conference and bring additional money for meals. Are you able to pay this fee? Yes/No

6. You are required to wear the official FFA uniform. Will that be a problem for you to purchase black slacks/skirt, a white button-up shirt, and dress shoes? Yes/No

7. If approved and selected to attend this conference, I understand I will be charged the full cost of the conference, at $100, if I back out or fail to show up. Yes/No

8. Parent Signature ________________________________

9. Student Signature ________________________________

The Conference will be held Jan 29th-30th in Ontario CA
California State FFA Convention
Application
Application must be typed and turned in by Friday 29th January

Name: ____________________________ Grade: ________

Last Semester's G.P.A ________

Current Grade in Ag. ________

Last Semester’s Grade in Ag: ________

1. Please list your top five (5) FFA Activities at the chapter level.
   a. __________________________________
   b. __________________________________
   c. __________________________________
   d. __________________________________

2. Please list your top five (5) FFA Activities above the chapter level, include conferences.
   a. __________________________________
   b. __________________________________
   c. __________________________________
   d. __________________________________

3. What other Non-FFA activities have you been involved in while in high school?

4. Why do you want to go to the FFA Conference?

5. What are your personal goals in the Highland FFA Program?
6. This conference is about leadership. How will you use this conference to improve on your leadership in the agriculture program next year? If you are a senior, when you graduate?

7. Do you want to be an officer for Highland FFA next year?

8. If you have/had one, explain your SOE Project with respect to type, size, history, and potential growth.

Please read carefully and sign below...

I ___________________________ have spoke with my parents about going to the conference. They have given me permission to go and if chosen, I will commit to paying $160 for the conference and I will not back out unless an emergency arises. I also understand that a refund will not be issued for students who do not attend. If the student’s vacant position is not filled, the student will be charged the entire cost, including registration cost of $110 which is paid for by Highland FFA.

I ___________________________ (parent/guardian) have spoke with my child and give them full support in going to the conference. I understand he/she will miss two days of school and I will make sure all work is collected ahead of time or he/she will be responsible for making up any work missed. I also understand that if my son/daughter is selected to go, he/she will go unless an emergency arises.

**If payment is creating hardships, please inquire about the William Young Scholarship which is designed to assist students going to the State Conference.
Greenhand
Degree Application
Highland High School

NAME

YEAR IN SCHOOL

YEAR IN AGRICULTURE

APPLICATION DUE APRIL 12, 2011
1. Do you know the FFA Motto?
   YES       NO

2. Are you familiar with the Creed?
   YES       NO

3. Are you familiar with the opening/closing ceremonies?
   YES       NO

4. If asked to identify one of the FFA emblems, could you do it?
   YES       NO

5. Name at least five (5), but not more than ten (10) FFA activities you have been involved with.

   ___________________________

   ___________________________

   ___________________________

   ___________________________

   ___________________________

6. What major goal(s) do you want to accomplish in the FFA next year?
Chapter Farmer (FFA)  
Degree Application  
Highland High School

NAME

YEAR IN SCHOOL

YEAR IN AGRICULTURE
Are your Record Books Completed? Yes □ No □

----- Total Assets

----- Total Liabilities

----- Net Worth ** Cannot be less than 150.00 dollars. **

1. Do you have your Greenhand Degree?

   Yes □ No □

2. What were your SAE Project(s)? For each one, tell us how much money you made.

   ________________________________

3. List ten (10) activities you were involved with in school this year.

   ________________________________
   ________________________________
   ________________________________
   ________________________________
   ________________________________
   ________________________________
   ________________________________
   ________________________________

4. What goals do you wish to accomplish before you leave Highland High School as a Senior.

   ________________________________
   ________________________________
   ________________________________
FFA History

Three years after the Smith-Hughes act was enacted in 1917, Virginia created a Future Farmers of Virginia club, for boys interested in agriculture education. States all around the U.S. began to join this movement and create their own Future Farmers clubs. The next step was to join all these states together and create a national organization. FFA is now run on three levels; locally, state wide.

FFA is a nationally student leadership based organization that teaches qualities such as leadership skills, and life skills. Being involved in FFA helps students gain self-confidence in almost all aspects of adulthood and responsibility, such as: communication, ownership, and entrepreneurship. Students that are involved in FFA must complete a SAE project (Supervised Agriculture experience) this gives students the opportunity to apply their academic and also occupational skills in a simulated business or project of their choice. Students have the chance to use their hands and creativity to learn not only about what agriculture is but also what it means to be responsible.

FFA offers many different activities that give students the chance to participate in events that share their personal interest. This allows students to join activities they enjoy, and also meet others that share common interest. The broad variety of competitions, conferences, workshops, and conventions that are provided all across the nation gives this organization the ability to meet many different types of people's needs.
SAE Projects

Supervised Agriculture Experience projects (SAE) are an important component of our program. They allow students to learn hands on career skills and are critical in helping students earn their State FFA Degree.

Kaley Stevens' SAE project was a market hog. She housed it at her own residents along with 5 other pigs. The project consists of countless hours working with the market hog preparing for show at the 2015 Kern County Fair. Stevens' most enjoyable part about raising a market hog was by far fair. She enjoyed the friendly competition and meeting other FFA member from fellow schools. Her least favorite task from her SAE project was the stress of ear tagging. Kaley decided to do a pig because she's always enjoyed working and being around animals and she had the access of being able to keep it at her house. Kaley Steven's ended up putting 170 total hours into her market hog SAE project.

Joshua Reyes' SAE project was a Steer. He housed it at the highland farm but later moved it to his residents. The project consists of countless hours working with his steer for the 2015 Kern County Fair. Reyes most enjoyable part of raising a steer was the fact that he got to start earlier than the other animal projects and establish a bigger and longer bond with his animal. Josh's least favorite part of the project was the amount of money and time it actually took up. He decided to do a steer because he wanted a new challenge and experience. Joshua Reyes ended up putting 460 total hours into his steer SAE project.

Bryson Kochanski's SAE project was the repurposing of wine barrels to make furniture. His favorite part was the income he was receiving for everything. Bryson's least favorite part was painting because of how many coats were needed and trying to get all the crevices. He first decided to do this particular SAE project because he saw it at a home and garden show and thought he could make the same thing but cheaper. Bryson Kochanski ended up putting 85 total hours into his SAE project.
Catherine Cervantes’ project was a market lamb. She housed it at the Highland school farm and raised it for 5 months while working with it and preparing it for the 2015 Kern County Fair. Catherine’s most enjoyable part was when she got to walk her sheep around the school. Her least favorite part was how difficult it was to get her lamb to set up correctly when working with it and during showmanship practice. She chose this SAE project because she has always had an interest in animals and thought it would be a new and fun learning experience. Catherine Cervantes ended up putting 220 total hours into her SAE project.

Suleyma James-Haggerty’s project was a rabbit. She has had her rabbit for about 2 years and takes him to different shows to compete and try to get awards. Suley’s most enjoyable part was taking her rabbit to different showing in other towns. Her least favorite part was the difficulty of having to get down and dirty for barn duty and trying to get her rabbit to hold a pose. She chose this SAE project because she knew she wanted to do an animal but wanted to start out small. Suleyma ended up putting 158 total hours into her SAE project.
Appendix M
Highland FFA Letter to Parents
September 7, 2015

Dear Parents,

As you know, your son/daughter is enrolled in an agriculture class at Highland High School. The Agriculture classes are like no other course on campus. The student’s grade is broken down into three specific areas: classroom assignments, Future Farmers of America/FFA, and the Supervised Agriculture Experience Program.

The classroom assignments are self-explanatory and account for the majority of the grading scale. In the agriculture curriculum there will be homework assignments and you should expect to see the homework weekly.

Ten percent of your son/daughter’s grade will be based on the FFA activities. The FFA is a national organization of students enrolled in Agriculture Education classes. Through the FFA, students gain leadership skills, compete in various events which are an extension of the classroom instruction, and interact with students from across the state as well as the nation. The majority of these activities do not occur during the school day; most are on weekends or after school. Last year, students, through the FFA, traveled to the university campuses of Davis, Fresno, Cal Poly San Luis Obispo, as well as many other local destinations and community colleges. Some students also had the opportunity to travel to Washington, D.C and Indianapolis, Indiana. The FFA and the activities associated with this organization provide a unique educational experience for the students.

Students enrolled in the agriculture program are graded by the number of leadership and recreational activities in which they participate. A point chart has been handed out to the students, and he/she can pick or choose the activities in which they wish to participate. Each activity is given a point value and the students must accumulate a certain number of points (30 during the 1st semester and 35 during the 2nd semester) to obtain a letter grade. It is important to understand all points must be earned or a zero grade will be given for FFA participation. The greater the challenge of the activity, the greater the points earned for that activity. Students will be advised at the beginning of every month of upcoming activities and are responsible for maintaining these in their planners. The activities will also be posted on the Highland FFA website which is linked from the main Highland Website.
The point system is devised to serve as a tool to encourage FFA participation. Often students are reluctant to participate in school activities in fear of being embarrassed, intimidated and many other reasons. After the initial shock of participating, points become secondary and the challenging FFA opportunities become primary.

The other part of the program is your son/daughter’s participation in the Supervised Agriculture Experience Program (S.A.E.P). S.A.E.P’s are devised to teach responsibility and the students are required to maintain the project and keep an account of income and expenses incurred. This is a work experience, business oriented endeavor that requires commitment to the project from start to finish. It can be a business owned by the student or a placement with a local company.

One of the most popular projects is a livestock animal. These County Fair animals, obtained in late May – June, are purchased and raised by the students. The county fair animals are sold during the livestock auction. Remember, the purpose of the project is to make a profit. As with all living things, there is a possibility that the animal may become ill or even die. Insurance is available at a reasonable cost which covers the possible loss of the animal. The animal project is only one out of literally hundreds of the potential projects in which a student may participate.

Please take the time to look over the syllabus your son/daughter will be providing you with and make sure you understand the scope of the program and the expectation we have on your son/daughter. Highland High School prides itself in having one of the best Agriculture programs in the state. We welcome you to our program and look forward to having your son/daughter in becoming an active and productive member of our program. We would also like to extend an invitation to you to get involved in our program so we can continue to provide students with a challenging, fun, and unique learning experience through our Highland FFA Booster Club.

If you have any questions, please feel free to contact your son/daughter’s instructor at your earliest convenience: craig_davidson@khsd.k12.ca.us or Jessica_barcellos@khsd.k12.ca.us.

Sincerely,

Craig Davidson, Lindsay Devaurs, and Michael Leishman
Highland Agriculture Instructors

Parent Signature

Student Print
Appendix N

Highland FFA r2 Roster
## FFA Roster

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Page last modified: 11/1/2013

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Appendix O

Agriculture Incentive Grant FFA Activities List
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<td>Attended Greenhand Conference</td>
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<td>Attended Made for Excellence Conference</td>
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<td>Attended Advanced Leadership Academy</td>
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<td>Attended Sacramento Experience</td>
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<td>Participated in Opening-Closing Contest - Sectional</td>
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<td>Participated in Best Informed Contest - Sectional</td>
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<td>Participated in Parliamentary Pro Contests - Sectional</td>
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<td>Participated in Prepared Public Speaking - Sectional</td>
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<td>Participated in Extemporaneous Speaking - Sectional</td>
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<td>Participated in Job Interview Contest - Sectional</td>
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<td>Participated in Agricultural COOP Quiz Contest - Sectional</td>
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<td>Submitted State FFA Degree Application</td>
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<td>Submitted American FFA Degree Application</td>
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<td>Participated in Project Competition - Sectional</td>
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<td>Participated in any FFA Judging Activity (other than above)</td>
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<td>Participated in any other FFA Sectional Activity</td>
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TOTAL AREAS MET 17
Appendix P

FFA Activity Points Chart
Appendix Q

Freshman Garden Project
Appendix R

Student Data Sheets
STUDENT DATA SHEET
Highland High School Agriculture

A. ____________________________  ____________________________
   Last Name                   First Name, MI

B. Street Address             ____________________________
   _________________________

C. Zip Code: 95506

D. Mother/Guardian Name       ____________________________
   Cell Phone ____________________________

E. Father/Guardian Name       ____________________________
   Cell Phone ____________________________

F. My Cell Phone Number       ____________________________

G. My Home Number             ____________________________

H. Email Address (print)      ____________________________

I. Gender:                    Male  Female

J. Year in Agriculture Program (1st, 2nd, 3rd, 4th) __________
   Grade Level __________

K. I am Taking this course Because: (Select one)
   ___ I plan a career in agriculture
   ___ Not a career, just an interest in agriculture
   ___ Not interested, placed in this class.
   ___ I heard this was an easy A so I signed up for it.

L. Hispanic:                  Yes   No

M. Race: (Select Only One) Note: Hispanic is not a race
   ___ White
   ___ Asian
   ___ Chinese
   ___ Hmong
   ___ Japanese
   ___ Korean
   ___ Vietnamese
   ___ Black
   ___ American Indian
   ___ Native Hawaiian/Pacific Islander
   ___ Filipino
   ___ Samoan
   ___ Other: __________
N. When you eventually take your place in this world, what would you like to do? If your dream is not related to agriculture, place in parenthesis () an occupation in agriculture you would enjoy doing.

[Space for answer]

O. Plans after graduation from high school:

1. Go to work full-time
   - No further Education
   - Some college Later

2. Go to College
   - Community College
   - Four-year college
   - Full-time Student
   - Part-time Student
   - Agriculture Major
   - Non-Agriculture Major

3. Go into Military Service

P. Do you have an interest in holding an FFA Office?

Q. Have/Do you hold/hold any leadership position with any group or organization? If so, what did you do and with who?

R. What are you looking forward to now that you are enrolled in the Highland High School agriculture program?
STUDENT DATA SHEET
Highland High School Agriculture

A. Last Name

B. Street Address

C. Zip Code

D. Mother/Guardian Name

E. Father/Guardian Name

F. My Cell Phone Number

G. My Home Number

H. Email Address (print)

I. Gender: Male Female

J. Year in Agriculture Program (1st, 2nd, 3rd, 4th) Grade Level 10th

K. I am Taking this course Because: (Select one)
   - I Plan a career in agriculture
   - Not a career, just an interest in agriculture
   - Interested, placed in this class.
   - I heard this was an easy A so I signed up for it.

L. Hispanic: Yes No

M. Race: (Select Only One) Note: Hispanic is not a race
   - White
   - Asian
   - Chinese
   - Hmong
   - Japanese
   - Korean
   - Vietnamese
   - Black
   - American Indian
   - Native Hawaiian/Pacific Islander
   - Filipino
   - Samoan
   - Other

School Year 2015-2016
N. When you eventually take your place in this world, what would you like to do? If your dream is not related to agriculture, place in parenthesis () an occupation in agriculture you would enjoy doing.

O. Plans after graduation from high school:

1. Go to work full-time
   No further Education
   Some college Later

2. Go to College
   Community College
   Four-year college
   Full-time Student
   Part-time Student
   Agriculture Major
   Non-Agriculture Major

3. Go In to Military Service

P. Do you have an interest in holding an FFA Office? __________

Q. Have/Do you held/hold any leadership position with any group or organization? If so, what did you do and with who?

R. What are you looking forward to now that you are enrolled in the Highland High School agriculture program?

___________
Appendix S

Freshman Record book
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Month of ___________ 20__
BUDGET

The budget is your best estimate of income and expenses to determine net income. The budget is to be completed before the start of the enterprise.

All numerical entries should be rounded to the nearest whole dollar. Do not record decimal or cents.

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<td>21</td>
<td>Total for month</td>
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<td>23</td>
<td>Total to date</td>
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</tbody>
</table>

Column 5 must equal the sum of columns A8, B8, C8, D8
Column 6 must equal the sum of columns A9, B9, C9, D9
Column 7 must equal the sum of columns A10, B10, C10, D10, 11
# FINANCIAL STATEMENT

<table>
<thead>
<tr>
<th>Assets</th>
<th>Beginning of Year</th>
<th>End of Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date:</td>
<td>Date:</td>
<td></td>
</tr>
<tr>
<td>1) Enterprise Assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Cash on hand or in the bank from SAE enterprises</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Enterprise Accounts Receivable (page 7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Value or Current/Operating Inventory (Grand Total from page 8b)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Value of Non-Current/Capital Non-Depreciable Inventory (Grand Total from page 9b)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) Value of Non-Current/Capital Depreciable Inventory (Grand Total from page 10b)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Total Enterprise Assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Personal Assets</td>
<td></td>
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</tr>
<tr>
<td>a) Cash on hand or in the bank earned from non-SAE enterprise sources</td>
<td></td>
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<tr>
<td>b)</td>
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<td>e)</td>
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<tr>
<td>4) Total Personal Assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) Total Assets (line 2 plus line 4)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Liabilities | | |
| 6) Enterprise Liabilities | | |
| a) Enterprise Loan Payments, "Balance Owed" (page 6) | | |
| b) Enterprise Accounts Payable (page 7) | | |
| 7) Total Enterprise Liabilities | | |
| 8) Personal Liabilities | | |
| a) | | |
| b) | | |
| c) | | |
| d) | | |
| 9) Total Personal Liabilities | | |
| 10) Total Liabilities (line 7 plus line 9) | | |

| Net Worth | | |
| 11) Enterprise Net Worth (line 2 minus line 7) | | |
| 12) Personal Net Worth (line 4 minus line 9) | | |
| 13) Total Net Worth (line 11 plus line 12) | | |
## FFA ACTIVITIES

### A. Degrees Held in the FFA
Enter date ONLY for degree earned during the year covered by this record book.

<table>
<thead>
<tr>
<th>Degrees</th>
<th>Date Elected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenhand FFA Degree</td>
<td></td>
</tr>
<tr>
<td>Chapter FFA Degree</td>
<td></td>
</tr>
<tr>
<td>State FFA Degree</td>
<td></td>
</tr>
</tbody>
</table>

### B1. Progress in Developing Parliamentary Skills
Instructions: List here only those procedures of parliamentary law which you have never before listed in the previous record book and which you performed to the satisfaction of your chapter advisor this year.

<table>
<thead>
<tr>
<th>Date</th>
<th>Procedure Performed</th>
<th>Where Performed (i.e. classroom, ASB, FFA Contest, Etc.)</th>
<th>Advisor's Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

### B2. Parliamentary Proficiency
During the year covered by this record book the student successfully passed a written examination, demonstrating proficiency in parliamentary law, under the supervision of the local agriculture instructor.

Date Examination Passed
Instructor's Initials

### C. Speaking Engagements Promoting Agriculture and/or the Future Farmers of America (FFA)

<table>
<thead>
<tr>
<th>No.</th>
<th>Date</th>
<th>Formal speech or Discussion Leader (list which one)</th>
<th>Group Speaking to/Leading Discussion with</th>
<th>Title/Topic</th>
<th>Length in minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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</tbody>
</table>

### D1. FFA Officers Held (List offices for which you began your service as an officer during the year covered by the book.)

<table>
<thead>
<tr>
<th>School Year</th>
<th>Office</th>
<th>Indicate Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Chapter</td>
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</tbody>
</table>

### D2. Service on FFA Committees - List committees which began to function during the period covered by this book.

<table>
<thead>
<tr>
<th>Committee</th>
<th>Chairman</th>
<th>Indicate Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
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</tbody>
</table>
**FFA ACTIVITIES (Continued)**

F. FFA Activities above the Chapter Level. List all FFA Activities occurring above the chapter level in which you participated this year which you have NOT recorded in any other section on pages 13-16.

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
<th>Indicate Level</th>
<th>Placing or Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Section</td>
<td>Region</td>
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</table>
Appendix T

Fair Exhibitor Handbook
Dear Parents and HHS FFA Exhibitors for the Kern County Fair,

Thank you for your interest in raising an animal for the Kern County Fair. I am encouraged and excited about your participation. **The advisor is the authority** for the livestock projects and the following pages detail the requirements for participation in the program. If you are out of compliance, the advisor has the authority and the right to **remove you and your animal from the program**. Reasons may include not following rules, being a poor role model, negativity, and not representing our program, to name a few. **The advisor reserves the right to not sign entry forms and remove fair entries for any reason.** While this packet may not cover every possible part of your project and/or the fair, it does attempt to answer most of your questions and concerns. *Please read all of the information CAREFULLY.* You should have your calendar out as you read this document to ensure all important dates are written down. Before you go any further, please input all dates in to your calendar/phone. You will be responsible for everything outlined in this packet, regardless of whether or not a reminder was given. Please note that there are many new items/policies and dates you should be aware of.

Highland FFA utilizes text messages to reach both parents and students regarding their projects and require the parties involved with the project to sign up to receive the notifications. Dates and times change and events come up on a regular basis and we want to make sure everyone stays in the loop with everything. Text the following to sign up:

1. Sheep Projects: Phone # 469-518-3417  
   text: @mrdsheep
2. Goats Projects: Phone # 747-900-3417  
   text: @mrsdevaurs
3. Rabbit Projects: Phone # 469-518-3417  
   text: @a6b41
4. All Pig Projects: Phone # 747-900-8146  
   text: @mrsdevaurs
5. ROC Pig Projects: Phone# 747-900-8146  
   text: @swiner

**Note:** If your pig is kept at ROC, you must subscribe to both.

This packet is also available on the Highland FFA website if you lose this packet.

If you should have any questions, please contact us at 661-872-2777 or email the advisors at craig_davidson@khsd.k12.ca.us or lindsay_devauers@khsd.k12.ca.us. Thank you.

Sincerely,

HHS Ag Department
<table>
<thead>
<tr>
<th>Description</th>
<th>Due Date</th>
</tr>
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</table>
| Turn in Fair Packet Form (last page of this document)                       | Mon March 16, 2015 all enrolled students  
|                                                                            | Mon May 4, 2014 all new or incoming students                              |
| Purchase Anti-Fungal Shampoo                                               | Upon entering sheep on KHSD facility. (Note: student will not be granted permission to house animal until sheep is properly vaccinated and checked by instructor upon entering) |
| Record book with Business Agreement and Budget completed                    | Prior to Animal entering facility  
|                                                                            | Ticket will be given to be granted entry                                 |
| Farm Agreements Due (including ROC)                                        | Monday May 4                                                              |
| Non-refundable deposits to the breeder due (if applicable)                 | May 4                                                                    |
| Livestock Insurance                                                        | Monday Due June 8                                                         |
| Buyers Workshop                                                            | June 10\(^{th}\) at 6:30 PM                                              |
| Animal Entries for Fair Due to Advisor,                                    | June 8. Any entries after this day will be the exhibitor's responsibility to turn in to the fair before the date set by the fair. (see fair book) |
| Showmanship Practices Weekly                                               | Goats – Tue 7 am, Pigs – Wed 7am, Sheep – Thu 7am, and Rabbits – Mon 6pm |
| Mandatory Ear-tagging                                                      | All exhibitors must be with their animals at ear tagging; dates are set by the Fair and are in the Entry Catalog  
|                                                                            | May 16 – Market Steers 6-8 am and KB&F Lambs 11am-1  
|                                                                            | Swine will be done yourself. Will not be taken to fair  
|                                                                            | July 24 – Sheep and Goats (Loaded and leave HHS at 5:00 pm)               |
| Record Book Meetings in 12 B                                               | July 8, Aug 5, Sept 9 (all at 5:30 pm)                                   |
| Mandatory parent AND exhibitor meeting (Must attend meeting!)              | Thursday, September 3, 2014 (see below)                                   |
| Bedding Paid for to the Booster Club                                       | August 11 ($30 – sheep and goats, $15-Pigs)                              |
| Completed and accurate Record Books                                        | Final Project visit in Sept before the Fair                               |
| Barn Set Up                                                                | Sat Sept 12 at 7:00 am                                                   |
| KC Fair Dates                                                              | September 23 – October 4, 2015                                           |
| Fair Clean Up – MANDATORY                                                 | Sunday, October 4, 2015 at 6:00 am                                      |

### Mandatory Exhibitor and Parent Fair Meeting

A mandatory exhibitor AND parent fair meeting will be held at the Highland High School Agriculture Department on the following days:

**Sheep and Swine:** Thursday, September 3, 2014 at 6:30-7:30  
**Goats and Rabbits:** Thursday, September 3, 2014 at 7:30 – 8:30

**PARENT & EXHIBITOR BOTH NEED TO ATTEND THE MEETING.**
We will go over rules and expectations verbally, transportation papers, assignment sheets, excused days, and the tentative schedule.

- Exhibitor passes and parking permits will be available mid-September. Passes will be distributed to those exhibitors providing an updated record book AND attend the mandatory parent and exhibitor meeting.

Parent and child passes go on sale in the Livestock Office at the fairgrounds in late August to early September. Please plan accordingly to purchase your tickets BEFORE the fair starts! 😊

**Showing Requirements**

1. Students planning on attending the Kern County Fair MUST have a 2.00 GPA on the report card prior to the purchase of the animals.
2. Exhibitors must have a 2.0 from the previous report card to be eligible to show.
3. Graduates may exhibit under the following conditions:
   a. They must be eligible and apply for their State and/or American FFA Degree which must be applied for and qualify for in the year they intend to show. If eligible to have received the State Degree during high school and did not apply, then they are not eligible to exhibit under the HHS FFA program. *The application must be completed prior to showing with a realistic chance of receiving enough funds to qualify for the respective degree.*
   b. Keep their animals penned with the HHS FFA animals at the fairgrounds during the Kern County Fair;
   c. May only exhibit at the fair directly after their graduation and the ONE following year provided that criteria (a) will be met AND no other rules during previous fairs have been violated;
   d. Must be studying agriculture at a community or a four-year college (provide a copy of transcripts) and/or be working in the agriculture industry.
   e. *The advisor may terminate the project at any time for any reason.*
4. Students MUST have a “C” or higher in their agriculture class(es).
5. Prior approval by the advisor is required for all students and their fair projects.
6. Students in high school for the fall will be required to enroll in the Agriculture Projects Class. The student will receive a letter grade for their grade. Fail grades will be earned by students for not attending showmanship practices, meeting deadlines, irresponsibility, and incomplete record books and post-fair checklist.
7. Any attempt to enter an animal without the advisor's permission and signature will result in automatic removal from the chapter and its activities permanently.

8. Students need to have the official livestock uniform by fair time which includes:
   - FFA jacket and tie or scarf
   - White pants
   - White button-up shirt
   - Show boots (neutral colored) or black or white tennis shoes
   - **To order a jacket, orders must be placed by August 1st. Approx. $65.00 (See the HHS FFA page for help. The National FFA offers jackets free of charge to students in need, pending funding and approval.)**
9. Students need to make sure they have the money to purchase the animal, feed, entry fees, medication, other needed supplies or equipment, and veterinary services (personal sources or bank loan).
10. Facilities to house the animal -- personal or pen at HHS school farm (agreement must be on file).
   a. Students housing their animals at the school farm will be responsible for purchase of their own feed.
   b. All students housing animals on the farm (sheep, chickens, rabbits) will be required to maintain a plot of land on the farm and keep the weeds down on a regular basis (once a week).
11. Be enrolled in an agriculture class for the Fall Semester.
12. Students must regularly update the record book. It is due at each project visit for grading.
13. Students must care for, manage and be in possession of the animal in Kern County for the ownership period required by the fair. See the official fair booklet for your animal's time period.
14. Students will be required to purchase bedding when the fair comes for their respective specie. All bedding purchases will be run through the FFA Alumni Association. See dates page for payment deadline.
15. *Record books will be done online.* Students will need to be trained on the use of the program. See the attached papers for instructions of “how-to”.
16. Final check-off on the Record Books will be at the final project visit prior to the fair. *Students will not receive activity points for exhibiting at the fair as they are receiving a class and project grade for this.*
17. To receive the check for the sale of their animal, the student will complete a check-off list, including showing the advisor their accurately completed record book, a thank-you note to the buyer, paying all debts, and completing an essay.
18. Students and parents must have a working email address that is checked regularly.
19. Animals housed at any other facility besides the ROC or HHS school farm will need to be transported to the fair by the appropriate family, not the agriculture instructor.
20. *First-time exhibitors for the FFA will be required to house their project with the rest of the chapter. All lambs will be housed at the HHS Farm Laboratory, regardless of years shown or facilities at home.*
21. *Students will not be permitted to show two different species. Permission will only be granted to show multiple animals of the same specie if room is available at the respective facilities.*
I-Record Book

Setting up your irecordbook

Work at your own pace but please ask questions if you are confused. Always capitalize first letter of names, and use correct spelling, etc. Refer to rubric for grading.

✓ Enter website address http://calaged.csuchico.edu/recordbook or google search irecordbook it should be first option.
✓ Stick label on inside of your notebook. Log in using the label 1st number is log in 2nd is password.
✓ Password: mustangs1

TOOLBAR

Welcome to the iRecordbook. Please note you must have some activity every 15 min or the iRecordbook will forget who you are and give you errors. If this happens, just log in again. More...

Announcements

Date Announcement By

Calendar

Tasks

<table>
<thead>
<tr>
<th>Task</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book</td>
<td></td>
</tr>
<tr>
<td>Setup an enterprise. See:</td>
<td>1/28/2014</td>
</tr>
<tr>
<td>Enterprises</td>
<td></td>
</tr>
<tr>
<td>Check your settings. See:</td>
<td>1/28/2014</td>
</tr>
<tr>
<td>Setup</td>
<td>Settings</td>
</tr>
</tbody>
</table>

iRecordbook Version 1.2a. Site developed and maintained by the California FFA Association.

Set-up a New Book

✓ On the tool bar go to Setup
  o Click on Book
  o Enter the following information under Book ID:
    ▪ Year 2015
    ▪ Description- Enter Book 1 or 2 or 3 dependent on year enrolled in ag
    ▪ Instructors- Enter Benson, Souza, Smith, Fontes
  o Click Save
OR
✓ Find where is says "No book has been set up" on the home page
✓ Click here to set up first book
  o Enter the following information under Book ID:
    ▪ Year 2015
    ▪ Description- Enter Book 1 or 2 or 3 dependent on year enrolled in ag
    ▪ Instructors- Enter Benson, Souza, Smith, Fontes
  o Click Save
✓ Your new created book will show up at the bottom of the screen
  o IF you need to EDIT anything click Edit

Planning Calendar
✓ Go to the toolbar and click Activities then Calendar
  o Enter all FFA Activities for the chapter for 2014-2015 even if you have or will not participate in them.
  o Enter 3 personal activities for each month of the year. Example- holidays, birth dates, planning of project dates.
  o Livestock AGD/FGR will be entered here
✓ As you save each date they will show up at the bottom of the screen.

OR
✓ Import Chapter Events
  o From Date 8/1/14
  o Through Date 6/15/15

FFA Activities- you have participated in
✓ Go to the toolbar and click on activities then FFA activities
  o A. Enter your degrees- Date awarded 9/14/14
  o B2. Parliamentary Procedure test passed Enter Date exam passed 8/25/14
  o C. Speaking Engagements- Enter all times you have spoken in front of class (estimate date)
  o D1. If you are a chapter officer enter here
  o D2. Service of committees- Enter anything you have helped with ex: fundraising (poinsettia, chicken BBQ), x-mas parade, Halloween mtg set up, Community service, BBQ
✓ Go to the toolbar and click FFA Activities Log under Activities
  o Here is where you will enter any of the activities you have participated in.
  o Enter Date of activity
  o Enter Activity Name
  o Under placing or responsibility enter either member, participant, attended, 1st place.
OR

✓ Go to the toolbar and click Activities then Calendar
  o Scroll down to the activity and click attend
  o Under placing or responsibility enter either member, participant, attended, 1st place.

Community service

✓ Go to the toolbar and click activities then community service
  o Enter at least 5 school activities. Be descriptive Ex- dress up days, Homecoming, sold mums
  o Enter any community service you have done- does not have to be FFA related or count for school community service. Be descriptive Ex- church work, school help, clean up

Setting up your enterprise (project)

✓ This section is where you set up your project information and records.
✓ On the toolbar go to Setup
  o Click on Enterprises
  o Under Enterprise ID fill out the following
    ▪ Description: Ex: Swine Production, Agriscience, Ag Mechanics, Landscape Management- Use proficiency list for areas
    ▪ Type: Ownership (do you own the project?) or Placement (do you work for a company?)
    ▪ Make sure active is checked
    ▪ Size and Scope: Enter how many or how big your project is or how often you will work. Ex: I raised 1 market lamb for the Salinas Valley Fair, I constructed 1 BBQ Pit to sell to in the Salinas Valley Fair auction.
    ▪ Startup and Growth: In complete sentences- Enter how you started your project, who helped and how did you get the money?
    o Scroll down and click save
✓ Your new created enterprise will show up at the bottom of the screen.

OR (turn page)
✓ Go to Home tab at top of screen
  o Find where it says “No enterprise has been set up” Click here
  o Enter in description- Ex: Swine Production, Agriscience, Ag Mechanics, Landscape Management- Use proficiency list for areas.
  o Enter type Ownership (do you own the project?) or Placement (do you work for a company?)
  o Make sure active is checked
  o Scroll down and Save

Budget

✓ Under transactions on the toolbar click Budget- Here you will enter what you THINK (estimate) what you will spend (expense) and earn (income) on your project.
  o Using description, no of units, price, amount and check expense or income then click save.
  o Leave category Blank
  o Click Save each entry and it will show at the bottom of screen.
  o Enter at least 5 expenses- ex: feed, gas, seeds, animal, equipment, mower, uniform
  o Enter at least 1 income- ex: sell Hog, Sell plants, labor hours

Agreements

✓ On the toolbar go to Set up and click Agreement
  o If you are working for someone it will be placement agreement
  o If you own the project it will be ownership agreement
    ▪ ALL project or enterprises must have an agreement
✓ Look at examples when filling in- must include all areas in bold at the top of agreement ex:profit or loss.
✓ Agreement date needs to cover all year 1/1/2015- 12/31/2015
✓ If agreement is the same as last year you may go back and change the date range to cover this year too.
Journal

✓ On the toolbar go to Transaction and click Journal
✓ Here is where you will enter exact income, expenses and hours with your project.
✓ Each transaction enter date
  o Double check you are on the correct enterprise if you have multiple!
✓ Description
  o A brief descriptions on what you did for those hours
  o Ex: SVF-Bought Feed, Weekly watering of plants, Checked Agriscience project
    for the week, Pruned fruit trees
✓ If it is income make sure to check box at bottom if not all will be entered as an expense.
✓ Hours can be entered weekly (livestock- at least 5hrs/week)

Set-Up for State Degree

✓ On the toolbar go to set-up and click student information
✓ Verify or enter any information not listed
✓ Future Plans- write in 3rd person ex: Nancy Armenta plans on attending Fresno State
  University and majoring in Agriculture Business and eventually would like to become an
  agriculture lawyer.
✓ For top five activities choose ones that are above the chapter level or most significant.
✓ For name pronunciation write name phonetically ex: Nancy Armenta  Nan-cee Arr-
  men-ta

Closing out a book for State Degree

To close out book must enter cash on hand at the end of the year. Go to transactions and cash on
hand enter the Net Current/Operating Income amount off the income summary which is under
reports income summary. For second year add the last years amount.
When books are done and ready for state degree go to set-up books and click edit then check the
box closed.
## ESTIMATED BUDGETS

### Market Goats

Ownership period is at least 60 days for market goats. This animal requires time and responsibility, but not as much as a larger animal. You will be responsible for halter breaking, practicing showmanship, and washing the animal. This is a fun project.

<table>
<thead>
<tr>
<th>Expenses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Goat</td>
<td>$250.00</td>
</tr>
<tr>
<td>Feed</td>
<td>$150.00</td>
</tr>
<tr>
<td>Entry Fees</td>
<td>$25.00</td>
</tr>
<tr>
<td>Equipment</td>
<td>$25.00</td>
</tr>
<tr>
<td>TOTAL EXPENSES</td>
<td>$450.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Income</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sale at Fair (with no buyers set up)</td>
<td>$500.00 (average price)</td>
</tr>
<tr>
<td>Profit/Loss</td>
<td>$50.00</td>
</tr>
</tbody>
</table>

### Steer

Ownership period is at least 120 days for a steer. This animal requires a lot of time and responsibility. You will be responsible for halter breaking, practicing showmanship, and washing the animal every other day. You will also need to attempt to grow a winter hair coat in the middle of summer. A “cooling box” is not necessary to do this, but shade and cooling devices, such as misters, are helpful. This is a time consuming, yet fun project.

<table>
<thead>
<tr>
<th>Expenses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Steer</td>
<td>$1000.00</td>
</tr>
<tr>
<td>Feed</td>
<td>$1000.00</td>
</tr>
<tr>
<td>Entry Fees</td>
<td>$25.00</td>
</tr>
<tr>
<td>Equipment &amp; Fitting Supplies</td>
<td>$50.00</td>
</tr>
<tr>
<td>TOTAL EXPENSES</td>
<td>$2075.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Income</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sale at Fair (with no buyers set up)</td>
<td>$2500.00 (average price)</td>
</tr>
<tr>
<td>Profit/Loss</td>
<td>$325.00</td>
</tr>
</tbody>
</table>
## Market Sheep

Ownership period is at least 60 days for a market lamb. This animal requires some time and responsibility. You will be responsible for practicing showmanship, exercising, washing, and shearing your animal. This is a time consuming, yet fun project.

<table>
<thead>
<tr>
<th>Expenses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeder lamb</td>
<td>$ 300.00</td>
</tr>
<tr>
<td>Feed</td>
<td>$ 200.00</td>
</tr>
<tr>
<td>Entry Fees</td>
<td>$ 25.00</td>
</tr>
<tr>
<td>Equipment</td>
<td>$ 25.00</td>
</tr>
<tr>
<td>TOTAL EXPENSES</td>
<td>$ 550.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Income</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sale at Fair (with no buyers set up)</td>
<td>$ 450.00 (average price)</td>
</tr>
<tr>
<td>Profit/Loss</td>
<td>$ -100</td>
</tr>
</tbody>
</table>

## Market Swine

Ownership period is at least 60 days for a market pig. This animal requires less time than some of the larger animal projects. You will be responsible for training your pig to walk, practicing showmanship, and washing the animal every other day. This is a fun project.

<table>
<thead>
<tr>
<th>Expenses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Pig</td>
<td>$ 300.00</td>
</tr>
<tr>
<td>Feed</td>
<td>$ 200.00</td>
</tr>
<tr>
<td>Entry Fees</td>
<td>$ 25.00</td>
</tr>
<tr>
<td>Equipment</td>
<td>$ 25.00</td>
</tr>
<tr>
<td>TOTAL EXPENSES</td>
<td>$ 550.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Income</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sale at Fair (with no buyers set up)</td>
<td>$ 500.00 (average price) Can be more with sponsors</td>
</tr>
<tr>
<td>Profit/Loss</td>
<td>$ -50</td>
</tr>
</tbody>
</table>
Ownership period is at least 60 days for a rabbit. This animal requires the least amount of time than the other projects, but it does still require a lot of responsibility, just as the other projects do. You will not make money on this project but you will gain a wealth of experience and knowledge on rabbits. You will be responsible for training your rabbit to show, practicing showmanship, and proper nutrition feeding. This is a fun project.

<table>
<thead>
<tr>
<th>Expenses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rabbit</td>
<td>$ 60.00</td>
</tr>
<tr>
<td>Feed</td>
<td>$ 30.00</td>
</tr>
<tr>
<td>Entry Fees</td>
<td>$ 25.00</td>
</tr>
<tr>
<td>Standards of Perfection Book</td>
<td>$ 20.00</td>
</tr>
<tr>
<td>Equipment</td>
<td>$ 25.00</td>
</tr>
<tr>
<td>TOTAL EXPENSES</td>
<td>$ 160.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Income</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential Premium awards</td>
<td>$ 20.00</td>
</tr>
</tbody>
</table>

**Profit/Loss**

$ - $140.00
Completing the Business Agreement

You may use this and copy this in to your Record Book.
All students with projects must fill this out for each project they have

- All bold items in the record book must be addressed. They are the following.
  Capital (money), equipment, management, profit/loss, buildings, land

I, (Your Name) will use my money from my savings account to purchase my lamb. I will house my lamb in a pen on the school farm. I will feed my animal and clean the pen twice a day. I will practice my showmanship skills daily. I will be responsible for purchasing my own equipment and feed but Highland High School will provide minor medications. Medications outside the realm of Highland FFA will be purchased by myself. Any money lost will be my responsibility and any money earned will go directly to me. After selling my animal at the Kern County Fair, I will give the buyers a thank-you letter and I will complete my record book. I understand I will not receive my check until the record book and thank-you letters are completed.

- After you have completed this write-up in the record book, the following people will sign it:
  ○ Parent
  ○ Student
  ○ FFA Advisor
Purchasing Animals

The final date to commit is May 4 by submitting a non-refundable check for $100 to the breeder.

Knowing the length of ownership will help you determine when you need to get your project. You have a few options in getting your project animal.

1. You can get the animal on your own.
2. You can ask the Ag. Teacher for assistance.
3. You can ask other students/parents who have shown before.

Some important points to remember in animal selection:

- Choose an animal that is the appropriate size and weight to be shown at the Kern Fair. Animals that are young or underweight require extra care in feeding, which can require extra money. Animals that are older or too large require being held back, which can be difficult. Purchasing light or heavy animals can seriously decrease your chances of making weight at the fair.
- Choose an animal that comes from a reputable source.
- Choose an animal that has good conformation and good health.
- Choose an animal that is in your price range and will compete favorably.

If you are requesting assistance from the Ag Teacher to obtain a fair animal, money will be due up front prior to getting the animals (the non-refundable $100 deposit). Students failing to provide the money up front will not receive assistance.

If you have financial difficulty at the present time, a possibility for financing the project is to obtain a loan from a local bank. This is an excellent opportunity for students to co-sign with their parents and establish an early line of credit.
STUDENTS HOUSING THEIR ANIMAL AT
THE SCHOOL FARM

If you wish to house your animal at the school farm, you must do the following:

1) Complete and submit a HHS Farm Agreement Form. (Can be obtained from an advisor.)
   a) Animals being housed at the ROC must have a separate Agreement on file and are due to Mrs. Devaurs by May 1.

2) **Attend a mandatory meeting with a parent/guardian to discuss**
   **School Farm Rules, develop a feeding and cleaning schedule, responsibilities related to showing, grooming and exercise, and answer questions regarding the project.**

3) All students must complete the Pink Cards EVERY DAY and stamp time cards!

4) Students must take care of their animals EVERY DAY!

5) In the event that your animal becomes ill or injured, it is the student’s responsibility to pay for the veterinarian expenses. It is NOT the agriculture department’s responsibility. (Remember that the other students who do not house their animal(s) at the school farm must pay their own rent and veterinarian fees.) Failure to handle illness or injury as it occurs will result in removal of the animal(s) from the school farm.

6) You will purchase feed yourself from the store.

_These criteria are put in place to ensure that everyone:_
   a) understands the school farm rules,
   a) has equal responsibility for cleaning the pen,
   b) has equal responsibility for buying feed, and
   c) has equal responsibility for feeding the animals.
Animal Care

Feeding

➤ Provide a regular feeding schedule in the morning and evening.
➤ This regular feeding schedule promotes a healthier animal, which will promote better weight gain.
➤ Feeding too close together makes it difficult for the animal to finish the feed and digest it; too far apart makes them extra hungry.
➤ Irregular feeding can lead to sickness and/or weight loss.
➤ Use feeds approved by your advisor. Please check with the advisor prior to purchase.
➤ The school farm will only be “open” to feed during certain hours. Anyone found on the farm outside of these hours will face disciplinary action.
  o M-F: 6:30 am – 9am and 5pm – 8pm
  o Sat-Sun: 8:30 am – 10:00 am and 5pm – 8pm
➤ Gate Combination:
  o Every student will be given a combination for the gate to be used within the hours above. This is a test year which may prove to be effective or not. Please do NOT provide anyone with this code. If someone needs to feed for you, please ask a student who already has the code. If the code is passed out, it defeats the purpose of added security and we will need to go back to the less-secure padlock.

Handling

➤ Handle your animal every day. This includes exercise, grooming, and showmanship practice.
  o If you are doing your project well, you should be working, in addition to feeding, for 1-2 hours every day. Feeding is not included with this 1-2 hours.
➤ Animals will be healthier, gain more weight, and develop more muscling if you take them for daily walks.
➤ Animals respond better to the individuals that work with them every day.
➤ During a project visit, you need to be able to show your skills handling the animal.
➤ If you are unable to handle the animal where you are keeping it, you will be unable to handle it at fair.

You may only use drugs or medicines approved by a veterinarian or your advisor. Individuals in violation with these rules will be expelled from showing.

Animals exhibited by Highland FFA members must meet the Quality Assurance and Ethics Standards enforced by the State Fair Quality Assurance Program.

Water

Clean, fresh, and cool water must be available to the animal 24 hours a day. NO EXCEPTIONS!!! With the hot summer days in Bakersfield, it is inhumane to have any animal go without water. If you won’t drink it, your animal shouldn’t either.
Housing

✓ The pen is to be kept clean on a regular basis.
✓ All pens are to be cleaned a minimum of two times per day.
✓ If you house your animals at the school farm, the pen must be cleaned in the morning AND afternoon.
✓ A posted schedule should be available for the advisor and pen-mates to see. Schedules should be posted on your clipboards showing who is cleaning the pen on what days.
✓ A clean environment promotes healthy animals.

Worming:

Pigs, sheep and goats should be wormed every 21-30 days. It is imperative to follow a strict schedule for worming to keep the animal healthy and gaining weight properly. Panacur and Safeguard are paste wormers for internal parasites, while Ivomec can take care of some internal and external parasites. Cattle can be wormed every 60 days. Failure to follow an appropriate schedule could result in medication remaining in the animal’s system at fair time. This will be an automatic disqualification, as the meat will be deemed inedible. Highland FFA will provide the de-wormer medication.

Vacations and other obligations:
As this is a student project, students are expected to maintain the project for the entire duration.

1. Students should not be out of town for more than 2 weeks throughout the summer, and no more than 1 week at 1 time.
   i. When leaving for the town for any duration of time, students must email the advisor the following information:
      1. Student responsible for feeding
      2. When they intend to leave and return
      3. Confirm the person feeding has all the feed and resources needed to assist.
      4. Confirm the person feeding understands he/she will clean the pen.

2. Students who are planning to participate with sports teams need to understand that the animal project should be first priority. Missing showmanship practices for sports practices will not be excused. If you plan to do a sport or have other obligations, please discuss any concerns with your coach before committing to an animal project. The showmanship practice schedule can be found on page 2 of this packet.

3. Students who are absent for too many days from their projects may lose their opportunity to show their projects.

Consequences
If discussions with the student and parent are unsuccessful with a change in student behavior, the advisor has the right to remove his/her animal from the fair. 72 hours' notice will be given to have the animal removed from the premises. The advisor will not be responsible for any loss in funds.
Showmanship

Showmanship is how well you can exhibit your animal. During your project visits and showmanship practices, the student and advisor will go over showmanship techniques. It is the student’s responsibility to practice showmanship between project visits.

All exhibitors should practice a minimum of ½ hour per day. 1 hour of concentrated practice is suggested each day during the cooler hours and slowly working toward warmer hours. Do NOT over stress your animal! Showmanship practice should not be detrimental to weight gain.

Your showmanship practice will be reflected in the show ring at the fair.

The student will be given a grade for the showmanship practices he/she attends. Refer to the grading rubric.

Showmanship dates and times have changed from previous years. Please see the schedule on page 2 of this packet.
Project Visitations

- Project visitations will occur throughout the summer. They are arranged by your agriculture teacher.
- You will be contacted with the visitation schedule for the summer by mid June.
- After the first visit, the subsequent visits will be reminded via the project visit form in the bottom right hand corner of the project visitation form, on a summer calendar, or emailed to you.
- As there will be a number of visits per day, please understand that there may be some delays along the way that might make your visit run a little later. In that situation, you will be notified if your visit will be more than 30 minutes from the originally scheduled time.
  - At the time of the visit, the student and/or parent need to be present.
    - If no one is there at the scheduled time, a strike will be assigned.
    - If you need to cancel, please call the appropriate ag teacher
    - Please do not call after 9:00 p.m. unless it is an emergency. There are emergency cancellations, which will be handled on a case-by-case basis.
- Student will bring their animal binder with all of their appropriate paperwork and they will access their record books online.
- Student will be given a grade for the project visitations and will be graded upon the items below. In addition, the student will be graded on promptness and preparedness.

The Project visit will consist of:
- ✓ weighing the animal
- ✓ determining rate of gain
- ✓ observation of handling skills
- ✓ checking pen cleanliness
- ✓ discussing feeding strategies
- ✓ going over recommendations and commendations

A copy of all items discussed will be given to the student/parent at the end of the visit.

IMPORTANT: If you have questions/concerns between visits, please do not hesitate or wait to call—especially if it is related to the animal’s health.

*It is the student’s responsibility to make sure to contact the advisor to arrange a time for the project visit when the requests are sent out.*
**Fair Entries**

- A fair premium catalog will be provided to each exhibitor as well as entry forms. They can also be obtained from the Kern County Junior Livestock Office or the main office.
- Entries will be due at the beginning of the project, the day the project is brought on the farm. Not one day after. Not two days after. The same day!
- It is the exhibitor’s responsibility to complete these forms, get the appropriate signatures and submit the paperwork to the advisor/livestock office at the Kern County Fairgrounds by the specified due date(s). *Entries not turned in to the advisor by the date on page 2 will be responsible for getting it to the fair by the fair-imposed due date found in the official premium book.* The advisor will not be held responsible for entries not turned in by the due dates. Checks will be made out to the KC Fair and stapled to the entry form.
- Under NO circumstance will any person be given permission to sign the forms for the advisor. Please plan in advance. *Remember, your emergency may not be my emergency on the day of the fair entry deadline.*
- Also, please read the rules in the premium book regarding your specie. Ask questions you may have early.
- All students will sign up for their respective exhibit/market classes as well as showmanship. If your lamb was born in Kern County, you will also sign up for the Kern Bred and Fed class.
- If you are entering Kern Bred and Fed for sheep, you are responsible for taking the entry forms to the fair yourself and finding transport for your lamb to the ear tagging.
## ENTRY FORM ASSISTANCE

### Market Pigs

<table>
<thead>
<tr>
<th>Division</th>
<th>Fee</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market</td>
<td>$15</td>
<td></td>
</tr>
<tr>
<td>Showmanship</td>
<td>$5</td>
<td>2</td>
</tr>
<tr>
<td>Kern Farrowed and Fed</td>
<td>$10</td>
<td>1</td>
</tr>
<tr>
<td>Market Barrow</td>
<td>$10</td>
<td>1</td>
</tr>
</tbody>
</table>

Classes: 1 Duroc, 2 Hampshire, 3 Yorkshire, 4 AOB, 5 Cross Bred

### Market Sheep

<table>
<thead>
<tr>
<th>Division</th>
<th>Fee</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market</td>
<td>$15</td>
<td></td>
</tr>
<tr>
<td>Showmanship</td>
<td>$5</td>
<td>2</td>
</tr>
<tr>
<td>Kern Bred and Fed</td>
<td>$10</td>
<td>1</td>
</tr>
</tbody>
</table>

Classes: 1 Hampshire, 2 Suffolk, 3 AOB, 4 Speckle, 5 Natural, 6 Cross Bred

### Rabbits

<table>
<thead>
<tr>
<th>Division</th>
<th>Fee</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat Pen of 3</td>
<td>$10</td>
<td></td>
</tr>
<tr>
<td>Rabbit Judging Show</td>
<td>Depends on Breed</td>
<td></td>
</tr>
<tr>
<td>Showmanship</td>
<td>$5</td>
<td></td>
</tr>
<tr>
<td>Synchronized Showmanship</td>
<td>$5</td>
<td></td>
</tr>
<tr>
<td>Poster Contest</td>
<td>$5</td>
<td></td>
</tr>
<tr>
<td>Costume Contest</td>
<td>See Catalogue</td>
<td></td>
</tr>
</tbody>
</table>

### Steers

<table>
<thead>
<tr>
<th>Division</th>
<th>Fee</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market</td>
<td>$20</td>
<td></td>
</tr>
<tr>
<td>Showmanship</td>
<td>$5</td>
<td>2</td>
</tr>
<tr>
<td>Kern Bred and Fed</td>
<td>$10</td>
<td>1</td>
</tr>
</tbody>
</table>

Class 1 Black Straight Breeds and X Breeds
Class 2 AOC Straight Breeds and X Breeds
Class 3: Slick Sheared
Class 4: All English

### Goats

<table>
<thead>
<tr>
<th>Division</th>
<th>Fee</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market</td>
<td>$15</td>
<td>1</td>
</tr>
<tr>
<td>Showmanship</td>
<td>$5</td>
<td>2</td>
</tr>
<tr>
<td>Kern Bred and Fed</td>
<td>$10</td>
<td>1</td>
</tr>
</tbody>
</table>

**Please refer to the KC Fair Catalogue for additional divisions/contests and classes and for accuracy of these divisions.

***Please staple your checks made out to the KC Fair to your Fair Entry Form
4. If there are any questions concerning the auction process or sale of an animal, please ask an ag teacher before or during project visits. DO NOT wait until the fair.

5. Every student who would like to secure a good profit must find a buyer by last Wednesday of fair. Please do not procrastinate about doing this!!! Start early. Those who have not done this before need to start asking questions early!

6. YOU MUST RUN SPONSORS THROUGH THE AUCTION OFFICE FOR THEM TO RECEIVE TAX CREDIT AND TO BE LEGAL. If you collect money on the side to avoid losing the commission, you risk being sued for these monies. Only money being run through the auction will count toward degrees and other awards.

7. If you pull the animal from the auction after it has been submitted for sale, you forfeit your eligibility to show and sell at the Kern County Fair for 2 years.

8. If you are outbid at the auction, you may add your sponsors to the winning bidder (if your sponsors don’t want the animal/meat). However; your “add-on” cannot exceed the bid amount of the winning bidder. For example, if you have a winning bid of $500, you cannot add more than $500 to that bid.

9. All exhibitors will sell their animal at the fair unless you have spoken to your advisor prior to beginning your project.

10. At the auction, your parent, or an adult previously arranged, must be present to sign the sales slip if your prearranged buyer cannot be present. That adult must be present to sign the sales slip. The advisor WILL NOT sign the sales slip under any circumstances.

11. You need to be in official FFA show uniform at the sale.

11. After you have sold your animal, you need to run the paperwork to your buyer. You should have a gift ready to give your buyer at the time he/she signs the paperwork.

12. The next few pages are directions for filling out buyer and sponsor forms.

13. You must let the instructor know in writing signed by a parent and yourself by Monday of fair to declare if the animal will be live pick up or be sold. Only one animal total may be sold per exhibitor at the fair.
Auction Paper
Buyer Forms

1. The Sponsor form is the same as the buyer form. Buyers and sponsors are given the same title in the auction office. There is only one distinction in filling them out—whether you check the buyer or donation (sponsor).

2. Make sure all information is COMPLETELY filled in and is legible on ALL copies.

3. Make sure that the appropriate specie is marked.

SPONSORS/DONATIONS

1. Collect the money from you sponsors when they sign the paperwork (if possible). The fair will not bill any 1st time buyers/sponsors or if the cost is less than $100. Monies over $100 can be billed (if they are a repeat buyer) by the fair but you may be waiting longer to receive your money if the sponsors take a while to pay. It’s much easier to collect the money yourself when they sign your buyers form.

2. YOU ARE NOT TO COLLECT ANY CHECKS MADE OUT TO YOU, OR USE ANY CASH THAT IS PAID TO YOU FOR YOUR SPONSORSHIPS! All money is to go through the auction office. The only exception is if the donation is less than $100. In this case, you will collect the check made out to the KC Livestock Auction and turn it in.

BUYERS

1. There are two ways to sell your animal. You can have someone buy the whole animal or multiple parties each buy a portion of the animal. The price that you ask for is not necessarily the “total bid” price. If one person donates $200 and another person donates $200, the total selling price at auction will be $400. Any donations that you receive can be added to the “bid” BEFORE you sell. Mr. Davidson will help you figure this out. You can also get assistance from the Livestock Auction Office at the Kern County Fair prior to the auction day.

2. Options for buyers:
   a. Resale: The buyer wants to help you out, but they don’t want the meat or the animal. What will happen is that animal will go across the auction block and then be sent to another market to be sold again. If your buyer chooses this option, they only pay for the difference between their agreed price and the market price that day.

   **Example:** They agree to buy it for $1.00/lb and they choose the resale option. On the day of the auction, market price is $0.43/lb. Your buyer will only have to pay $0.57/lb. The person who purchases your animal at the next sale will pay the $0.43/lb. However; you will receive $1.00/lb.
b. **Custom Processing:** The buyer wants the animal for their freezer. An example is *Farmer's Wholesale* located off Taft Hwy. It is a custom processing facility. Your buyer will have to pay the agreed price per pound + the kill charge (about $35) + the cut and wrap fees ($60-$100+). Please let them know this up front, otherwise they will be shocked when the auction bill comes, or when they pick the meat up from the butcher.

**Figuring Out Bid Price**
1. Be sure to set aside enough time to go through the figuring of the final bid price distribution of paperwork.
2. Your parent or the signed representative MUST be present at auction to do the actual bidding as specified in your fair packet.
3. Every animal will be sold "per pound" so you will need to do some math prior to the auction.

**Distribution of Forms**
1. So what do you do with these forms when they are completed???? Here is where the copies go:
   a. White- Auction Office
   b. Yellow- Buyer/Sponsor
   c. Pink-Exhibitor/Parent
2. If you are handling your own paperwork, PLEASE do not wait until the day before or day of auction. Procrastination on your part does not constitute an emergency on their part. Plan ahead! You have all summer!

**Thank You Letters**
1. Thank you letters are due upon collecting the checks.
2. The thank you letter should be a minimum of three paragraphs to include at least the following information:
   a. A thank you for buying/sponsoring the animal,
   b. Information about your project and experiences with it,
   c. Plans for use of the money (be professional)
   d. A reminder of the cut and wrap facility of their choice with the appropriate phone number and address, (FOR BUYERS ONLY),
   e. A reminder to contact the cut and wrap facility to discuss preferences, (FOR BUYERS ONLY),
   f. A reminder that if there are any problems with the billing to contact the Kern County Fair Livestock Auction Office.
   g. And your hope that they will continue to support the FFA and the Junior Livestock Auction.
How to get Buyers/Sponsors

Here are some tips to get buyers/sponsors.

➤ Make a list. Businesses, family members, friends of the family—anybody that will pay their bill is a potential buyer/sponsor. Don’t force the people to help you—they have to want to help!

➤ Go IN PERSON and be prepared. It’s harder to tell someone “no” in person than it is over the phone. Many businesses will be asked to make donations for the fair. Don’t feel hurt if they say “no.” It is also easier for your letter to get “lost” amid all the other letters that companies receive on a daily basis.

➤ Introduce yourself.

➤ Dress Appropriately. Official Dress is recommended!

➤ Take photos of you working with your animals and be prepared to give specifics on things you have learned and challenges you have dealt with.

➤ Recommend sending them a newsletter every month with updated information you have learned or dealt with.

➤ A workshop will be held in room 12B on June 5th at 6:30 pm to show you how to find buyers.
Veterinary Clinics

Vets are not limited to this list

<table>
<thead>
<tr>
<th>Bakersfield Veterinary Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>4408 Wible Road</td>
</tr>
<tr>
<td>832-1150</td>
</tr>
</tbody>
</table>

| Travis Thurman                  |
| 2720 Calloway Dr, Suite E      |
| 589-9900                        |

<table>
<thead>
<tr>
<th>San Joaquin Veterinary Hospital Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3441 Allen Road</td>
</tr>
<tr>
<td>588-3299</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Banfield Vet Hospital (rabbits) – Dr. Davidson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oswell St (Petsmart)</td>
</tr>
<tr>
<td>369-8110</td>
</tr>
</tbody>
</table>

Feed and Tack/Supplies Stores

<table>
<thead>
<tr>
<th>Round Up</th>
<th>Garcias Feed Store</th>
</tr>
</thead>
<tbody>
<tr>
<td>5805 Rosedale Hwy.</td>
<td>3221 Niles Street</td>
</tr>
<tr>
<td>327-1301</td>
<td>Bakersfield CA 93306</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Granite Station Feed and Tack</th>
<th>New store in oildale</th>
</tr>
</thead>
<tbody>
<tr>
<td>7156 Golden State Hwy Unit B</td>
<td>Norris Road</td>
</tr>
<tr>
<td>619-4545</td>
<td>Oildale</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Bugni Hardware and Feed</th>
<th>CLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2612 Taft Hwy.</td>
<td>3105 F Street</td>
</tr>
<tr>
<td>832-8051</td>
<td>327-0321</td>
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</table>

<table>
<thead>
<tr>
<th>East Hills Feed and Supply</th>
<th>Walco</th>
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<tbody>
<tr>
<td>7500 Muller Rd.</td>
<td>Enos Ln</td>
</tr>
<tr>
<td>363-5213</td>
<td>635-3030</td>
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</table>

<table>
<thead>
<tr>
<th>Valley Feeds</th>
<th>Tractor Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>12905 Hageman Rd</td>
<td>2749 Calloway Dr # 560</td>
</tr>
<tr>
<td>661-589-5885</td>
<td>Bakersfield, CA 93312</td>
</tr>
<tr>
<td></td>
<td>(661) 589-1504</td>
</tr>
</tbody>
</table>

Important Contact Information

Ag. Department: 871-2777

Mr. Davidson:
craig_davidson@khsd.k12.ca.us

Mrs. Devaurs
Lindsay_devaurs@khsd.k12.ca.us
Rules & Expectations While at the Fair

The following includes, but is not limited to, the summation of the rules and expectations for members of the Highland FFA group at the Kern County Fair.

I. Attendance

B. All members will be excused from school for ONLY those days that they show and/or sell their animal at the fair.

C. Students on the fairgrounds on non-cleared days during school hours will be reported as a cut to the attendance office. In addition, students will be asked to leave their exhibit until after school hours.

D. Additionally, some members will be excused on non-show and/or non-sale days with the assignment of “Barn Duty” during the hours of 7:00 a.m. to 4:00 p.m. Only those members approved to be on “barn duty” will have a cleared absence.
   1. Those people assigned to barn duty will be responsible during the hours required by their animal specie. Barn Duty students are responsible to:
      a. Arrive on time and stay for the duration of their assigned barn duty.
      b. Clean soiled bedding out of the pens as it happens during the day.
      c. Make sure water is clean and available to animals.
      d. Make sure animals are cool and comfortable.
      e. Make sure equipment is put away neatly.
      f. Make sure the tack area is organized and clean.
      g. Make sure the aisles around our pens are kept clear and clean. They usually require being swept every half hour.
      h. Complete homework.
      i. Answer the public’s questions.

II. Livestock Barns

A. Exhibitors are to follow the leadership of the advisor.

B. All members will be responsible to show up on time to the fair grounds for feeding, cleaning, showing, and auction.

C. All animals in ALL barns must be clean and have their bedding clean in the morning by 7:30 a.m. and in the evening between 5:30-7:30 p.m.
   1. There will be a sign-in board in the barn. All exhibitors are expected to SIGN IN and SIGN OUT upon completion of feeding and cleaning in the morning and evening. I need to know where everyone is at all times, especially if you leave.
   2. As there are many exhibitors in all barns, it is difficult to see when all exhibitors come and go. Failure to sign in will result in a disciplinary action/strikes.

D. Members are expected to work together as a TEAM. There is no room for “individuality” at the fair. Things will run much smoother when everyone pulls together.

E. Personal differences need to be set-aside for the duration of the fair. If you are unable to do so, please consider finding an alternative group for exhibiting livestock, i.e. 4-H.

F. All equipment, animals, etc. will be kept with the HHS FFA in either the chapter’s or personal tack boxes.
G. It is the responsibility of the entire group to maintain a clean aisle walkway, pens, and storage area for tack.

H. Barn will need to be decorated so we ask for a handful of volunteers (parents/students) to assist with this. Please see an advisor if you are interested.

I. It is each exhibitor’s job to feed, water and clean his or her own animals. Exceptions are made when students have conflicting school activities, but not “extra” activities at the fair, i.e. concerts and shows.

J. On the days between the last show day and the auction, the students on barn duty in the morning will be responsible for feeding hay to the sheep to assist students going to school.

K. Defiance will not be tolerated.

L. HHS FFA members represent HHS. Each exhibitor’s best behavior and conduct is expected at all times!
   1. Tardiness
      a. Reporting times are given in the Section II B of these expectations. Anyone later than 15 minutes past those times will receive a strike.

M. Overall Behavior
   1. Students are to conduct themselves in a proper manner, dress respectably, and use good, clean language.
   2. As this is a school activity, all school and district rules apply.

III. Responsibilities

A. FFA Uniforms
   1. You are expected to wear the appropriate FFA livestock show uniform – white pants, crisp white collared shirt (no polos), FFA jacket, and FFA tie/scarf. Please select neutral colored tennis shoes or boots.
      a. Uniforms are to be worn on:
         1. Showmanship Day
         2. Market Day
         4. Awards Night (if applicable)
         5. Sale Day
   2. FFA Jackets are to be purchased at the latest by AUGUST 1st to ensure that they arrive for the fair.

B. Transportation
   1. A signed parent permission form is due to me before fair begins. It is the parent’s responsibility to make sure the student has transport to the fair each day. A bus is not provided.

C. School
   1. It is the student’s responsibility to get any assignments they will miss for the days they have been cleared to miss.
   2. It is the student’s responsibility to complete and turn in all missed assignments.
   3. Grades will be checked by the advisor at the end of the first quarter. Those not earning a 2.00 GPA with at least a C in their agriculture class will not be eligible for an entire year and will include the next Kern County Fair.
D. Show, Grooming, & Auction

1. All exhibitors are responsible to groom their own animals. Parents and advisors are there to advise – not do the work for the exhibitor. **THIS RULE IS IN THE PREMIUM BOOK.** If the student cannot groom at least half of their animal without adult help, they need to find another organization.

2. Bedding will be purchased by the exhibitor. All payments will be made via the FFA Boosters. Cost will be announced mid-late summer.

3. The advisor will make the final decision regarding which animals will be selected for the pen of six in sheep and swine and pen of three in beef.

4. Sale declaration (Sell or No Sale) must be made by 9:00 a.m. on the Monday after market classes. If a written statement is not provided, the instructor will declare the animal to “sell” on the auction block. This may result in being very upset because your animal is now going to be sold.

5. Only the exhibitor is allowed to show and sell THEIR animal.

6. Only one animal may be sold.

7. Kern County Fair animal identification tags ARE NOT to be removed from any animal’s ears by an individual for any reason. They are required for release and/or auction.

8. Fair thank you letters will be due within two weeks of receipt of buyer list. Thank you letters must all be handwritten and presented to the advisor BEFORE they are mailed. Please provide a stamped addressed envelope when turning in the letter for approval.

E. Fair Passes

1. Each exhibitor will receive only one fair pass and one parking pass per family.

3. It is recommended that exhibitors laminate their fair passes as the fair will not replace washed, lost, etc. fair passes.

4. Parents and family members can purchase 7 day or entire fair passes in the livestock office before the fair starts – usually in September.

5. Only one gate 39 pass is issued per family.

F. Fair Time Warnings

1. A total of three strikes will be giving for any infractions of the rules above.

2. On the 3rd strike, the exhibitor will be dismissed from the show and/or auction.
CONSEQUENCES

- Students are expected to be on their best behavior, courteous, and respectful while at the fair.
- Remember, you are representing your FFA Chapter and Highland High School.
- ALL SCHOOL RULES APPLY WHILE YOU ARE AT THE FAIR
  - Anyone caught in violation of school rules will be removed from the show/auction, ineligible for any shows for the NEXT school year, restricted to local activities as approved by the advisor, and any other action deemed necessary by the school and department.
- Students will be given a total of three warnings during the course of the project for not following the guidelines set forth in this packet. On the fourth warning, regardless of whether the animal is at school or at home, fair entries will not be signed. If it has already been signed, it will be pulled from the Kern County Livestock Office.
- Other reasons an exhibitor may not show at fair include, but are not limited to:
  - Failing to turn in entries on time;
  - Failing to get animal(s) ear tagged/nose printed on the correct date;
  - Failing to attend the mandatory parent AND exhibitor meeting;
  - Failing to attend the fair pen set up at the fair;
  - Receiving more than 3 warnings before or during the fair for non-compliance of the rules.
  - Bad mouthing students, parents, or advisors in a public forum.
- Parents/Guardians are to ensure that they and/or their child will handle any disagreement/dispute at the fair in a professional and discreet manner that is respectful of the advisor's profession so as not to undermine the advisor's authority. Any occurrences that are conflict with this rule will result in the child/children not exhibiting at the current, or subsequent fairs.
Kern County Fair Acknowledgement of Terms and Project Designation
EXHIBITOR COPY -- YOU KEEP THIS COPY

We agree to the terms set forth in this packet by the Agriculture Department at Highland High School for the Highland High School FFA Kern County Fair Projects. Further, we understand the consequences for non-compliance of these guidelines related to the Kern County fair project(s) while conducting the project under the supervision of the Highland High School Agriculture Department.

- Through this signature, you as a parent are ensuring that you will handle any disagreement/dispute at the fair in a professional and discreet manner that is respectful of the advisor’s profession so as not to undermine the advisor’s authority.

Mailing Address During Summer: ____________________________________________

City: __________________________ State: _______ Zip: __________

Phone Number: __________________________ GPA: ______

Fall Sem Ag Grade ______ Current Ag Grade ______

I would like to submit the following application to show the following animal(s) at the Kern County Fair. Please check correct category. (By indicating what you would like to show, it does not lock you into that specie unless there is an ownership period conflict).

- Market Sheep
- Market Steer
- Market Swine
- Dairy Cattle
- Registered Beef
- Commercial Beef Heifer
- Horse
- Breeding Sheep
- Breeding Swine
- Rabbits
- Poultry
- Dairy Goats
- Pygmy Goats
- Market Goats (no new exhibitors)
  *Student responsible for practicing on his/her own – goat exhibitors

- I need help finding my fair animal(s).
- I do not need help finding my fair animal(s).

Please select one. Thank you.

We will attend the following Parent and Exhibitor Meeting.

( initial) Thursday, September 3, 2015
(Mark this date on your calendar! There will be no alternate times or dates.)
Kern County Fair Acknowledgement of Terms and Project Designation

EXHIBITOR COPY -- YOU KEEP THIS COPY

We agree to the terms set forth in this packet by the Agriculture Department at Highland High School for the Highland High School FFA Kern County Fair Projects. Further, we understand the consequences for non-compliance of these guidelines related to the Kern County fair project(s) while conducting the project under the supervision of the Highland High School Agriculture Department.

Through this signature, you as a parent are ensuring that you will handle any disagreement/dispute at the fair in a professional and discreet manner that is respectful of the advisor’s profession so as not to undermine the advisor’s authority.

Mailing Address During Summer: __________________________

City: ___________________ State: _______ Zip: __________

Phone Number: __________________________ GPA: _______

Fall Sem Ag Grade ______ Current Ag Grade ______

I would like to submit the following application to show the following animal(s) at the Kern County Fair. Please check correct category. (By indicating what you would like to show, it does not lock you into that specie unless there is an ownership period conflict).

____ Market Sheep
____ Market Steer
____ Market Swine

____ Dairy Cattle
____ Registered Beef
____ Commercial Beef Heifer
____ Horse

____ Breeding Sheep
____ Breeding Swine

____ Rabbits
____ Poultry
____ Dairy Goats
____ Pygmy Goats
____ Market Goats (no new exhibitors)
*Student responsible for practicing on his/her own – goat exhibitors

____ I need help finding my fair animal(s).
____ I do not need help finding my fair animal(s).

Please select one. Thank you.

We will attend the following Parent and Exhibitor Meeting.

____ (initial) Thursday, September 3, 2015

(Mark this date on your calendar! There will be no alternate times or dates.)
Appendix U

SAE Project Visitation Sheets
Highland High School Agriculture Department

Student Name: ___________________________ Date: _______________________

Visiting Teacher: Davidson Devaurs ______________________

Project Visit for:

<table>
<thead>
<tr>
<th>Sheep</th>
<th>Beef Cattle</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pigs</td>
<td>Dairy Cattle</td>
<td></td>
</tr>
<tr>
<td>Rabbits</td>
<td>Goats</td>
<td></td>
</tr>
<tr>
<td>Chickens</td>
<td>Home Visit</td>
<td></td>
</tr>
</tbody>
</table>

Animal ID: ___________________________ ___________________________ ___________________________ ___________________________

Weights for fair animals: ___________________________ ___________________________ ___________________________ ___________________________

Weight on last visit: ___________________________ ___________________________ ___________________________ ___________________________

Number of Days since last visit: ___________________________

Rate of Gain: ___________________________ lbs/day ___________________________ lbs/day ___________________________ lbs/day ___________________________

Number of days to fair: ___________________________

Projected Weight Gain: ___________________________ ___________________________ ___________________________ ___________________________

Projected Wt @ Fair: ___________________________ ___________________________ ___________________________ ___________________________

General Comments/Recommendations:

____________________________________________________________________________________________________________________________________________

____________________________________________________________________________________________________________________________________________

____________________________________________________________________________________________________________________________________________

____________________________________________________________________________________________________________________________________________

____________________________________________________________________________________________________________________________________________

____________________________________________________________________________________________________________________________________________

Fair requirements to still meet: 
- Anti-Fungal Shampoo (if applicable)
- Fair Packet Form and Deposit for animal
- Barn Set Up at Fairgrounds
- Bedding Fees to the Booster Club
- Ear tagging
- Parent/Student Fair Meeting in Sept
- Completed Record Books
- Fair Entry Form Turned In
- Work completed on the farm

Next Project Visit:
Date: ________ Time: ________am/pm

Mon Tues Wed Thurs Fri Sat

Student Signature

Advisor Signature
HOME VISIT REPORT

Student Name: __________________________ Grade: ______ Date: ______________

Project Location: ______________________ Phone: ______________________

Project: ____________________________ Project Type: ______________________

Purpose of Visit: ______________________

Current Feeding Program: ______________________

Project Weight: __________________________ Goal Weight: ______________

Record Book Check _______________ Up-to-date: ______________

General Comments / Recommendations:

<table>
<thead>
<tr>
<th>Date</th>
<th>Animal Treated</th>
<th>Medication</th>
<th>Amount Given</th>
<th>Withdrawal</th>
<th>Withdrawal end Date</th>
<th>Responsible Person</th>
</tr>
</thead>
</table>

Student Signature: ______________________

Instructor Signature: __________________________ Est. Date of Next Visit ______________

Parent Signature: ______________________
Appendix V

Home Visit Sheets
Highland High School Agriculture Department
Home Visit Report 2015-2016

Student Name: ________________________________

Period: _______  Class: __________________________

Date: ________________  Time: ________________

Parent’s Names: ______________________________________

✓ Grade Breakdown:
  
  50% Classroom: Classwork, homework etc...
  
  30% Quizzes/Exams
  
  10% FFA Participation (3 FFA Credits per quarter)
  
  10% SAE (Supervised Agricultural Experience - 3 hrs/month of work on an Ag project outside of class)

✓ Webpage Available through Synergy where you can check grades & various other things at all times!

✓ FFA Interests: __________________________________________

✓ What are you going to do for FFA Credits? __________________________________________
  
  ✓ Highlandffa.com

✓ SAE Project Idea or Started: __________________________________________

✓ Signatures:

  Student: ________________________________  Date: ________________

  Parent: ________________________________  Date: ________________

  Teacher: ________________________________  Date: ________________

*Parent’s will receive a copy of this sheet sent home with student after the visit.

*An additional copy will also be kept in the student’s file.
Appendix W

Request to be Absent Form
KERN HIGH SCHOOL DISTRICT
REQUEST TO BE ABSENT
FROM ASSIGNED RESPONSIBILITIES FOR PROFESSIONAL ACTIVITIES

Instructions: This form is to be submitted by all personnel who expect to be absent from duties, other than for personal necessity or other leave. It must be received by the Office of Innovative Programs 10 days prior to absence.

Name:  Lindsay Devaurs

School:  Highland High  Department:  Agriculture

Destination (City/State):  San Luis Obispo, Ca.
Attach letter of explanation for out-of-state travel.

Reason (Explain in detail):  CATA Conference

Dates: from  June 19  to  June 23, 2016  Total Days for this Activity:  4

Substitute:  NO  ☒  YES  ☐  Dates and Periods:  

Funding Source/Substitute:  Acct #:  

Funding Source/Expenses:  Acct #:  1105 - 1105 - 0
CASE Job #

Funding Source/Expenses:  Acct #:  2100 - 5200 - 0

Estimated Expenses:
□ Registration
☒ Hotel/Motel Name  Hilton Garden Inn, Pismo Beach, Ca  Paid through Perkins  691.15

☒ Meals
□ School Vehicle
☒ Private Car:  *Effective 1/1/16 mileage reimbursement: .54¢

□ Other Transportation:
□ Other:

TOTAL ESTIMATE:  

Date:  2/4/16  Signature

SCHOOL AUTHORIZATION
The expenses listed above are approved.

Date:  Principal’s Signature:

DISTRICT AUTHORIZATION

Date:  District Approval:

(SEND TO THE OFFICE OF INNOVATIVE PROGRAMS)
Appendix X

Credentials
**New Search**

Last Name: DAVIDSON    Last Known County of Employment:  
First Name: CRAIG     Adverse and Commission Actions Indicator:  
Middle Name: IAN

Note: Please verify County of Employment is current  
If flag displayed, click the Adverse and Commission Actions tab. If no flag, review Status field under the  
All Documents tab to view any adverse action taken.

<table>
<thead>
<tr>
<th>Document Number</th>
<th>Document Title</th>
<th>Term</th>
<th>Status</th>
<th>Issue Date</th>
<th>Expiration Date</th>
<th>Original Issue Date</th>
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</thead>
<tbody>
<tr>
<td>130145544</td>
<td>Single Subject Teaching Credential</td>
<td>Clear</td>
<td>Valid</td>
<td>8/7/2013</td>
<td>9/1/2018</td>
<td>6/2/2006</td>
</tr>
</tbody>
</table>

### Authorization/Subjects

**Authorization Code**

R3A1

**Authorization Description**

This credential authorizes the holder to teach agriculture in grades twelve and below, including preschool, and in classes organized primarily for adults. It also authorizes the holder to develop and coordinate curriculum, develop programs, and deliver staff development for agriculture education programs coordinated by school districts or county offices of education.

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>Subject Description</th>
<th>Major/Minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI</td>
<td>Agriculture</td>
<td>MAJ</td>
</tr>
</tbody>
</table>

### Renewal Requirements

Please disregard any # signs you may see below and refer to the "Additional Description" column to the right for specific renewal requirements.

**Renewal Code**

R20

Renewal Description

To renew this credential, the holder needs to submit only an application and fee to the Commission no earlier than 12 months before the expiration date. The renewal period is five years.

Additional Description

TC Code Not Required

R15P

The term of this credential is limited by the term of the prerequisite credential. To renew this credential, the holder must also renew the prerequisite credential.

Additional Description

TC Code Not Required

### Employment Restrictions

**No Records**
**Last Name:** DEVAURS  
**First Name:** LINDSAY  
**Middle Name:** REBECCA  
**Last Known County of Employment:** KERN  
**Office of EDUCATION**  
**Adverse and Commission Actions Indicator:** Note: Please verify County of Employment is current. If flag displayed, click the Adverse and Commission Actions tab. If no flag, review Status field under the All Documents tab to view any adverse action taken.

<table>
<thead>
<tr>
<th>Current Document</th>
<th>All Documents</th>
<th>Adverse and Commission Actions</th>
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<th>Term</th>
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<th>Expiration Date</th>
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<tbody>
<tr>
<td>150219277</td>
<td>Specialist Instruction Credential (Agriculture)</td>
<td>Clear</td>
<td>Valid</td>
<td>8/12/2015</td>
<td>8/1/2019</td>
<td>7/13/2010</td>
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<tr>
<td>140132301</td>
<td>Single Subject Teaching Credential</td>
<td>Clear</td>
<td>Valid</td>
<td>7/1/2014</td>
<td>8/1/2019</td>
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**Authorization/Subjects**

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<th>Subject Code</th>
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<th>Added Authorization Date</th>
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<tr>
<td>R3A1</td>
<td>This credential authorizes the holder to teach agriculture in grades twelve and below, including preschool, and in classes organized primarily for adults. It also authorizes the holder to develop and coordinate curriculum, develop programs, and deliver staff development for agriculture education programs coordinated by school districts or county offices of education.</td>
<td>AGRI</td>
<td>Agriculture</td>
<td>MAJ</td>
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**Renewal Requirements**

Please disregard any # signs you may see below and refer to the "Additional Description" column to the right for specific renewal require

<table>
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<th>Additional Description</th>
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<tbody>
<tr>
<td>R20</td>
<td>To renew this credential, the holder needs to submit only an application and fee to the Commission no earlier than 12 months before the expiration date. The renewal period is five years.</td>
<td>TC Code Not Required</td>
</tr>
<tr>
<td>R15P</td>
<td>The term of this credential is limited by the term of the prerequisite credential. To renew this credential, the holder must also renew the prerequisite credential.</td>
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</tr>
</tbody>
</table>

**Employment Restrictions**

| No Records | |
LEISHMAN, MICHAEL  > Document:

New Search  Note: If you have questions about the information displayed below, please click here for a listing of Commission contact

Last Name: LEISHMAN
First Name: MICHAEL
Middle Name: LEE

Last Known County of Employment: KERN COUNTY
OFFICE OF EDUCATION

Note: Please verify County of Employment is current
If flag displayed, click the Adverse and Commission Actions tab. If no flag, review Status field under the All Documents tab to view any adverse action taken.

Adverse and Commission Actions Indicator:

Current Document  All Documents  Adverse and Commission Actions ▼ 1 - 3 of 3 ▼

<table>
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<tr>
<th>Document Number</th>
<th>Document Title</th>
<th>Term</th>
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Authorization/Subjects ▼ 1 - 2 of 2 ▼

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<th>Major/Minor</th>
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<td>R1S</td>
<td>This document authorizes the holder to teach the subject area(s) listed in grades twelve and below, including preschool, and in classes organized primarily for adults. The following instructional services may be provided to English learners within the content area(s) listed on this document: (1) English language development defined as instruction designed specifically for limited-English-proficient students to develop their listening, speaking, reading, and writing skills in English; and (2) specially designed content instruction delivered in English defined as instruction in a subject area, delivered in English, that is specially designed to meet the needs of limited-English-proficient students. This English learner authorization also covers classes taught on the basis of other valid, non-emergency credentials or permits held within the settings or content/specialty area (g) listed at the grade or age levels authorized.</td>
<td>AGRI</td>
<td>Agriculture</td>
<td>MAJ</td>
<td></td>
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<td>ELAS</td>
<td>NONE</td>
<td>MAJ</td>
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Renewal Requirements

Please disregard any # signs you may see below and refer to the "Additional Description" column to the right for specific renewal requirer

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<th>Renewal Description</th>
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<tr>
<td>R14I</td>
<td>This credential may not be renewed. To qualify for the clear credential, the holder of this document must complete a Commission-approved Induction program including Verification of Completion by the program sponsor.</td>
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Employment Restrictions ▼ No Records ▼
Appendix Z

Professional Development Activities
<table>
<thead>
<tr>
<th>Activity</th>
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<tbody>
<tr>
<td>University-Aged Skills Week</td>
<td>X</td>
</tr>
<tr>
<td>Summer Conference</td>
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<td>Section In-Service</td>
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<tr>
<td>Section In-Service</td>
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<tr>
<td>Spring Region Meeting</td>
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</tr>
<tr>
<td>Region In-Service Day</td>
<td>X</td>
</tr>
<tr>
<td>Fall Region Meeting</td>
<td>X</td>
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</tbody>
</table>

**Teachers' Names**

Qualified and Competent Personnel

Professional development activities:

Based on the previous year's record, every agriculture teacher teaching at least 50% time agriculture, attends a minimum of four of the following:

**Criteria A4.4B Incentive Grant In-Service Activities Documentation**

Highland High School 14-15
Appendix AA

Department Meeting Schedule
# HIGHLAND HIGH SCHOOL
## STUDENT ATTENDANCE CALENDAR 2015-16

<table>
<thead>
<tr>
<th>School Months:</th>
<th>M</th>
<th>Tu</th>
<th>W</th>
<th>Th</th>
<th>F</th>
<th>Notations:</th>
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<tbody>
<tr>
<td>AUGUST - SEPTEMBER</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>August 17 &amp; 18, 2015 Teacher Orientation</td>
</tr>
<tr>
<td>First Month</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>August 19, 2015 Instruction Begins</td>
</tr>
<tr>
<td>(17 Days)</td>
<td>31</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>August 31, 2015 Back to School Night</td>
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<tr>
<td></td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>September 7, 2015 Labor Day</td>
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<tr>
<td>SEPTEMBER - OCTOBER</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>October 9, 2015 First Quarter Ends</td>
</tr>
<tr>
<td>Second Month</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>October 21, 2015 Faculty #1</td>
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<tr>
<td>(20 Days)</td>
<td>20</td>
<td>29</td>
<td>30</td>
<td>1</td>
<td>2</td>
<td>November 3 &amp; 4 CAHSEE 11-12 (4th 90 Min E-O)</td>
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<tr>
<td></td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>November 11, 2015 Veterans' Day Observance</td>
</tr>
<tr>
<td>OCTOBER - NOVEMBER</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>November 23-27, 2015 Thanksgiving Recess</td>
</tr>
<tr>
<td>Third Month</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>November 26 &amp; 27, 2015 Thanksgiving Holidays</td>
</tr>
<tr>
<td>(20 Days)</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
<td>Thanksgiving Holiday</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>November 11, 2015 Thanksgiving Recess</td>
</tr>
<tr>
<td>Fourth Month</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>November 26 &amp; 27, 2015 Thanksgiving Holidays</td>
</tr>
<tr>
<td>(14 Days)</td>
<td>[23]</td>
<td>[24]</td>
<td>[25]</td>
<td>[26]</td>
<td>[27]</td>
<td>Thanksgiving Holiday</td>
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<tr>
<td></td>
<td>30</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>December 18, 2015 Fall Term Ends = 81 Days</td>
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<tr>
<td>DECEMBER - JANUARY</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>December 21-January 1 Christmas Recess</td>
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<tr>
<td>Fifth Month</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>December 23, 2015 Admission Day (In Lieu Of)</td>
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<td>(10 Days)</td>
<td>[21]</td>
<td>[22]</td>
<td>[23]</td>
<td>[24]</td>
<td>[25]</td>
<td>Christmas Holidays</td>
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<td></td>
<td>[28]</td>
<td>[29]</td>
<td>[30]</td>
<td>[31]</td>
<td>[32]</td>
<td>Christmas Holidays</td>
</tr>
<tr>
<td>JANUARY</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>January 1, 2016 New Year's Day</td>
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<tr>
<td>Sixth Month</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>January 13, 2016 Faculty #2</td>
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<tr>
<td>(18 Days)</td>
<td>[18]</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>[22]</td>
<td>January 18, 2016 *Dr. Martin L. King, Jr. Day Observance</td>
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<tr>
<td></td>
<td>25</td>
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<td>27</td>
<td>28</td>
<td>29</td>
<td>January 22, 2016 Non-Student Inservice Day</td>
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<td>FEBRUARY</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td>February 3, 2016 *Lincoln's Day Observance</td>
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<td>FEBRUARY - MARCH</td>
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<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>March 18, 2016 Third Quarter Ends</td>
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<td>Eighth Month</td>
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<td>10</td>
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<tr>
<td>(15 Days)</td>
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<td>[24]</td>
<td>[25]</td>
<td>[26]</td>
<td>[27]</td>
<td>March 18, 2016 Third Quarter Ends</td>
</tr>
<tr>
<td></td>
<td>[28]</td>
<td>29</td>
<td>30</td>
<td>31</td>
<td>1</td>
<td>March 25, 2016 Easter Recess Holiday</td>
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<tr>
<td>MARCH - APRIL</td>
<td>4</td>
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<td>April 13, 2016 Faculty #4</td>
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<tr>
<td>Ninth Month</td>
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<td>12</td>
<td>13</td>
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<tr>
<td>(19 Days)</td>
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<td>19</td>
<td>20</td>
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<td>APRIL - MAY</td>
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<td>Tenth Month</td>
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<td>(20 Days)</td>
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<td>19</td>
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<td>(9 Days)</td>
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<td>6**</td>
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<td></td>
<td></td>
<td>May 30, 2016 Memorial Day Observance</td>
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**90 Minute Early-out Collaboration**  **1 Hour Early-out**  **CAHSEE Testing**  **rev. 2/2/16**

**90 Minute Early-out Faculty**  **Finals**  **STAFF INSERVICE - NO STUDENTS**

**90 Minute Early-out Holiday**  **No School - Holidays**
Appendix AB

Department Meeting Minutes
November 17, 2015

Meeting was called to order at 2.00. We followed up on Road Show and discussed the importance of turning in RTBA forms to the district.

Skate Night is coming up; Craig will supervise at the event.

Officer team let us down, because they planned their event too last minute and we couldn’t get kids to the event on such short notice. We need to have a better system to catch these kids.

Remind students to pick up fair checks from front office and check record books to ensure they are accurate.

Applications for MFE ALA are out, they should be submitted and filled out completely.

CDE meeting is coming up to discuss what teams we will offer.

Meeting adjourned at 3.15 PM
March 8, 2015

Ag Department Meeting Minutes

Craig called the meeting to order at 1.50. First order of business was organizing the fair exhibitor meeting. We decided that students cannot show both a lamb and a pig, but they can show two of the same or a breeding and a market of the same specie. We also discussed display set up for fair, changing dates, and specie responsibilities.

We discussed CATA Conference and ensuring that registration was submitted.

Next order of business was the Spring Festival. We feel confident in Chyanne’s ability to put the event together and are hoping for a positive turnout.

Recruitment was discussed. We are not allowed to go to junior highs to recruit. We will have to rely heavily on Scot’s Preview Night. We have to have hands on activities at the event- floral design, animal science, ag mech (oxy cutting table).

We discussed BTSA next year; Lindsay, if approved, will be Michael’s support provider.

Finally, we discussed teaching assignments and prep periods next year. Lindsay and Michael would all first period off ☺, and Craig would like 7th period.

Meeting adjourned at 3.35PM.
Appendix AC

Storage Facilities
Storage Closet in 12α
Appendix AD

Laboratory Facilities
Sink in 12a Laboratory Facility
Laboratory Facility in 12a
Appendix AE
Facilities Maintenance Request
Hi, gentlemen!

I went through and started the process of cleaning out the metal cabinets along the wall in 12a. Many of them are emptied. Could they be removed? I've labeled the ones that are good to go.

Also, there are some broken and extra chairs and a broken podium that needs to leave 12a, as well.

Thanks,

LRD

Lindsay R. Devaurs
Highland High School
Agriculture Department
(661) 872-2777 ext 74188
lindsay_devaurus@kernhigh.org
Appendix AE

Advisory Committee Membership
Highland Ag Advisory Committee
Member Biographies

1. **Darren Willis, Professor at Bakersfield College**
Darren Willis is an assistant professor at Bakersfield College who has taught two years there full-time in the Engineering & Industrial Design department. He previously taught Architectural Design, Drafting, and CAD for eleven years in the KHSD at Highland High School. During that time he served as both HHS CTE Department Chairperson and the KHSD Industrial Technology (CTE) subject area facilitator for eight years. His background includes twelve years of full-time experience in the design/build field, with a specialization in architectural millwork and cabinetry. He possesses a current California Teaching Credentials in the areas of Drafting Occupations and Carpentry/Cabinetmaking. He is a volunteer designer & drafter for California RBC #2, and runs their CAD training program. Darren is the Co-Advisor to the BC Society of Women Engineers Club and serves as the CTE representative on the BC Accreditation Steerage Committee. Darren is an active member of the California Industrial Technology Education Association and the California Drafting Technology Consortium.

2. **Armando Cabrera, Livestock Judge and Former Feed Store Owner**
Armando Cabrera was raised in Wasco and was an active member in the Wasco FFA Chapter. As a result of his involvement in the FFA, Armando opened a feed store in Southeast Bakersfield. During this time, Armando became actively involved in raising show dogs, rabbits, and cavies and traveling throughout the world with his champion stock. Armando has multiple national awards for his genetic improvements and is renowned for his livestock judging skills. Armando is an active member of the National American Rabbit Breeder’s Association and is a former board member. Armando judges many shows each year around the country in addition to being a 4-H advisor and the Kern County Fair Rabbit Committee Chairman.

3. **Mike Poncetta, Poncetta Farms**
Mike Poncetta is a 4th generation farmer from Bakersfield. He is a partner of Poncetta Farms which includes growing and selling Alfalfa hay and breeding cattle and goats for both the show circuit and food consumption. Mike is married to Janice and father to Branson. Mike graduated with a Bachelor of Science Degree in Ag Business at Fresno State in 2006. Mike is heavily involved with the Beef Committee at the Kern County Fair and assists many local youth with their beef and goat fair projects. His wife Janice has also been involved with assisting local FFA projects, including Highland, and currently owns and operates a floral shop in Bakersfield.
4. Lori Rodgers, Kern County Department of Agriculture
For the last 13 years, Lori has been working as an Agricultural Biologist/Weights & Measures Inspector for Kern County. As an Animal Science graduate from Cal Poly San Luis Obispo, her career fits nicely into her educational background. She has been President and a Board Director for the California Association of Standards and Agricultural Professionals (CASAP) promoting professional development for biologists and inspectors within the State of California. She has also served as President or officer of Kern County Agricultural and Measurement Standards Association (KCAMSA) for the Kern County Dept. of Agriculture and Measurement Standards since 2001. Her latest endeavor has been to establish a 4H Chapter in Stallion Springs, were she lives. Her volunteer work includes working with high school students in Agriculture. She has spent 5 years as a horse judging coach for Highland High School and has assisted the Agriculture Advisory Committee for several years. Working closely with The Future Farmers of America, she has directed Market Lamb and Breeding Sheep projects for high school students at the Kern County Fair. It is her goal to promote agricultural in the educational arena and provide support to students that wish to pursue careers in agriculture.

5. Heather Stevenson, QA Manager Bolthouse Farms, Former Floral Shop Owner
Heather Stevenson is the current Sr. Quality Assurance (QA) Manager of Regulatory Affairs at Wm. Bolthouse Farm, INC. She is responsible for all the label and legal review of the packaging film, implementation and maintenance of the Produce Trade Initiative as well as the Global Trade Identification Numbers. She started at Bolthouse in 2008 as a lab technician and through hard work and dedication has been promoted numerous times. Prior to her tenure with Bolthouse she owned and operated a small local retail floral business. It was during her time as a business owner she learned the value of communication and how to lead a team. In 2007 she closed the business to pursue other goals. She wants to give back to the community, and as a Bakersfield native she thinks it’s even more important to give to the community that helped shape her. She serves as an Advisor to the Phi Sigma Sigma sorority at CSU, Bakersfield and has also served as a committee member of the Highland High School FFA Advisory Committee. She attends Living Grace Church where she assists in any way she can. She also serves on a few committees of the professional associations she belongs to.

6. Tim Calahan, Anchor of Channel 23 News, Former Director of Marketing and Communication
Tim began his career working for a fox television affiliate in Seattle before working for Channel 23 KGET in Bakersfield. Tim worked as a journalist and news anchor before serving as the Director of Covenant Media, a non-profit foster youth organization. Tim was responsible for marketing the organization and raising funds for Covenant Community Services and Covenant Coffee. Tim moved to the Bakersfield Rescue Mission in 2012 to serve as the Director of Marketing and Communication. There he became responsible for promoting and branding the Bakersfield Rescue Mission by working closely with local and national news organizations, raising millions of dollars in contributions, and bringing community awareness to the newly named Mission of Bakersfield. Recently Tim has been hired as the Channel 23 News Anchor and continues to be an avid supporter for the Highland FFA program through multiple news stories and promotions.
7. Tracy Street, Alumni
Tracy Street was born and raised in Bakersfield, CA. and graduated from Highland High School. She was first introduced to the FFA program in 8th grade by way of the Junior FFA Program at Chipman Jr. High through Highland. Her husband Nick is also a graduate of Highland High School and former FFA member. Together they have four children and are strong believers in the FFA organization and how it enhances students learning and leadership skills. Tracy is happy to have become reacquainted with the program through her oldest daughter who has also become a member of the Highland FFA Chapter. It was her favorite organization to be involved with and it provided many great opportunities. She credits the program and the members for holding her accountable and providing her with the leadership skills to becoming a productive member in her community.

8. Randy Thompson, Agriculture Specialist, Tri Counties Bank
Randy has been employed with the Tri Counties Bank for almost 2 years. Most recently, he worked with the Bank of the West for fifteen years and served as the Vice President/Relationship Manager in the Bakersfield Agri-Business Department. Prior, he was Vice President Branch Manager and Loan Officer with the California Republic Bank / First Interstate Bank and Home Savings for a combined six years. He was also employed by Farm Credit in Wasco as a Senior Loan Officer for three years and Community First Bank in various offices in the Bakersfield area for eleven years. Additionally, he served as a member of the Kern County small cities police review board and was involved in the final hiring decisions on police applicants. He was also involved in the restructuring of the Shafter FFA program. Randy has served with multiple service clubs and various civic events but the past 35 years have been centered around agricultural financing.

9. Erika Calahan, Alumni and Manager of Target
A former student of Highland and President of the FFA, Erika developed many leadership traits. Erika was involved in the FFA at the highest levels and took full advantage of the opportunities which were afforded to her. She was also President of the Associate Student Body. Erika received her Bachelor's Degree in Agriculture Communications at Cal Poly, San Luis Obispo and now serves as an executive on the managerial team at Target in Bakersfield. Erika is involved in the hiring process, customer relations, inventory, and team leading. Although Erika is not directly involved in the Agriculture industry at this time, her skills in professionalism and her experience in the FFA will serve as a great tool for advising the Highland FFA program.

10. Melissa Iger, Executive Director of the Bakersfield Tree Foundation
Native of Bakersfield and Executive Director of the Tree Foundation of Kern since March, 2008. Melissa studied Environmental Horticulture at Bakersfield College and received her certification in March, 2012. She became an International Society of Arboriculture Certified Arborist in March, 2014 and since, provides assistance to the City of Bakersfield and other organizations in beautifying the community. One of her many tasks is to find and write grants to purchase trees where she then coordinates community tree planting events all around the city. Melissa previously studied Culinary Arts in Santa Barbara and worked as a chef and caterer. She opened a retail coffee and tea shop which she sold in 1986. Since then, she married, raised her boys and returned to the workforce. She has won numerous awards for her work with the Tree Foundation and as a student at Bakersfield College.
11. Lindsay Ono, Bakersfield College Agriculture Department Chair
Bakersfield native, Lindsay graduated from South High School, then attended Bakersfield College and Cal Poly to study horticulture. His family had a nursery in here in town so he has been involved with the Horticulture industry his whole life. Mr. Ono decided to teach after his dad retired. He is currently the department chair for agriculture at Bakersfield College and sits on numerous state committees for curriculum. He has been teaching at BC since 2000 and currently co-hosts the Country Garden Radio Show on KERN1180.

12. Dr. David Chao, Banfield Vet Hospital
Dr. Chao was born in China and raised in Los Angeles. He attended UC San Diego and studied Animal Physiology and Neuroscience as an undergrad degree and transferred to Ross University in the Caribbean to study Veterinary Science. Following Vet School, he did his clinical at the University of Florida before working with Banfield Vet Hospital here in Bakersfield.

13. Fred Ansolabehere, Sheep Breeder
Fred was born and raised in Kern County and is a 3rd generation sheep producer. His Grandfather and father were both commercial sheep producers. Fred worked as a produce marketer in the agriculture industry for 26 years and continued to raise sheep as a hobby. He decided to close the marketing business to focus his attention on upgrading his club lamb stock. Since, he has developed champion lines and continues to support a plethora of youth agriculture organizations throughout the county. He is married with 3 children and 1 grandson. His youngest twin is studying at Cal Poly as a Plant Science major and the other twin is at Oklahoma State, also studying plant science.

14. Chuck Sears, Cargill Animal Nutrition
Chuck is the Territory Manager for central California for Cargill Animal Nutrition, and has held this position for a little over 4 years. Prior to working with Cargill he owned a local feed store, Valley Feed. Prior to that he was in the grocery business for roughly 20 years. Chuck also serves on the DPAC for the KHSD, as well as the LCAP committee and the Advisory Committee for North High Ag Dept. He has been married for over 25 years to his wife Tiffany and has 3 great kids. Charles is a Kern County Sheriff, Kelsey is finishing her student teaching at Foothill and will be an Ag teacher in the spring, and his youngest daughter Kassidy is a freshman at Fresno State University studying to become an Ag Teacher.
Appendix AG

Advisory Committee Minutes
Minutes
ADVISORY COUNSEL
February 6, 2013

I. Call the meeting to order at 18:25.

II. Welcome

III. Meet each other

IV. Principal remarks

Principal Vickstrom is very supportive of the program.

V. What is the Agriculture Program all about?

a. Projects, FFA, Classroom instruction

PowerPoint presentation used to illustrate the three prong approach to the HHS Agricultural program. Utilizing classroom instruction, combined with FFA and projects. The idea is to motivate the students in the classroom to take the skills they learn and apply them to FFA. The projects are used to explore any field related to agriculture.

b. FFA Mission

Growth in premier leadership, personal success, and career success.

VI. Program History, where we are now, and where we want to go.

The program started with 16 students and 1 instructor that worked with the students all 4 years at HHS. The Ag Farm began as an empty lot that was to be allocated to other purposes. Today the farm is
functioning, there are over 300 students in the program ran by two instructors. There are more class offerings, and plenty of ideas for growth.

VII. School Wide Goals

VIII. Advisory Committee Role in the Program

Assist in advising the program utilizing the individual expertise of each member.

IX. Review the Constitution for the Advisory Committee

X. Nominate and Vote on a Chair and Secretary

Chair: Lori Rodgers, Vice-Chair: Heather Stevenson, Secretary: Tracy Street

XI. Needs Within Our Program

There is a need to transition/engage students from classroom to FFA members as well. Various farm projects are in need of carpentry and concrete skills or work.

XII. Feedback on Where We Are

Currently the students are beginning to form their projects. The idea has been posed to also inform the students that careers in the Ag industry are more than working with animals, teaching, or working a farm.

XIII. Next Meeting Dates

April 11, 2013 at 6p (18:00)

XIV. Adjourn 19:40

Respectfully Submitted,

Heather Stevenson
Highland Agriculture Department Advisory Committee
Meeting Minutes April 21, 2014

Craig Davidson called the meeting to order at 6.54 PM. Lori Rodgers had to step down from the committee due to family commitments. Tracy Street is also stepping back from the committee due to family obligations.

Allie Hastings, a current Highland agriculture student, shared her experience in the agriculture program. Allie hopes to become an agriculture teacher as she majors in Ag. Ed. and Dairy Science at Fresno State.

Davidson reviewed the foundations of the agriculture program— the three circles model of classroom, Supervised Agriculture Experience (SAE) and FFA participation. Our goal is to get a cross-section of the community and input from business leaders with the advisory committee.

Craig introduced new committee members at the meeting: Melissa Iger, of the Tree Foundation of Kern County, Fred Ansolabahere, local farmer, Lindsay Ono, horticulture professor at Bakersfield College, and David Chao, vet.

Next year’s funding has been uncertain; Governor Brown took Ag Incentive Grant out of the state budget for the 2014-2015 school year. We also receive funding from Carl Perkins, which can only be used on non-consumables/equipment and student leadership development. Assemblymember Rudy Salas has pushed a bill through which will reinstate Ag Incentive Grant back into the state education budget as a separate line item.

The Highland agriculture mechanics shop is scheduled to start construction next year, with the addition of a third ag teacher seen as a necessity.

Craig and Lindsay Devaurs set a goal of increasing the amount of community service the FFA chapter participates in; this year, the freshmen classes grew produce and donated it to the Mission of Kern County. We also donated over 1000 cans in our canned food drive during the holiday season. Additionally, we organized a community clean up in the bluffs and removed 2 truckloads of trash, including over 90 tires! We are also coordinating a downtown tree planting with the Tree Foundation of Kern County on May 15.

We will be holding our second annual project competition on April 29th. If you are interested in judging, please let us know.

We have identified career visits/guest speakers as an area for growth for the classroom component of the program. If you or anyone you know is interested or available, let Craig or Lindsay know.

There is a need to increase senior participation in the program. Some ideas discussed by the committee included a senior trip, an agriculture tour, a junior year college trip, Tulare Farm Show, Ag in the Classroom, and reinstating Garden Buddies program.

Meeting adjourned at 7.46pm.

Respectfully submitted,

Lindsay Devaurs
Highland High School Advisory Committee Meeting

10/28/14

The meeting was called to order at 6:59 PM by Craig Davidson. Randy Thompson, Fred Ansolabahere, Heather Stevenson, Melissa Iger, and David Chao were present.

Melissa moved to approve the previous meeting minutes. Fred seconded. Motion passed by voice vote.

Craig briefly reviewed the three circles model of our program and discussed our FFA mission statement, as well as the advisory committee mission statement.

Craig updated on our class numbers. Highland has a large number of students already, and that is reflected in our class size. There are about 40 freshmen in each of Craig’s classes, and there are 3 periods of Ag Biology classes, compared to 2 periods last year. Additionally, the Ag Government/Econ class has allowed our program to grow with 40 program completers (3-4 year students). Melissa Iger offered to teach a class about tree care/science for interested students. Craig will follow up with administration.

It has been confirmed by district office that the ag mechanics shop will start in June of 2015. Because of our growing class offerings, there is a lot of interest in the administration team to add a third ag teacher. We are not sure if or when this will happen, but we are very fortunate to have an administration team that supports and believes in what we do.

Kern County Fair was very successful for Highland FFA. We had about 65 students in dairy, swine, sheep, and rabbits. There were many top placers in showmanship and market classes.

UC Davis, Fresno State, and Chico have had college visits with our program. Craig will look into asking the BC Ag Ambassadors to do a presentation.

Students have expressed an interest in holding a Highland FFA Farmers Market where students can sell the products of their SAE. In addition, we have been approached about holding a farmer’s market here at Highland by the county farmer’s market coordinator. More research has to be done in order to find out what this means for our programs and for us as ag teachers.

The booster club has been transformed into an alumni organization. We can engage former members, not just parents. Our application has been approved by the National Alumni Organization; we are now waiting on approval from KHSD.

We will have 54 students participating in the Opening/Closing public speaking contest next week. This is a huge growth from last year.

We are currently trying to build our cattle show program. We have some concerns with zoning that we need to follow up on with the County and we will also be seeking advice from Jim Aschwanden at CATA.
The district is going to be making curricular changes in the next few years. We are no longer testing in the Earth Science area, so we need to adapt and find a new science class for our students in the future. This will be our main topic of discussion at the next meeting, scheduled for March 4 at 6:30 PM.

Respectfully submitted,

Lindsay Devaurs
Agriculture teacher
Highland High School Advisory Committee Meeting

02-05-2015

The meeting was called to order at 6.51 PM by Craig Davidson. Randy Thompson, Heather Stevenson, Melissa Iger, and David Chao were present.

David moved to approve the previous meeting minutes. Fred seconded. Motion passed by voice vote.

Craig briefly reminded the committee of the FFA mission statement, the school mission statement, as well as the advisory committee mission statement.

Craig began by discussing the possibility of hiring a 3rd ag teacher if the shop begins being constructed this summer.

We are still talking about construction beginning this summer on the Ag Mechanics shop. The budget has increased from 1 million to 1.5 million dollars.

As discussed at the previous meeting, Craig did discuss asking the B.C Ag Ambassadors to come and visit but there was no response.

There will be a cow plop fundraiser in March and the goal is to raise $5000 for the students.

Concerns regarding housing cattle on our farm have been met. We are now housing 4 steers on our farm. This is a trial year to see if neighbors are okay with it and our facilities are conducive.

We need input on new curriculum next year. Possible changes include adding Environmental Horticulture, Crop Science, and a Farm Maintenance class.

Respectfully submitted,

Lindsay Devaurs
Agriculture teacher
Highland High School Advisory Committee Meeting

05-14-2015

The meeting was called to order at 7:02 PM by Craig Davidson.

David moved to approve the previous meeting minutes. Tim seconded. Motion passed by voice vote.

Craig briefly reminded the committee of the FFA mission statement, the school mission statement, as well as the advisory committee mission statement.

Lots of exciting things happening with our program this year. Administration has been great and very supportive.

We have been flying the position for an Ag Mechanics teacher and we have hired Michael Leishman, currently a student teacher at Foothill High School and a Fresno State graduate. He will begin teaching responsibilities this summer. It was very difficult to find someone due to the ag teacher shortage so we are very excited we were able to find someone as good as Michael. He will be a great fit to our program. He has a lot of experience in the mechanics industry and is very knowledgeable with animal science. He will oversee the construction and implementation of the new shop. This will be a transition year so he will be teaching other classes but those have not been negotiated yet.

We have a record number of program completers this year – 51. We had a record number of state degree recipients this year – 18.

Our FFA Banquet was a great success. The students did a great job organizing and running the event. Thank you to the advisory committee members who were able to attend (Fred and Lori)

The cow plop fundraiser hit the target goal with over $5000 being raised. Thank you to the advisory committee members who were able to attend.

We are currently working with the Kern County Department of Agriculture and Lori Rodgers (advisory Member) to set up a weekly certified farmers market at the school site. Our classes will all have input with this. The freshmen classes will be producing the vegetables. Animal Science will raise the eggs. The OH class will produce plants to sell. The Ag Business class will oversee the running of the Farmers Market.

We anticipate higher than normal pig and sheep project numbers. This is an indication of our strong and growing program.

Funding next year looks good. The principal has acknowledged programs without credentialed teachers will not be receiving Perkins which puts us in line to receive almost all of the school’s allotted Perkins funding. There is a potential CTE grant that may be available to the KHSD and the FFA is also hoping to receive this grant. Additionally, the governor is proposing to increase CTE funds in his budget.
The principal is going to buy us another school truck so we can retire our old truck, assuming it is approved at the district level.

Our school was recognized on the local news for the work we are doing on the school farm with our students. We were also nominated by a colleague by having one of the best small-farms which utilize their land best.

We need input on new curriculum next year. Possible changes include adding Environmental Horticulture, Crop Science, and a Farm Maintenance class.

Construction has begun on the shop. Things will be inconvenienced but they are scheduled to finish in July of 2016. Very exciting news!

Tomorrow we will be hosting our senior project – Summer Send Off Dance for the Special education students. The seniors have been working very hard on this and we expect just under 200 students from several schools to be attending.

Respectfully submitted,

Lindsay Devaurs
Agriculture teacher
Highland Agriculture Department Advisory Committee
Meeting Minutes December 2, 2015

The Meeting was called to order at 6:50 on December 2\textsuperscript{nd} 2015 in the conference room at Highland High School.

People present were; Randy Thompson, Teddy Armijo, Chuck Sears, Michael Leishman, Craig Davidson, & Dr. David Chao.

Mr. Davidson briefly went over the Advisory Committee Mission and the three Circle model, some discussion followed on how it was important to have the SAE component do to the real world application. After which Mr. Davidson went over our department goals from 2013 highlighting that we achieved most of them.

Mr. Thompson asked about our retention and the possibility to see the follow up numbers on our graduates. Mr. Davidson replied that he would share those at the next advisory meeting as they have not been filled out for this year yet.

Mr. Davidson then introduced Mr. Sears and went over the advisory members list. It was noticed by Mr. Sears that there was a deficiency in industry representation for Ag Mech on the advisory committee (Stan Ellis). He proffered some names of local business owners that he feels would benefit our program.

The voting and nominating of a chairperson was postponed due to not having a full quorum.

Setting new goals was addressed and it was suggested that we maintain the same goals but a better idea would come about after the numbers came back from our follow up survey.

The pathways we have available were addressed and considerable amount of time was talking about the Ag Mech pathways we will be offering. Some classes addressed where Ag Mech 1, Ag Mech Fabrication & Construction, Ag Mech Power, Ag Mech Small engines, & Ag Mech Welding. Mr. Sears suggested that before anything concrete was decided that we get some industry input because the other advisory committee that he is on has an industry person on it and he stated that the type of welding taught in the schools is not what they use out in the oilfields.

The funding and grants for the Ag department were discussed. The main discussion centered around how to go about utilizing the funds in a fiduciary manner that would be sound investment to both the department, industry, and the students’ education. Mr. Davidson asked that the committee think about “big” items that students should know about or know how to use in order to be job ready upon graduation. Mr. Thompson asked that Craig forward the list of items that we currently have so that they can review/edit it and give us some more ideas.

Mr. Davidson spoke about all the industry partners we have had come to speak to the ag classes.
Mr. Armijo spoke about the shop and how everything was developing and that the shop was ahead of schedule. Mr. Sears asked if it would be possible to take a tour of the place and Mr. Armijo said it was. Mr. Davidson mentioned that if there was time at the end of the meeting that they might stroll down and take a look.

Mr. Davidson presented the Farmers market Plan to the committee a lot of discussion followed about how it was an awesome plan and how they were interested to see how everything worked out.

Finally student participation was addressed and it was stated that the demographics was going to change due to interest in Ag Mech.

The next meeting was set for March 14th 2016

The shop walk-through is going to be set up for a day that more time is available for more advisory committee members to attend.

Meeting was adjourned at @ 8:07PM
Appendix AH

Career Projects Sheets for Students
Animal Science Quarter 4 Presentation

Careers in Animal Science

You will be creating a presentation using PowerPoint. You will research and teach your classmates about a particular career in the science industry. Think outside the box—there are more options than being a veterinarian!

Each student will be presenting about one career. We will assign/decide careers in class to avoid repeats.

Parameters for presentation:
- Title slide
- Description of career
- 4-5 photos of someone "on the job"
- Education or training needed for profession
- Skills needed—both "hard" and "soft" skills
- Starting salary and median salary
- Where most jobs in this field are found
- Any other pertinent information
- References or resources

You should not copy and paste this information from a website. *This information should be put into your own words. If you do not put this into your own words, you will immediately receive a 0 for plagiarism.*

This portion of your project will be worth 100 points. I will be looking for accuracy, completeness, and quality of project (spelling errors, appearance, etc.)

You will also be presenting this project in class. *You cannot read off of your PowerPoint.* You should be familiar with the information, as you are teaching the class about this disease. You can prepare note cards, but you cannot read off of them. You should also speak up, so your peers can hear you. The presentation will be worth 100 points as well.

Your PowerPoint project should be emailed to me at Lindsay.devaurus@kernhigh.org to expedite the schedule on presentation days.

Please keep this paper and submit to me on the day you present your project. If you do not turn in this paper, you will lose 25 points.

This project is worth 225 points total.

PowerPoint grade: ______/100

Presentation grade: ________/100

Score sheet: ________/25

TOTAL SCORE: ________/225
Floral Design

2nd Quarter Project - Career Research

Your responsibility is to complete research about a career in the horticulture/plant science/floral design industries. There is a list of careers on the back of this page. You will be signing up in class, so there should be no duplicate careers presented in class.

The career you will be researching is: ________________________________

You will be creating a PowerPoint presentation AND a paper outlining your findings. Your paper and presentation should include the following information:

- Introduction of career (14 points)
- What is involved with the work? What do they do? (14 points)
- Where does someone in this career typically work? What are the working conditions? (14 points)
- How many people work in this field currently? (14 points)
- What type of training or education do you need to be involved in this field? What schools offer a major or training for this career? (14 points)
- What is the salary range? (14 points)

Your PowerPoint should include the information above, as well as the items below:
- Relevant pictures
- No excessive use of colors and various, hard to read fonts.

Your research paper should include the information above, as well as the items below:
- Citations and sources (5 points)
- 12 point font, Arial, double spaced (5 points)
- A cover page with the name of the career, your name, date, and period. (5 points)

DUE: ________________________________

TOTAL ____________/100 for research paper
TOTAL ____________/100 for PowerPoint presentation   GRAND TOTAL ____________/200
Potential Careers:

- Florist
- Horticulture therapist
- Horticulture teacher
- Landscape designer
- Crop management specialist
- Botanist
- Nursery/Greenhouse manager
- Groundskeeper
- Pest Control Advisor
- Soil Scientist
- Landscape architect
- Arborist
- Plant scientist
- Plant breeder
- Public garden manager
- Viticulturist
- Enology
- Crop duster
- Athletic grounds manager
- Golf course manager
- Fertilizer sales representative
- Plant breeder
- Urban forestry
- Any other ideas?
Appendix AI

FFA Recruitment Brochures
What is Ag Education?

Agriculture is rooted in science, math, business, and technology. The time you spend in the classroom and school lab with your teacher will help you explore and master the information necessary to move forward with your career development. Get ready for exciting hands-on opportunities that make textbooks come alive!

The curriculum is split into three different “circles.” These three circles consist of regular classroom instruction, or your regular science class, SAE projects, and the FFA. Mastering all three areas is quite a challenge, but it is also one of the most efficient and wonderful opportunities your child can experience.

What is the FFA?

The FFA or Future Farmers of America is the largest youth organization in the U.S. Today, more than 500,000 student members are engaged in a wide range of agricultural education activities, leading to over 300 career opportunities. As an FFA member, you will work on developing your potential for premier leadership, personal growth, and career success. By participating in competitions, degree programs, conferences, state and national conventions, community service projects, summer camps, and chapter committees, you’ll grow in ways that utilize your talents and help you become a leader you were meant to be. The key to success in the FFA is to get involved!

Fast Facts About the FFA

- Founded: 1928
- Current National Membership: 507,763
- Number of Chapters: 7,439 (National)
- Highland FFA membership: 289
- The top five membership states are California, Texas, Georgia, Oklahoma, and Ohio
- FFA scholarships have awarded more than $22 million
What Opportunities Will I Have Available to Me During Freshman Year?

When you put on an FFA jacket, you become part of a total agricultural education program that will connect you to exciting careers in the science, business and technology of agriculture. Its not just cows and plows anymore! Whether you are looking to enhance your public speaking skills, become a leader, understand parliamentary procedure, or even work with numbers and records, the FFA is the way to go.

There are a wide variety of competitions and events that can appeal to your desires. From our B.I.G (Best Informed Green hand) Team, which was 1st in state and undefeated at six field days in 2009, to our Parliamentary Procedure team, which took Fourth place at the regional competition and will be competing at the State level, there most definitely will be something for every-body.

Aside from the competitions there is also a great amount of conferences that aim at helping each student reach their full potential. Motivational speakers often come in and inspire their young minds to go out and make a difference. Once you step in, you'll find yourself not wanting to step out.

What Skills Will My Child Attain?

In this organization, your child will be given numerous opportunities to step up and go far beyond the average high school experience. The variety of programs and the emphasis on leadership helps build the student's self-esteem and self-confidence. Personal growth is measured by gaining expertise in an area(s). When students feel they can handle a task on their own, their self-confidence grows accordingly. Ag programs show students how to use the skills they learn in high school for their chosen career, including resumes, work applications, and going after that important job interview! This is a rare occasion for your child to expand their qualifications and start towards their bright future.

What is an S.A.E.?

Nothing takes your skills to the highest level faster than putting them into practice. Through an S.A.E or Supervised Agricultural Experience project, you can create your own landscaping business, conduct a scientific research project that could change the world, grow crops or raise live stock, secure a meaningful job that provides insider experience related to your career choice or learn how to make a difference in your community through civic engagement. Best of all, you can earn while you learn! Not to mention the life-time friendships you make and memories you will never forget.

An S.A.E is a "learning by doing" tool in agricultural education. Through these individual programs, some paid and some unpaid, members receive hands-on training in goal setting, planning, and record keeping. The hours you put into your project are definitely awarded and recognized. There are numerous awards, proficiencies, and scholarships that you can apply for. From the chapter degree, state degree, American degree, and other honors, your child could be recognized at a prestigious level for doing something they love and will help them later on in life.
FFA makes a positive difference in the lives of students by developing their potential for **Premier Leadership, Personal Growth, and Career Success** through agricultural education.

To accomplish its mission, FFA:

- Develops competent and assertive agricultural leadership.
- Increases awareness of the global and technological importance of agriculture and its contribution to our well-being.
- Strengthens the confidence of agriculture students in themselves and their work.
- Promotes the intelligent choice and establishment of an agricultural career.
- Encourages achievement in supervised agricultural experience programs.
- Encourages wise management of economic, environmental and human resources of the community.
- Develops interpersonal skills in teamwork, communications, human relations and social interaction.
- Builds character and promotes citizenship, volunteerism and patriotism.
- Promotes cooperation and cooperative attitudes among all people.
- Promotes healthy lifestyles.

*Encourages excellence in scholarship*

**The FFA Motto**

*Learning to do, Doing to Learn, Earning to live, Living to Serve.*
Appendix AJ

SAE Loan Application
4-H / FFA AgYOUTH PROGRAM APPLICATION/AGREEMENT

EVENT & DUE DATE: To qualify for funds to participate in __2016 Kern County Fair______, this Application/Agreement must be completed, signed and received by American AgCredit no later than 60 days prior to the Sale Date at the Event specified above.

A. PARTICIPANT INFORMATION

Participant ___________________________ Date of Birth: ______________

Mailing Address ______________________ City ___________ State ____ Zip ______

Email Address ________________________ Phone Number _______________

School _______________________________ Grade in School __________ GPA ______

B. PARENT/LEGAL GUARDIAN INFORMATION

Parent/Legal Guardian ___________________ Occupation _______________________

Mailing Address ______________________ City ___________ State ____ Zip ______

Email Address ________________________ Home Number ______________________

Cell Phone Number ____________________ Work Number ______________________

Preference for Notification (Please Check One): ___ Phone ___ Email ___ Letter

C. LEADER/ADVISOR INFORMATION

Leader/Advisor Dave Gossman Club/Chapter Name Atwater FFA

Mailing Address 2201 Fruitland Ave City Atwater State CA Zip 95301

Email Address dgossman@muhsd.k12.ca.us Office Number 209-357-6025

Cell Number 209-648-2616 Preference for Notification: X Phone X Email ___ Letter

Comments ____________________________

D. PROJECT INFORMATION

PLEASE SELECT PROJECT TYPE

___ DAIRY- Replacement Heifer ($1,500 max.)

___ BEEF- Market Steer ($1,500 max.)

___ BEEF- Market Calf ($500 max.)

___ SHEEP- Market Lamb ($500 max.)

___ SWINE- Market Hog ($500 max.)

___ GOAT- Market or Replacement ($500 max.)

E. ESTIMATED PROJECT BUDGET

Estimated Income $ 500.00

Expenses

Cost of Animal $ 225.00

Feed $ 160.00

Veterinary $ 10.00

Rent/Other $ 30.00

Total Expenses $ 425.00

Net Income (Income - Expenses) $ 75.00

Rev. 9/25/2012
Amount Requested $425.00  Anticipated Sale Date June 15, 2013
Fair Name Merced County Fair  Fair Dates June 9 - 16, 2013

I hereby apply for American AgCredit AgYouth Program funds in the amount of $425.00 to be used for the purchase and care of the animal specified above. In order to facilitate approval of my request, I agree to the following terms as follows:

1. Enrollment Certification. I hereby certify that I am a current grade school student (Grades 4-12).
2. Use Advance for Purchase. To use the advance for the purchase and care of the animal described in the Project Information.
3. Care for the Animal, Inspection. To care for the animal in accordance with good and acceptable agricultural practices. I understand that American AgCredit has the right to inspect the animal and any facility where the animal is housed.
4. Sell the Animal and Remit Proceeds. To sell the animal and to remit the proceeds received from the sale of the animal to American AgCredit in an amount equal to the amount advanced to me within 14 days of sale, or within 7 days of student’s recipient of proceeds, whichever is sooner. To assure that American AgCredit will receive the proceeds, I authorize them to notify any and all parties deemed necessary that I have agreed to remit the proceeds to American AgCredit. I understand that even if I don’t sell the animal, I will still be obligated to repay American AgCredit within a reasonable timeframe.
5. Notify American AgCredit of Changes in Plan. To notify American AgCredit within 10 business days of any material changes in the Project Information.
6. Project Books and Records. To keep good, accurate and complete project records and to turn in such books and records to American AgCredit for inspection at its request.
7. GPA Certification. I hereby certify that currently have, and pledge to maintain, a GPA of no less than 2.0.
8. Information Certified. I hereby certify that the information contained above is true, complete and accurate as of the date I have signed this Application. I understand that I am only allowed one outstanding project advance at a time.

IN SINGING THIS APPLICATION, ALL PARTIES SIGNING BELOW AGREE TO THE TERMS AND CONDITIONS STIPULATED ABOVE.

In witness whereof, I have signed this Application/Agreement on _________________.

(Date)

Participant__________________________

PARENT/GUARDIAN CERTIFICATION:
I hereby certify that I am aware of and have approved the project described on this Application/Agreement and will reimburse American AgCredit for the amount of the advance if the participant does not. I agree to assist American AgCredit in obtaining participant’s project book for inspection and to facilitate any inspection of the facilities.

Parent__________________________

LEADER/ADVISOR CERTIFICATION and Agreement:
I certify as follows: I am an authorized advisor of the above-mentioned 4-H/FFA Club (Section C). The above-referenced student is a member in good standing of the 4-H/FFA Club specified above and that I am aware of the proposed project. I agree to assist American AgCredit in obtaining the student’s project book for inspection and to facilitate any inspection of the facilities. I agree to cooperate with American AgCredit in obtaining proceeds from the animal sale.

Leader/Advisor ____________________________

ACCEPTANCE:
American AgCredit hereby approves the application: ________________  ________________

Loan Officer  Date

Rev. 9/25/2012
I hereby apply for American Ag Credit Ag Youth Program funds in the amount of $300.00 to be used for the purchase and care of the animal specified above. In order to induce American AgCredit to approve my request, I promise as follows:

1. **Use Advance for Purchase.** To use the advance for the purchase and care of the animal described in the Project Information.

2. **Care for the Animal, Inspection.** To care for the animal in accordance with good and acceptable agricultural practices. I understand that American AgCredit has the right to inspect the animal.

3. **Sell the Animal and Remit Proceeds.** To sell the animal and to remit the proceeds received from the sale of the animal to American AgCredit in an amount equal to the amount advanced to me within **14 days** of sale. To assure that American AgCredit will receive the proceeds, I authorize them to notify any and all parties deemed necessary that I have agreed to remit the proceeds to American AgCredit. I understand that even if I don't sell the animal, I will still be obligated to repay American AgCredit.

4. **Notify American AgCredit of Changes in Plan.** To notify American AgCredit within ten business days of any material changes in the Project Information.

5. **Project Books and Records.** To keep good, accurate and complete project records and to turn in such books and records to American AgCredit for inspection at its request.

6. **Information Certified.** I hereby certify that the information contained above is true, complete and accurate as of the date I have signed this Application. I understand that I am only allowed one outstanding project advance at a time.

In witness whereof, I have signed this Application/Agreement on _______________________.

(Date)

Participant ____________________________

PARENT CERTIFICATION:

I hereby certify that I am aware of and have approved the project described on this Application/Agreement and will reimburse American AgCredit for the amount of the advance if my child does not. I agree to assist American AgCredit in obtaining my child's project book for inspection and to facilitate any inspection of the facilities.

Parent ____________________________

ADVISOR CERTIFICATION and Agreement:

I certify as follows: I am an authorized advisor of 4-H/FFA Club mentioned above. The above-referenced student is a member in good standing of the 4-H/FFA Club specified above and that I am aware of the proposed project. I agree to assist American AgCredit in obtaining the student's project book for inspection and to facilitate any inspection of the facilities. I agree to cooperate with American AgCredit in obtaining proceeds from the animal sale.

Advisor ____________________________

ACCEPTANCE:

American AgCredit hereby approves the application.

Loan Officer ____________________________

Revised 2/2/04
Appendix AK
Scots Preview Night Sign-Up Sheets
Do you want to be in Ag?

Do you want to learn about agriculture and leadership while fulfilling your Earth Science graduation requirement in a challenging and dynamic environment? Note: This is college prep! Please check yes or no in the boxes below...

___ Yes  ___ No

Highland Agriculture courses fulfill UC and CSU Science courses and are 100% transferable!

Highland Agriculture courses fulfill UC and CSU Science courses and are 100% transferable!
I WANT TO RAISE AN ANIMAL!

Contact Info

YES! I am interested in purchasing and raising an animal for the Kern County Fair through the agriculture program.

Cost of animal: About $300 + about $250 for feed and other expenses.

Please check the animal you would like to purchase and you will be contacted soon.

Name___________________
Address_________________
Tel.#____________________

_________Pig
_________Lamb

Office Use Only: 
The final decision to purchase the animal was...
______ Yes ______ No

Office Use Only. Do not write here...
Contacted? ______ Yes ______ No
1st contact______ 2nd contact______ 3rd Contact______
Appendix AL

Graduate Follow Up Data
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47 Seniors
39/47 Seniors are Program Completers = 85%
15 Seniors are Ag Science Majors = 33%