

Grade 7: Body Systems

Stage 1 Desired Results		
ESTABLISHED GOALS: <u>Competencies:</u> Structure and Function- Students will analyze the relationship among structure and function of natural or human designed objects, using evidence to redesign or support claims about survival and/or improved performance. Systems and System Models- Students will investigate and analyze a natural or human designed system in order to develop and justify a model that accurately represents the system or aspects of the system (e.g., boundaries, inputs, outputs, interactions, and behaviors). Energy and Matter in Systems- Students will analyze evidence (e.g., investigations, models, theories, scenarios) to predict and track changes in the cycling of matter and flow of energy within and between systems in order to identify their possibilities and limitations. Students will demonstrate the ability to analyze and summarize text and integrate knowledge to make meaning of discipline-specific materials. Students will demonstrate the ability to produce coherent and supported writing in order to communicate effectively for a range of discipline-specific tasks, purposes, and audiences. Students will demonstrate the ability to speak purposefully and effectively by strategically making decisions about content, language use, and discourse style. <u>Content Standards:</u> MS-LS1-3 Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. MS-LS1-7 Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support	<i>Transfer</i>	
	Students will be able to independently use their learning to apply their understanding of body systems to a variety of organisms.	
	<i>Meaning</i>	
	ENDURING UNDERSTANDINGS Students will understand that... - a multicellular organism is a complex unit made up of interacting subsystems. - body systems work together to help organisms maintain homeostasis.	ESSENTIAL QUESTIONS - Is any one living thing more important than another? - Is any one body system more important than another?
	<i>Acquisition</i>	
	Students will know... - that systems may interact with other systems; they may have sub-systems and be a part of larger complex systems. - that complex structures and systems can be visualized, modeled, and used to describe how their function depends on the relationships among its parts, therefore complex natural structures/systems can be analyzed to determine how they function. - that all living things are made up of cells, which is the smallest unit that can be said to be alive. An organism may consist of many different numbers and types of cells (multicellular). - that cells form tissues and tissues form organs specialized for particular body functions. - that there is a particular structure and function of the circulatory, excretory, digestive, respiratory, muscular, and nervous systems. - that cellular respiration in animals involves chemical reactions with oxygen that release stored energy. In these processes, complex molecules containing carbon react with oxygen to produce carbon dioxide	Students will be skilled at... - describing the structure and interactions of systems that may exist independently, or be composed of subsystems, or be part of a larger complex system. - determining the limitations of a model when it represents only certain aspects of the system under study. - modeling systems and their interactions including inputs, processes, and outputs. - modeling complex structures and systems. - analyzing complex natural structures/systems to determine how they function. - demonstrating how the transfer of energy drives the motion and/or cycling of matter with a natural system - predicting possible changes within the system by tracking the transfer of energy flow through a natural system.

● MS-LS1-8 Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.	and other materials. ● that within individual organisms, food moves through a series of chemical reactions in which it is broken down and rearranged to form new molecules, to support growth, or to release energy. ● that each sense receptor responds to different inputs (electromagnetic, mechanical, chemical), transmitting them as signals that travel along nerve cells to the brain. The signals are then processed in the brain, resulting in immediate behaviors or memories. <u>vocabulary:</u> cell, tissue, organ, organ system, specialized cell, nutrient, cell respiration, homeostasis	
Content Area Literacy Standards	21st Century Skills	
● RST.6-8.1 Cite specific textual evidence to support analysis of science and technical texts. ● RST.6-8.2 Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions. ● RST.6-8.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics. ● RST.6-8.8 Distinguish among facts, reasoned judgment based on research findings, and speculation in a text. ● WHST.6-8.1 Write arguments focused on discipline-specific content. ● WHST.6-8.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. ● WHST.6-8.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. ● WHST.6-8.5 With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed. ● WHST.6-8.6 Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.	● <i>reason effectively</i> ● <i>make judgments and decisions</i> ● <i>communicate clearly</i> ● <i>collaborate with others</i> ● <i>access and evaluate information</i> ● <i>use and manage information</i> ● <i>be flexible</i>	

● WHST.6-8.7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. ● WHST.6-8.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. ● WHST.6-8.9 Draw evidence from informational texts to support analysis, reflection, and research.	
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Stage 2 - Evidence	
<i>Evaluative Criteria</i>	<i>Assessment Evidence</i>
	PERFORMANCE TASK(S):
	OTHER EVIDENCE:

Stage 3 – Learning Plan	
Summary of Key Learning Events and Instruction	
<i>Language Arts Integration</i>	<i>Mathematics Integration</i>
● 1.OA.1 Use	● 1.OA.1 Use
<i>Technology Integration</i>	<i>District Materials</i>

● 1.OA.1 Use	
<i>Science and Engineering Practices</i>	