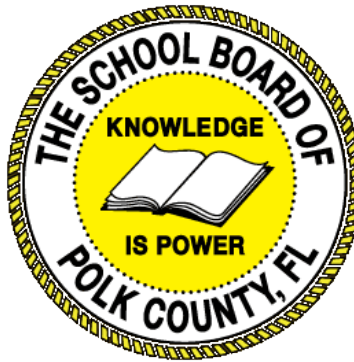


Individual Test Item Specifications

8100210- Exploration to Agriscience

2015



The contents of this document were developed under a grant from the United States Department of Education. However, the content does not necessarily represent the policy of the United States Department of Education, and you should not assume endorsement by the federal government.

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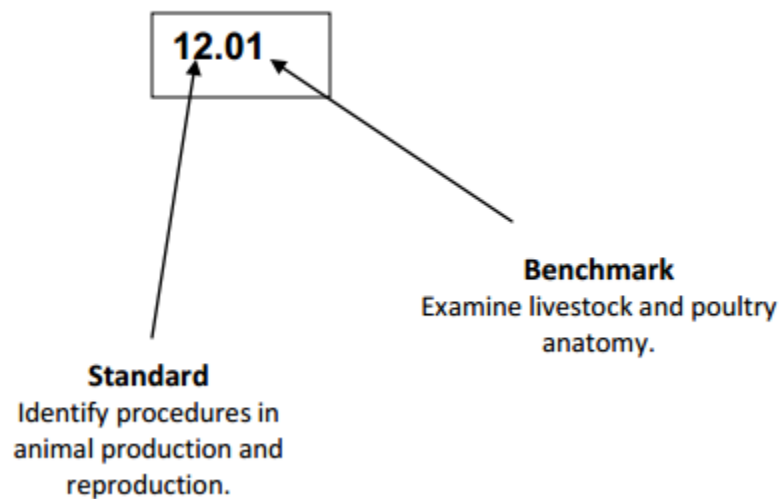
I. Guide to the Individual Benchmark Specifications

Content specific guidelines are given in the *Individual Benchmark Specifications* for each course. The *Specifications* contains specific information about the alignment of items with the Florida Standards. It identifies the manner in which each benchmark is assessed, provides content limits and stimulus attributes for each benchmark, and gives specific information about content, item types, and response attributes.

Benchmark Classification System

- Each Career and Technical Education course has its own set of course standards. The benchmarks are organized numerically, with two numbers separated by a decimal point. The first number is the standard number, and the second number is the benchmark number. You will see these numbers on the Item Specifications for each course.

An example, from Agritechnology 1:



The image above describes the components of a Career and Technical Education Standard and Benchmark classification system.

Each MAFS benchmark is labeled with a system of letters and numbers.

- The four letters in the *first position* of the label identify the **Subject**.
- The number(s) in the *second position* represents the **Grade Level**.
- The letter(s) in the *third position* represents the **Category**.
- The number in the fourth position shows the **Domain**.
- The number in the *fifth position* identifies the **Cluster**.
- The number in the last position identifies the specific **Benchmark**.



The image above describes the components of a Florida Standard and Benchmark classification system.

Definitions of Benchmark Specifications

The *Individual Benchmark Specifications* provides standard-specific guidance for assessment item development for the Florida Department of Education Career and Technical Education item banks. For each benchmark assessed, the following information is provided.

Reporting Category	is a grouping of related benchmarks that can be used to summarize and report achievement.
Standard	refers to the standard statement presented in the Florida Standards.
Benchmark	refers to the benchmark statement presented in the Florida Standards. In some cases, two or more related benchmarks are grouped together because the assessment of one benchmark addresses another benchmark.
Item Types	are used to assess the benchmark or group of benchmark.
Cognitive Complexity	ideal level at which item should be assessed.
Benchmark Clarifications	explain how achievement of the benchmark will be demonstrated by students. In other words, the clarification statements explain what the student will do when responding to questions.
Content Limits	define the range of content knowledge and that should be assessed in the items for the benchmark.
Stimulus Attributes	define the types of stimulus materials that should be used in the items, including the appropriate use of graphic materials and item context or content.
Response Attributes	define the characteristics of the answers that a student must choose or provide.
Content Focus	addresses the broad key terms and concepts associated with the examples found in the standards, benchmarks, or benchmark clarifications.
Sample Items	are provided for each type of question assessed. The correct answer for all sample items is provided.

II. Individual Benchmark Specifications

Standard	01.0 Apply knowledge and skills in biotechnology.
Benchmark	01.03 Identify issues associated with biotechnology.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	L,M
Benchmark Clarification	The student will identify issues commonly associated with biotechnology.
Content Focus	Biotechnology
Content Limits	The items should address the issues associated with biotechnology in agriculture it may or may not address the ethical issues and risks associated with biotechnology.
Stimulus Attributes	The stimulus may include terms, phrases, sentences, images, diagrams, or charts.
Response Attributes	The response may include terms, phrases, sentences, images, diagrams, or charts.
Sample Item	Which of the following is considered an ethical issue associated with biotechnology? A. antibiotics B. flu vaccines C. organism mutations D. increases in crop yields Answer: C

Standard	02.0 Apply knowledge and skills in plant sciences.
Benchmark	02.01 Produce an agricultural crop.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	L,M
Benchmark Clarification	The student will use knowledge produce an agricultural crop specific to Florida.
Content Focus	Cultivate, harvest, germinate, water management, bedding, spring crop, fall crop
Content Limits	The items should demonstrate knowledge of methods of producing Florida agricultural crops that may include either/or fall and spring crops. May or may not include proper production methods, procedures and theories. Should not include ornamentals or landscape plants.
Stimulus Attributes	The stimulus may include videos, pictures, images, models, physical products, charts, or graphs.
Response Attributes	The response may include videos, pictures, images, models, physical products, charts, or graphs.
Sample Item	Which of the following crops is a winter crop? A. eggplant B. kale C. okra D. peas Answer: B

Standard	02.0 Apply knowledge and skills in plant sciences.
Benchmark	02.04 Identify the recommended uses and safety precautions from a pesticide label.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	L,M
Benchmark Clarification	The student will identify recommended uses and safety precautions from pesticide labels commonly used.
Content Focus	Pesticide, MSDS, warning levels
Content Limits	The items should focus on reading pesticide labels for recommended uses, safety precautions, and proper disposal methods.
Stimulus Attributes	The stimulus may include terms, phrases, sentences, images, diagrams, or charts.
Response Attributes	The response may include terms, phrases, sentences, images, diagrams, or charts.
Sample Item	Where should all leftover pesticides be stored? A. in unmarked containers B. in the original and labeled container C. in the sprayer to be ready for the next use D. in any container that fits the left over amount Answer: B

Standard	02.0 Apply knowledge and skills in plant sciences.
Benchmark	02.08 Identify parasites, pathogens, pests, and predators of agricultural, forestry and agronomic crops.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	L,M
Benchmark Clarification	The student will identify pests, pathogens, parasites, and predators of horticultural, forestry, and agronomic crops in Florida.
Content Focus	Pathogens, pests
Content Limits	The items should focus on pests, pathogens, parasites and/or predators and/or their damage to horticultural, forestry an agronomic crops in Florida.
Stimulus Attributes	The stimulus may include terms, phrases, sentences, images, diagrams, or charts.
Response Attributes	The response may include terms, phrases, sentences, images, diagrams, or charts.
Sample Item	Which of the following pests has sucking mouthparts? A. aphid B. caterpillar C. grasshopper D. leaf miner Answer: A

Standard	02.0 Apply knowledge in plant sciences.
Benchmark	02.09 Describe the major components of soil.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	L, H
Benchmark Clarification	The student will identify soil components to include but not limited to minerals, organic matter, clay, sand, silt, and loam.
Content Focus	Clay, silt, sand, loam
Content Limits	The items should focus on the major components of soil included but not limited to; minerals, organic matter, clay, sand, silt, loam, other mixes of soil types.
Stimulus Attributes	The stimulus may include pictures, diagrams, images, models, and soil samples.
Response Attributes	The response may include terms, phrases, sentences, images, diagrams, or charts.
Sample Item	Which of the following soil types has rapid permeability? A. clay B. loam C. sand D. silt Answer: C

Standard	02.0 Apply knowledge in plant sciences.
Benchmark	02.10 Explain methods of soil conservation.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	L,M
Benchmark Clarification	The student will need to explain methods of soil conservation used in agricultural practices.
Content Focus	Erosion, BMPs, no-till, bedding, terracing
Content Limits	The items should focus on methods of soil conservation and prevention of soil erosion including but not limited to terracing, bedding, no-till, cover crops, strip cropping, and controller plowing.
Stimulus Attributes	The stimulus may include terms, phrases, sentences, images, diagrams, or charts.
Response Attributes	The response may include terms, phrases, sentences, images, diagrams, charts, and/or videos.
Sample Item	Which of the following methods to prevent erosion includes farming on the side of mountains in a stair step manner? A. bedding B. cover cropping C. no-till farming D. terracing Answer: D

Standard	02.0 Apply knowledge and skills in plant sciences.
Benchmark	02.11 Identify the major forest regions of the United States and Florida.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	L,M
Benchmark Clarification	The student will identify the major forest regions of the United States and the species and forest communities in Florida.
Content Focus	Forestry in Florida
Content Limits	The items should address the various forest regions of the United States and the species and forest communities in Florida which many include but is not limited to hardwood communities, mixed stands and softwood communities.
Stimulus Attributes	The stimulus may include diagrams, images, charts, and/or videos.
Response Attributes	The response may include diagrams, images, charts, and/or videos.
Sample Item	Which of the following trees is a deciduous conifer that grows in Florida? A. bald cypress B. long leaf pine C. red maple D. slash pine Answer: A

Standard	02.0 Apply knowledge and skills in plant sciences.
Benchmark	02.12 Describe the importance of forests and forest products.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	L,H
Benchmark Clarification	The student will describe the importance of the forests in terms of ecological and economical importance, forestry products and/or manufacturing processes and the forestry industry and its impact in Florida.
Content Focus	By-products, direct products, revenue and income derived through forestry products, revenue and income and industry, ecological impacts, and economical impacts.
Content Limits	The items may include but are not limited to the importance of forestry in Florida, including wildlife impacts, revenue impacts and describe the products produced in the forestry industry in Florida including but not limited to food products, industrial products and personal and home care products.
Stimulus Attributes	The stimulus may contain lists, images, and/or videos.
Response Attributes	The response may include terms, phrases, sentences, images, diagrams, or charts.
Sample Item	Which of the following agricultural products is derived from Florida forests? A. beef B. poultry C. landscape ornamentals D. timber Answer: D

Standard	02.0 Apply knowledge and skills in plant sciences.
Benchmark	02.13 Describe how trees grow, reproduce, and components of forest health.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	L,H
Benchmark Clarification	The student will describe and discuss tree reproduction including but limited to factors such as regions of Florida, soil and environmental factors, and reproductive parts of the tree; tree growth including but not limited to inner and outer tree structure
Content Focus	Prescribed burn, conifers, deciduous, angiosperm, gymnosperm, cambium, phloem, and xylem
Content Limits	The items should include but are not limited to the process of tree growth including determining age, reproduction of trees including but not limited to angiosperms and gymnosperms/specific reproductive parts, and components of forest health in Florida including but not limited to prescribed burns, management plans and techniques.
Stimulus Attributes	The stimulus may include pictures, diagrams, graphs, and images.
Response Attributes	The response may include terms, phrases, sentences, images, diagrams, or charts.
Sample Item	Which of the following terms is associated with the inner part of the tree that allows nutrients to travel upward from the roots through the tree? A. cambium B. conifer C. phloem D. xylem Answer: D

Standard	03.0 Apply knowledge and skills in animal science.
Benchmark	03.01 Describe differences between animal welfare and animal rights.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
Cognitive Complexity Level	L,H
Benchmark Clarification	The student will describe the various differences between animal welfare and animal rights.
Content Focus	Anthropomorphic, animal advocacy, apathy, instinctive behavior, conditioning
Content Limits	The items should address the differences between animal welfare and animal rights and may or may not address animal husbandry, animal care, human uses of animals and humane treatment.
Stimulus Attributes	The stimulus may include videos, pictures, images, and/or lists.
Response Attributes	The response may include videos, pictures, images, and/or lists.
Sample Item	<p>Jessica believes that all animals should be free and should never be caged. Which of the following describes Jessica's views?</p> <p>A. animal husbandry B. animal rights C. animal science D. animal welfare</p> <p>Answer: B</p>

Standard	03.0 Apply knowledge and skills in animal science.
Benchmark	03.02 Raise and care for an agricultural animal.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	L,M
Benchmark Clarification	The student will describe and/or demonstrate skills necessary to care for and raise agricultural animals.
Content Focus	Husbandry, production, agricultural animals
Content Limits	The items should demonstrate knowledge of methods of producing Florida agricultural animals which may or may not include horses, cattle, swine, poultry, sheep, goats and rabbits . May or may not include proper production methods, procedures and theories. Should not include companion animals.
Stimulus Attributes	The stimulus may include videos, pictures, images, models, physical products, charts, and/or graphs.
Response Attributes	The response may include terms, phrases, sentences, images, diagrams, or charts.
Sample Item	John has a calf that has stopped nursing. He notices the cow is experiencing great discomfort, her bag is swollen, and her temperature is elevated. What is John's cow most likely suffering from? A. blackleg B. bloat C. grass tetany D. mastitis Answer:

Standard	04.0 Demonstrate knowledge and skills in food science.
Benchmark	04.01 Demonstrate the proper handling and storage of food products.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	L,M
Benchmark Clarification	The student will describe and/or demonstrate the proper handling and storage of food products.
Content Focus	Preservation, food safety, cross contamination
Content Limits	The items should focus on the proper storage and handling of food products which may or may not include preservation techniques, food safety, and food preparation techniques.
Stimulus Attributes	The stimulus may include videos, pictures, images, diagrams, models, and lists.
Response Attributes	The response may include videos, pictures, images, diagrams, models, and/or lists.
Sample Item	Which of the following is not a proper method of food storage? A. cooking B. dehydrating C. freezing D. refrigeration Answer: A

Standard	04.0 Demonstrate knowledge and skills in food science.
Benchmark	04.06 Describe the components of a balanced diet.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	L,M
Benchmark Clarification	The student will describe the six components of a well balanced diet including proteins, carbohydrates, lipids, vitamins, minerals and water.
Content Focus	Proteins, carbohydrates, lipids, vitamins, minerals, water, deficiency, fiber, estimated average requirement, essential nutrients, calories
Content Limits	The items should address the varied components of a balanced diet including but not limited to: average daily requirements, the parts of a varied diet(proteins, carbohydrates, lipids, vitamins, minerals and water).
Stimulus Attributes	The stimulus may include videos, pictures, images, models, charts, and/or graphs.
Response Attributes	The response may include videos, pictures, images, models, charts, and/or graphs.
Sample Item	Daisy wants to be sure she is eating a balanced diet. Which of the following should she avoid large amounts of in order to stay healthy? A. carbohydrates B. proteins C. minerals D. vitamins Answer: A

Standard	o6.o Apply knowledge and skills in environmental resources.
Benchmark	o6.o3 Identify major ecosystems in Florida.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	L,M
Benchmark Clarification	The student will identify the major ecosystems in Florida.
Content Focus	Scrub, pinewoods, hardwood hammocks, cypress domes, coral reefs, mangrove, marshes, swamp
Content Limits	The items should focus on but not be limited to the different types of ecosystems and the components of those ecosystems that are found in Florida.
Stimulus Attributes	The response may include videos, pictures, images, charts, and/or graphs.
Response Attributes	The response may include terms, phrases, sentences, images, diagrams, or charts.
Sample Item	Which of the following Florida ecosystems is located near water? A. cypress dome B. hardwood hammock C. pinewoods D. scrub Answer: A

Standard	o6.o Apply knowledge and skills in environmental resources.
Benchmark	o6.o5 Define best management practices.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	L,M
Benchmark Clarification	The student will identify and define BMPs.
Content Focus	BMPs
Content Limits	The items should focus on but not be limited to best management practices that are used in agriculture including the areas of plant science, animal science, food science, and environmental science.
Stimulus Attributes	The stimulus may include terms, phrases, sentences, images, diagrams, or charts.
Response Attributes	The response may include terms, phrases, sentences, images, diagrams, or charts.
Sample Item	Which best management practice helps to ensure healthy swine production? A. housing as many hogs together as possible B. cleaning pens daily and hauling manure to a compost pile C. reusing needles when medicating to save money on supplies D. using slop a

Standard	07.0 Demonstrate the value of responsibility, good work habits, and planning for career opportunities in agriculture.
Benchmark	07.04 Identify and research careers within a specific area of agriscience.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	L,M
Benchmark Clarification	The student should identify agricultural careers and research the careers within specific areas of agriscience.
Content Focus	Job and career
Content Limits	The items should focus on but not be limited to the identification and research of careers in the various sectors of agriscience such as animal science, plant science, food science, and environmental resources.
Stimulus Attributes	The stimulus may include terms, phrases, sentences, images, diagrams, or charts.
Response Attributes	The response may include terms, phrases, sentences, images, diagrams, or charts.
Sample Item	Which symptom denotes nitrogen deficiency in citrus? A. burning B. splotching C. withering D. yellowing Answer: D

Standard	o8.o Apply leadership and communication skills.
Benchmark	o8.01 Discuss the establishment and history of the FFA organization.
Item Types (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
Cognitive Complexity Level	L,M
Benchmark Clarification	The student will be able to discuss the establishment and historical points and events in the history of the FFA organization.
Content Focus	FAA
Content Limits	The items should address the establishment and history of the FFA organization including but not limited to important dates, important figures within the FFA and the significance of paraphernalia associated with the FFA (emblem, FFA jacket, FFA Creed, etc.).
Stimulus Attributes	The stimulus may include terms, phrases, sentences, images, diagrams, or charts.
Response Attributes	The response may include terms, phrases, sentences, images, diagrams, or charts.
Sample Item	What year was the FFA established? A. 1917 B. 1928 C. 1944 D. 1969 Answer: B