

# Introduction to Agricultural Education

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<b>Primary Career Cluster:</b>	Agriculture, Food, & Natural Resources
<b>Consultant:</b>	<a href="mailto:CTE.Standards@tn.gov">CTE.Standards@tn.gov</a>
<b>Course Code(s):</b>	C18X02
<b>Prerequisite(s):</b>	None
<b>Credit:</b>	½ - 1
<b>Grade Level:</b>	7
<b>Graduation Requirements:</b>	This course does not satisfy credit attainment for concentrator status, because it is not part of an approved program of study.
<b>Programs of Study and Sequence:</b>	This course serves as a middle school primer for all programs of study in the Agriculture, Food, & Natural Resources career cluster.
<b>Aligned Student Organization(s):</b>	FFA: <a href="http://www.tnffa.org">http://www.tnffa.org</a>
<b>Coordinating Work-Based Learning:</b>	All Agriculture students are encouraged to participate in a Supervised Agricultural Experience (SAE) program. In addition, teachers who hold an active WBL certificate may offer placement for credit when the requirements of the state board's WBL Framework and the Department's WBL Policy Guide are met. For information, visit <a href="https://www.tn.gov/education/educators/career-and-technical-education/work-based-learning.html">https://www.tn.gov/education/educators/career-and-technical-education/work-based-learning.html</a> .
<b>Available Student Industry Certifications:</b>	None
<b>Teacher Endorsement(s):</b>	048, 150, 448, and 950
<b>Required Teacher Certifications/Training:</b>	None
<b>Teacher Resources:</b>	<a href="https://www.tn.gov/education/educators/career-and-technical-education/career-clusters/cte-cluster-agriculture-food-natural-resources.html">https://www.tn.gov/education/educators/career-and-technical-education/career-clusters/cte-cluster-agriculture-food-natural-resources.html</a>  Add "Best for All Central: <a href="https://bestforall.tnedu.gov/">https://bestforall.tnedu.gov/</a>

## Course at a Glance

CTE courses provide students with an opportunity to develop specific academic, technical, and 21st century skills necessary to be successful in career and in life. In pursuit of ensuring every student in Tennessee achieves this level of success, we begin with rigorous course standards which feed into intentionally designed programs of study.

Students engage in industry relevant content through general education integration and experiences such as career & technical student organizations (CTSO) and work-based learning (WBL). Through these experiences, students are immersed with industry standard content and technology, solve industry based problems, meaningfully interact with industry professionals and use/produce industry specific, informational texts.

### Using a Career and Technical Student Organization (CTSO) in Your Classroom

CTSOs are a great resource to put classroom learning into real-life experiences for your students through classroom, regional, state, and national competitions, and leadership opportunities. Below are CTSO connections for this course, note this is not an exhaustive list.

- Participate in CTSO Fall Leadership Conference to engage with peers by demonstrating logical thought processes and developing industry specific skills that involve teamwork and project management.
- Participate in FFA career and leadership events (CDE/LDE) that align with this course including but not limited to Agriscience Fair, Agricultural Communications, Agricultural Issues, Conduct of Meetings, Creed Speaking, Dairy Cattle handlers, Employment Skills, Public Speaking, and Extemporaneous Speaking.

### Using Work-Based Learning (WBL) in Your Classroom

Sustained and coordinated activities that relate to the course content are the key to successful work-based learning. Possible activities for this course include the following. This is not an exhaustive list.

- **Standards 1.1-3.2** | Invite an industry representative as a guest speaker to discuss the history and impacts made because of the agriculture industry.
- **Standard 5.1-11.2** | Job shadow virtually or in person an industry representative to focus on career opportunities and skills needed to secure employment and their professional roles and responsibilities.

## Course Description

*Introduction to Agricultural Education* analyzes the different aspects of the agricultural industry. It is a middle school course designed to introduce students to the vast opportunities available in Agricultural Education to make informed decisions regarding their future academic and occupational goals in the agriculture, food, and natural resource career cluster. Students will have the opportunity to participate in FFA activities. Upon completion of this course, students will understand the importance of agriculture in daily life by exploring basic principles of agribusiness, agricultural mechanics, animal science, natural resources, and horticulture systems, and will be prepared for high school coursework in agriculture.

## Course Standards

### 1. Agriculture Importance and Trends

- 1.1 Comprehensive Definition: Research the term agriculture to **develop a comprehensive definition** that includes all aspects of the industry.\*
- 1.2 Importance of Agriculture: Create an accurate summary of the **importance of agriculture in daily life**. Identify sources of different types of food, fiber, or by-products, and depict them in a visual representation.\*
- 1.3 Major Trends: Identify the **major changes and advancements** that have occurred in agriculture over the last 200 years, specifying the societal and economic impacts of these advancements.

### 2. Career and Employment Skills

- 2.1 Career Interest: Complete a **career awareness interest survey**, such as AgExploror to identify your top career focus areas. Identify the educational, work experience, and skills needed for the top three occupations in each focus area.\*
- 2.2 Career Opportunities and Industry Importance: Explore local **career opportunities in agriculture and examine the importance of the agriculture industry** to Tennessee's economy. Use local job postings and Tennessee labor and workforce data.\*
- 2.3 Employment Skills Development: Enhance or develop a **Supervised Agricultural Experience (SAE) program based on career goals and industry needs** for every individual.\*

### 3. Principles of Leadership, Personal Growth, and Career Success

- 3.1 Organizational Membership: Explain the **benefits for participating in FFA and other civic and community organizations** and their activities as an active member.\*
- 3.2 Knowledge and Skill Development: Describe the knowledge and skills needed for Leadership Development Events (LED) and Career Development Events (CDE). Identify **LEDs and CDEs that align with the individuals career goals**.

## 4. Safety

- 4.1 Safety: Accurately **read and interpret safety rules**. Identify and explain the intended use of safety equipment available in the classroom. Demonstrate ability to pass a safety test at 100 percent accuracy on all lab equipment.\*

## 5. Agribusiness

- 5.1 Agribusiness Careers: Identify types of agribusinesses and explore the different roles of **local and regional career opportunities related to agribusiness**. Use local job postings and Tennessee labor and workforce data.\*
- 5.2 Communication Skills: Demonstrate **effective communication skills** through the delivery of a presentation, speech, or demonstration.

## 6. Introduction to Animal Science

- 6.1 Animal Science Careers: Investigate **local and regional career opportunities in animal science**, drawing on information from multiple resources such as local job postings, and Tennessee labor and workforce data.\*
- 6.2 Breeds: Compare and contrast **small companion and large domesticated animals**, to describe the following:
- identify important breeds and their historical and contemporary roles in society and the agriculture industry specifically;
  - the social and economic implications for maintaining animal health; and
  - common domesticated breeds and their use in society.\*
- 6.3 Animal Body Systems: Review illustrative models of **major animal body systems** (i.e., skeletal, muscular, respiratory, digestive, nervous, integumentary, urinary, reproductive) in conjunction with technical information from scientific texts to establish a basic knowledge of animal anatomy and physiology.

## 7. Introduction to Environmental and Natural Resources

- 7.1 Environmental and Natural Resources Careers: Compare and contrast information gathered from a variety of sources to identify **local and regional career opportunities in environmental and natural resources systems**.\*
- 7.2 Ecosystems: Explore the **major ecosystems** in Tennessee and discuss their importance to agriculture. Define Best Management Practices (BMP) and explain their benefits to agriculture.\*
- 7.3 Environmental and Economic Impacts: Describe the interrelationships among plants and animals. Identify native wildlife species and describe their **environmental and economic impacts** in Tennessee, incorporating visual representations such as diagrams or models.

7.4 Types of Pollution: Identify the **types of pollution found in air and water**. Determine pollution sources and the general effects of pollutants on the environment.

## 8. Introduction to Horticulture and Plant Science

8.1 Horticulture Careers: Compare and contrast **local and regional career opportunities in horticulture** using local job postings, and Tennessee labor and workforce data.\*

8.2 Plant Structures: Describe how **form and function of plant structures** are related. Explain each component and their processes involved in plant reproduction and growth.\*

8.3 Soils: Analyze the **relationship between soil quality and plant health and growth**, including the impact of pH, organic matter content, and mineral content.

## 9. Food Science

9.1 Food Careers: Compare and contrast **local and regional career opportunities in food science** using local job postings, and Tennessee labor and workforce data.\*

9.2 Career Pathways: Create a web chart showing the **various career pathways of a food scientist** including the sequential steps for education and training for studying food science.

9.3 Meat Breeds: Identify the different **meat breeds for beef, swine, and poultry**.\*

9.4 Sanitation Practices: Explain the techniques of **basic handwashing and proper sanitation practices** within kitchen.

## 10. Agriculture Supply Value Chain

10.1 Agriculture Supply Value Chain Careers: Compare and contrast **local and regional career opportunities** in the agriculture supply value chain using local job postings, and Tennessee labor and workforce data.\*

10.2 Importance of Agriculture Supply Value Chain: Explain the **importance of agriculture supply value chain**. Select an agriculture product and research where it is grown or raised. Compare and contrast the steps necessary to transport the product to a supermarket versus a local farmer's market. Identify the aspects of science, technology, engineering, and math involved in this process.

## 11. Introduction to Agricultural Mechanics (Machines)

11.1 Impact of Agricultural Mechanic: Examine the **impact of the agricultural mechanics industry** on United States society and the economy at large, addressing technological developments and career options. Produce an informational essay or model (e.g., timeline, graphic illustration, or presentation) to illustrate findings.\*

- 11.2 Agricultural Mechanics Practices: Demonstrate a conceptual understanding of the following **current practices in agricultural mechanics**:
- a. Calculate linear measurements and simple angles using approved methods of measurements.
  - b. Calculate horsepower and explain its importance and uses.
  - c. Investigate the concepts of the different types of power, structural, and technical systems.
  - d. Demonstrate the safe use and maintenance of basic hand and power tools, including passing a safety test at 100 percent accuracy.\*

## Implementation Notes

\*Marked areas to be taught in a single grade level nine-week rotation format.

## Standards Alignment Notes

References to other standards include:

- SAE for All: [Evolving the Essentials](#): All Agriculture students are encouraged to participate in a Supervised Agricultural Experience (SAE) program to practice and demonstrate the knowledge and skills learned in their agriculture courses.
- AFNR: [National Agriculture, Food, & Natural Resources \(AFNR\) Career Cluster Content Standards](#):
  - Note: While not directly aligned to one specific standard, students engaged in activities outlined above should be able to demonstrate fluency in Standards AS.01 and PS.01 at the conclusion of the course.
- P21: Partnership for 21st Century Skills [Framework for 21st Century Learning](#)
  - Note: While not all standards are specifically aligned, teachers will find the framework helpful for setting expectations for student behavior in their classroom and practicing specific career readiness skills.