

Fundamentals of Agriscience

Foundational Standards

- 1 Incorporate safety procedures in handling, operating, and maintaining tools and machinery; handling materials; utilizing personal protective equipment; maintaining a safe work area; and handling hazardous materials and forces.** F.1

- 2 Demonstrate effective workplace and employability skills, including communication, awareness of diversity, positive work ethic, problem-solving, time management, and teamwork.** F.2

- 3 Explore the range of careers available in the field and investigate their educational requirements and demonstrate job-seeking skills including resume-writing and interviewing.** F.3

- 4 Demonstrate digital literacy by using digital and electronic tools appropriately, safely, and ethically.** F.4

- 5 Participate in a Career Technical Student Organization (CTSO) to increase knowledge and skills and to enhance leadership and teamwork.** F.5

- 6 Participate in Supervised Agricultural Experiences and/or work-based, experiential, and service learning.** F.6

Impact of Agriculture

- 1 Define agriculture and identify major divisions of the agriculture industry.** 1
 - a Identify major agricultural commodities in the local area, state, nation, and world. 1.A
 - b Describe various agricultural organizations and their roles in the agricultural industry. 1.B

- 2 Create a timeline listing major changes and accomplishments in the history of agriculture.** 2

Technology Applications

- 3 Utilize technology to access, manage, and integrate agricultural information. Examples: spreadsheets, databases, web-based drives, electronic record keeping, Geographic Integration System, Global Positioning System, drones** 3
 - a Identify technological advances that enhance the agriculture industry. 3.A

Agribusiness Leadership

- 4 Apply problem-solving and decision-making skills to address agribusiness issues. Examples: supply and demand, financial management, marketing** 4

5 Discuss the history and structure of agriscience education and its three-circle model. 5

- a Examine the history of the National FFA Organization. 5.A
 - b List legislation which mandates or supports agricultural education. 5.B
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6 Identify components of a Supervised Agricultural Experience (SAE), including manageability, record keeping, availability of facilities, financing, and award opportunities. Examples: award opportunities - agriscience fairs, proficiency awards, degree applications, scholarships 6

- a Identify financial considerations as factors to be considered in agricultural opportunities and selecting a Supervised Agricultural Experience (SAE). 6.A
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7 Demonstrate communication skills through Leadership Development Events (LDEs), including prepared public speaking, extemporaneous speaking, creed speaking, conduct of a chapter meeting, and parliamentary procedure. 7

- a Practice listening and speaking skills. 7.A
 - b Refine reading and writing skills. 7.B
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Environmental Science

8 Identify methods and practices for conserving the environment. 8

- a Explain the importance of natural resources. 8.A
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9 Identify major soil areas in Alabama. 9

- a Identify layers of soil in a soil profile. 9.A
 - b Determine the texture of various soil samples. 9.B
 - c Determine the land capability class for a given plot of land. 9.C
 - d Explain how to adjust soil pH. 9.D
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10 Discuss forest management practices. 10

- a Identify trees for local, state, national, and global markets. 10.A
 - b Identify potential hazards for Alabama forests and forest professionals. Examples: invasive species; venomous spiders and snakes, poisonous plants, topographic hazards 10.B
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11 Discuss ethical and legal responsibilities involved in wildlife management. 11

- a Describe state hunting laws and regulations concerning wildlife. 11.A
 - b Explain hunting safety practices. 11.B
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12 Identify common fish and wildlife species of Alabama. 12

Plant Science

13 Identify characteristics and functions of plants. 13

- a Explain plant processes, including photosynthesis, respiration, and transpiration. 13.A

- b Identify the essential elements needed for plant health and growth. 13.B
 - c Identify various necessities for producing plants. 13.C
 - d Demonstrate sexual and asexual plant propagation. 13.D
 - e Discuss the use of chemicals in agriculture. Examples: herbicides, fungicides, insecticides 13.E
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Animal Science

- 14 Identify characteristics of common breeds of livestock including cattle, swine, sheep, equine animals, and poultry. 14**
 - a Identify species-specific terminology used to identify livestock. Example: bovine-bull, cow, heifer, steer, calf 14.A
 - b Explain practices used to manage livestock, including handling, breeding, vaccinating, and transporting. 14.B
 - c Determine nutritional requirements for livestock, including cattle, swine, sheep, equine animals, and poultry. 14.C
 - 15 Differentiate among types of aquaculture enterprises in Alabama, including catfish, crawfish, shrimp, and tilapia. 15**
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Industrial Agricultural Technology

- 16 Apply mathematical, reading, and writing skills used in woodworking. 16**
 - a Demonstrate procedures for constructing a woodworking project, including completing a bill of materials, calculating board feet, selecting tools, applying measurements, cutting, assembling, and finishing. 16.A
- 17 Examine procedures used in welding. 17**
- 18 Explain the theory of operation for two- and four-stroke small engines. 18**
- 19 Identify major components and functions of basic wiring circuits. 19**
- 20 Identify procedures for installing and maintaining plumbing lines and fixtures for structures. 20**