Agriscience

Agriscience is a course that provides students with a general overview of the Agriculture, Food and Natural Resources cluster, which contains five pathways—Power, Structure, and Technical Systems; Environmental and Natural Resources Systems; Animal Systems; Plant Systems; and Agribusiness Systems. Students are involved in classroom and laboratory activities in each of the five pathway areas. Topics included in this course include career opportunities, safety, technology applications, agribusiness leadership, environmental science, soil science, plant science, forestry, animal science, aquaculture, wildlife science, pest management, woodworking, metalworking, small engines, electrical wiring, and plumbing.

Content standards for this course are not intended to serve as the entire curriculum. Teachers are encouraged to expand the curriculum beyond the limits of these content standards to accommodate specific community interests and utilize local resources. This course encourages critical thinking, use of the scientific method, integration of technology, development of student leadership skills, and application of knowledge and skills related to practical questions and problems. Safety concepts are integrated into instruction to the maximum extent possible.

This course may be taught as a one-credit or half-credit course. For a half-credit course, content standards 1, 2, 3, 6, 7, 9, 10, 12, 16, 18, and 19 must be included.

Career and technical student organizations are integral, cocurricular components of each career and technical education course. These organizations serve as a means to enhance classroom instruction while helping students develop leadership abilities, expand workplace-readiness skills, and broaden opportunities for personal and professional growth.

Introduction

Students will:

1. Identify major agricultural commodities in the local area, state, nation, and world.
    - Sequencing major changes and accomplishments in the history of agriculture
    - Describing various agricultural organizations and their roles in the agricultural industry
    - Defining agriculture and major divisions of the agricultural industry

Career Opportunities

2. Determine factors in developing an effective career plan, including procedures for obtaining employment.
    - Identifying various careers in the agricultural industry

Safety

3. Identify tool and equipment safety procedures in woodworking, welding, electrical, small engine, plumbing, and masonry operations.

Technology Applications

4. Utilize technology to access, manage, and integrate information in the agricultural industry.
   Examples: Internet, spreadsheets, databases

   - Identifying technological advancements that enhance the agricultural industry

Agribusiness Leadership

5. Apply problem-solving skills to resolve agribusiness issues.
   - Explaining the eight steps in the decision-making process
   - Describing fundamental principles of economics that affect the management of a business, including supply and demand

6. Identify characteristics of a SAE program, including manageability, record keeping, availability of facilities, and financing.
   - Identifying principles of financial literacy
   - Describing factors to be considered in agricultural entrepreneurial opportunities
     Examples: risk, reward, business climate, obtaining finances

7. Demonstrate communication skills, including prepared public speaking, extemporaneous speaking, creed speaking, and parliamentary procedure, through career development events (CDEs).
   - Demonstrating leadership and teamwork skills gained through student organization activities
     Examples: activities—CDEs, proficiency awards, officer leadership opportunities, teamwork opportunities

Environmental Science

8. Identify methods for conserving the environment.
   - Explaining the importance of natural resources
   - Describing techniques for recycling, reusing, and reducing the use of natural resources

Soil Science

9. Identify major soil areas in Alabama.
   - Identifying layers of soil in a soil profile
   - Determining the texture of various soil samples
   - Determining the land capability class for a given plot of land
   - Explaining how to adjust soil pH

Plant Science

10. Determine characteristics and functions of plants.
    - Explaining plant processes, including photosynthesis, respiration, and transpiration
    - Identifying the sixteen essential elements needed for plant health and growth
    - Identifying various requirements needed to produce successful vegetable gardens, greenhouse plants, and landscape plants
    - Propagating plants sexually and asexually
    - Explaining how agricultural crops can be utilized as alternative fuel sources

Forestry

11. Determine forest management practices.
    - Identifying trees for local, state, national, and global markets
    - Applying mathematics concepts to the measurement of trees and land

Animal Science

12. Identify common breeds of livestock and their characteristics, including cattle, swine, sheep, equine, and poultry.
    - Identifying species-specific terminology used to describe livestock
      Examples: bovine—bull, cow, heifer, steer, calf
      equine—stallion, mare, foal, gelding, filly
      swine—boar, sow, piglet, gilt, barrow
    - Explaining practices used to manage livestock, including handling, breeding, vaccinating, and transporting
    - Determining nutritional requirements for livestock, including cattle, swine, sheep, equine, and poultry

Aquaculture

13. Differentiate among types of aquaculture enterprises in Alabama, including catfish, crawfish, shrimp, and tilapia.

Wildlife Science

14. Assess ethical and legal responsibilities for conduct in wildlife management.
    - Identifying state hunting laws and regulations concerning wildlife
    - Explaining hunter ethics
    - Determining management practices used to enhance wildlife habitats
    - Explaining hunting safety practices

Pest Management

15. Describe the importance of pest management in the agricultural industry.
    - Comparing types of pesticides and how they control pests