

Course Title: Agricultural Science III

Board Approval Date: 4/14/14

Credit / Hours: 1 credit

Course Description:

This course focuses on mastery of the PA Academic Standards for Science and Technology as well as Career Education and Work. As students progress through this course they will participate in a systematic study of an advanced understanding of the agricultural industry. At this point in the student's educational career, they have continued to specialize in their own interest areas. Throughout this course, instruction is provided in these specialty areas that are agriculturally production oriented as well as agriculturally related to this industry. Material being presented in this course is designed to provide a specialized and diverse amount of information to students who in turn can apply these principles to their own individual situations. Information being presented such as: Careers in Agriculture, Animal Science, Plant Science, Plumbing, Agricultural Management, Concrete and Masonry Skills, Electrical Procedures, Plasma Arc Cutting, Turf/Landscape Management, General Wood and Metal Working, Christmas Tree Production, Meat Science and Integrated Pest Management.

Learning Activities / Modes of Assessment:

Large group instruction	Tests and Quizzes
Laboratory/Shop demonstration	Checklists / Teacher Observation
Small group work	Projects with Rubrics
Greenhouse instruction	Lesson Worksheets
Career Pathway Explorations	LFS Worksheets

Instructional Resources:

www.agednet.com
www.pacareerzone.com
FFA Videos
You Tube Videos
Agri-science 4th Edition Text (Burton & Cooper, 2011)
Agricultural Mechanics 6th Edition Text (Herren, 2011)

Course Pacing Guide

Course: **Agricultural Science III**

Course Unit (Topic)	Length of Instruction (Days/Periods)
1. Animal Welfare	20 days
2. ATV Safety	20 days
3. Meat Science	40 days
4. Electricity	20 days
5. Plumbing	20 days
6. Alternative Energies	20 days
7. Irrigation and Drainage Systems	20 days
8. Supervised Agricultural Experience	<u>20 days</u>
TOTAL DAYS	180 Days

Topic: Unit A-1-Animal Welfare

Days: 20

Subject(s): Vocations

Grade(s): 11th

Know:

Understand:

Do:

13.1.C – Compact

Analyze how the changing roles of individuals in the workplace relate to new opportunities within career choices.

Students should understand the importance of proper animal welfare for all domesticated animals.

13.1.B – Essential

Analyze career options based on personal interests, abilities, aptitudes, achievements and goals.

13.3.G – Unranked

Evaluate the impact of lifelong learning on career retention and advancement.

13.1.A – Essential

Relate careers to individual interests, abilities, and aptitudes.

Topic: Unit B-2-ATV Safety

Days: 20

Subject(s): Vocations

Grade(s): 11th

Know:

Understand:

Do:

<p>3.4.12.A1. – Important CHARACTERISTICS OF TECHNOLOGY - Compare and contrast the rate of technological development over time.</p>	<p>Students should have a basic understanding of ATV safety and operation.</p>	<p>3.4.12.A1. – Important CHARACTERISTICS OF TECHNOLOGY - Compare and contrast the rate of technological development over time.</p> <p>13.1.A – Essential Relate careers to individual interests, abilities, and aptitudes.</p> <p>13.1.B – Essential Analyze career options based on personal interests, abilities, aptitudes, achievements and goals.</p> <p>Discuss the different ATV classes and their uses</p> <p>Discuss the history of development and use of ATV's</p> <p>Explain various ATV safety guidelines</p> <p>Identify how to properly register and license an ATV</p>
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Topic: Unit C-3-Meat Science

Days: 40

Subject(s): Vocations

Grade(s): 11th

Know:

Understand:

Do:

<p>3.4.12.A1. – Important CHARACTERISTICS OF TECHNOLOGY - Compare and contrast the rate of technological development over time.</p> <p>3.4.12.A2. – Essential CORE CONCEPTS OF TECHNOLOGY - Describe how management is the process of planning, organizing, and controlling work.</p> <p>Animal carcass and meat cut identification</p> <p>Proper, safe, and sanitary meat processing skills</p> <p>Types of meat packaging</p>	<p>Understand the knowledge and skill necessary to properly identify, process, and package a meat product.</p>	<p>3.4.12.A1. – Important CHARACTERISTICS OF TECHNOLOGY - Compare and contrast the rate of technological development over time.</p> <p>3.4.12.A2. – Essential CORE CONCEPTS OF TECHNOLOGY - Describe how management is the process of planning, organizing, and controlling work.</p> <p>Properly identify different animal carcasses and cuts of meat from the carcasses.</p> <p>Demonstrate proper skills during the processing of an animal carcass.</p> <p>Discuss and utilize various kinds of meat packaging techniques.</p>
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Topic: Unit D-4-Electricity

Days: 20

Subject(s): Vocations

Grade(s): 11th

Know:

Understand:

Do:

<p>3.4.12.C3. – Essential RESEARCH & DEVELOPMENT, INVENTION & INNOVATION, EXPERIMENTATION/PROBLEM SOLVING AND TROUBLESHOOTING - Apply the concept that many technological problems require a multi-disciplinary approach.</p> <p>Demonstrate how to safely work with electricity and electrical circuits</p> <p>Properly wire simple and branch circuits</p>	<p>Students should understand how to properly use the principles of electricity and safety to plan and wire simple and branch circuits.</p>	<p>3.4.12.C3. – Essential RESEARCH & DEVELOPMENT, INVENTION & INNOVATION, EXPERIMENTATION/PROBLEM SOLVING AND TROUBLESHOOTING - Apply the concept that many technological problems require a multi-disciplinary approach.</p> <p>13.1.A – Essential Relate careers to individual interests, abilities, and aptitudes.</p> <p>13.1.B – Essential Analyze career options based on personal interests, abilities, aptitudes, achievements and goals.</p> <p>Wire simple circuits</p> <p>Wire branch circuits</p> <p>Identify and utilize various electrical tools, equipment, and materials</p>
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Topic: Unit E-5-Plumbing

Days: 20

Subject(s): Vocations

Grade(s): 11th

Know:

Understand:

Do:

<div data-bbox="131 359 415 621" data-label="Text" style="background-color: #e0f2f1; padding: 5px; border: 1px solid #ccc;"> <p>3.4.12.A2. – Essential CORE CONCEPTS OF TECHNOLOGY - Describe how management is the process of planning, organizing, and controlling work.</p> </div> <div data-bbox="131 638 415 940" data-label="Text" style="background-color: #fff9c4; padding: 5px; border: 1px solid #ccc;"> <p>3.4.12.E7. – Important CONSTRUCTION TECHNOLOGIES - Analyze the technologies of prefabrication and new structural materials and processes as they pertain to constructing the modern world.</p> </div> <div data-bbox="131 957 415 1199" data-label="Text" style="background-color: #e0f2f1; padding: 5px; border: 1px solid #ccc;"> <p>13.1.C – Compact Analyze how the changing roles of individuals in the workplace relate to new opportunities within career choices.</p> </div>	<div data-bbox="483 331 773 474" data-label="Text"> <p>Students should understand the basic processes of plumbing systems.</p> </div>	<div data-bbox="854 359 1455 506" data-label="Text" style="background-color: #e0f2f1; padding: 5px; border: 1px solid #ccc;"> <p>3.4.12.A2. – Essential CORE CONCEPTS OF TECHNOLOGY - Describe how management is the process of planning, organizing, and controlling work.</p> </div> <div data-bbox="854 527 1455 705" data-label="Text" style="background-color: #fff9c4; padding: 5px; border: 1px solid #ccc;"> <p>3.4.12.E7. – Important CONSTRUCTION TECHNOLOGIES - Analyze the technologies of prefabrication and new structural materials and processes as they pertain to constructing the modern world.</p> </div> <div data-bbox="854 726 1455 852" data-label="Text" style="background-color: #e0f2f1; padding: 5px; border: 1px solid #ccc;"> <p>13.1.B – Essential Analyze career options based on personal interests, abilities, aptitudes, achievements and goals.</p> </div>
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Topic: Unit F-6-Alternative Energies

Days: 20

Subject(s): Vocations

Grade(s): 11th

Know:

3.4.12.A1. – Important
CHARACTERISTICS OF TECHNOLOGY - Compare and contrast the rate of technological development over time.

3.4.12.A3. – Essential
TECHNOLOGY CONNECTIONS - Demonstrate how technological progress promotes the advancement of science, technology, engineering and mathematics (STEM).

3.4.12.E6. – Essential
MANUFACTURING TECHNOLOGIES - Compare and contrast the importance of science, technology, engineering and math (STEM) as it pertains to the manufactured world.

Understand:

Students should understand the different types of alternative power generation methods used in the United States.

Do:

13.1.B – Essential
Analyze career options based on personal interests, abilities, aptitudes, achievements and goals.

3.4.12.A1. – Important
CHARACTERISTICS OF TECHNOLOGY - Compare and contrast the rate of technological development over time.

3.4.12.A3. – Essential
TECHNOLOGY CONNECTIONS - Demonstrate how technological progress promotes the advancement of science, technology, engineering and mathematics (STEM).

3.4.12.E2. – Essential
AGRICULTURAL AND RELATED BIOTECHNOLOGIES - Compare and contrast the technologies of biotechnology, conservation, bio-fuels, and ecosystems as they relate to managing Earth's resources effectively.

3.4.12.E3. – Essential
ENERGY AND POWER TECHNOLOGIES - Compare and contrast energy and power systems as they relate to pollution, renewable and non-renewable resources, and conservation.

3.4.12.E6. – Essential
MANUFACTURING TECHNOLOGIES - Compare and contrast the importance of science, technology, engineering and math (STEM) as it pertains to the manufactured world.

Topic: Unit G-7-Irrigation and Drainage Systems

Days: 20

Subject(s): Vocations

Grade(s): 11th

Know:

Understand:

Do:

3.4.12.A3. – Essential TECHNOLOGY CONNECTIONS - Demonstrate how technological progress promotes the advancement of science, technology, engineering and mathematics (STEM).

Students should understand the different irrigation and drainage systems that are used in Pennsylvania.

3.4.12.A3. – Essential TECHNOLOGY CONNECTIONS - Demonstrate how technological progress promotes the advancement of science, technology, engineering and mathematics (STEM).

3.4.12.E2. – Essential AGRICULTURAL AND RELATED BIOTECHNOLOGIES - Compare and contrast the technologies of biotechnology, conservation, bio-fuels, and ecosystems as they relate to managing Earth's resources effectively.

13.1.B – Essential
Analyze career options based on personal interests, abilities, aptitudes, achievements and goals.

13.1.A – Essential
Relate careers to individual interests, abilities, and aptitudes.

Topic: Unit H-8-Supervised Agricultural Experience

Subject(s): Vocations

Days: 20

Grade(s): 12th

Know:

13.1.B – Compact

Analyze career options based on personal interests, abilities, aptitudes, achievements and goals.

13.1.C – Compact

Analyze how the changing roles of individuals in the workplace relate to new opportunities within career choices.

Understand:

Students should understand how to analyze career options and complete a SAE project.

Do:

13.1.A – Essential

Relate careers to individual interests, abilities, and aptitudes.

13.1.D – Important

Evaluate school-based opportunities for career awareness/preparation, such as, but not limited to: Career days, Career portfolio, Community service, Cooperative education, Graduation/senior project, Internship, Job shadowing, Part-time employment, Registered apprenticeship and School-based enterprise.

13.1.F – Essential

Analyze the relationship between career choices and career preparation opportunities, such as, but not limited to: Associate degree, Baccalaureate degree, Certificate/licensure, Entrepreneurship, Immediate part/full time employment, Industry training, Military training, Professional degree, Registered apprenticeship, Tech Prep and Vocational rehabilitation centers.

13.1.H – Important

Review personal high school plan against current personal career goals and select postsecondary opportunities based upon personal career interests.