



Career and Technical Education (CTE) Middle School Competencies

Career Cluster:
M01-Agriculture

May 2026



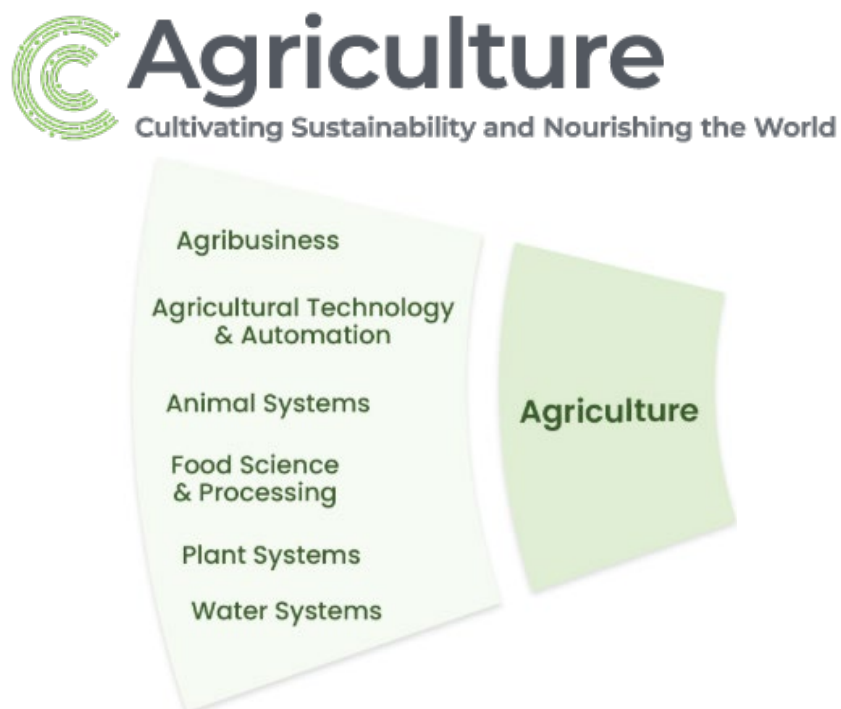
M01-Agriculture: Cultivating Sustainability and Nourishing the World

Cluster Definition: The Agriculture Career Cluster concentrates on scientific advancement of agriscience, cultivation, processing, and distribution of agricultural products, employing advanced technologies and sustainable practices to optimize global food systems. This Cluster also supports other plant- and animal-based industries, including regenerative agriculture, sustainable logging, and fisheries. This Cluster has meaningful connections with the Energy and Natural Resources Cluster, highlighting a symbiotic relationship that emphasizes stewardship and resilient communities.

Sub-Clusters:

- Agribusiness
- Agricultural Technology & Automation
- Animal Systems
- Food Science & Processing
- Plant Systems
- Water Systems

More details can be found at [Agriculture - Advance CTE](#)



Middle School Competencies

The MS Instructional Design form will be used to communicate the delivery model of the program, which will also be entered into the Career and Technical Education Information System (CTEIS).

Competency Code	M01 Agriculture Middle School Competency Statements
M1	Evaluate agriculture industry safety protocols by identifying common hazards (e.g., equipment entanglement, chemical exposure, livestock handling risks) and demonstrating responsible behaviors such as proper PPE use and safe operation zones.
M2	Explain the roles and responsibilities of professionals across agriculture sub-clusters—such as agronomists, livestock managers, equipment technicians, and food scientists—and how they contribute to production, processing, and distribution systems.
M3	Analyze sustainable agricultural practices by comparing methods like conservation tillage, crop rotation, water-efficient irrigation, and soil health strategies to balance productivity with environmental stewardship.
M4	Apply fundamental measurement, mapping, and data-collection techniques to monitor variables such as plant growth, soil quality, or environmental conditions and interpret their impact on agricultural outcomes.
M5	Differentiate between types of agricultural tools, machinery, and technologies—including tractors, sensors, hand tools, and irrigation systems—and describe routine maintenance and safety procedures associated with each.
M6	Create small-scale agricultural projects—such as container gardens, soil experiments, or simple hydroponic systems—using teamwork, problem-solving, and safe handling practices to model real-world production processes.
M7	Assess agricultural regulations, food safety guidelines, and environmental policies to understand how compliance supports safe, ethical, and sustainable food and fiber systems.
M8	Explore careers in the Agriculture Career Cluster and connect the opportunities to personal interests, strengths, and future goals.

Advance CTE Career Ready Practices

Career Ready Practices, built on a meta-analysis of over 30 different listings of general professional skills developed by industry and educational institutions, represent the skills needed to succeed in the modern workplace. These practices should be embedded across the pre-kindergarten to workforce continuum. Refer to the [Advance CTE Career Ready Practices](#) document for more detailed information.

Competency Code	Career Ready Practices
CRP 01	Lead as a contributing and professional employee
CRP 02	Communicate clearly, effectively, and with reason
CRP 03	Think critically to make sense of problems and persevere in solving them
CRP 04	Collaborate productively while using cultural and global competencies
CRP 05	Use digital skills and technologies to enhance productivity and make data-informed decisions
CRP 06	Remain resilient in a changing workplace and world of work
CRP 07	Manage time and space effectively
CRP 08	Demonstrate a creative and innovative mindset
CRP 09	Act as a good steward of organizational and personal finances and resources
CRP 10	Navigate an education and career path aligned to strengths, work style, interests, and goals
CRP 11	Consider the environmental and social impacts of decisions
CRP 12	Apply appropriate academic and technical skills