



# **Principles of Agriculture, Food & Natural Resources**

PRE-TEST/POST-TEST TEKS BLUEPRINT

*\* This course will be retiring Summer 2025 due to the creation of new content or updated TEKS.*

# **Pre-Test/Post-Test Development Overview**

## **TEKS Addressed Selection Process**

The Texas Essential Knowledge & Skills (TEKS) included in the course pre-test and post-test were selected for their direct relevance to the course content. This selection process was guided by the goal of assessing learners' understanding of specific topics and skills that are integral to the course. As a result, TEKS related to general employability skills or broader topics were often excluded. This focus ensures that the assessments accurately measure students' mastery of the subject matter, allowing educators to gain a clear insight into areas where students excel or may need additional support. By concentrating on content-specific TEKS, the tests provide a more precise evaluation of the students' knowledge and understanding of the core material.

## **Test Question Development Process**

The questions created for the pre-test and post-test were designed using psychometric principles to ensure they are of high quality and fairness. This approach helps to accurately assess student understanding. These principles guide the development of questions to be reliable, valid, and free from bias, ensuring that they effectively measure the knowledge and skills the students are expected to acquire in the course.

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Knowledge & Skills Statement	Student Expectation	iCEV Lesson Title
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experimental learning activity.	Blue & Gold Experience: SAE Programs
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(B) apply proper record-keeping skills as they relate to the supervised agriculture experience	Blue & Gold Experience: SAE Programs
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(C) participate in youth leadership opportunities to create a well-rounded experience program	Blue & Gold Experience: Introduction
(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:	(D) produce and participate in a local program of activities using a strategic planning process	Blue & Gold Experience: Introduction
(3) The student analyzes concepts related to global diversity. The student is expected to:	(A) compare and contrast global agricultural markets, currency, and trends	The World of Agriculture
(3) The student analyzes concepts related to global diversity. The student is expected to:	(B) evaluate marketing factors and practices that impact the global markets	The World of Agriculture
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(A) define the scope of agriculture	The World of Agriculture
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(B) analyze the scope of agriculture, food, and natural resources and its effect upon society	The World of Agriculture
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(C) evaluate significant historical and current agriculture, food, and natural resource developments	The World of Agriculture
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(D) identify potential future scenarios for agriculture, food, and natural resources systems, including global impacts	The World of Agriculture
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(E) describe how emerging technologies and globalization impacts agriculture, food, and natural resources	The World of Agriculture
(4) The student explains the historical, current, and future significance of the agricultural, food, and natural resources industry. The student is expected to:	(F) compare and contrast issues impacting agriculture, food, and natural resources such as biotechnology, employment, safety, environment, and animal welfare issues	The World of Agriculture
(5) The student analyzes the structure of agricultural, food, and natural resources leadership in organizations. The student is expected to:	(A) develop and demonstrate leadership skills and collaborate with others to accomplish organizational goals and objectives	Blue & Gold Experience: Leadership
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(A) discuss major research and developments in the fields of agriculture, food, and natural resources	The World of Agriculture
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(B) use a variety of resources for research and development	Researching Strategies & Tactics
(7) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:	(C) describe scientific methods of research	Scientific Procedures & Safety
(8) The student applies problem-solving, mathematical, and organizational skills in order to maintain financial and logistical records. The student is expected to:	(A) develop a formal business plan	Agricultural Business: Management
(8) The student applies problem-solving, mathematical, and organizational skills in order to maintain financial and logistical records. The student is expected to:	(B) develop, maintain, and analyze records	Agricultural Business Management

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(9) The student uses information technology tools to access, manage, integrate, and create information related to agriculture, food, and natural resources. The student is expected to:	(A) apply technology applications such as industry-relevant software and Internet applications	Workplace Technology
(9) The student uses information technology tools to access, manage, integrate, and create information related to agriculture, food, and natural resources. The student is expected to:	(B) utilize collaborative, groupware, and virtual meeting software	Workplace Technology
(9) The student uses information technology tools to access, manage, integrate, and create information related to agriculture, food, and natural resources. The student is expected to:	(C) analyze the benefits and limitations of emerging technology such as online mapping systems, drones, and robotics	The World of Agriculture
(9) The student uses information technology tools to access, manage, integrate, and create information related to agriculture, food, and natural resources. The student is expected to:	(D) explain the benefits of computer based and mobile application equipment in agriculture, food, and natural resources	The World of Agriculture
(10) The student develops technical knowledge and skills related to soil systems. The student is expected to:	(A) identify the components and properties of soils	Field Trip: DigIt! The Secrets of Soil
(10) The student develops technical knowledge and skills related to soil systems. The student is expected to:	(B) identify and describe the process of soil formation	Soil Formation & Evaluation
(10) The student develops technical knowledge and skills related to soil systems. The student is expected to:	(C) conduct experiments related to soil chemistry	Fertilizers & Soil Amendments
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(A) describe the structure and function of plant parts	Anatomy of Plants
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(B) discuss and apply plant germination, growth, and development	Plant Nutrition
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(C) describe plant reproduction, genetics, and breeding	Plant Genetics
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(D) identify plants of importance to agriculture, food, and natural resources	Crop Production in the United States: Southern Region
(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to plant systems	Fertilizers & the Environment
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(A) describe animal growth and development	Plants & Animals: What's the Difference
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(B) identify animal anatomy and physiology	External Anatomy of Livestock: Terms & Terminology
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(C) identify and evaluate breeds and classes of livestock	Basic Animal Science
(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:	(D) explain animal selection, reproduction, breeding, and genetics	Basic Animal Reproduction
(13) The student describes the principles of food products and processing systems. The student is expected to:	(A) evaluate food products and processing systems	Dairy Products Production
(13) The student describes the principles of food products and processing systems. The student is expected to:	(B) determine trends in world food production	Farm to Plate
(13) The student describes the principles of food products and processing systems. The student is expected to:	(C) discuss current issues in food production	Farm to Plate
(13) The student describes the principles of food products and processing systems. The student is expected to:	(D) use tools, equipment, and personal protective equipment common to food products and processing systems	Dairy Products Production
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(A) identify major areas of power, structural, and technical systems	Power, Structural & Technical Systems
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(B) use safe and appropriate laboratory procedures and policies	Personal & Occupational Health & Safety

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(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(C) create proposals that include bill of materials, budget, schedule, drawings, and technical skills developed for basic power, structural, and technical system projects or structures	Project Management Skills
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(D) identify building materials and fasteners	Installation: Roofing
(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:	(E) use tools, equipment, and personal protective equipment common to power, structural, and technical systems	Personal & Occupational Health & Safety
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(A) determine the effects of agriculture, food, and natural resources upon safety, health, and the environment	The World of Agriculture
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(B) identify regulations relating to safety, health, and environmental systems in agriculture, food, and natural resources	The World of Agriculture
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(C) identify and design methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources	The World of Agriculture
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(D) research and analyze alternative energy sources that stem from or impact agriculture, food, and natural resources	Environmental Resources: Renewable & Non-Renewable Resources and Energy
(15) The student explains the relationship between agriculture, food, and natural resources and the environment. The student is expected to:	(E) evaluate energy and water conservation methods	Environmental Resources: Renewable & Non-Renewable Resources and Energy