Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 01.0 Describe the history of agriculture and its influence on the global economy.

Benchmark: 01.01 Investigate the origin and history of agriculture and its relationship to science and technology.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to the origin and history of agriculture and its relationship to science and technology.

Stimulus Attributes:

Stimulus may include definitions for basic terminology – agriculture, science, technology, and agriscience.
Stimulus may include internet and web resources.
Stimulus may compare and contrast the relationship agriculture has with science and technology.
Stimulus may include timelines, charts, and diagrams.
Stimulus may include specific major historical events.
Stimulus should not address specific dates.

Response Attributes:

Responses may include correct and incorrect historical information.
Responses may include correct and incorrect relationships among agriculture, science and technology.

Sample Item:

Which invention allowed for the expansion of production of crops in the southern United States in the early 1800s?

A. reaper
B. moldboard plow
* C. cotton gin
D. steam engine

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 01.0 Describe the history of agriculture and its influence on the global economy**.**

Benchmark: 01.02 Analyze the impact of agriculture on the local, state, national and global economy.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to the impact of agriculture on the local, state, national and global economy.

Stimulus Attributes:

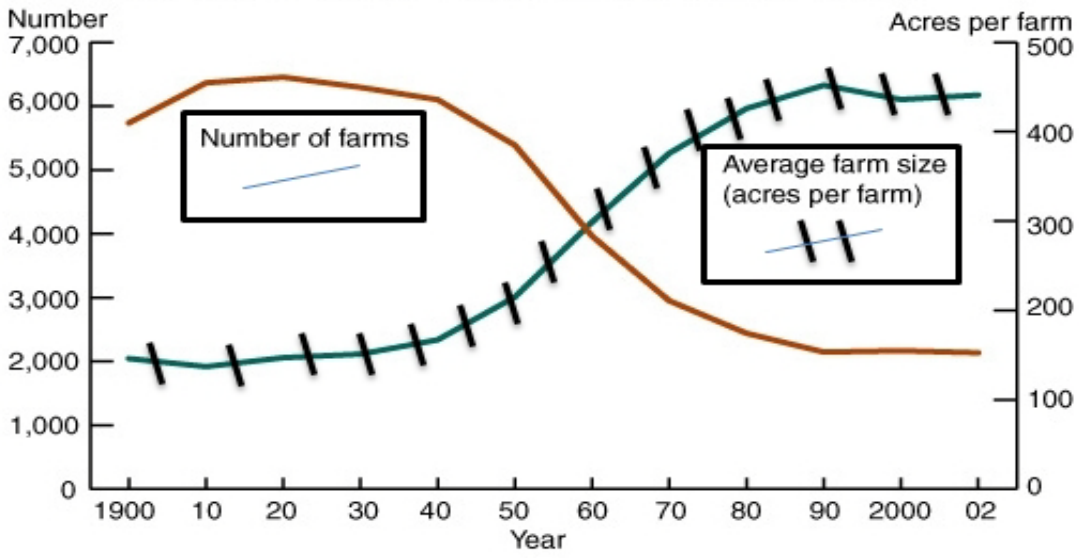
Stimulus may compare and contrast the affect agriculture has had on the local, state, national and global economy.
Stimulus may include internet and web resources.
Stimulus may include the economic relationships among local, state, national, and global economies.
Stimulus may include charts, diagrams, and time lines.
Stimulus should not include specific dates.

Response Attributes:

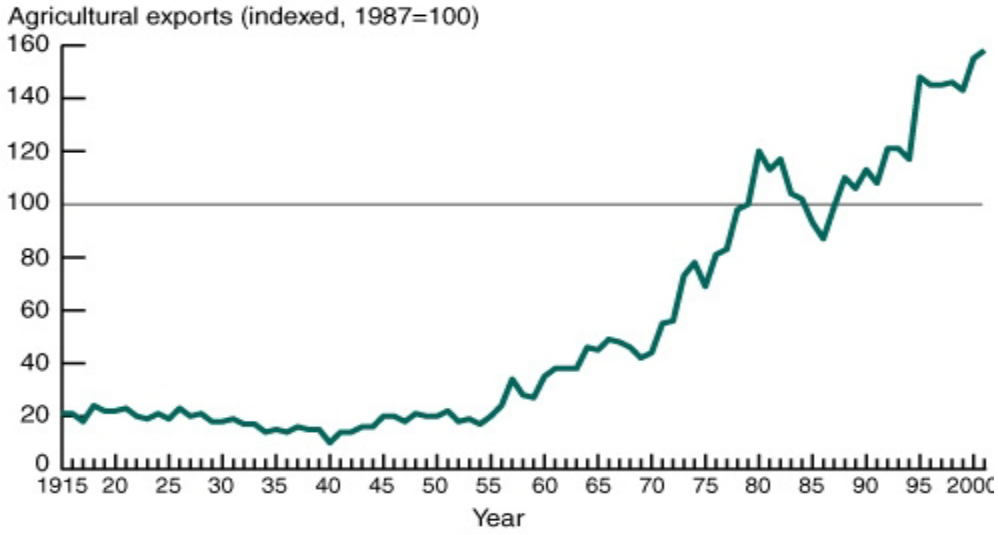
Responses may include correct and incorrect impacts of agriculture on different economies.
Responses may include correct and incorrect developments that have taken place in agriculture.

Sample Item:

Item Specifications



Source: Compiled by Economic Research Service, USDA, using data from *Census of Agriculture, Census of Population*, and *Census of the United States.*



Note: Standard techniques were used to combine four series of data for quantity of goods exported.
Source: Compiled by Economic Research Service, USDA, using data from *Agricultural Statistics.*

The two graphs represent the impact of agriculture on the United States economy. What conclusion can be made from the data in these graphs?

A. Farms are becoming larger but producing less food for export.
B. There are more acres used for farming in 2002 than there were in 1960.
C. Agriculture has become a vital part of the United States economy in the last 50 years.
* D. Farms have increased production to meet the growing demands for export.

Item Specifications

Standard: 01.0 Describe the history of agriculture and its influence on the global economy**.**

Benchmark: 01.03 Identify significant career patterns/shifts in the history of the agricultural industry.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to significant career patterns/shifts in the history of the agricultural industry.

Stimulus Attributes:

Stimulus may include internet and web resources.
Stimulus may include charts and timelines.
Stimulus may compare and contrast changes in career patterns.
Stimulus may include changes in the agricultural industry.
Stimulus may include historical events but may not include specific dates.

Response Attributes:

Responses may include correct and incorrect changes in career patterns caused by changes in agriculture.
Responses may include correct and incorrect relationships between careers and agriculture.

Sample Item:

Which event in United States history resulted in a decrease in the amount of labor needed in agricultural production?

A. Roosevelt's "First Hundred Days" policy
B. launching the Tennessee Valley Authority project
* C. the introduction of grangers
D. the formation of the Agricultural Adjustment Administration

Item Specifications

Standard: 01.0 Describe the history of agriculture and its influence on the global economy**.**

Benchmark: 01.04 Examine the role of the agricultural industry in the interaction of population, food, energy, and the environment.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to the role of the agricultural industry in the interaction of population, food, energy, and the environment.

Stimulus Attributes:

Stimulus may identify factors that affect our environment, our population, our food, and energy.
Stimulus may identify population, food, energy, and environmental trends.
Stimulus may include identifying the advances made in the agricultural industry.
Stimulus may compare and contrast the various roles the agriculture industry has.
Stimulus may include how the advances made in the agricultural industry have effected/affected the population, food, energy, and environment.
Stimulus may contain charts and graphs.

Response Attributes:

Responses may include correct and incorrect benefits of advancements made in the agricultural industry.
Responses may include correct and incorrect negative impacts the agricultural industry has had on our population, food, energy, and environment.

Sample Item:

The mechanization of agriculture in the 20th century and agriscience research have brought about many changes in the United States. Which statement is true today?

* A. Agriculture produces more food on less land with less impact on the environment.
B. Agriculture produces less food on less land with less impact on the environment.
C. Agriculture produces more food on more land with less impact to the environment.
D. Agriculture produces less food on more land with less impact to the environment.

Item Specifications

Standard: 02.0 Practice agriscience safety skills and procedures.

Benchmark: 02.01 Identify the common causes and prevention of accidents in agriscience operations.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to the common causes and prevention of accidents in agriscience operations.

Stimulus Attributes:

Stimulus may include safety regulations in agriscience.
Stimulus may include the major historical agricultural accidents and threats, real or unreal, that agriscience presents.
Stimulus may include a code of ethics.
Stimulus may include charts and tables.

Response Attributes:

Responses may include safety regulations in agriscience.
Responses may include the major historical agricultural accidents and threats, real or unreal, that agriscience presents.

Sample Item:

What is the **MOST** common cause of injuries when operating a tractor?

A. PTO mishap
* B. rollover
C. implement jackknife
D. ditch cave-in

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 02.0 Practice agriscience safety skills and procedures.

Benchmark: 02.02 Demonstrate proper safety precautions and use of personal protective equipment.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to proper safety precautions and use of personal protective equipment. Items may include a demonstration of knowledge by the selection of correct behaviors or performing the required behaviors.

Stimulus Attributes:

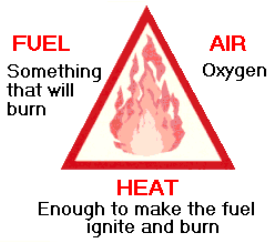
Stimulus may include safety rules, protocols, and procedures relating to agriculture.
Stimulus may include safety equipment and personal protective equipment and the proper use of it.
Stimulus may include safety risks and hazards to avoid.
Stimulus may include posters, charts, and diagrams.
Scenarios may relate to agricultural settings.

Response Attributes:

Responses may include correct and incorrect responses to an emergency.
Responses may include correct and incorrect safety precautions and rules.

Sample Item:

Joe has been interning in an agricultural mechanics shop. He sees this sign and immediately knows that he should be concerned about the potential of starting a fire. What safety step should he take?



A. Make sure he has a blanket with him at all times so he can smother any flames.
B. Keep his cell phone with him at all times so he can call 911.
* C. Receive instructions on how to use the fire extinguishers.
D. Place all oily rags in a plastic box for pickup once a week.

Item Specifications

Standard: 02.0 Practice agriscience safety skills and procedures.

Benchmark: 02.03 Evaluate the food safety responsibilities that occur along the food supply chain.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to food safety responsibilities that occur along the food supply chain.

Stimulus Attributes:

Stimulus may include food safety handling rules.
Stimulus may include the risks and dangers that occur along the food supply chain.
Stimulus may include the relationships among food safety, food quality, and food security.
Stimulus may include the regulating agencies such as FDA and USDA.
Stimulus may include standards such as *Hazard Analysis and Critical Control Points.*
Stimulus may include charts and graphs.

Response Attributes:

Responses may include correct and incorrect methods for transporting, handling, packaging, and harvesting foods.
Responses may include correct and incorrect risks and dangers.
Responses may include locations where risks or dangers are most prevalent along the food supply chain.

Sample Item:

One of the easiest places for food contamination to happen is during the processing stage. In this stage, what is **NOT** a responsibility of a meat packing house regarding food safety to avoid contamination?

* A. grade the product
B. temperature control
C. sanitation
D. inspect for contamination

Item Specifications

Standard: 02.0 Practice agriscience safety skills and procedures.

Benchmark: 02.04 Extract and utilize pertinent information from a container label and/or Material Safety Data Sheet (MSDS) following Environmental Protection Agency (EPA), Worker Protection Standard, and Occupational Safety and Health Agency (OSHA) regulations.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to utilize pertinent information from a container label and/or Material Safety Data Sheet (MSDS) following Environmental Protection Agency (EPA), Worker Protection Standard, and Occupational Safety and Health Agency (OSHA) regulations.

Stimulus Attributes:

Stimulus may include Environmental Protection Agency (EPA), Worker Protection Standard, and/or Occupational Safety and Health Agency (OSHA) regulations.
Stimulus may include several Material Safety Data Sheets (MSDS), Product safety data sheet (PSDS), and container labels.
The stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may include Environmental Protection Agency (EPA), Worker Protection Standard, and/or Occupational Safety and Health Agency (OSHA) regulations.
Responses may include several Material Safety Data Sheets (MSDS), Product safety data sheet (PSDS), and container labels.
Responses may include data interpreted from graphs, charts, diagrams, or pictures.

Sample Item:

Item Specifications

Information extracted from a specimen label.

Active ingediants: Pyrethrins 6%, Piperonyl butoxide 60%

Multipurpose insecticide

For use on growing crops, livestock, and fruit fly control on harvested fruits and vegetables.
For use in canneries: Use a diluted mixture to treat for ants, roaches, spiders, and cheese mites.
For use on stored products: Use a diluted mixture to treat rice, barley, beans, corn, grain, oats, figs, and grain nuts.
For use on harvested fruits and vegetables: Including apples, grapes, guavas, oranges, pineapple, plums, raspberries, and tomatoes.

Using the information provided on the specimen label, on which crop would the chemical (using the active ingredient Pyrethrins) be appropriate for use?

A. radishes
B. collards
* C. tomatoes
D. watermelon

Item Specifications

Standard: 02.0 Practice agriscience safety skills and procedures.

Benchmark: 02.05 Identify proper disposal of hazardous waste materials and biohazards.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to proper disposal of hazardous waste materials and biohazards.

Stimulus Attributes:

Stimulus may address the proper disposal of hazardous waste materials and biohazards.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may describe the proper disposal of hazardous waste materials and biohazards addressed in the stimulus.
Responses may include data interpreted from graphs, charts, diagrams, or pictures.

Sample Item:

Item Specifications

Public domain source: http://www.docstoc.com/docs/44411121/

Koc: 884 - 60,000 L/kg
Adsorbs strongly to soil.
Water, aerobic:
Half life: < 7 days

13. DISPOSAL CONSIDERATIONS

Product
Recycle if appropriate facilities/equipment available.
Burn in special, controlled high temperature incinerator.
Keep out of drains, sewers, ditches and water ways.
Follow all local/regional/national/international regulations.

Container
See the individual container label for disposal information.
Triple or pressure rinse empty containers.
Pour rinse water into spray tank.
Store for collection by approved waste disposal service.
Recycle if appropriate facilities/equipment available.
Emptied containers retain vapour and product residue.
Observe all labelled safeguards until container is cleaned, reconditioned or destroyed.
Follow all local/regional/national/international regulations.

14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

Not hazardous under the applicable DOT, ICAO/IATA, IMO, TDG and Mexican regulations.

15. REGULATORY INFORMATION

TSCA Inventory
All components are on the US EPA's TSCA Inventory

OSHA Hazardous Components
Surfactant(s)

SARA Title III Rules
Section 311/312 Hazard Categories
Immediate
Section 302 Extremely Hazardous Substances
Not applicable.
Section 313 Toxic Chemical(s)
Not applicable.

Item Specifications

According to the provided MSDS of a chemical containing glyphosate, how should a homeowner dispose of a partially filled bottle of this chemical?

A. Pour the unused product along the fence line.
B. Incinerate any unused product in a wood fire.
C. Pour the unused product into sanitary drain.
* D. Send the container to an appropriate recycling center.

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 02.0 Practice agriscience safety skills and procedures.

Benchmark: 02.06 Describe emergency procedures.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to emergency procedures for fire, chemical spill, or natural disasters. Items should be limited to trauma/injuries to humans or animals. Items may include written ideas or the selection of appropriate ideas.

Stimulus Attributes:

Stimulus may address emergency procedures for items listed in the content limits.
Stimulus may examine emergency procedures for fire, a chemical spill, or disaster.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect emergency procedures addressed in the stimulus.
Responses may include data interpreted from graphs, charts, diagrams, or pictures.

Sample Item:

There was a fire and explosion in the agriculture shop and the teacher was rendered unconscious. What is the correct order of the emergency procedures the student should follow?

A. evacuate students, push the emergency shut off button, and call 911
B. call 911, evacuate students, and push the emergency shut off button
* C. push the emergency shut off button, evacuate students, and call 911
D. call 911, push the emergency shut off button, and evacuate students

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 03.0 Apply scientific and technological principles to agriscience issues.

Benchmark: 03.01 Employ scientific measurement skills.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to scientific measurement skills as they apply to the agriculture industry.

Stimulus Attributes:

Stimulus may include scientific measurement skills.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may include scientific measurement skills.
Responses may include data interpreted from graphs, charts, diagrams, or pictures.

Sample Item:

Using the metric system of measurement, what volume of liquid would fill a 1 cubic centimeter container?

A. 1 micrometer (1um)
B. 1 deciliter (1dl)
* C. 1 milliliter (1ml)
D. 1 Liter (1L)

Item Specifications

Standard: 03.0 Apply scientific and technological principles to agriscience issues.

Benchmark: 03.02 Demonstrate safe and effective use of common laboratory equipment.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to safe and effective use of common laboratory equipment. Items should be limited to lab equipment used in the agriculture industry. Items may include a demonstration of knowledge through the selection of correct behaviors or performing the required behaviors.

Stimulus Attributes:

Stimulus may include safe and effective use of common laboratory equipment.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may include safe and effective use of common laboratory equipment.
Responses may include data interpreted from graphs, charts, diagrams, or pictures.

Sample Item:

What is the proper sequence to insert a slide into a microscope that demonstrates safe and effective use of the equipment?

* A. Lift the clips with the eyepiece in the highest position; place the slide with the slipcover on the platform.
B. Lift the clips with the eyepiece in the lowest position; place the slide with the slipcover on the platform.
C. Lift the clips with the eyepiece in the highest position; place the slide on the platform, and place the slipcover on the slide.
D. Lift the clips with the eyepiece in the lowest position; place the slide on the platform, and place the slipcover on the slide.

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 03.0 Apply scientific and technological principles to agriscience issues.

Benchmark: 03.03 Identify the parts and functions of plant and animal cells.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to the identification and function of animal and plant cells.

Stimulus Attributes:

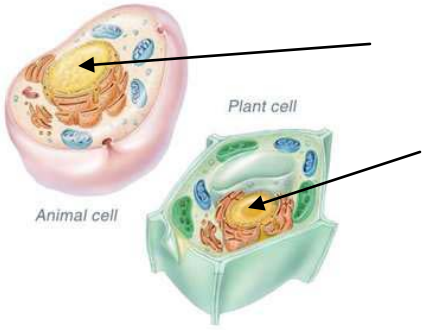
Stimulus may identify the parts and functions of plant and animal cells.
Stimulus may include a scenario, diagrams, picture, and/or charts.

Response Attributes:

Responses may address the functions of plant and animal cells.
Responses may include the identification of the parts of animal and plant cells.

Sample Item:

What part of a plant and animal cell is indicated by the arrow?



A. cytoplasm
* B. nucleus
C. vacuole
D. chloroplast

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 03.0 Apply scientific and technological principles to agriscience issues.

Benchmark: 03.04 Describe the phases of cell reproduction.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to describing the phases of cell reproduction in plants and animals. Items may include a description of written ideas or the selection of appropriate ideas.

Stimulus Attributes:

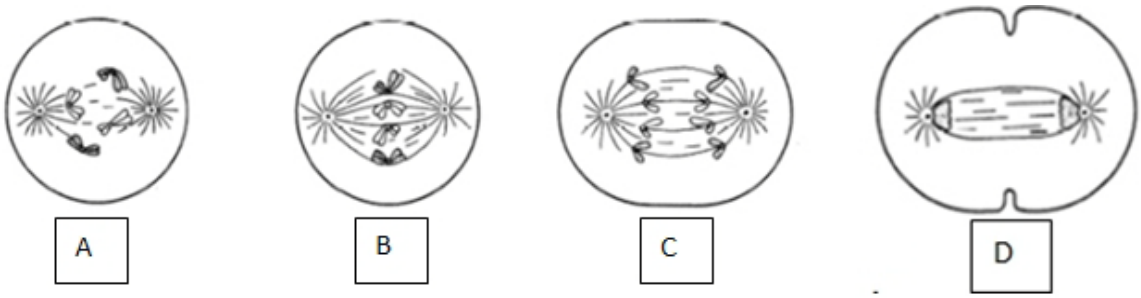
Stimulus may describe/identify the phases of cell reproduction in plants and animals.
Stimulus may include a scenario, diagrams, picture, graph, and/or charts of the phases of cell reproduction in animals and/or plants.

Response Attributes:

Responses may address the phases of cell reproduction.
Responses may be limited to describing cell reproduction.

Sample Item:

Which picture shows the metaphase of cell reproduction?



A. A
* B. B
C. C
D. D

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 03.0 Apply scientific and technological principles to agriscience issues.

Benchmark: 03.05 Implement the scientific method and science process skills through the design and completion of an agriscience research project.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to the scientific methods and scientific process skills in which can be demonstrated through an agriscience research project.

Stimulus Attributes:

Stimulus may identify the scientific method through the design and completion of an agriscience research project.
Stimulus may include a scenario, diagrams, picture, and/or charts which demonstrate the science process skills that can be completed using an agriscience research project.

Response Attributes:

Responses may address the scientific method.
Responses may relate to the results of an agriscience research project.

Sample Item:

John, who has been a member of the FFA for the past two years, has decided to participate in the agriscience fair. His experiment will examine why some mature cabbage are larger than others. What are the five steps of the scientific method that John will have to use to conduct his experience?

A. hypothesis, conclusion, prediction, experimentation, and guess
B. conclusion, hypothesis, experimentation, guess, and observation
* C. observation, hypothesis, prediction, experimentation, and conclusion
D. experimentation, conclusion, prediction, hypothesis, and observation

Item Specifications

Standard: 03.0 Apply scientific and technological principles to agriscience issues.

Benchmark: 03.06 Interpret, analyze, and report data.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to information gathered that is commonly obtained or part of the agriculture industry. Items should be limited to content or processes associated with interpreting, analyzing, and or reporting of data.

Stimulus Attributes:

Stimulus may include graphs, charts, diagrams or pictures related to the scientific method.
Stimulus may involve a scenario where data has been collected.

Response Attributes:

Responses may involve a scenario related to the data collect from an agriscience research project.
Responses may include different analyses that need to be interpreted and reported.

Sample Item:

John observed that mature cabbage differ in size. Analyze the data in the chart and draw a conclusion on the cause for the difference in size.

	Row 1 (East)	Row 2 (East)	Row 3 (West)	Row 4 (West)
Size	3 lb. average	2.5 lb. average	1.5 lb. average	1 lb. average
Seed	Chinese Cabbage	Earliana Cabbage	Wakefield Cabbage	Salad Delight
Soil	Sandy	clay	sandy	clay
Fertilizer	10-10-10	12-12-12	12-12-12	10-10-10

A. the seed type
B. the type of fertilizer applied
C. the soil type
* D. the amount of sun

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 03.0 Apply scientific and technological principles to agriscience issues.

Benchmark: 03.07 Investigate DNA and genetics applications in agriscience including the theory of probability.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to DNA and genetic applications in the agriscience industry. Items may include the probability of an event occurring.

Stimulus Attributes:

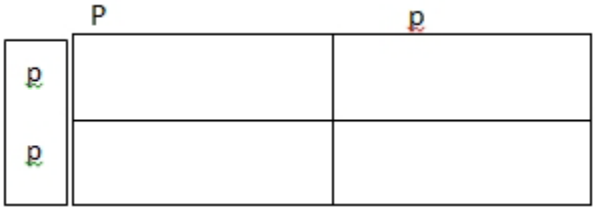
Stimulus may address DNA applications used in the agriculture industry.
Stimulus may involve a scenario using genetic applications in agriculture.
Stimulus may include graphs, charts, diagrams or pictures related to the theory of probability in the agriscience industry.

Response Attributes:

Responses may include DNA and genetic applications used in agriculture.
Responses may include information pertaining to the theory of probability in agriscience.

Sample Item:

Given parents with the following genetic make-up, what percent of the offspring would be polled?



A. 25%
* B. 50%
C. 75%
D. 100%

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 03.0 Apply scientific and technological principles to agriscience issues.

Benchmark: 03.08 Evaluate advances in biotechnology that impact agriculture (e.g. transgenic crops, biological controls, etc.).

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to the advances of biotechnology in agriculture.

Stimulus Attributes:

Stimulus may address the impact that biotechnology has made on agriculture.
Stimulus may involve a scenario using transgenic crops and biological controls in agriculture.
Stimulus may include graphs, charts, diagrams or pictures related to biotechnology in the agriscience industry.

Response Attributes:

Responses may include transgenic crops and biological controls.
Responses may be a description of advances in biotechnology that impact the agriculture.

Sample Item:

Which is an example of biological control?

* A. nematodes to control mole crickets
B. roundup to control crab grass
C. atrizine to control torpedo grass
D. grasshoppers to control aphids

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 04.0 Apply environmental principles to the agricultural industry.

Benchmark: 04.01 Research how different climactic and geological activity influences agriculture.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to different climactic and geological activity influences on agriculture.

Stimulus Attributes:

Stimulus may address different climactic and geological activity influences o agriculture.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect different climactic and geological activity influences on agriculture.
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Stimulus: In researching agriculture in Florida, a student discovers the following map that pertains to the hardiness zones found in Florida. In a paragraph, describe what the hardiness zone indication means and how that impacts agriculture in Florida. Also, describe at least two differences in characteristics between any two zones in the state of Florida.

Rubric:

4 Points	Response includes a comprehensive and thorough explanation as to what is meant by the hardiness zones. Response includes a reasonable and correct explanation as to what impact the hardiness zones have on Florida as to how it influences agriculture. Response includes a thorough comparison of two different zones within Florida indicating at least 2 correct differences. The explanation is clear with few grammatical errors.
3 Points	Response includes a correct explanation as to what is meant by the hardiness zones. The explanation may be slightly incorrect. Response includes a partially correct explanation as to what impact the hardiness zones have on Florida as to how it influences agriculture. Response includes a comparison of two different zones within Florida indicating at least 1 correct difference. The explanation is generally clear but may contain minor grammatical errors.
2 Points	Response includes an explanation as to what is meant by the hardiness zones. The explanation may be partially incorrect. Response includes a brief or somewhat incorrect explanation as to what impact the hardiness zones have on Florida as to how it influences agriculture. Response includes a comparison of two different zones within Florida indicating at least 1 correct difference. The explanation is somewhat unclear and may contain multiple grammatical errors.
1 Point	Response includes an incorrect explanation as to what is meant by the hardiness zones. Response includes a mostly incorrect explanation as to what impact the hardiness zones have on Florida as to how it influences agriculture. Response includes an incorrect or missing comparison of 2 different zones within Florida. The explanation is generally unclear and may contain major grammatical errors.

Item Specifications

Standard: 04.0 Apply environmental principles to the agricultural industry.

Benchmark: 04.02 Describe various ecosystems as they relate to the agriculture industry.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to various ecosystems as they relate to the agriculture industry. Items may include written ideas or the selection of appropriate ideas.

Stimulus Attributes:

Stimulus may address various ecosystems as they relate to the agriculture industry.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect various ecosystems as they relate to the agriculture industry addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

In what ecosystem would you find a Red-cockaded Woodpecker in its natural environment?

* A. longleaf wiregrass forest
B. hardwood scrubs
C. blackwater swamps
D. the Everglades

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 04.0 Apply environmental principles to the agricultural industry.

Benchmark: 04.03 Describe the environmental resources (soil, water, air) necessary for agriculture production.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to environmental resources (soil, water, air) necessary for agriculture production. Items may include a description of written ideas or the selection of appropriate ideas.

Stimulus Attributes:

Stimulus may address environmental resources (soil, water, air) necessary for agriculture production.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect environmental resources (soil, water, air) necessary for agriculture production addressed in the stimulus..
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

Hydroponic farming is becoming a more common way for the agriculture industry to produce food. What environmental resource, generally necessary for growing plants, is missing in hydroponic farming?

A. air
* B. soil
C. water
D. nutrients

Item Specifications

Standard: 04.0 Apply environmental principles to the agricultural industry.

Benchmark: 04.04 Identify regulatory agencies that impact agricultural practices.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to regulatory agencies that impact the agriculture industry.

Stimulus Attributes:

Stimulus may address regulatory agencies that impact agricultural practices.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect regulatory agencies that impact agricultural practices addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

Which agency is responsible for regulating the sale of plants in Florida?

A. Department of Environmental Protection
* B. Department of Agriculture and Consumer Services
C. Department of Natural Resources
D. Agricultural Research Service

Item Specifications

Standard: 04.0 Apply environmental principles to the agricultural industry.

Benchmark: 04.05 Apply Best Management Practices that enhance the natural environment.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to Best Management Practices that enhance the natural environment.

Stimulus Attributes:

Stimulus should address Best Management Practices that enhance the natural environment.
Stimulus may address methods of Best Management Practices that enhance the natural environment.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect Best Management Practices that enhance the natural environment addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

Which Best Management Practice can introduce new nutrients to the soil to enhance the natural environment?

A. growing a grass cover crop
B. planting a cowpea/sudex crop mixture
C. developing a legume cover crop
* D. incorporating a legume crop into the soil

Item Specifications

Standard: 04.0 Apply environmental principles to the agricultural industry.

Benchmark: 04.06 Identify conservation practices related to natural resources.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to conservation practices related to natural resources.

Stimulus Attributes:

Stimulus may address conservation practices related to natural resources.
Stimulus may address methods of conservation practices related to natural resources.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect conservation practices related to natural resources addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

Which soil conservation practice is used the **LEAST** in Florida?

A. buffer zone
B. mulching
C. micro irrigation
* D. terracing

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 05.0 Investigate and utilize basic scientific skills and principles in plant science.

Benchmark: 05.01 Identify and describe the specializations within the plant science industry.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to specializations within the plant science industry. Items may include written ideas or the selection of appropriate ideas.

Stimulus Attributes:

Stimulus may address specializations within the plant science industry.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect specializations within the plant science industry addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

Which specialist is responsible for the growing and caring of trees?

A. horticulturalist
B. entomologist
C. forester
* D. arboriculturalist

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 05.0 Investigate and utilize basic scientific skills and principles in plant science.

Benchmark: 05.02 Categorize plants based on specific characteristics according to industry and scientific standards.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to plants based on specific characteristics according to industry and scientific standards.

Stimulus Attributes:

Stimulus may address plants based on specific characteristics according to industry and scientific standards.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect plants based on specific characteristics according to industry and scientific standards that are addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

What is the primary purpose of a plant used as ground cover?

* A. provide protection from erosion and drought
B. prevent over-drying of the soil
C. insulate the soil
D. help the soil retain essential nutrients

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 05.0 Investigate and utilize basic scientific skills and principles in plant science.

Benchmark: 05.03 Examine the processes of plant growth including photosynthesis and respiration.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to the processes of plant growth including photosynthesis and respiration.

Stimulus Attributes:

Stimulus may address the processes of plant growth including photosynthesis and respiration.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect the processes of plant growth including photosynthesis and respiration addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

During the process of photosynthesis what molecule is released?

A. P_2O_5
B. NH_4
* C. O_2
D. CO_2

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 05.0 Investigate and utilize basic scientific skills and principles in plant science.

Benchmark: 05.04 Identify the nutrients required for plant growth from the periodic table and explain their functions.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to nutrients required for plant growth from the periodic table and explain their functions.

Stimulus Attributes:

Stimulus may address nutrients required for plant growth from the periodic table and explain their functions.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect nutrients required for plant growth from the periodic table and explain their functions addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

What nutrient is required to produce green matter in plants?

A. Bo
B. K
* C. N
D. Su

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 05.0 Investigate and utilize basic scientific skills and principles in plant science.

Benchmark: 05.05 Analyze information from a fertilizer label.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to information from a fertilizer label.

Stimulus Attributes:

Stimulus may address analyzing information from a fertilizer label.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

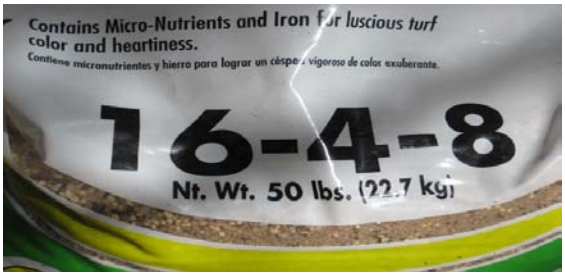
Responses may reflect analyzed information from a fertilizer label addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Stimulus: Examine the fertilizer bag label. In a two-paragraph essay, explain the nutrients indicated by the numerals. Identify each nutrient and describe the benefit of the nutrient for a lawn. Describe a situation where this fertilizer would be appropriate.



Rubric:

4 Points	Response demonstrates a thorough understanding of the nutrients contained in the sample fertilizer. The student correctly identifies the nutrients and describes the benefit of each nutrient to a lawn. The response includes an appropriate application for this fertilizer. The response is clearly written and contains few grammatical errors.
3 Points	Response demonstrates a partial understanding of the nutrients contained in the sample fertilizer. The student correctly identifies the nutrients and briefly describes the benefits of each nutrient to a lawn. The explanation may contain slight errors. The response includes an appropriate application for the fertilizer. The response is generally clear and may contain minor grammatical errors.
2 Points	Response demonstrates a minimal understanding of the nutrients contained in the sample fertilizer. The student correctly identifies at least two nutrients but the benefits of each nutrient to a lawn may be incorrect. The response may include a partially correct application of the fertilizer. The response is somewhat unclear and may contain multiple grammatical errors.
1 Point	Response demonstrates a poor understanding of the nutrients contained in the sample fertilizer. The student may not correctly identify the nutrients and the benefits to a lawn may be incorrect. The response may include an incorrect application of the fertilizer. The response is generally unclear or may contain major grammatical errors.

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 05.0 Investigate and utilize basic scientific skills and principles in plant science.

Benchmark: 05.06 Propagate and grow plants through sexual and/or asexual reproduction.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Performance Task

Content Limits: Items should be limited to sexual/asexual reproduction in plants.

Stimulus Attributes:

Stimulus may include basic scientific skills in sexual/asexual reproduction.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may include fundamental knowledge of scientific skills and principles in sexual/asexual reproduction.

Sample Item:

Kent used bud grafting to create a new plant. How is the new plant related to the original plant?

* A. It is a clone.
B. It is a virion.
C. It is genetically inferior.
D. It is genetically superior.

Item Specifications

Standard: 05.0 Investigate and utilize basic scientific skills and principles in plant science.

Benchmark: 05.07 Investigate the impacts of various pests and propose solutions for their control.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Performance Task

Content Limits: Items should be limited to pests and pest controls commonly associated with the agriculture industry. Items should be limited to positive and negative impacts of pests and/or pest controls.

Stimulus Attributes:

Stimulus may include pests and pest control strategies.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may include fundamental knowledge pests and pest control strategies.
Responses may include pest names, pest control products, and/or pest control strategies.

Sample Item:

Mary is in her garden checking on her tomato plants and notices a fuzzy dark growth on a few of the leaves. What is the **MOST** likely cause of this growth?

A. aphids
* B. fungus
C. over watering
D. lack of fertilizer

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 05.0 Investigate and utilize basic scientific skills and principles in plant science.

Benchmark: 05.08 Investigate the nature and properties of food, fiber, and by-products from plants.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Performance Task

Content Limits: Items should be limited to plant products including by-products, food, and fiber commonly found in the agriculture industry.

Stimulus Attributes:

Stimulus may include plant products (food, fiber, and by-products).
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may include names of plant products (food, fiber, and plant products).
Responses may include the process of producing by-products.
Responses may include properties of plant products.

Sample Item:

Which is the primary source of ethanol?

A. sugarcane
B. beets
C. leatherleaf fern
* D. corn

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 05.0 Investigate and utilize basic scientific skills and principles in plant science.

Benchmark: 05.09 Explore career opportunities in plant science.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Performance Task

Content Limits: Items should be limited to career opportunities and/or requirements for positions in the horticulture industry.

Stimulus Attributes:

Stimulus may include horticultural related careers.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may include horticultural related careers.
Responses may include common practices for obtaining horticulture careers.
Responses may include educational requirements in the field of horticulture.

Sample Item:

Alex is hands-on and likes working with people. He currently has discovered that he enjoys working with plants and particularly the retail market. Which of the following would be a good option for him to further investigate to determine a possible career interest?

A. nursery worker
B. landscape worker
* C. garden center worker
D. greenhouse worker

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 06.0 Investigate and utilize basic scientific skills and principles in animal science.

Benchmark: 06.01 Explain the economic importance of animals and the products obtained from animals.

Depth of Knowledge: Low Complexity

Item Types: Multiple Choice, Performance Task

Content Limits: Items should be limited to animals commonly discussed in agricultural coursework. Items should be limited to impacts on the economy based on the sale of animals and animal products. Items may include written ideas or the selection of appropriate ideas.

Stimulus Attributes:

Stimulus may include a scenario involving importance of animals/products obtained from animals.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may include fundamental knowledge of the importance of animals/products obtained from animals.
Responses may include economic terms.

Sample Item:

Which is the highest grossing food animal in Florida?

* A. cattle
B. goats
C. poultry
D. swine

Item Specifications

Standard: 06.0 Investigate and utilize basic scientific skills and principles in animal science.

Benchmark: 06.02 Categorize animals according to use, type, breed, and scientific classification.

Depth of Knowledge: Low Complexity

Item Types: Multiple Choice, Performance Task

Content Limits: Items should be limited to categorization of animals. Items should be limited to use, breed, and/or scientific classification.

Stimulus Attributes:

Stimulus may include a scenario involving scientific skills and principles in animal science. Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may include fundamental knowledge of scientific skills and principles in animal science.

Sample Item:

What is the genus name of beef cattle?

A. Sus
B. Capra
C. Gallus
* D. Bos

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 06.0 Investigate and utilize basic scientific skills and principles in animal science.

Benchmark: 06.03 Illustrate correct terminologies for animal species and conditions (e.g. age, sex, etc.) within those species.

Depth of Knowledge: Low Complexity

Item Types: Multiple Choice, Performance Task

Content Limits: Items should be limited to terminology associated with animal species and conditions. Items should be limited to animal species and conditions commonly covered within agriculture coursework.

Stimulus Attributes:

Stimulus may include basic scientific skills and principles in animal science.
Stimulus may include animal conditions.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may include fundamental knowledge of scientific skills and principles in animal science.
Responses may include animal species terminology and/or naming.
Responses may include conditions of animals.

Sample Item:

What is the term used to refer to a male castrated swine?

* A. barrow
B. boar
C. bull
D. steer

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 06.0 Investigate and utilize basic scientific skills and principles in animal science.

Benchmark: 06.04 Compare basic internal and external anatomy of animals.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Performance Task

Content Limits: Items should be limited to the internal and/or external anatomy of animals. Items should be limited to animals commonly covered in animal science coursework.

Stimulus Attributes:

Stimulus may include basic scientific skills and principles in animal science.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may include fundamental knowledge of scientific skills and principles in animal science.
Responses may include scientific or common naming of anatomical parts of animals.
Responses may include names of conditions associated with anatomical parts.

Sample Items:

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

The four animals shown in the pictures have been entered into an agricultural show. They will be judged on traits such as their leg confirmation. Which cow displays the **BEST** leg structure?

A 

B 

C 

D 

* A. A
B. B
C. C
D. D

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 06.0 Investigate and utilize basic scientific skills and principles in animal science.

Benchmark: 06.05 Demonstrate scientific practices in the management, health, safety, and technology of the animal agriculture.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Performance Task

Content Limits: Items should be limited to scientific practices. Items should be limited to practices associated with management, health, safety, and/or technology of animal agriculture. Items may include a demonstration of knowledge through the selection of correct behaviors or performing the correct behavior.

Stimulus Attributes:

Stimulus may include basic scientific skills and principles in animal science.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may include fundamental knowledge of scientific skills and principles in animal science.

Sample Item:

The Florida Cracker cattle are especially suited to heat in Florida but tend to be small in size. A rancher wanted to increase the size of his cattle and decided to breed a Florida Cracker with a Brahman. The Brahman is much larger in size and is also able to handle the heat of Florida. The offspring should be larger than a Florida Cracker and able to tolerate the Florida heat. What is this cattle management technique called?

A. upgrading
B. inbreeding
* C. crossbreeding
D. outcrossing

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 06.0 Investigate and utilize basic scientific skills and principles in animal science.

Benchmark: 06.06 Compare and contrast animal welfare issues.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Performance Task

Content Limits: Items should be limited to animal welfare issues. Items should be limited to comparing and contrasting two or more issued.

Stimulus Attributes:

Stimulus may include basic scientific skills in relation to animal welfare issues.
Stimulus may include multiple welfare issues.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may include fundamental knowledge of scientific skills and principles in animal science in relation to animal welfare issues.
Responses may include animal welfare topics or differences.

Sample Item:

Some believe that sows may appear to be mistreated when placed in a farrowing crate. Others feel that the number of lost piglets when a sow is not confined is too great. Using the data in the chart, compare and contrast the number of piglets saved when the sow is placed in the crate when versus that of a free range sow.

	Sow A - Confined	Sow B - Free Range
Piglet Litter 1	12	9
Piglet Litter 2	11.5	9
Piglet Litter 3	11	8

Considering the data, what statement would be an accurate interpretation of the data?

A. There was not a difference in the number of piglets born for a confined or free range sow.
* B. A confined sow had 25% more piglets survive than did a free range sow.
C. A free range sow had 25% more piglets survive than did a confined sow.
D. There is no conclusion that can be made from the data.

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 06.0 Investigate and utilize basic scientific skills and principles in animal science.

Benchmark: 06.07 Investigate the nature and properties of food, fiber, and by-products from animals.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Performance Task

Content Limits: Items should be limited to food, fiber, and by-products from animals. Items should be limited to the nature and properties of food, fiber, and by-products as they associate to animals.

Stimulus Attributes:

Stimulus may include the following animal products (food, fiber, and by-products).
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may include the following animal products (food, fiber, and by-products).
Responses may include the nature of animal productions.
Responses may include commonalities of by-products.

Sample Item:

Hormones like estrogen and insulin are by-products of the animal industry. Which statement regarding these by-products is true?

A. Only insulin has been used in human medical advancements.
B. Neither estrogen nor insulin has been used in veterinarian medical advancements.
* C. Both insulin and estrogen has been used in both human and veterinarian advancements.
D. Only insulin has been used in veterinarian medical advancements.

Item Specifications

Standard: 06.0 Investigate and utilize basic scientific skills and principles in animal science.

Benchmark: 06.08 Explore career opportunities in animal science.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Performance Task

Content Limits: Items should be limited to career opportunities in animal science. Items should be limited to career requirements as they associate with career opportunities in the animal science industry.

Stimulus Attributes:

Stimulus may include animal science related careers.
Stimulus may include career opportunities commonly found in the animal science industry.
Stimulus may include career requirements for animal science careers.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may include fundamental knowledge in animal related careers.
Responses may include career names and/or career requirements.
Responses may include educational requirements for animal science careers.

Sample Item:

What is the minimum level of education that is typically required for a student to complete in order to become a veterinarian?

A. Associate in Arts Degree (2 Years)
B. Bachelor's Degree (4 Years)
C. Master's Degree (5 Years)
* D. Doctorate Degree (8 Years)

Item Specifications

Standard: 07.0 Demonstrate the use of agriscience tools, equipment, and instruments.

Benchmark: 07.01 Select and demonstrate proper use of agriscience tools, equipment, and instruments.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to selecting and demonstrating proper use of agriscience tools, equipment, and instruments. Items may include a demonstration of knowledge through the selection of correct behaviors or performing the required behaviors.

Stimulus Attributes:

Stimulus may address selecting and demonstrating proper use of agriscience tools, equipment, and instruments.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect selecting and demonstrating proper use of agriscience tools, equipment, and instruments addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

Which tool should be used to hammer a staple into a wood fence post?

A. sledge hammer
B. ball peen hammer
* C. claw hammer
D. chipping hammer

Item Specifications

Standard: 07.0 Demonstrate the use of agriscience tools, equipment, and instruments.

Benchmark: 07.02 Examine various physical science principles as applied in selected mechanical applications (e.g. levers, pulleys, hydraulics, and internal combustion).

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to various physical science principles as applied in selected mechanical applications (e.g. levers, pulleys, hydraulics, and internal combustion).

Stimulus Attributes:

Stimulus may address various physical science principles as applied in selected mechanical applications (e.g. levers, pulleys, hydraulics, and internal combustion).
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect various physical science principles as applied in selected mechanical applications (e.g. levers, pulleys, hydraulics, and internal combustion) addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

What physical science principle is used when raising a tractor with a hydraulic jack?

* A. pressure
B. leverage
C. pulley
D. gravity

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 07.0 Demonstrate the use of agriscience tools, equipment, and instruments.

Benchmark: 07.03 Solve time, distance, area, volume, ratio, proportion, and percentage problems in agriscience.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to solving time, distance, area, volume, ratio, proportion, and percentage problems in agriscience.

Stimulus Attributes:

Stimulus may address solving time, distance, area, volume, ratio, proportion, and percentage problems in agriscience.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect time, distance, area, volume, ratio, proportion, and percentage problems in agriscience addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

Item Specifications

A tractor tire has the following information:

Load Range: C
Ply Rating: 6
Rim Width: 15.00 inches
Overall Width: 16.9 inches
Overall Diameter: 56.5 inches
Static Load Radius: 25.4 inches
Rolling Circumference: 167 inches
Bar Height Index: 47 (32nds)
Bar Height: 1.47 inches
Flat Plate: 221 inches
Tire Weight: 170 lbs
Max Load & Inflation: 3640 lbs @ 18 psi

Conversion of inches to meters: 1 inch = 0.02 meters and 1 meter = 39.4 inches

After plowing his field a farmer has to take the tractor back to the barn for the day. The barn is 300 meters directly in front of the field. How many rotations will the tire make to get from the field to the barn?

	A.	13.99
*	B.	70.78
	C.	209.20
	D.	465.35

Item Specifications

Standard: 07.0 Demonstrate the use of agriscience tools, equipment, and instruments.

Benchmark: 07.04 Service and maintain agriscience equipment, instruments, facilities, and supplies.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to service and maintain agriscience equipment, instruments, facilities, and supplies.

Stimulus Attributes:

Stimulus may address service and maintenance on agriscience equipment, instruments, facilities, and supplies.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect service and maintenance on agriscience equipment, instruments, facilities, and supplies addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

Which maintenance items would be examined during a daily pre-start check on a farm tractor?

A. bearing grease, engine coolant, and tire pressure
* B. engine oil, engine coolant, and tire pressure
C. transmission fluid, tire pressure, and bearing grease
D. gear oil, tire pressure, and tire weights

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 08.0 Demonstrate agribusiness, employability and human relation skills.

Benchmark: 08.01 Develop, implement, and maintain work based learning through Supervised Agricultural Experiences (SAE).

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to work based learning through Supervised Agricultural Experiences (SAE).

Stimulus Attributes:

Stimulus may address work based learning through Supervised Agricultural Experiences (SAE).
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect work based learning through Supervised Agricultural Experiences (SAE) addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

A student, after being enrolled in an agriculture class for two weeks, was informed by the instructor he needed an SAE. The class was given a grant to purchase a cow for each student. The student is required to maintain records of all labor and expenses incurred. Under what SAE classification would this project fall?

A. laboratory
B. placement
* C. entrepreneurship
D. experiential

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 08.0 Demonstrate agribusiness, employability and human relation skills.

Benchmark: 08.02 Utilize a record keeping system to collect, interpret, and analyze data.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to record keeping system to collect, interpret, and analyze data. Items should relate to record keeping commonly done in the agriculture industry.

Stimulus Attributes:

Stimulus may address record keeping system to collect, interpret, and analyze data.
Stimulus may address methods of record keeping system to collect, interpret, and analyze data.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect record keeping system to collect, interpret, and analyze data addressed in the stimulus.
Responses may include information from data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

A citrus grower buys a citrus grove in 2009. The citrus fruit is grown in 2010. The fruit is paid for in 2011. The grower sells his grove in 2012. Using the accrual accounting system, in which year would a producer account for citrus he sold?

A. 2009
* B. 2010
C. 2011
D. 2012

Item Specifications

Standard: 08.0 Demonstrate agribusiness, employability and human relation skills.

Benchmark: 08.03 Enhance oral communications through telephone, interview and presentation skills.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to oral communications. Items should be limited to telephone, interview, and/or presentation skills. Items should relate to oral communication commonly occurring in the agriculture industry.

Stimulus Attributes:

Stimulus may address oral communications through telephone, interview, and presentation skills.
Stimulus may address methods of oral communications through telephone, interview, and presentation skills.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect oral communications through telephone, interview, and presentation skills addressed in the stimulus.
Responses may include information from data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

If a student stumbles on words during an oral presentation, which area of speaking should be worked on for improvement?

* A. fluency
B. volume
C. voice quality
D. poise

Item Specifications

Standard: 08.0 Demonstrate agribusiness, employability and human relation skills.

Benchmark: 08.04 Enhance written communication by developing resumes and business letters.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to written communication by developing resumes and business letters.

Stimulus Attributes:

Stimulus may address written communication by developing resumes and business letters.
Stimulus may address methods of written communication by developing resumes and business letters.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect to written communication by developing resumes and business letters addressed in the stimulus.
Responses may include information from data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

When developing a resume, which information is **NOT** generally included?

A. contact information
* B. marital status
C. work experience
D. professional organizations

Item Specifications

Standard: 08.0 Demonstrate agribusiness, employability and human relation skills.

Benchmark: 08.05 Demonstrate interpersonal (nonverbal) communication skills.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to interpersonal (nonverbal) communication skills. Items should be limited to communication skills commonly occurring in the agriculture industry. Items may include the selection of correct behaviors or performing required behaviors.

Stimulus Attributes:

Stimulus may address interpersonal (nonverbal) communication skills.
Stimulus may address methods of interpersonal (nonverbal) communication skills.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect interpersonal (nonverbal) communication skills addressed in the stimulus.
Responses may include information from data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

When giving a speech or presentation, what is an appropriate non-verbal clue to attract attention to an important fact?

A. eye contact
* B. a slight pause
C. hand gestures
D. snapping fingers

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 08.0 Demonstrate agribusiness, employability and human relation skills.

Benchmark: 08.06 Demonstrate good listening skills.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to good listening skills. Items should be related to listening skills commonly needed in the agriculture industry. Items may include a demonstration of knowledge through the selection of correct behaviors or performing the required behaviors.

Stimulus Attributes:

Stimulus may address good listening skills.
Stimulus may address methods of good listening skills.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect good listening skills addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

Which of the following is **NOT** a good listening skill?

A. eye contact
B. restating information
C. leaning toward speaker
* D. completing others' sentences

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 09.0 Apply leadership and citizenship skills.

Benchmark: 09.01 Identify and describe leadership characteristics.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to leadership characteristics. Items should be focused on leadership within the agriculture industry. Items may include a description of written ideas or the selection of appropriate ideas.

Stimulus Attributes:

Stimulus may address leadership characteristics.
Stimulus may address methods of leadership.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect leadership characteristics addressed in the stimulus.
Responses may include information from data gathered from graphs, charts, diagrams, or pictures.
Responses may include reference to personal trait characteristics.

Sample Item:

Which of the following is **NOT** an example of positive leadership characteristics?

A. trust worthy
B. collaborative
C. good communicator
* D. strong willed

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 09.0 Apply leadership and citizenship skills.

Benchmark: 09.02 Identify opportunities to apply acquired leadership skills.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to opportunities to apply acquired leadership skills.

Stimulus Attributes:

Stimulus may address opportunities to apply acquired leadership skills.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect opportunities to apply acquired leadership skills addressed in the stimulus.
Responses may include information from data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

In which situation would you be **MOST** likely to utilize leadership skills learned in your agriculture class?

* A. at an FFA school meeting
B. at a chess club meeting
C. at a school board meeting
D. at a school advisory meeting

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 09.0 Apply leadership and citizenship skills.

Benchmark: 09.03 Identify and demonstrate ways to be an active citizen.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to ways to be an active citizen. Items should be limited to characteristics of citizenship. Items may include a demonstration of knowledge through the selection of correct behaviors or performing the required behaviors.

Stimulus Attributes:

Stimulus may address ways to be an active citizen.
Stimulus may include graphs, charts, diagrams, or pictures.
Stimulus may include characteristics of citizenship.

Response Attributes:

Responses may reflect ways to be an active citizen addressed in the stimulus.
Responses may include information from data gathered from graphs, charts, diagrams, or pictures.
Responses may include traits and/or characteristics.

Sample Item:

Sally wants to be involved with beautifying the landscape throughout her hometown. Which agency should she become involved with to accomplish her goals?

A. City Council
B. Rotary club
* C. Parks and Recreation department
D. Habitat for Humanity

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 09.0 Apply leadership and citizenship skills.

Benchmark: 09.04 Participate in community based learning activities.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to community based learning activities. Items should be limited to community activities commonly associated with the agriculture industry. Items may include participation through the selection of correct behaviors or performing the required behaviors.

Stimulus Attributes:

Stimulus may address community based learning activities.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect community based learning activities addressed in the stimulus.
Responses may include information from data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

Which of the following is **NOT** an example of a community based learning activity?

A. hunter safety
B. animal ethics class
C. first aid and CPR class
* D. virtual school

Course Name: Agriscience Foundations 1
Course Number: 8126810

Item Specifications

Standard: 09.0 Apply leadership and citizenship skills.

Benchmark: 09.05 Demonstrate the ability to work cooperatively.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to the ability to work cooperatively. Items should be limited to working in the agriculture industry. Items may include a demonstration of knowledge through the selection of correct behaviors or performing the required behaviors.

Stimulus Attributes:

Stimulus may address the ability to work cooperatively.
Stimulus may include graphs, charts, diagrams, or pictures.
Stimulus may include working requirements within the agriculture industry.

Response Attributes:

Responses may reflect the ability to work cooperatively addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.
Responses may include working requirements for individuals and/or groups.

Sample Item:

Carrie is developing a new project and needs to build a team. What should **NOT** be a concern for her when deciding who should be on the team?

A. personality characteristics
B. content knowledge
* C. education level
D. ability to work well with others

Item Specifications

Standard: 09.0 Apply leadership and citizenship skills.

Benchmark: 09.06 Conduct formal and informal meetings using correct parliamentary procedure skills.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to formal and informal meetings using correct parliamentary procedure skills.

Stimulus Attributes:

Stimulus may address formal and informal meetings using correct parliamentary procedure skills.
Stimulus may include graphs, charts, diagrams, or pictures.
Stimulus may include meeting procedures or process.
Stimulus may include parliamentary procedures.

Response Attributes:

Responses may reflect formal and informal meetings using correct parliamentary procedure skills addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.
Responses may include activities commonly occurring at meetings.
Responses may include formal meeting terminology and verbiage.

Sample Item:

In conducting a formal meeting, what is the last action that is required of the Chair before a main motion can be placed on the floor for debate?

* A. restate the motion
B. make the motion
C. record the motion
D. state the motion

Item Specifications

Standard: 09.0 Apply leadership and citizenship skills.

Benchmark: 09.07 Identify the opportunities for leadership development available through the National FFA.

Depth of Knowledge: Low Complexity, Moderate Complexity

Item Types: Multiple Choice, Constructed Response

Content Limits: Items should be limited to the opportunities for leadership development available through the National FFA.

Stimulus Attributes:

Stimulus may address opportunities for leadership development available through the National FFA.
Stimulus may include graphs, charts, diagrams, or pictures.

Response Attributes:

Responses may reflect the opportunities for leadership development available through the National FFA addressed in the stimulus.
Responses may include data gathered from graphs, charts, diagrams, or pictures.

Sample Item:

The National FFA offers many workshops, however, one workshop is commonly considered the "pinnacle" in leadership development. What is the name of this FFA workshop?

A. Made for Excellence
* B. Washington Leadership Conference
C. National FFA Convention
D. Advanced Leadership Development