

Science
Unit 3: Human Body Systems

Essential Understandings	▪ The human body is made of many systems that work together.
Essential Questions	▪ How does each organ work? ▪ What is the function of each organ? ▪ What is an organ system? ▪ What are the parts of each organ system? ▪ What makes a person healthy? ▪ What are some signs that our organ systems are unhealthy?
Essential Knowledge	▪ The muscular system helps the body move. ▪ The skeletal system supports the body and protects organs. ▪ The circulatory system moves blood around the body. ▪ The respiratory system delivers oxygen to all parts of the body. ▪ The digestive system fuels the body and feeds cells. ▪ The nervous system carries messages to and from the brain through nerve cells. ▪ Genetic traits are inherited from biological parents. ▪ External factors can affect the way genes are passed from parent to offspring (i.e., illness, drug use, stress, etc.). ▪ Models can be used to represent major body systems.

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Vocabulary	▪ <u>Muscular System:</u> ○ pectoral/chest, quadriceps/thigh, deltoid/shoulder, biceps, lateral muscles, abdominal muscles, abdominal tendons ▪ <u>Skeletal System:</u> ○ clavicle/collarbone, scapula/shoulder blade, sternum/breast bone, rib cage, humerus/upper arm, ulna and radius/lower arm, vertebrae/spinal column, hip bone, sacrum, coccyx, femur/upper leg, phalanges/fingers ▪ <u>Circulatory System:</u> ○ aorta, arteries, capillaries, veins, right atrium, right ventricle, lungs, left atrium, left ventricle, diaphragm ▪ <u>Respiratory System:</u> ○ nose, sinus, mouth, throat, esophagus, epiglottis, trachea, larynx, bronchial tubes, lungs, bronchioles, alveoli, capillaries, diaphragm ▪ <u>Digestive System:</u> ○ teeth, tongue, salivary glands, epiglottis, esophagus, stomach, pancreas, liver, gall bladder, large intestine, small intestine, anus, rectum ▪ <u>Nervous System:</u> ○ cerebrum, cerebellum, spinal cord, brain stem, nerves ▪ <u>Heredity:</u> ○ genes, genetic traits, chromosomes, offspring, reproduction
Essential Skills	▪ Describe the function of these major body systems: ○ Muscular ○ Skeletal ○ Circulatory ○ Respiratory ○ Digestive ○ Nervous ▪ Create a model to represent at least one of the major body systems. ▪ Name some likenesses between children and parents that are inherited. ▪ Identify some external factors that can affect the way genes are passed from parents to offspring.

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Related Maine Learning Results	<u>Science</u> A. Unifying Themes A1.Systems Students explain interactions between parts that make up whole man-made and natural things. a. Give examples that show how individual parts of organisms, ecosystems, or man-made structures can influence one another. A2.Models Students use models to represent objects, processes, and events from the physical setting, the living environment, and the technological world. a. Represent the features of a real object, event, or process using models including geometric figures, number sequences, graphs, diagrams, sketches, maps, or three-dimensional figures and note ways in which those representations do (and do not) match features of the originals. E. The Living Environment E4.Hereditry and Reproduction Students describe characteristics of organisms, and the reasons why organisms differ from or are similar to their parents. a. Name some likenesses between children and parents that are inherited, and some that are not. b. Explain that in order for offspring to look like their parents, information related to inherited likenesses must be handed from parents of offspring in a reliable manner.
Sample Lessons And Activities	▪ Walk through a large size heart and describe the process. ▪ Eat a cracker and describe what happens as it travels through the digestive system. ▪ Write an essay for each system as a tour guide that is traveling through the body. ▪ Create a memory game for each system. Match the vocabulary word with its role in the system.
Sample Classroom Assessment Methods	▪ Create a body book with illustrations as well as essays describing each system. ▪ Draw and label each system and show how they work together.

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Sample Resources	▪ <u>Publications:</u> ○ <u>The Body Book</u> - Donald Siler and Patricia Wynne ○ <u>The Children's Atlas of The Human Body</u> – Richard Walker ○ <u>The Circulatory System</u> – Alvin Silverstein ○ <u>The Digestive System</u> - Alvin Silverstein ○ <u>Human Anatomy</u> - John Harcup ○ <u>The Human Body</u> – Heather Amery ○ <u>The MacMillan Book of The Human Body</u> – Mary Elting ○ <u>The Respiratory System</u> – Alvin Silverstein ▪ <u>Videos:</u> ○ <u>Eyewitness: Human Machine</u> ○ <u>Human Body The Inside Scoop</u> – Bill Nye ○ <u>The Incredible Human Body</u> ○ <u>Inside Story With Slim Good Body</u>
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