
Coal City Unit District #1
Human Anatomy and Physiology
Science Curriculum

SC. HAP:1 Students will have knowledge of the structure and function of the human body. (IL 23A, 23B, 23C)

- SC.HAP:1-1 Apply knowledge of the increasing complexity levels of organization of the body.
- SC.HAP:1-2 Determine the differences between the axial and appendicular subdivisions of the body.
- SC.HAP:1-3 Identify nine abdominal regions and the abdominal quadrants.
- SC.HAP:1-4 Identify and define the directional terms and sections (planes) used in describing the body and the relationship of body parts to one another.
- SC.HAP:1-5 Apply knowledge of the major body cavities and the subdivisions of each.
- SC.HAP:1-6 Identify homeostasis and give an example of a homeostatic mechanism.

SC.HAP:2 Students will have knowledge of the various organ systems of the body. (IL 23A, 23B, 23C)

- SC.HAP:2-1 Identify the eleven major organ systems of the body.
- SC.HAP:2-2 Identify the major organs of each organ system.
- SC.HAP:2-3 Determine the major functions of each organ system.
- SC.HAP:2-4 Distinguish the major subdivisions of the reproductive system.
- SC.HAP:2-5 Identify methods of organ replacement and possible problems with organ donation.
- SC.HAP:2-6 Identify the function of a human kidney.
- SC.HAP:2-7 Relate kidney function to homeostasis.

SC.HAP:3 Students will identify mechanisms of disease. (IL 23A, 23B, 23C)

- SC.HAP:3-1 Identify the basic mechanisms of disease as well as risk factors associated with various diseases.
- SC.HAP:3-2 Identify pathogenic organisms and explain how they cause disease.
- SC.HAP:3-3 Differentiate between benign and malignant as they apply to tumors.
- SC.HAP:3-4 Apply knowledge of patho-genesis of cancer.
- SC.HAP:3-5 Apply knowledge of the events of the inflammatory response and its disease significance.
- SC.HAP:3-6 Research a particular human disease and present findings.
- SC.HAP:3-7 Obtain relevant information from credible sources.
- SC.HAP:3-8 Evaluate the scientific validity and credibility of information obtained.

SC.HAP:4 Students will have knowledge of the skeletal system. (IL 23A, 23B, 23C)

- SC.HAP:4-1 Identify how bones are formed, how they grow, and how they are remodeled.
- SC.HAP:4-2 Summarize the microscopic structure of bone and cartilage, as well as identify the specific cell types and structural features.
- SC.HAP:4-3 Identify the major anatomical structures found in a typical long bone and discuss bone formation and growth.
- SC.HAP:4-4 Identify the major functions of the skeletal system.
- SC.HAP:4-5 Apply knowledge of the two major subdivisions of the skeleton and the bones found in each area.
- SC.HAP:4-6 Identify and compare the major types of joints in the body and give an example of each.
- SC.HAP:4-7 Apply knowledge of disorders of bones and joints.

SC.HAP:5 Students will have knowledge of the muscular system. (IL 13A, 23A, 23B, 23C)

- SC.HAP:5-1 Determine the structure and function of the major types of muscle tissue.
- SC.HAP:5-2 Apply knowledge of the microscopic structure of a skeletal muscle sarcomere and motor unit.
- SC.HAP:5-3 Determine how a muscle is stimulated and exhibit knowledge of the major types of muscle contractions.
- SC.HAP:5-4 Identify that the chief energy-storing compound used by organisms is ATP (adenosine triphosphate).
- SC.HAP:5-5 Name and identify the major muscles as well as give the function of the major muscles.
- SC.HAP:5-6 Exhibit knowledge of the common types of movement produced by skeletal muscles.
- SC.HAP:5-7 Determine the major disorders of skeletal muscles.

SC.HAP:6 Students will have knowledge of blood. (IL 23A, 23B, 23C)

- SC.HAP:6-1 Describe the major functions and/or normal amount of blood.
- SC.HAP:6-2 Identify the formed elements of blood as well as the function of each.
- SC.HAP:6-3 Exhibit knowledge of anemia in relation to red blood cell numbers and hemoglobin content.
- SC.HAP:6-4 Determine why blood may clot due to various scenarios.
- SC.HAP:6-5 Apply knowledge of ABO and Rh blood typing.
- SC.HAP:6-6 Apply knowledge of common disorders associated with each type of blood cell.

SC.HAP:7 Students will have knowledge of the heart and heart disease. (IL 23A, 23B, 23C)

- SC.HAP:7-1 Determine the size, location, and position of the heart in the thoracic cavity and differentiate the heart chambers, sounds, and valves.
- SC.HAP:7-2 Identify major types of cardiac valve disorders.
- SC.HAP:7-3 Determine the flow of blood through the heart and apply knowledge of the functions of the heart chambers on the right and left sides.
- SC.HAP:7-4 Identify causes of a myocardial infarction.
- SC.HAP:7-5 Identify the features of a normal electrocardiogram.
- SC.HAP:7-6 Identify major types of cardiac arrhythmia.
- SC.HAP:7-7 Identify possible causes of heart failure.
- SC.HAP:7-8 Identify heart sounds/valves and measure blood pressure.
- SC.HAP:7-9 Exhibit knowledge of the structure and function of the blood vessels: artery, vein, and capillary.