Alabama CTE

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

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

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

Environmental Science

8 **Identify methods and practices for conserving the environment.** 8

- a Explain the importance of natural resources. 8.A

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

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

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

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

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

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