Alabama CTE

Applied 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	**Explain the impact of agriculture on a selected county's economy, utilizing National Agricultural Statistics Service (NASS) information.** 1 a Compare United States and world agricultural practices and policies. 1.A
Technology Applications	2	**Employ an electronic record keeping platform to input and record agriculture data. Example: Agricultural Experience Tracker (AET)** 2
	3	**Demonstrate a variety of technological applications used in the agriculture industry. Examples: Computer Numerical Controlled (CNC), electronic control systems, drones, Global Positioning System (GPS), Geographic Information System (GIS)** 3
Agribusiness Leadership	4	**Apply the three-circle model to opportunities within agriscience education. Examples: working toward FFA awards and degrees, participating in Career/Leadership Development Events** 4

Power Equipment Technology

5 Perform routine care and maintenance on engines. 5

- a Demonstrate preventive maintenance procedures used in checking and servicing hydraulic and pneumatic systems. Examples: changing fluids, changing filters, checking fluid levels, checking hoses 5.A
- b Describe the purpose of compliance controls on power equipment. Examples: engine kill switch, inertia brake control 5.B
- c Demonstrate the procedures for overhauling manual starters and for repairing electric starters. 5.C
- d Diagnose problems involving power equipment. Examples: cutting deck – loose belts; chain saw - loose chain; string trimmer – improper fuel mixture; tiller – spark plug 5.D

Welding

6 Explain and demonstrate safety techniques for using oxyfuel equipment, including setting up and shutting down, lighting and adjusting a torch, disassembling the equipment, changing cylinders, cutting straight-line and square shapes, and piercing and slot cutting. 6

7 Demonstrate plasma arc cutting processes. Examples: identifying, setting up, and storing equipment; cutting 7

8 Demonstrate techniques for preparing metal for fabrication. Examples: cleaning base metal, beveling, selecting joint design layout 8

9 Analyze weld imperfections to determine corrective measures. 9

- a Review codes governing welding. 9.A
- b. Identify weld imperfections and explain causes. 9.B
- c Compare destructive and nondestructive examination practices. 9.C
- d Explain the importance of quality workmanship. 9.D

10 Demonstrate the shielded metal arc welding (SMAW) process. 10

- a Explain welding electrical current. 10.A
- b Identify characteristics of welding power supplies. 10.B
- c Demonstrate how to set up a machine for welding. 10.C
- d Identify tools used for weld cleaning. 10.D

11 Compare and contrast various types of welding electrodes used in shielded metal arc welding (SMAW). 11

- a Investigate factors that affect electrode selection. 11.A
- b Select the proper electrode for a welding task. 11.B

	12 **Apply techniques for flat, vertical, horizontal, and overhead welding.** 12 a Demonstrate the setup of shielded metal arc welding (SMAW) equipment. 12.A b Demonstrate methods of striking an arc. 12.B c Demonstrate stringer, weave, and overlapping welds. 12.C d Perform fillet welds in horizontal, vertical, and overhead positions. 12.D
Framing and Finishing	**13** **Utilize power tools to construct and maintain systems within the agriculture industry. Examples: woodworking, plumbing, electrical** 13
	14 **Demonstrate finishing techniques in a simulated workplace. Examples: prepping, staining, varnishing, painting** 14