Course Title: Agricultural Science II
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 a basic and advanced understanding of the agricultural industry. As entering this elective program, students have begun to develop interest areas where they would like to specialize in a particular area. Throughout this course, instruction is provided in these specialty areas that are agricultural 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, Sheet Metal Working, Cold Metal Working and Soldering, Principles of Animal Science, Tool Redressing and Conditioning, Advanced Arc and Gas Welding, Plasma Cutting, MIG/TIG Welding, Agronomy, Food Science, Farm/Agricultural Equipment Safety and General Wood and Metal Working.

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 II**

Course Unit (Topic)	**Length of Instruction (Days/Periods)**
1. Tractor/Agricultural Equipment Safety	45 days
2. Tool Sharpening/Reconditioning and Sheet Metal	25 days
3. Fasteners	10 days
4. Plasma Cutting/Mig and Tig Welding	20 days
5. Small Animal Science	20 days
6. Food Science	40 days
7. Supervised Agricultural Experience	20 days
TOTAL DAYS	180 Days

Curriculum: CCSD CURRICULUM
Course: Agricultural Science II-(4/14/14)
Teacher / Team Name: Brown/Turner

PENNSYLVANIA
Date: March 6, 2014 ET

Topic: Unit A-1-Tractor/Agricultural Equipment Safety
Days: 45
Subject(s): Vocations
Grade(s): 10th

Know:	Understand:	Do:
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). **13.1.A – Important** Relate careers to individual interests, abilities, and aptitudes. **13.1.D – Compact** Explain the relationship of career training programs to employment opportunities. Hazardous Occupations Order in Agriculture Industry Safety Standards Mechanical Hazards Tractor Mechanical Controls Tractor Instruments Tractor Safety Signs, Symbols, and Colors Safe Tractor Driving Skills and Attitudes	Students should understand the knowledge and skills necessary to safely operate agricultural machinery	**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). **13.1.A – Important** Relate careers to individual interests, abilities, and aptitudes. Define the Hazardous Occupations Order in Agriculture Discuss tractor safety standards Identify possible mechanical hazards when working with agricultural equipment Explain and utilize tractor safety controls and instruments Identify tractor safety signs, symbols, and colors Drive a tractor

Topic: Unit A-1-Tractor/Agricultural Equipment Safety
Days: 45
Subject(s): Vocations
Grade(s): 10th

Know:	Understand:	Do:

Curriculum: CCSD CURRICULUM

PENNSYLVANIA

Course: Agricultural Science II-(4/14/14)

Date: March 6, 2014 ET

Teacher / Team Name: Brown/Turner

Topic: Unit B-2-Tool Sharpening/Reconditioning and Sheet Metal

Days: 25

Subject(s): Vocations

Grade(s): 10th

Know:	Understand:	Do:
3.4.12.A2. – Essential CORE CONCEPTS OF TECHNOLOGY - Describe how management is the process of planning, organizing, and controlling work. **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.	Students should understand the processes that are needed to successfully construct, sharpen and recondition tools.	**3.4.12.A2. – Essential** CORE CONCEPTS OF TECHNOLOGY - Describe how management is the process of planning, organizing, and controlling work. **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. **13.1.A – Essential** Relate careers to individual interests, abilities, and aptitudes. **13.1.D – Important** Explain the relationship of career training programs to employment opportunities. **13.3.A – Important** Determine attitudes and work habits that support career retention and advancement.

Curriculum: CCSD CURRICULUM

PENNSYLVANIA

Course: Agricultural Science II-(4/14/14)

Date: March 6, 2014 ET

Teacher / Team Name: Brown/Turner

Topic: Unit C-3-Fasteners

Days: 10

Subject(s): Vocations

Grade(s): 10th

Know:	Understand:	Do:
13.1.C – Compact Explain how both traditional and nontraditional careers offer or hinder career opportunities. **13.1.D – Compact** Explain the relationship of career training programs to employment opportunities. **13.1.A – Important** Relate careers to individual interests, abilities, and aptitudes. **13.3.G – Compact** Identify formal and informal lifelong learning opportunities that support career retention and advancement.	Students should have an understanding of the basic differences that exist within types of fasteners	**13.1.A – Important** Relate careers to individual interests, abilities, and aptitudes. **13.1.B – Important** Relate careers to personal interests, abilities and aptitudes.

Curriculum: CCSD CURRICULUM

PENNSYLVANIA

Course: Agricultural Science II-(4/14/14)

Date: March 6, 2014 ET

Teacher / Team Name: Brown/Turner

Topic: Unit D-4-Plasma Cutting/Mig and Tig Welding

Days: 20

Subject(s): Vocations

Grade(s): 10th

Know:	Understand:	Do:
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. **13.1.A – Important** Relate careers to individual interests, abilities, and aptitudes. **13.1.D – Compact** Explain the relationship of career training programs to employment opportunities. **13.3.A – Compact** Determine attitudes and work habits that support career retention and advancement.	Students should understand the procedures used to properly operate a MIG and TIG Welding Machine as well as a Plasma Arc Cutting Machine	**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. **13.1.A – Important** Relate careers to individual interests, abilities, and aptitudes. **13.1.E – Important** Analyze the economic factors that impact employment opportunities, such as, but not limited to: Competition, Geographic location, Global influences, Job growth, Job openings, Labor supply, Potential advancement, Potential earnings, Salaries/benefits and Unemployment.

Curriculum: CCSD CURRICULUM
Course: Agricultural Science II-(4/14/14)
Teacher / Team Name: Brown/Turner

PENNSYLVANIA
Date: March 6, 2014 ET

Topic: Unit E-5-Small Animal Science
Days: 20
Subject(s): Vocations
Grade(s): 10th

Know:	Understand:	Do:
13.1.A – Important Relate careers to individual interests, abilities, and aptitudes. **13.1.D – Compact** Explain the relationship of career training programs to employment opportunities. **13.3.E – Important** Identify and apply time management strategies as they relate to both personal and work situations. **13.4.B – Important** Evaluate how entrepreneurial character traits influence career opportunities.	Students should understand the basic principles used to manage, house and handle small animals.	**13.1.A – Important** Relate careers to individual interests, abilities, and aptitudes. **13.1.B – Important** Relate careers to personal interests, abilities and aptitudes.

Curriculum: CCSD CURRICULUM

PENNSYLVANIA

Course: Agricultural Science II-(4/14/14)

Date: March 6, 2014 ET

Teacher / Team Name: Brown/Turner

Topic: Unit F-6-Food Science

Days: 40

Subject(s): Vocations

Grade(s): 10th

Know:	Understand:	Do:
13.1.C – Compact Explain how both traditional and nontraditional careers offer or hinder career opportunities. **13.1.D – Compact** Explain the relationship of career training programs to employment opportunities. **13.3.G – Compact** Identify formal and informal lifelong learning opportunities that support career retention and advancement. **13.1.A – Important** Relate careers to individual interests, abilities, and aptitudes.	Students should understand the processes that are utilized to ensure a healthy and wholesome food supply in the United States.	**13.1.E – Important** Analyze the economic factors that impact employment opportunities, such as, but not limited to: Competition, Geographic location, Global influences, Job growth, Job openings, Labor supply, Potential advancement, Potential earnings, Salaries/benefits and Unemployment. **13.1.A – Important** Relate careers to individual interests, abilities, and aptitudes.

Topic: Unit G-7-Supervised Agricultural Experience
Days: 20
Subject(s): Vocations
Grade(s): 12th

Know:	Understand:	Do:
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.	Students should understand how to analyze career options and complete a SAE project.	**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.