

Unifying Theme: Human Body Systems

Essential Standard and Clarifying Objectives

5.L.1 Understand how structures and systems of organisms (to include the human body) perform functions necessary for life.

5.L.1.1 Explain why some organisms are capable of surviving as a single cell while others require many cells that are specialized to survive.

5.L.1.2 Compare the major systems of the human body (digestive, respiratory, circulatory, muscular, skeletal, cardiovascular) as it relates to their functions necessary for life.

5.L.3 Understand why organisms differ from or are similar to their parents based on the characteristics of the organism.

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5.L.3.2 Give examples of likenesses that are inherited and some that are not.

Unpacking

What does this clarifying objective mean a child will know, understand and be able to do?

5.L.1.1 Students know that unicellular organisms consist of a single cell and perform all life processes within a single cell. Students know that multicellular organisms are organisms that consist of more than one cell and have differentiated cells that perform specialized functions in the organism. Students know that many organisms – including humans – are multicellular. Students know that in complex multicellular organisms, only the surface cells that are in contact with the external environment are able to exchange substances with it. Cells within the organism are too far away from the environment for direct exchange. This is the reason multicellular organisms have developed transport systems.

5.L.1.2 Students know there are many systems in the human body. Some of these systems are:

- **Circulatory System** (heart, blood, vessels)
- **Respiratory System** (nose, trachea, lungs)
- **Skeletal System** (bones) {addressed in *Human Body* unit, 3rd grade.}
- **Muscular System** (muscles) {addressed in *Human Body* unit, 3rd grade.}
- **Digestive System** (mouth, esophagus, stomach, intestines)
- **Nervous System** (brain, spinal cord, nerves)

Students know that each system performs a special life process function and that the systems work together to maintain health and fitness.

5.L.3.1 Students know that life processes and species characteristics that define a population will be transmitted from parent to offspring. Students also know that these processes and characteristics cover a broad range of structures, functions and behaviors that can vary substantially from individual to individual.

5.L.3.2 Students know some likenesses between parents and children are inherited. Other likenesses are learned from parents or within the community (population/culture). Students know that in order for offspring to resemble their parents, there must be a reliable way to transfer genetic information from parent to offspring. Students can be encouraged to keep lists of characteristics that animals and plants acquire from their parents, characteristics that aren't, and characteristics which students are unsure about either way. This is also a time to start building the notion of a population whose members are alike in many ways but show some variation.

