

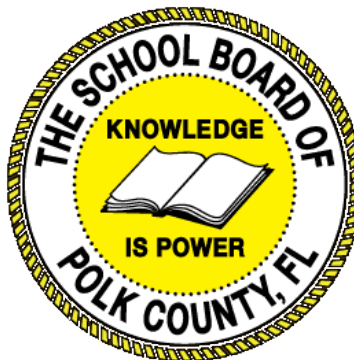
# Individual Test Item Specifications

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8417100- Health Science  
Anatomy & Physiology

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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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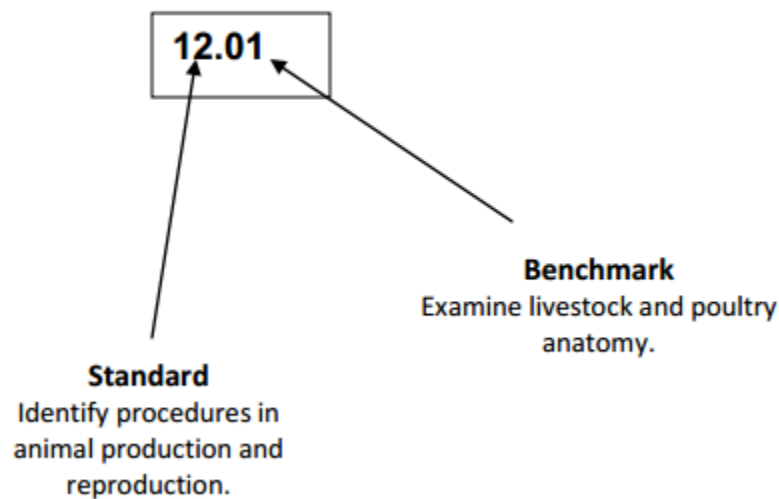
## I. Guide to the Individual Benchmark Specifications

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.

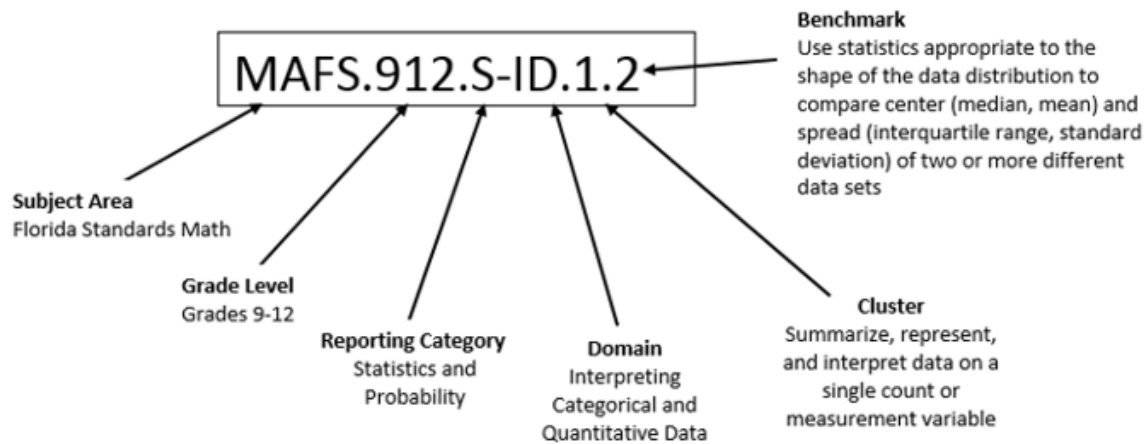
An example, from Agritechnology 1:



*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.

<b>Reporting Category</b>	is a grouping of related benchmarks that can be used to summarize and report achievement.
<b>Standard</b>	refers to the standard statement presented in the Florida Standards.
<b>Benchmark</b>	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.
<b>Item Types</b>	are used to assess the benchmark or group of benchmark.
<b>Cognitive Complexity</b>	ideal level at which item should be assessed.
<b>Benchmark Clarifications</b>	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.
<b>Content Limits</b>	define the range of content knowledge and that should be assessed in the items for the benchmark.
<b>Stimulus Attributes</b>	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.
<b>Response Attributes</b>	define the characteristics of the answers that a student must choose or provide.
<b>Content Focus</b>	addresses the broad key terms and concepts associated with the examples found in the standards, benchmarks, or benchmark clarifications.
<b>Sample Items</b>	are provided for each type of question assessed. The correct answer for all sample items is provided.

## II. Individual Benchmark Specifications

<b>Standard</b>	04.0 Analyze and interpret an overview of the human body, including organization and chemical process
<b>Benchmark</b>	04.02 Examine medical implications of body planes, directional terms, cavities, abdominal regions and quadrants
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
<b>Cognitive Complexity Level</b>	Low, Moderate
<b>Benchmark Clarification</b>	The student will understand terms referring to body planes, directional terms, cavities, abdominal regions and quadrants.
<b>Content Focus</b>	Anatomic position, anterior, caudal, cranial, distal, dorsal, frontal, inferior, lateral, medial, proximal, posterior, sagittal, superior, ventral
<b>Content Limits</b>	May include all vocabulary terms and the nine regions of the abdomen
<b>Stimulus Attributes</b>	May include multiple choice or short response questions given a scenario and asked to give directional terms when comparing body parts. May include a diagram of the abdominal cavity for labeling.
<b>Response Attributes</b>	Students will give the directional term that describes the relationship between two body parts. Students can identify abdominal regions.
<b>Sample Item</b>	<p>What position should the arms and palms be when standing in "anatomical position"?</p> <ol style="list-style-type: none"> <li>arms above head with palms facing backward.</li> <li>arms at side with palms facing backwards</li> <li>arms at side with palms forward</li> <li>arms at side with palms parallel to body</li> </ol> <p>Answer: c</p>

<b>Standard</b>	o6.o Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions - The student will be able to:
<b>Benchmark</b>	o6.o1 Discuss and describe cell structure and function in healthy tissue.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)=(ER)=X
<b>Cognitive Complexity Level</b>	Low, Moderate
<b>Benchmark Clarification</b>	The student will identify various organelles according to structure and/or function. Students will be able to describe the processes that transport materials in and out of a cell.
<b>Content Focus</b>	Mitosis, meiosis, organelle, chromosome, DNA, RNA, gene, protein synthesis, diffusion, filtration, osmosis, active transport, phagocytosis, pinocytosis
<b>Content Limits</b>	Content limited to animal cells. Items will include questions related to the following organelles: nucleus, centrioles, endoplasmic reticulum, mitochondria, Golgi apparatus, lysosomes, peroxisomes, pinocytic vesicle, vacuole
<b>Stimulus Attributes</b>	May include a diagram/picture of a cell and its organelles with multiple choice or short response questions.
<b>Response Attributes</b>	Using a diagram of a cell, students might be asked to label organelles.
<b>Sample Item</b>	Which of the following is the control center of the cell? a. gene b. mitochondria c. nucleus d. ribosomes Correct Answer: c

<b>Standard</b>	06.0 Evaluate cells and tissues microscopically and macroscopically and relate their specialized functions - The student will be able to:
<b>Benchmark</b>	06.03 Compare and contrast the four main types of tissue including the interrelationships of tissues
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
<b>Cognitive Complexity Level</b>	Moderate, High
<b>Benchmark Clarification</b>	The student will identify various epithelial, connective, muscle and nerve tissue and explain their general functions.
<b>Content Focus</b>	Stratified, squamous, cuboidal, columnar, transitional, adipose, fibrous, involuntary, voluntary, irritability, conductivity
<b>Content Limits</b>	Epithelial tissue classification may include types of epithelial cells (squamous, cuboidal, or columnar) and structure (simple or stratified). Muscle tissue may include general distinctions between skeletal, smooth and cardiac muscle. Questions relating to connective tissue may include adipose, areolar, dense fibrous, supportive and vascular tissue. Epithelial membranes may include mucous and serous membranes. Connective membranes may include synovial membrane.
<b>Stimulus Attributes</b>	May include a diagram/picture of tissues with multiple choice or short response questions.
<b>Response Attributes</b>	Students should be able to classify the 4 types of tissues and their location. Students should be able to identify the location of mucous, serous and synovial membranes.
<b>Sample Item</b>	Which tissue can be found in the intestinal wall of the digestive system? a. adipose tissue b. areola tissue c. columnar epithelial tissue d. fibrous connective tissue Correct Answer: c



<b>Standard</b>	07.0 Analyze the integumentary system in relation to health and disease - The student will be able to:
<b>Benchmark</b>	07.02 Discuss and describe the structure and function of the integumentary system across the lifespan.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
<b>Cognitive Complexity Level</b>	Low, Moderate
<b>Benchmark Clarification</b>	The student will identify the structures of skin and its appendages. Students will be able to explain the effects of aging on the integumentary system.
<b>Content Focus</b>	Epidermis, dermis, subcutaneous, hair follicle, hair shaft, keratin, melanin, papilla,
<b>Content Limits</b>	Structures include the layers of the skin and the appendages of the skin (hair, nails, sudoriferous and sebaceous glands).
<b>Stimulus Attributes</b>	May include a diagram/picture of the skin with multiple choice or short response questions.
<b>Response Attributes</b>	Student may be required to identify and label a part of the integumentary system. Student may be asked to describe the function of the integumentary system. Students may be asked to explain the effects of aging on the integumentary system.
<b>Sample Item</b>	Irregular patches of which of the following would create freckles? a. keratin b. melanin c. papilla d. sebum Correct Answer: b

<b>Standard</b>	07.0 Analyze the integumentary system in relation to health and disease - The student will be able to:
<b>Benchmark</b>	07.04 Identify and analyze common diseases and disorders of the integumentary system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
<b>Cognitive Complexity Level</b>	Moderate, High
<b>Benchmark Clarification</b>	The student will differentiate common diseases and disorders of the skin, hair and nails.
<b>Content Focus</b>	Albinism, alopecia, pallor, flushing, cyanosis, jaundice, macule, papule, pustule, vesicle, ulcer
<b>Content Limits</b>	Limited to athlete's foot, impetigo, ringworm, urticaria, skin lesions, alopecia, skin cancers, and burns.
<b>Stimulus Attributes</b>	May include multiple choice or short response questions with a descriptive scenario.
<b>Response Attributes</b>	Student will be able to identify common skin conditions when given a descriptive scenario.
<b>Sample Item</b>	Jennifer, an 8-year old who is allergic to bees, was stung by a bee. Which skin condition will probably develop? a. alopecia b. dermatitis c. pustule d. urticaria Correct Answer: d

<b>Standard</b>	o8.o Analyze the skeletal system in relation to health and disease - The student will be able to:
<b>Benchmark</b>	o8.o2 Discuss and describe the structure and function of the skeletal system across the lifespan.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
<b>Cognitive Complexity Level</b>	Low, Moderate
<b>Benchmark Clarification</b>	The student will distinguish between the bones of the axial skeleton and the appendicular skeleton. Students will identify the major bones of the axial and the appendicular skeleton. Students will explain the effects of aging on the skeletal system.
<b>Content Focus</b>	Appendicular skeleton, axial skeleton, diaphysis, fontanel, medullary canal, endosteum, periosteum, osteocytes, osteoblasts, osteoclasts
<b>Content Limits</b>	Limited to bone formation, structure of long bones, parts of the axial and appendicular skeleton. Limited to the major bones (i.e. skull, ribs, sternum, sacrum, vertebra, clavicle, scapula, humerus, radius, ulna, femur, patella, tibia, fibula, carpals, tarsals, phalanges) and will not include the minor bones.
<b>Stimulus Attributes</b>	May include a diagram/picture of the skeletal system for labeling with multiple choice or short response questions.
<b>Response Attributes</b>	Students should be able to label major bones of the skeletal system. Students should be able to differentiate osteoblasts, osteoclasts and osteocytes. Students should be able to describe the effects of aging on the skeletal system.
<b>Sample Item</b>	Which of the following is not part of the appendicular skeleton? a. clavicle b. ischium c. parietal d. radius Correct Answer: c

<b>Standard</b>	o8.o Analyze the skeletal system in relation to health and disease - The student will be able to:
<b>Benchmark</b>	o8.o4 Identify and explain joints and their implications.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
<b>Cognitive Complexity Level</b>	Low, Moderate
<b>Benchmark Clarification</b>	The student will identify kinds of joints and joint movements.
<b>Content Focus</b>	Diarthroses, amphiarthroses, synarthroses, flexion, extension, abduction, adduction, rotation, supination, pronation, inversion, eversion, plantar flexion, dorsiflexion
<b>Content Limits</b>	Kinds of joints limited to diarthroses, amphiarthroses and synarthroses joints. Joint movements may include flexion, extension, abduction, adduction, rotation, supination, pronation, inversion, eversion, plantar flexion, dorsiflexion.
<b>Stimulus Attributes</b>	May include identifying joint movements when a particular action is given (i.e. turning a door knob) with multiple choice and short response questions.
<b>Response Attributes</b>	Student will explain the different kinds of joints. Students will explain what joint movement is required to perform a particular movement such as raising your arm above your head.
<b>Sample Item</b>	Which of the following is a synarthroses joint? a. cranium b. knee c. symphysis pubis d. vertebrae Correct Answer: a

<b>Standard</b>	o8.o Analyze the skeletal system in relation to health and disease - The student will be able to:
<b>Benchmark</b>	o8.o7 Identify and analyze common diseases and disorders of the skeletal system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
<b>Cognitive Complexity Level</b>	Moderate, High
<b>Benchmark Clarification</b>	The student will differentiate common bone and joint disorders. Students will identify common diagnostic test used to identify skeletal disorders.
<b>Content Focus</b>	Greenstick fracture, impacted fracture, comminuted fracture, dislocation, sprain, osteoporosis, kyphosis, lordosis, scoliosis, arthritis
<b>Content Limits</b>	Limited to bone fractures, bone and joint injuries, arthritis, curvatures of the spine, rickets and osteoporosis. R.I.C.E treatment may be used.
<b>Stimulus Attributes</b>	A diagram/picture of bone fractures may be used. May include multiple choice or short response questions with a descriptive scenario.
<b>Response Attributes</b>	Student will be able to identify common skeletal diseases/disorders when given a descriptive scenario. Students will differentiate osteoarthritis and rheumatoid arthritis.
<b>Sample Item</b>	Mr. Brown is suffering from osteoporosis which is affecting his back. Which of the following would you expect to find on the physical exam? a. arthrodisis b. kyphosis c. lordosis d. scoliosis Correct Answer: b

<b>Standard</b>	09.0 Analyze the muscular system in relation to the health and disease - The student will be able to:
<b>Benchmark</b>	09.02 Discuss and describe the structure and function of the muscular system across the lifespan.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
<b>Cognitive Complexity Level</b>	Moderate, High
<b>Benchmark Clarification</b>	The student will identify the major muscles and their function. Students will recognize characteristics of muscles. Students will identify the effects of aging on the muscular system.
<b>Content Focus</b>	Smooth muscle, skeletal muscle, cardiac muscle, sphincter, excitability, irritability, contractibility, extensibility, neuromuscular junction,
<b>Content Limits</b>	Limited to the major muscles of the head and neck, upper and lower extremities. Items will include the characteristics of muscles (contractibility, excitability, extensibility, elasticity).
<b>Stimulus Attributes</b>	May include a diagram/picture of the muscles for labeling with multiple choice or short response questions.
<b>Response Attributes</b>	Students may be asked to label muscles on a diagram. Students may be asked functions of the major muscles.
<b>Sample Item</b>	<p>What major muscle is responsible for flexion of the arm?</p> <ol style="list-style-type: none"> <li>biceps brachii</li> <li>brachioradialis</li> <li>deltoid</li> <li>triceps brachii</li> </ol> <p>Correct Answer: a</p>

<b>Standard</b>	09.0 Analyze the muscular system in relation to health and disease - The student will be able to:
<b>Benchmark</b>	09.07 Identify and analyze common diseases and disorders of the muscular system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
<b>Cognitive Complexity Level</b>	Moderate, High
<b>Benchmark Clarification</b>	The student will differentiate common muscle disorders. Students will identify common diagnostic tests used to diagnose muscle disorders.
<b>Content Focus</b>	Atrophy, hernia, hypertrophy, myalgia, strain, sprain
<b>Content Limits</b>	Disorders limited to hernias, muscular dystrophy, myasthenia gravis and strains. May include how muscle fatigue occurs.
<b>Stimulus Attributes</b>	May include multiple choice or short response questions with a descriptive scenario.
<b>Response Attributes</b>	Student will identify common muscular diseases/disorders when given a descriptive scenario.
<b>Sample Item</b>	Which of the following causes muscle fatigue? a. a buildup of calcium b. a buildup of glycogen c. a buildup of lactic acid d. a buildup of carbon dioxide Correct Answer: c

<b>Standard</b>	10.0 Analyze the nervous system in relation to the health and disease - The student will be able to:
<b>Benchmark</b>	10.02 Discuss and describe the structure and function of the nervous system across the lifespan.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
<b>Cognitive Complexity Level</b>	Low, Moderate
<b>Benchmark Clarification</b>	The student will identify the major divisions of the nervous system and describe the anatomy and physiology of the central and peripheral nervous systems. Students will identify the functions of the major parts of the brain. Students will describe the effects of aging on
<b>Content Focus</b>	Central nervous system, peripheral nervous system, autonomic nervous system, somatic nervous system, nucleus, axon, dendrite, myelinated tissue, irritability, conductivity, excitability, dura mater, arachnoid, pia mater, cerebrum, gyri, fissure, sulci,
<b>Content Limits</b>	Limited to the major parts of the brain. (Cerebrum, diencephalon, cerebellum, medulla, pons, midbrain and hypothalamus. Limited to the major divisions of the nervous system, including the structural classification (central and peripheral) and the functional classification (somatic and autonomic).
<b>Stimulus Attributes</b>	May include a diagram/picture of the brain for labeling with multiple choice or short response questions.
<b>Response Attributes</b>	Students will identify major parts of the brain and their functions.
<b>Sample Item</b>	What part of the brain is responsible for balance and coordination? a. brain stem b. cerebellum c. hypothalamus d. medulla Correct Answer: b



<b>Standard</b>	10.0 Analyze the nervous system in relation to health and disease - The student will be able to:
<b>Benchmark</b>	10.08 Identify and analyze common diseases and disorders of the nervous system.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
<b>Cognitive Complexity Level</b>	Moderate, High
<b>Benchmark Clarification</b>	The student will differentiate common disorders/diseases of the central and peripheral nervous systems. Students will be able to identify common diagnostic tests and treatments used to diagnose and treat disorders of the nervous system.
<b>Content Focus</b>	Meningitis, encephalitis, seizure, cerebral vascular accident, hydrocephalus, dementia, hematoma, hemiplegia, paraplegia, quadriplegia,
<b>Content Limits</b>	Limited to major diseases and disorders of the central nervous system (cerebral vascular accident, epilepsy, cerebral palsy, hydrocephalus, Parkinson's disease, multiple sclerosis, dementia, and Alzheimer's disease). Diseases and disorders of the peripheral nervous system may include peripheral neuropathy, sciatica, Bell's palsy, shingles and carpal tunnel syndrome.
<b>Stimulus Attributes</b>	May include multiple choice or short response questions with a descriptive scenario.
<b>Response Attributes</b>	Student will be able to identify common neurological diseases/disorders when given a descriptive scenario.
<b>Sample Item</b>	Janice, a one-year-old, had a shunt operation that diverts the cerebrospinal fluid. What condition is she being treated for? a. cerebral palsy b. encephalitis c. hydrocephalus d. meningitis Correct Answer: c

<b>Standard</b>	11.0 Analyze the endocrine system in relation to health and disease - The student will be able to:
<b>Benchmark</b>	11.02 Discuss and describe the structure and function of the endocrine system across the lifespan.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
<b>Cognitive Complexity Level</b>	Low, Moderate
<b>Benchmark Clarification</b>	The student will identify the major glands of the endocrine system, the hormones they release, and the function of those hormones.
<b>Content Focus</b>	Endocrine gland, exocrine gland, negative feedback, gland, hormone
<b>Content Limits</b>	Limited to the most common endocrine glands and their hormones: pituitary gland, thyroid gland, parathyroid gland, adrenal gland, and pancreas. May include the role a hormone may play in negative feedback.
<b>Stimulus Attributes</b>	May include a diagram/picture of the endocrine glands for labeling with multiple choice or short response questions.
<b>Response Attributes</b>	Student will compare endocrine and exocrine glands and give examples of each. Students will identify hormones and their functions
<b>Sample Item</b>	Which gland is considered the master gland? a. adrenal gland b. pancreas c. pituitary gland d. thyroid gland Correct Answer: c

<b>Standard</b>	12.0 Analyze the cardiovascular/circulatory system in relation to health and disease - The student will be able to:
<b>Benchmark</b>	12.02 Discuss and describe the structure and function of the cardiovascular system across the lifespan.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
<b>Cognitive Complexity Level</b>	Low, Moderate
<b>Benchmark Clarification</b>	The student will describe the structure and function of the heart, heart valves, and major blood vessels. Students will describe the effects of aging on the cardiovascular/circulatory system.
<b>Content Focus</b>	Heart, artery, vein, capillary, endocardium, myocardium, pericardium, atrium, ventricle, systolic, diastolic, pulse
<b>Content Limits</b>	Contents may include the blood flow through the heart, structures of the heart, functions of the valves, structures of arteries, veins and capillaries blood components, and blood types.
<b>Stimulus Attributes</b>	May include a diagram/picture of the heart for labeling with multiple choice or short response questions. May also include a chart of systolic/diastolic reading for students to interpret.
<b>Response Attributes</b>	Students should be able to label the heart. Students should be able to compare the structure and function of blood vessels.
<b>Sample Item</b>	Which of the following carry oxygenated blood? a. aorta b. inferior vena cava c. pulmonary artery d. right ventricle Correct Answer: a

<b>Standard</b>	12.0 Analyze the cardiovascular/circulatory system in relation to health and disease - The student will be able to:
<b>Benchmark</b>	12.10 Evaluate ABO blood types and Rh factor.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
<b>Cognitive Complexity Level</b>	Low, Moderate
<b>Benchmark Clarification</b>	The student will identify the blood type and Rh factor depending on the presence of certain antigens and antibodies.
<b>Content Focus</b>	Antibody, antigen, Rh factor, agglutination, compatible, donor, hemolytic disease, recipient, universal donor, universal recipient
<b>Content Limits</b>	Limited to Type A, B, AB, and O with the type of antibodies and antigens present in each. May also include blood donor compatibility.
<b>Stimulus Attributes</b>	May include multiple choice or short response questions with blood type scenarios or potential blood donor scenarios.
<b>Response Attributes</b>	Students should know the presence of antigens and antibodies for each blood type and which blood types each can donate to or receive from.
<b>Sample Item</b>	Which of the following might result in an Rh incompatibility problem? a. an Rh negative father and an Rh positive b. an Rh negative mother and an Rh positive fetus c. an Rh positive mother and an Rh negative fetus d. an Rh positive mother and an Rh negative father Correct Answer: b

<b>Standard</b>	12.0 Analyze the cardiovascular/circulatory system in relation to health and disease - The student will be able to:
<b>Benchmark</b>	12.12 Identify and analyze common diseases and disorders of the cardiovascular system including etiology, prevention, pathology, diagnosis, and treatment/rehabilitation.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
<b>Cognitive Complexity Level</b>	Moderate, High
<b>Benchmark Clarification</b>	The student will describe diseases of the heart. Students will be able to identify common diagnostic tests used to diagnose cardiac disorders.
<b>Content Focus</b>	Aneurysm, angina pectoris, arrhythmia, arteriosclerosis, atherosclerosis, bradycardia, congestive heart failure, electrocardiogram, gangrene, heart murmur, hypertension, hypotension, myocardial infarction, tachycardia, etc.
<b>Content Limits</b>	Diseases/disorders of the heart may include mitral valve prolapse, coronary artery disease, myocardial infarction, rheumatic heart disease, and congestive heart failure. Disorders of the circulatory system may include hypertension, aneurysm, arteriosclerosis, atherosclerosis, and gangrene. May include medications used to treat cardiovascular disease. May include types of heart surgery (angioplasty, coronary bypass, and cardiac stents. Diagnostic testing may include electrocardiogram, cardiac catheterization, and angiography.
<b>Stimulus Attributes</b>	May include multiple choice or short response questions with a descriptive scenario.
<b>Response Attributes</b>	Student will be able to identify common cardiovascular diseases/disorders when given a descriptive scenario. Students should be familiar with common diagnostic tests and treatment for cardiovascular diseases/disorders.
<b>Sample Item</b>	Which of the following heart valves can be damaged from complications of rheumatic fever? a. aortic valve b. bicuspid valve c. pulmonic valve d. tricuspid valve Correct Answer: b

<b>Standard</b>	13.0 Analyze the lymphatic and immune systems in relation to health and disease
<b>Benchmark</b>	13.04 Compare and contrast passive and active immunity
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
<b>Cognitive Complexity Level</b>	Moderate, High
<b>Benchmark Clarification</b>	The student will differentiate active and passive immunity
<b>Content Focus</b>	Active, passive, natural, acquired , artificial immunity
<b>Content Limits</b>	Content will be limited to the contrast and comparison of active and passive immunity
<b>Stimulus Attributes</b>	Distinguish between active and passive immunity
<b>Response Attributes</b>	Ability to define the the difference between active and passive immunity
<b>Sample Item</b>	<p>What is active immunity?</p> <ul style="list-style-type: none"> <li>a. immunity that is automatic</li> <li>b. immunity is longer acting</li> <li>c. immunity lasts a lifetime</li> <li>d. immunity is temporary</li> </ul> <p>Answer: b</p>

<b>Standard</b>	14.0 Analyze the respiratory system in relation to health and disease - The student will be able to:
<b>Benchmark</b>	14.02 Discuss and describe the structure and function of the respiratory system across the lifespan.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
<b>Cognitive Complexity Level</b>	Low, Moderate
<b>Benchmark Clarification</b>	The student will identify the major organs of the respiratory system and their functions. Students will describe the effects of aging on the respiratory system.
<b>Content Focus</b>	External respiration, internal respiration, cellular respiration, ventilation, inhalation, exhalation
<b>Content Limits</b>	Major structures limited to pharynx, larynx, trachea, bronchi, bronchioles, alveoli, and the lungs. Neural control will be limited to phrenic nerves, Hering-Breuer reflex, and the medulla oblongata in the brain. Chemical factors will be limited to carbon dioxide in the blood and chemoreceptors in the carotid arteries and aorta.
<b>Stimulus Attributes</b>	May include a diagram/picture of the respiratory tract for labeling with multiple choice or short response questions.
<b>Response Attributes</b>	Students will identify major organs of the respiratory system. Students will describe neural and chemical control of breathing.
<b>Sample Item</b>	Where does diffusion of oxygen and carbon dioxide take place in the respiratory tract? a. alveoli b. bronchi c. larynx d. trachea Correct Answer: a

<b>Standard</b>	14.0 Analyze the respiratory system in relation to health and disease - The student will be able to:
<b>Benchmark</b>	14.05 Identify and analyze common diseases and disorders of the respiratory system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
<b>Cognitive Complexity Level</b>	Moderate, High
<b>Benchmark Clarification</b>	The student will differentiate common diseases/disorders of the respiratory system.
<b>Content Focus</b>	Hyperventilation, hypoventilation, apnea, dyspnea, cyanosis, orthopnea, hypoxia, hypoxemia
<b>Content Limits</b>	Limited to bronchitis, chronic obstructive pulmonary disease, pneumonia, tuberculosis, asthma, and emphysema.
<b>Stimulus Attributes</b>	May include multiple choice or short response questions with a descriptive scenario.
<b>Response Attributes</b>	Student will be able to identify common respiratory diseases/disorders when given a descriptive scenario.
<b>Sample Item</b>	Which of the following is a result of hyperventilation? a. increase in oxygen and acidosis b. increase in oxygen and an increase in pH c. increase in carbon dioxide and alkalosis d. increase in carbon dioxide and a decrease in pH Correct Answer: b



<b>Standard</b>	15.0 Analyze the digestive system in relation to health and disease - The student will be able to:
<b>Benchmark</b>	15.02 Discuss and describe the structure and function of the digestive system across the lifespan.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
<b>Cognitive Complexity Level</b>	Low, Moderate
<b>Benchmark Clarification</b>	The student will describe the structures of the organs of the digestive system and describe how mechanical and chemical digestion takes place. Students will describe the effects of aging on the digestive system.
<b>Content Focus</b>	Digestion, absorption, elimination, peristalsis, sphincter, chyme, villi, rugae,
<b>Content Limits</b>	Organs of digestion will include salivary glands, esophagus, stomach, small intestines, large intestines, pancreas, liver and gallbladder. The chemical and mechanical process of digestion may also be included.
<b>Stimulus Attributes</b>	May include a diagram/picture of the digestive system for labeling with multiple choice or short response questions.
<b>Response Attributes</b>	Students may be asked to label the digestive system. Students should be able to explain the mechanical and chemical process of digestion. Students should understand how the liver, gallbladder, and pancreas aid in digestion.
<b>Sample Item</b>	<p>What is the function of the cardiac sphincter?</p> <ol style="list-style-type: none"> <li>It allows the stomach contents to enter the duodenum.</li> <li>It allows fecal material in the ileum to enter into the cecum.</li> <li>It prevents the stomach contents from entering into the esophagus.</li> <li>It prevents fecal material in the duodenum from entering the stomach.</li> </ol> <p>Correct Answer: c</p>

<b>Standard</b>	15.0 Analyze the digestive system in relation to health and disease - The student will be able to:
<b>Benchmark</b>	15.04 Identify and analyze common diseases and disorders of the digestive system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
<b>Cognitive Complexity Level</b>	Moderate, High
<b>Benchmark Clarification</b>	The student will differentiate common diseases/disorders of the digestive system. Students will understand the structural and functional changes produced by the diseases.
<b>Content Focus</b>	Peritonitis, gastritis, gastroenteritis, diarrhea, constipation, jaundice
<b>Content Limits</b>	Limited to gastroesophageal reflux disease (GERD), hiatal hernia, pyloric stenosis, ulcers, Crohn's disease, ulcerative colitis, hepatitis, cirrhosis, cholecystitis, and diverticulosis.
<b>Stimulus Attributes</b>	May include multiple choice or short response questions with a descriptive scenario.
<b>Response Attributes</b>	Students will recognize diseases of the digestive system when given a scenario.
<b>Sample Item</b>	<p>How would you compare ulcerative colitis and Crohn's disease?</p> <ol style="list-style-type: none"> <li>Both ulcerative colitis and Crohn's disease are diseases of the large intestine.</li> <li>Both ulcerative colitis and Crohn's disease can appear in either the large or small intestine.</li> <li>Ulcerative colitis is a disease of the small intestine; Crohn's disease occurs in the large intestine.</li> <li>Ulcerative colitis is a disease of the large intestine; Crohn's disease occurs in the small intestine.</li> </ol> <p>Correct Answer: d</p>

<b>Standard</b>	16.0 Analyze the urinary system in relation to health and disease - The student will be able to:
<b>Benchmark</b>	16.02 Discuss and describe the structure and function of the urinary system across the lifespan.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
<b>Cognitive Complexity Level</b>	Low, Moderate
<b>Benchmark Clarification</b>	The student will identify major components of the urinary system and describe the function of each. The student will describe the effects of aging on the urinary system.
<b>Content Focus</b>	Filtration, glomerulus, kidney, nephron, reabsorption, renal cortex, renal medulla, renal pelvis, secretion, ureter, urethra, urinary bladder
<b>Content Limits</b>	Limited to the major structures of the urinary system. May include the process of urine formation. May include the chemical and nervous control of urine secretion.
<b>Stimulus Attributes</b>	May include a diagram/picture of the urinary system for labeling with multiple choice or short response questions.
<b>Response Attributes</b>	Students will label major components of the urinary system. Students can describe chemical and nervous control of urine secretion. Student can explain urine formation. Students can explain the effects of aging on the urinary system.
<b>Sample Item</b>	<p>What of the following is the functional unit of the kidney responsible for filtering metabolic waste from the blood?</p> <ol style="list-style-type: none"> <li>calyx</li> <li>medulla</li> <li>nephron</li> <li>ureter</li> </ol> <p>Correct Answer: c</p>

<b>Standard</b>	16.0 Analyze the urinary system in relation to health and disease - The student will be able to:
<b>Benchmark</b>	16.05 Identify and analyze common diseases and disorders of the urinary system including etiology, prevention, pathology, diagnosis and treatment/rehabilitation.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
<b>Cognitive Complexity Level</b>	Moderate, High
<b>Benchmark Clarification</b>	The student will differentiate common disorders of the urinary system. The student will identify common diagnostic tests used to diagnose urinary tract disorders.
<b>Content Focus</b>	Dehydration, dysuria, edema, glucosuria, hematuria, hydronephrosis, incontinence, polyuria, pyuria, renal failure, renal calculi,
<b>Content Limits</b>	Disorders limited to acute and chronic kidney failure, renal calculi, and cystitis. Dialysis and kidney transplants as a treatment may be included.
<b>Stimulus Attributes</b>	May include multiple choice or short response questions with a descriptive scenario.
<b>Response Attributes</b>	Student will be able to identify common urinary diseases/disorders when given a descriptive scenario.
<b>Sample Item</b>	<p>What complication can occur with polyuria?</p> <ul style="list-style-type: none"> <li>a. edema</li> <li>b. dehydration</li> <li>c. glycosuria</li> <li>d. urinary tract infection</li> </ul> <p>Correct Answer: b</p>

<b>Standard</b>	17.0 Analyze both the male and female reproductive systems in relation to health and disease - The student will be able to:
<b>Benchmark</b>	17.02 Discuss and describe the structure and function of both reproductive systems across the lifespan.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=
<b>Cognitive Complexity Level</b>	Low, Moderate
<b>Benchmark Clarification</b>	The student will identify the major organs of the male and female reproductive systems. Students will describe the hormonal control of the male and female reproductive systems. Students will describe the effects of aging on the reproductive system.
<b>Content Focus</b>	Gamete, gonad, meiosis, mitosis, spermatozoa, zygote, ovulation, puberty, menstruation, menopause
<b>Content Limits</b>	Female reproductive system limited to the uterus, ovary, cervix, fallopian tubes, and vagina. Male reproductive system limited to the seminal vesicle, ejaculatory duct, vas deferens, epididymis, testis, prostate gland, urethra, penis, and scrotum. Stages of the menstrual cycle and hormonal changes may be included.
<b>Stimulus Attributes</b>	May include a diagram/picture of the reproductive system for labeling with multiple choice or short response questions.
<b>Response Attributes</b>	Students may be asked to label the reproductive system. Students will describe the stages of the menstrual cycle and the hormonal changes that occur.
<b>Sample Item</b>	Which of the following hormones is released during the ovulation stage of menstruation? a. estrogen b. follicle stimulating hormone c. lutenizing hormone d. progesterone Correct Answer: c

<b>Standard</b>	17.0 Analyze both the male and female reproductive systems in relation to health and disease - The student will be able to:
<b>Benchmark</b>	17.04 Identify and analyze common diseases and disorders of both reproductive systems including etiology, prevention, pathology, diagnosis and treatment/rehabilitation.
<b>Item Types</b> (MC)-Multiple Choice (SA)-Short Answer (P)-Performance (ER)-Extended Response	(MC)=X (SA)=X (P)= (ER)=X
<b>Cognitive Complexity Level</b>	Moderate, High
<b>Benchmark Clarification</b>	The student will differentiate common diseases/disorders of the female and male reproductive system.
<b>Content Focus</b>	Impotence, infertility, amenorrhea, dysmenorrhea, etc.
<b>Content Limits</b>	Disorders of the female reproductive system may include endometriosis, fibroid tumors, pelvic inflammatory disease, sexual transmitted infections, and cancer. Disorders of the male reproductive system may include prostatitis, benign prostatic hypertrophy, and sexual transmitted infections. Sexually transmitted infections limited to chlamydia, human papilloma virus, gonorrhea, genital herpes and syphilis.
<b>Stimulus Attributes</b>	Scenarios may be used, multiple choice, short response
<b>Response Attributes</b>	Student will be able to identify common reproductive diseases/disorders when given a descriptive scenario.
<b>Sample Item</b>	What sexually transmitted disease causes warts to appear on the shaft of the penis or vagina? a. chlamydia b. genital herpes, c. gonorrhea d. human papillomavirus Correct Answer: d