

Human Anatomy and Physiology ACC:

Structure and Function (Transport)

Stage 1 Desired Results		
ESTABLISHED GOALS: <u>Competencies:</u> Structure & Function Students will demonstrate the ability to use evidence to support claims about the relationship among structure and function of natural and human designed objects. Stability & Change in Systems Students will demonstrate the ability to investigate and analyze static and dynamic conditions of natural and human designed systems in order to explain and predict changes over time. Nature of Science Student will demonstrate the ability to work collaboratively and individually to generate testable questions or define problems, plan and conduct investigations using a variety of research methods in a various settings, analyze and interpret data, reason with evidence to construct explanations in light of existing theory and previous research, and effectively communicate the research processes and conclusions. - 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> - HS-LS1-2. Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms. - HS-LS1-3 Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.	Transfer	
	Students will be able to independently use their learning to apply the principles of homeostasis to their personal health.	
	Meaning	
	ENDURING UNDERSTANDINGS Students will understand that... - models (e.g., physical, mathematical, computer models) can be used to simulate systems and interactions—including energy, matter, and information flows—within and between systems at different scales. - investigating or designing new systems or structures requires a detailed examination of the properties of different materials, the structures of different components, and connections of components to reveal its function and/or solve a problem. - feedback (negative or positive) can stabilize or destabilize a system.	ESSENTIAL QUESTIONS Which system is most vital for supporting life?
	Acquisition	
	Students will know... - that systems of specialized cells within organisms help them perform the essential functions of life. - that multicellular organisms have a hierarchical structural organization, in which any one system is made up of numerous parts and is itself a component of the next level. - that feedback mechanisms maintain a living system's internal conditions within certain limits and mediate behaviors, allowing it to remain alive and functional even as external conditions change within some range. Feedback mechanisms can encourage (through positive feedback) or discourage (negative feedback) what	Students will be skilled at... - describing position and structure. - developing and using models. - planning and conducting investigations.

	is going on inside the living system. • that the body is made up of specific chemical constituents that allow the systems to function properly. • that body cells, tissues, organs and systems can be plagued by diseases that can compromise homeostasis. <u>vocabulary:</u> chromosomes, diffusion, osmosis, facilitated diffusion, active transport, homeostasis, negative feedback, positive feedback, anatomy, physiology, organs, organ systems, anatomical terms, anatomical positions, body cavities, tissue, nervous, endocrine, digestive, respiratory, circulatory, lymphatic, epithelial, connective, epithelium, appendicular, axial, cardiac, atherosclerosis, respiration, alimentary canal	
Content Area Literacy Standards		21st Century Skills
• RST.11-12.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. • RST.11-12.2 Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms. • RST.11-12.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text. • RST.11-12.4 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 <i>grades 11-12 texts and topics</i>. • RST.11-12.5 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. • RST.11-12.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. • RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. • RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. • WHST.11-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes. • WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. • WHST.11-12.6 Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. • WHST.11-12.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. • WHST.11-12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text		• <i>make judgments and decisions</i> • <i>work creatively with others</i> • <i>communicate clearly</i> • <i>collaborate with others</i>

selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation • WHST.11-12.9 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 Subunits/ Systems: Respiratory Circulatory Lymphatic Digestion	
<i>Language Arts Integration</i>	<i>Mathematics Integration</i>
1.OA.1 Use	1.OA.1 Use

Technology Integration	District Materials
1.OA.1 Use	
Science and Engineering Practices	
S&EP 2. Developing and using models S&EP 3. Planning and carrying out investigations S&EP 6. Constructing explanations (for science) and designing solutions (for engineering) S&EP 8. Obtaining, evaluating, and communicating information	