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| CENTRAL FLORIDA ASSESSMENT COLLABORATIVE |
| Individual Test Item Specifications |
| Health Science 1 |
| 2014 |

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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 NGSSS and MAFS. 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.



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 **Standard**.



Definitions of Benchmark Specifications

The *Individual Benchmark Specifications* provides standard-specific guidance for assessment item development for CFAC item banks. For each benchmark assessed, the following information is provided:

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| **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 NGSSS or domain in the MAFS. |
| **Benchmark** | refers to the benchmark statement presented in the NGSSS or standard statement in the MAFS. In some cases, two or more related benchmarks are grouped together because the assessment of one benchmark addresses another benchmark. Such groupings are indicated in the Also Assesses statement. |
| **Item Types** | are used to assess the benchmark or group of benchmark. |
| **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. |
| **Sample Items** | are provided for each type of question assessed. The correct answer for all sample items is provided. |

II. Individual Benchmark Specifications

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| **Benchmark Number** | 04.01 |
| **Standard** | 04.0 Discuss and describe an overview of the human body, including organization and chemical process. |
| **Benchmark** | Define the basic structural and functional organization of the human body including chemical, cellular, tissue and organ systems. |
| **Also Assesses** | SC.912.L.14.1  SC.912.L.14.2 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice |
| **Ideal Cognitive Complexity Level** | Low |
| **Benchmark Clarification** | Students will have a basic understanding of the structure and function of an animal cell, including all the organelles. Students will understand the organization of the body from a cellular level to the development of an organ system. |
| **Content Limits** | Limited to the organelles found in animal cells. (Cell membrane, cytoplasm, nucleus, nucleolus, centrioles, ribosomes, endoplastic reticulum, vacuoles, mitochondria, Golgi apparatus, lysosomes, cilia, flagella. |
| **Stimulus Attributes** | Diagrams of an animal cell may be used. |
| **Response Attributes** | None Specified |
| **Sample Item** | Which organ system allows the body to respond to its environment in order to maintain homeostasis?  A) endocrine system  B) muscular system  C) nervous system  D) respiratory system  **Correct Answer: C** |

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| **Benchmark Number** | 04.02 |
| **Standard** | 04.0 Discuss and describe an overview of the human body, including organization and chemical process. |
| **Benchmark** | Identify body planes, directional terms, quadrants and cavities. |
| **Also Assesses** | 04.01  05.01 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice |
| **Ideal Cognitive Complexity Level** | Low, Moderate |
| **Benchmark Clarification** | Students will be able identify the terms referring to location, direction, planes, and sections of the body. Students will be able to identify the body cavities and the organs they contain. Students will be able to identify the organs contained in each quadrant of the abdomen. |
| **Content Limits** | Planes will include sagittal, coronal, and transverse planes. Directional terms include anterior (ventral), posterior (dorsal), cranial caudal, superior, inferior, medial, lateral, proximal, distal, superficial, and internal. Terms related to the regions of the abdomen include right and left hypochondriac, lumbar and inguinal regions, the epigastric, umbilical and hypogastric regions. |
| **Stimulus Attributes** | Diagram of planes of the body may be used. |
| **Response Attributes** | None Specified |
| **Sample Item** | Mr. Reynolds is scheduled to have his gallbladder removed. In what abdominal region will his incision most likely be?  A) epigastic  B) left hypochondriac  C) right hypochondriac  D) umbilical  **Correct Answer: C** |

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| **Benchmark Number** | 05.01 |
| **Standard** | 05.0 Use correct medical terminology relating to body structure and function. |
| **Benchmark** | Use anatomical terminology to describe location of parts or areas of the body or to describe the relation of one part to another. |
| **Also Assesses** | 04.01 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice |
| **Ideal Cognitive Complexity Level** | Low, Moderate |
| **Benchmark Clarification** | Students will be able to use proper anatomical terminology to describe locations of parts/ areas of the body and/or to describe the relation of one part to another. |
| **Content Limits** | Directional terms include anterior (ventral), posterior (dorsal), cranial caudal, superior, inferior, medial, lateral, proximal, distal, superficial, and internal. |
| **Stimulus Attributes** | Diagrams may be used. |
| **Response Attributes** | None Specified |
| **Sample Item** | Using anatomical position as a reference, how would you describe the wrist in comparison to the elbow?  A) distal  B) inferior  C) proximal  D) superior  **Correct Answer: A** |

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| **Benchmark Number** | 06.01 |
| **Standard** | 06.0 Identify cells and tissues microscopically and macroscopically and relate their specialized functions. |
| **Benchmark** | Describe cell structure and function in healthy tissue. |
| **Also Assesses** | 04.03  05.02  SC.912.L.14.2  SC.912.L.14.11  SC.912.L.14.12  SC.912.L.14.14  SC.912.L.14.16 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Low, Moderate, High |
| **Benchmark Clarification** | Students will be able to 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. Student will be able to differentiate the phases of mitosis. |
| **Content Limits** | Limited to animal cells. Items will include questions related to cell structures and their function. Items will include movement of materials across the cell membrane. (Diffusion, osmosis, filtration, active transport, phagocytosis, and pinocytosis) |
| **Stimulus Attributes** | Diagram of a cell and its organelles may be used. A diagram of the stages of mitosis may be used. |
| **Response Attributes** | None Specified |
| **Sample Item** | Which of the following cells would most likely have the largest number of mitochondria?  A) blood  B) bone  C) muscle  D) skin  **Correct Answer: B** |

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| **Benchmark Number** | 06.04 |
| **Standard** | 06.0 Identify cells and tissues microscopically and macroscopically and relate their specialized functions. |
| **Benchmark** | Define the location and function of tissues. |
| **Also Assesses** | 05.02  06.01  SC.912.L.14.02  SC.912.L.14.11  SC.912.L.14.12  SC.912.L.14.16 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Low, Moderate, High |
| **Benchmark Clarification** | Students will be able to identify the different types of tissue and explain their general functions. |
| **Content Limits** | Epithelial tissue classification may include types of epithelial cells (squamous, cuboidal, or columnar) and structure (simple or stratified).Connective tissues may include characteristics. 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. |
| **Stimulus Attributes** | Items may include questions related to tissue location and function. Items may also include comparing characteristics of muscle fibers and nerve fibers. Items may contain diagrams/pictures of tissues |
| **Response Attributes** | None Specified |
| **Sample Item** | Which tissue type performs peristalsis in the digestive system?  A) cardiac muscle tissue  B) fluid connective tissue  C) smooth muscle tissue  D) stratified squamous epithelial tissue  **Correct Answer: C** |

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| **Benchmark Number** | 07.01 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Describe the structure and function of the integumentary system. |
| **Also Assesses** | Not Applicable |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Low, Moderate, High |
| **Benchmark Clarification** | Students will be able to identify the structure and function of the skin and its appendages. |
| **Content Limits** | Structures include the layers of the skin and the appendages of the skin (hair, nails, sudoriferous and sebaceous glands). |
| **Stimulus Attributes** | Diagram/picture of the integumentary system may be used. |
| **Response Attributes** | None Specified |
| **Sample Item** | Irregular patches of which of the following would cause freckles?  A) keratin  B) melanin  C) papilla  D) sebum  **Correct Answer: B** |

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| **Benchmark Number** | 07.02 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Identify common diseases and disorders of the integumentary system including prevention, pathology, diagnosis and treatment. |
| **Also Assesses** | 08.01  08.02  08.03 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Moderate, High |
| **Benchmark Clarification** | Students will be able to identify common diseases and disorders of the skin, hair and nails. Students will be able to explain the effects of aging on the integumentary system. |
| **Content Limits** | Limited to common disorders of the skin, the hair and nails, skin cancer, burns and skin lesions. May also include the effects of aging on the integumentary system. |
| **Stimulus Attributes** | None Specified |
| **Response Attributes** | None Specified |
| **Sample Item** | Jennifer, an 8-year old who is allergic to bees, was stung by a bee. Which skin condition will probably develop?  A) alopecia  B) atopic dermatitis  C) psoriasis  D) urticaria  **Correct Answer: D** |

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| **Benchmark Number** | 07.01 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Describe the structure and function of the skeletal system. |
| **Also Assesses** | 05.02  06.01  SC.912.L.14.12  SC.912.L.14.13  SC.912.L.14.14 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Low, Moderate, high |
| **Benchmark Clarification** | Students will be able to distinguish between the bones of the axial skeleton and the appendicular skeleton. Students will be able to identify the major bones of the axial and the appendicular skeleton. |
| **Content Limits** | Limited to bone formation, structure of long bones, parts of the axial and appendicular skeleton, types of joints and types of motion  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. |
| **Stimulus Attributes** | Diagram/picture of the skeletal system may be used. |
| **Response Attributes** | None Specified |
| **Sample Item** | Which of the following is **not** part of the appendicular skeleton?  A) clavicle  B) ischium  C) parietal  D) radius  **Correct Answer: C** |

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| **Benchmark Number** | 07.02 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Identify common diseases and disorders of the skeletal system including prevention, pathology, diagnosis and treatment. |
| **Also Assesses** | 08.01  08.02 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Moderate, High |
| **Benchmark Clarification** | Students will be able to identify common bone and joint disorders. Students will be able to explain the effects of aging on the skeletal system. Students will be able to identify common diagnostic test used to identify skeletal disorders. |
| **Content Limits** | Limited to bone fractures, bone and joint injuries, arthritis, curvatures of the spine, gout, rickets, osteoporosis, and the effects of aging on the skeletal system. R.I.C.E. treatment may be addressed. |
| **Stimulus Attributes** | A diagram/picture of bone fractures may be used. |
| **Response Attributes** | None Specified |
| **Sample Item** | 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) arthrodosis  B) kyphosis  C) lordosis  D) scoliosis  **Correct Answer: B** |

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| **Benchmark Number** | 07.01 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Describe the structure and function of the muscular system. |
| **Also Assesses** | 05.02  06.03  SC.912.L.14.16  SC.912.L.14.17  SC.912.L.14.18  SC.912.L.14.19  SC.912.L.14.20 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Low, Moderate, High |
| **Benchmark Clarification** | Students will be able to identify the major muscles and their function.  Students will be able to describe the steps involved in the sliding filament of muscle contraction. Students will be able to discuss how sports-training affects the muscles. |
| **Content Limits** | Limited to the major muscles of the human body. Items will include the characteristics of muscles (contractibility, excitability, extensibility, elasticity).  Items may include differentiating isotonic and isometric exercises. |
| **Stimulus Attributes** | A diagram/picture of the major muscles may be used. |
| **Response Attributes** | None Specified |
| **Sample Item** | Which major muscle is responsible for flexion of the arm?  A) biceps brachii  B) brachioradialis  C) deltoid  D) triceps brachii  **Correct Answer: A** |

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| **Benchmark Number** | 07.02 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Identify common diseases and disorders of the muscular system including prevention, pathology, diagnosis and treatment. |
| **Also Assesses** | 8.01  8.02 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Moderate, High |
| **Benchmark Clarification** | Students will be able to identify common muscle disorders. Students will be able to explain the effects of aging on the muscular system. Students will be able to identify common diagnostic tests used to diagnose muscle disorders. |
| **Content Limits** | Disorders include hernias, muscular dystrophy, and myasthenia gravis. Injuries include repetitive joint injuries and sprains. |
| **Stimulus Attributes** | None Specified |
| **Response Attributes** | None Specified |
| **Sample Item** | Which of the following causes muscle fatigue?  A) a buildup of ATP  B) a buildup of carbon dioxide  C) a buildup of glycogen  D) a buildup of lactic acid  **Correct Answer: D** |

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| **Benchmark Number** | 07.01 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Describe the structure and function of the nervous system. |
| **Also Assesses** | 05.02  06.01  SC.912.L.14.21  SC.912.L.14.22  SC.912.L.14.23  SC.912.L.14.24  SC.912.L.14.25  SC.912.L.14.26  SC.912.L.14.27  SC.912.L.14.28 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Low, Moderate, High |
| **Benchmark Clarification** | Students will name the major divisions of the nervous system. Students will 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 physiology of nerve conduction, including the action potential and the synapse. Students will explain the role of cell membranes as a highly selective barrier. |
| **Content Limits** | 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). The physiology of nerve conduction may also be included. |
| **Stimulus Attributes** | Illustrations or diagrams may be used. |
| **Response Attributes** | None Specified |
| **Sample Item** | What part of the brain is responsible for the balance, coordination and muscle tone?  A) cerebellum  B) hypothalamus  C) medulla  D) thalamus  **Correct Answer: A** |

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| **Benchmark Number** | 07.02 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Identify common diseases and disorders of the nervous system including prevention, pathology, diagnosis and treatment. |
| **Also Assesses** | 08.01  08.02 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Moderate, High |
| **Benchmark Clarification** | Students will be able to identify common disorders/diseases of the central and peripheral nervous systems. Students will be able to identify common diagnostic tests used to diagnose disorders of the nervous system. Students will be able to describe the effects of aging on the central nervous system. |
| **Content Limits** | Diseases and disorders of the central nervous system to include meningitis, encephalitis, epilepsy, cerebral palsy, hydrocephalus, Parkinson's disease, multiple sclerosis, dementia, Alzheimer’s disease, and spinal cord injury. Diseases and disorders of the peripheral nervous system including neuritis, peripheral neuropathy, sciatica, Bell's palsy, shingles and carpal tunnel syndrome. |
| **Stimulus Attributes** | None Specified |
| **Response Attributes** | None Specified |
| **Sample Item** | 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** |

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| **Benchmark Number** | 07.01 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Describe the structure and function of the endocrine system. |
| **Also Assesses** | 05.02  06.01  SC.912.L.29  SC.912.L.31  SC.912.L.32 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Low, Moderate, High |
| **Benchmark Clarification** | Students will be able to identify the major glands of the endocrine system, the hormones they release, and the function of those hormones. Students will describe the functions/role of each hormone and its effect on the organ/organ system/ or body as a whole. |
| **Content Limits** | 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 feedback systems. |
| **Stimulus Attributes** | Stimulus may include pictures and/or diagrams. |
| **Response Attributes** | None Specified |
| **Sample Item** | How does the endocrine system regulate blood glucose levels?  A) The liver releases glucagon to lower blood glucose levels and releases insulin to elevate blood glucose levels.  B) The liver releases insulin to lower blood glucose levels and releases glucagon to increase blood glucose levels.  C) The pancreas releases glucagon to lower blood glucose levels and releases insulin to elevate blood glucose levels.  D) The pancreas releases insulin to lower blood glucose levels and releases glucagon to increase blood glucose levels.  **Correct Answer: D** |

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| **Benchmark Number** | 07.02 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Identify common diseases and disorders of the endocrine system including prevention, pathology, diagnosis and treatment. |
| **Also Assesses** | 08.01  08.02 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Moderate |
| **Benchmark Clarification** | Students will be able to identify common diseases and disorders of the endocrine system. Students will be able to describe the effects of aging on the endocrine system. |
| **Content Limits** | Limited to the most common diseases/disorders of the endocrine including gigantism, acromegaly, dwarfism, myxedema, cretinism, Cushing's syndrome, Addison's disease, and diabetes mellitus. |
| **Stimulus Attributes** | None Specified |
| **Response Attributes** | None Specified |
| **Sample Item** | A person with an abnormally high metabolic rate, underweight and has  protruding eyes is exhibiting symptoms of which disorder?  A) Addison's disease  B) Cretinism  C) Cushing's syndrome  D) Grave's disease  **Correct Answer: B** |

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| **Benchmark Number** | 07.01 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Describe the structure and function of the circulatory system. |
| **Also Assesses** | 05.02  06.01  SC.912.L.14.36  SC.912.L.14.38  SC.912.L.14.39  SC.912.L.14.40  SC.912.L.14.41 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Low, Moderate, High |
| **Benchmark Clarification** | Students will be able to identify the composition of blood. Student will be able to identify the major plasma proteins. Students will be able to describe factors affecting blood flow through the cardiovascular system.  Students will be able to describe the histology of major arteries and veins. Students will be able to describe fetal circulation and changes that occur to the circulatory system at birth. Students will be able to describe the steps in hemostasis. Students will be able to describe the relevant plasma proteins (antibodies) related to ABO blood typing and the significance in transfusion reactions. |
| **Content Limits** | Limited to the major arteries and veins of the systemic, pulmonary, hepatic portal, coronary, and fetal circulation. Included will also be the basis for blood typing and transfusion reactions. (Which blood types are compatible with each other and which are not) |
| **Stimulus Attributes** | Stimulus may include pictures/diagrams of the cardiopulmonary circulatory system. |
| **Response Attributes** | None Specified |
| **Sample Item** | Which of the following might result in an Rh incompatibility problem?  A) an Rh negative mother and an Rh negative fetus  B) an Rh negative mother and an Rh positive fetus  C) an Rh positive mother and an Rh negative father  D) an Rh positive mother and an Rh negative fetus  **Correct Answer: B** |

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| **Benchmark Number** | 07.02 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Identify common diseases and disorders of the circulatory system including prevention, pathology, diagnosis and treatment. |
| **Also Assesses** | 8.01  8.02  SC.912.L.14.36  SC.912.L.14.39 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice, Short Responses |
| **Ideal Cognitive Complexity Level** | Moderate, High |
| **Benchmark Clarification** | Students will be able to determine the relationship between those factors affecting blood flow and hypertension/cardiovascular diseases. Students will be able the describe hypertension and some of the factors that produce it. Students will be able to identify common diagnostic tests used to diagnose circulatory system disorders. Students will be able to describe the effects of aging on the circulatory system. |
| **Content Limits** | Disorders include hypertension, aneurysm, arteriosclerosis, atherosclerosis, gangrene, phlebitis, embolism, varicose veins, hemorrhoids, cerebral hemorrhage, peripheral vascular disease, transient ischemic attacks, cerebral vascular accident and hypoperfusion. |
| **Stimulus Attributes** | May include a chart of blood values or systolic/diastolic reading for students to interpret. |
| **Response Attributes** | None Specified |
| **Sample Item** | Mr. Jackson came to the doctor’s office with complaints of pain in his toes and feet. He stated he could only walk a few feet before severe cramping developed in his legs.  What is most likely causing his symptoms?  A) gangrene   B) peripheral vascular disease   C) phlebitis  D) varicose veins  **Correct Answer: B** |

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| **Benchmark Number** | 07.01 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Describe the structure and function of the cardiac system. |
| **Also Assesses** | 05.02  06.01  SC.912.L.14.36  SC.912.L.14.38 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Low, Moderate, High |
| **Benchmark Clarification** | Students will be able to describe the structure of the heart. Students will be able to describe the function of the various structures of the heart. Students will be able to describe the control of heart contractions. |
| **Content Limits** | Items will include changes in the composition of circulating blood. Items will include identifying structures of the heart, including its chambers and valves. Items will include the conduction system of heart contractions. Items may include prevention of heart disease. |
| **Stimulus Attributes** | Stimulus may include a diagram/picture of the heart. |
| **Response Attributes** | None Specified |
| **Sample Item** | Which of the following contains oxygenated blood?  A) aorta  B) inferior vena cave  C) pulmonary artery  D) right ventricle  **Correct Answer: A** |

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| **Benchmark Number** | 07.02 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Identify common diseases and disorders of the cardiac system including prevention, pathology, diagnosis and treatment. |
| **Also Assesses** | 08.01  08.02  SC.912.L.14.37 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice |
| **Ideal Cognitive Complexity Level** | Moderate |
| **Benchmark Clarification** | Students will be able to discuss the diseases of the heart. Students will identify diagnostic tests for heart disease. Students will be able to identify common diagnostic tests used to diagnose cardiac disorders. Students will be able to identify the effects of aging on the cardiac system. |
| **Content Limits** | Items may include components of an electrocardiogram, angiography, echocardiography, cardiac catheterization, and blood tests used to diagnose heart disease. Diseases/disorders of the heart may include mitral valve prolapse, coronary artery disease, myocardial infarction, heart failure, congestive heart failure and rhythm/conduction defects. Items may include types of heart surgery (angioplasty, coronary bypass, cardiac stents, and transmyocardial laser revascularization. Items will include the effects of aging on the cardiac system. |
| **Stimulus Attributes** | None Specified |
| **Response Attributes** | None Specified |
| **Sample Item** | Which of the following heart valves can be damaged from complications of rheumatic fever?  A) aortic valve  B) bicuspid valve  C) pulmonary valve  D) tricuspid valve  **Correct Answer: B** |

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| **Benchmark Number** | 07.01 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Describe the structure and function of the lymphatic system. |
| **Also Assesses** | SC.912.L.14.42  SC.912.L.14.52 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Low, Moderate, High |
| **Benchmark Clarification** | Students will be able to identify the major organs of the lymphatic system. Students will be able to describe the general function of each of those organs. |
| **Content Limits** | Identified organs are limited to lymph vessels, lymph nodes, spleen. Items may include natural and acquired immunities. |
| **Stimulus Attributes** | None Specified |
| **Response Attributes** | None Specified |
| **Sample Item** | Mrs. Fox had chicken pox as a little girl.  She is now immune to the chicken pox virus.  This is an example of what type of immunity?  A) artificial acquired Immunity  B) natural acquired Immunity  C) natural Immunity   D) passive acquired Immunity  **Correct Answer: B** |

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| **Benchmark Number** | 07.02 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Identify common diseases and disorders of the lymphatic system including prevention, pathology, diagnosis and treatment. |
| **Also Assesses** | 8.01  8.02 |
| **(K)nowledge (P)erformance or (B)oth** | (K) nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Moderate, High |
| **Benchmark Clarification** | Students will be able to identify common disorders/diseases of the lymphatic system. Students will be able to describe the modes of AIDS transmission and measures used to prevent its transmission. |
| **Content Limits** | Disorders will include Hodgkin's disease, infectious mononucleosis, scleroderma and HIV/AIDS. |
| **Stimulus Attributes** | None Specified |
| **Response Attributes** | None Specified |
| **Sample Item** | Which of the following will cause swelling of a lymph tissue?  A) an increase in pathogenic substances  B) an increase in plasma fluid  C) an increase in white blood cells  D) an increase in the number of lymphocyte  **Correct Answer: A** |

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| **Benchmark Number** | 07.01 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Describe the structure and function of the respiratory system. |
| **Also Assesses** | 05.02  06.01  SC.912.L.14.43  SC.912.L.14.44 |
| **(K)nowledge (P)erformance or (B)oth** | (K)nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Low, Moderate, High |
| **Benchmark Clarification** | Students will be able to identify the major organs of the respiratory system. Student will describe how and where gas exchange takes place. Students will explain neural and chemical control mechanisms for pulmonary ventilation. |
| **Content Limits** | 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. |
| **Stimulus Attributes** | Diagrams may be used. |
| **Response Attributes** | None Specified |
| **Sample Item** | Which of the following describes the purpose of residual air in the lungs?  A) it allows for extra air needed to take a deep breath  B) it allows the continuous exchange of gases between breaths  C) it prevents the lungs from collapsing  D) it prevents the temporary stoppage of breathing  **Correct Answer: B** |

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| **Benchmark Number** | 07.02 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Identify common diseases and disorders of the respiratory system including prevention, pathology, diagnosis and treatment. |
| **Also Assesses** | 08.01  08.02 |
| **(K)nowledge (P)erformance or (B)oth** | (K)nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Moderate, High |
| **Benchmark Clarification** | Students will be able to identify common diseases/disorders of the respiratory system. Student will be able to describe the effects of aging on the respiratory system. Students will have a basic understanding of lung capacity studies. |
| **Content Limits** | Limited to bronchitis, COPD, pneumonia, tuberculosis, asthma, and emphysema. |
| **Stimulus Attributes** | None Specified |
| **Response Attributes** | None Specified |
| **Sample Item** | Mr. Wolf was admitted to the hospital with complains of night sweats, weight loss, chronic cough, and fever.  What is his probable diagnosis?  A) COPD  B) SARS  C) SIDS  D) TB  **Correct Answer: D** |

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| **Benchmark Number** | 07.01 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Describe the structure and function of the digestive system. |
| **Also Assesses** | 05.02  06.01  SC.912.L.14.45  SC.912.L.14.46 |
| **(K)nowledge (P)erformance or (B)oth** | (K)nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Low, Moderate, High |
| **Benchmark Clarification** | Students will describe the structures and functions of the organs of the digestive system. Students will be able to describe how mechanical and chemical digestion takes place with the organs of the digestive system. Students will be able to describe how absorption takes place within the organs of the digestive system. |
| **Content Limits** | Organs of digestion will include salivary glands, esophagus, stomach, small intestines, large intestines, pancreas, liver and gallbladder. |
| **Stimulus Attributes** | Diagrams and illustrations may be used. |
| **Response Attributes** | None Specified |
| **Sample Item** | What is the function of the cardiac sphincter?  A) It allows stomach contents to enter into the duodenum.  B) It allows fecal material in the ileum to enter into the cecum.  C) It prevents stomach contents from entering into the esophagus.  D) It prevents fecal material in the duodenum from entering the stomach.  **Correct Answer: C** |

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| **Benchmark Number** | 07.02 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Identify common diseases and disorders of the digestive system including prevention, pathology, diagnosis and treatment. |
| **Also Assesses** | 8.01  8.02 |
| **(K)nowledge (P)erformance or (B)oth** | (K)nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Moderate, High |
| **Benchmark Clarification** | Students will be able to describe common diseases/disorders for the digestive system. Student will be able to describe the effects of aging on the digestive system. |
| **Content Limits** | Limited to GERD, heartburn, hiatal hernia, pyloric stenosis, gastroenteritis, ulcers, Crohn's disease, ulcerative colitis, hepatitis, cirrhosis, cholecystitis, diverticulosis, and cancer of GI tract. |
| **Stimulus Attributes** | None specified |
| **Response Attributes** | None Specified |
| **Sample Item** | How would you compare ulcerative colitis and Crohn’s disease?  A) Ulcerative colitis is a disease of the small intestine; Crohn’s disease is of the large intestine.  B) Ulcerative colitis is a disease of the large intestine; Crohn’s disease is of the small intestine.  C) Both are diseases of the large intestine.  D) Both are diseases that can appear in either the large or small intestine.  **Correct Answer: B** |

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| **Benchmark Number** | 07.01 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Describe the structure and function of the urinary system. |
| **Also Assesses** | 05.02  06.01  SC.912.L.14.47  SC.912.L.14.48 |
| **(K)nowledge (P)erformance or (B)oth** | (K)nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Low, Moderate, High |
| **Benchmark Clarification** | Students will be able to describe the general function of the nephron. Students will describe the flow of urine through the urinary system. |
| **Content Limits** | Limited to the major structures of the urinary system and urine formation in the nephron. |
| **Stimulus Attributes** | Stimulus may include diagrams and/or pictures. |
| **Response Attributes** | None Specified |
| **Sample Item** | What of the following is the functional unit of the kidney responsible for filtering metabolic waste from the blood?  A) the calyx  B) the medulla   C) the nephron   D) the ureter  **Correct Answer: C** |

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| **Benchmark Number** | 07.02 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Identify common diseases and disorders of the urinary system including prevention, pathology, diagnosis and treatment. |
| **Also Assesses** | 8.01  8.02 |
| **(K)nowledge (P)erformance or (B)oth** | (K)nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Moderate, High |
| **Benchmark Clarification** | Students will be able to describe common disorders of the urinary system. The student will be able to identify common diagnostic tests used to diagnose urinary tract disorders. Students will be able to describe the effects of aging on the urinary system. |
| **Content Limits** | Disorders to include acute and chronic kidney failure, kidney stones, and cystitis. Dialysis and kidney transplants as a treatment may be included. |
| **Stimulus Attributes** | None Specified |
| **Response Attributes** | None Specified |
| **Sample Item** | What complication can occur with polyuria?  A) dehydration  B) edema  C) glycosuria  D) urinary tract infection  **Correct Answer: A** |

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| **Benchmark Number** | 07.01 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Describe the structure and function of the reproductive system. |
| **Also Assesses** | 05.02  06.01  SC.912.L.14.31  SC.912.L.14.33 |
| **(K)nowledge (P)erformance or (B)oth** | (K)nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Low, Moderate, High |
| **Benchmark Clarification** | Students 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. |
| **Content Limits** | Will not include changes that occur during pregnancy for the developing embryo/fetus and mother. |
| **Stimulus Attributes** | Diagrams/pictures may be used. |
| **Response Attributes** | None Specified |
| **Sample Item** | Which of the following hormones might be used by a fertility clinic to help to enhance female fertility?  A) estrogen  B) follicle stimulating hormone   C) oxytocin  D) testosterone  **Correct Answer: B** |

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| **Benchmark Number** | 07.02 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Identify common diseases and disorders of the reproductive system including prevention, pathology, diagnosis and treatment. |
| **Also Assesses** | 8.01  8.02 |
| **(K)nowledge (P)erformance or (B)oth** | (K)nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Moderate, High |
| **Benchmark Clarification** | Students will be able to describe common disorders of the reproductive system. The student will be able to identify common diagnostic tests used to diagnose reproductive system disorders. Student will be able to describe the effects of aging on the reproductive system. |
| **Content Limits** | Disorders of the female reproductive system may include endometriosis, fibroid tumors, pelvic inflammatory disease, cancer, toxic shock syndrome. Disorders of the male reproductive system may include epididymitis, orchitis, prostatitis, benign prostatic hypertrophy, and sexual transmitted infections. |
| **Stimulus Attributes** | None Specified |
| **Response Attributes** | None Specified |
| **Sample Item** | 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** |

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| **Benchmark Number** | 07.01 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Describe the structure and function of the sensory system. |
| **Also Assesses** | Not Applicable |
| **(K)nowledge (P)erformance or (B)oth** | (K)nowledge |
| **Item Types** | Multiple Choice |
| **Ideal Cognitive Complexity Level** | Low |
| **Benchmark Clarification** | Students will be able to describe general structures and functions of the sensory system. |
| **Content Limits** | Limited to eyes, ears, nose, and tongue. |
| **Stimulus Attributes** | None Specified |
| **Response Attributes** | None Specified |
| **Sample Item** | Which specialized organ is the olfactory sense a function of?  A) ear  B) eye  C) nose  D) tongue  **Correct Answer: C** |

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| **Benchmark Number** | 07.02 |
| **Standard** | 07.0 Identify and discuss the structure and function of the body systems in relation to health and disease. |
| **Benchmark** | Identify common diseases and disorders of the sensory system including prevention, pathology, diagnosis and treatment. |
| **Also Assesses** | Not Applicable |
| **(K)nowledge (P)erformance or (B)oth** | (K)nowledge |
| **Item Types** | Multiple Choice, Short Response |
| **Ideal Cognitive Complexity Level** | Moderate, High |
| **Benchmark Clarification** | Students will be able to describe common diseases/disorders of the sensory system. |
| **Content Limits** | Limited to glaucoma, cataracts, strabismus, ruptured ear drum, otitis media, epistaxis, and rhinitis. |
| **Stimulus Attributes** | None Specified |
| **Response Attributes** | None Specified |
| **Sample Item** | Mr. White has just been diagnosed with glaucoma which is the result from which of the following?  A) a bacterial infection of the sebacious gland  B) a ruptured tympanic membrane  C) an allergic reaction  D) an increased intraocular pressure  **Correct Answer: D** |