

PHENOMENA, DRIVING QUESTIONS AND SEPUP STORYLINE

BODY SYSTEMS

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Unit Issue: How interactions between body systems can be affected by disease, medications, and other factors.

Anchoring Phenomenon: How body systems function and interact in a healthy person and when a person is sick. An example is the interaction of the circulatory and respiratory systems during exercise. Students generate and answer questions such as: How do systems in the human body function? How do they interact? How can a problem in one system affect another system or systems?

Investigative Phenomenon	Driving Questions	Guiding Questions	Activities	PE	Storyline
Medicines can treat diseases but can have unintended consequences.	How do scientists ensure that a medication to treat a health condition works and is safe?	How do scientists investigate and gather evidence about the human body? (Activity 1)	1 (13, 14)	MS-LS1-3 MS-LS1-8	Students learn about the challenge of pellagra and the methods scientists use to investigate and treat/cure medical conditions.
The human body is a system made up of subsystems, including organ systems, organs, cells, and tissues.	What are the systems in the human body, and what are they composed of?	What do you know about structures, such as organs, in the human body? (Activity 2) How do structures in the human body interact to perform a specific function? (Activity 3)	2, 3	MS-LS1-3	The human body has different systems with different functions. Body systems are composed of organs, which are composed of tissues, which are composed of cells.
Each body system has specific structures and functions.	What does each body system contribute to the overall function of the body?	How does your digestive system function and interact with other systems in your body? (Activity 4) How does food provide energy and matter for organisms? (Activity 5) What can your observations tell you about how an organism's nervous system will respond to stimuli? (Activity 6) How does your brain gather and synthesize information from sensory receptors in your skin? (Activity 7) How does your body gather and synthesize information to respond to stimuli? (Activity 8)	4, 5, 6, 7, 8	MS-LS1-3 MS-LS1-8	Each specific body system connects to other body systems. Stimuli can affect behavior of organisms. Nervous systems gather and synthesize information differently. Nervous system responses can affect other body systems.

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BODY SYSTEMS (continued)

Investigative Phenomenon	Driving Questions	Guiding Questions	Activities	PE	Storyline
Changes in one body system can cause changes in another body system.	How do different body systems interact with and affect one another?	<p>How do your body systems respond to exercise? (Activity 9)</p> <p>How much carbon dioxide is in your exhaled breath before and after you exercise? (Activity 10)</p> <p>How do systems in your body work together to keep you healthy? (Activity 11)</p> <p>How do oxygen, nutrients, and wastes move into, within, and out of your body? (Activity 12)</p>	9, 10, 11, 12	MS-LS1-3 MS-LS1-8	<p>Systems interact.</p> <p>Interactions between systems affect both systems.</p> <p>Structures and functions of systems facilitate interactions.</p> <p>Problems in one system can cause problems in another system.</p>
Medicines can treat diseases but can have unintended consequences.	How do scientists ensure that a medication to treat a health condition works and is safe?	<p>How are medicines tested during a clinical trial? (Activity 13)</p> <p>How can data be used to determine the best medicine to research and test? (Activity 14)</p>	(1) 13, 14	MS-LS1-3 MS-LS1-8	<p>Students learn more about the methods scientists use to investigate and treat/cure medical conditions. Cycles back to Activity 1.</p> <p>Students investigate data about effects of a medicine on several systems in human body. Cycles back to Activity 1.</p>