

Grade 4: Structure, Function and Information Processing

Stage 1 Desired Results		
ESTABLISHED GOALS: <u>Competencies:</u> <u>Nature of Science and Engineering</u> - Students 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 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. <u>Cause & Effect</u> - Students will demonstrate the ability to investigate, explain, and evaluate potential causal relationships by using evidence to support claims and predictions about the mechanisms that drive those relationships. <u>System and System Models</u> - Students will demonstrate the ability to investigate and analyze a natural or human designed system in terms of its boundaries, inputs, outputs, interactions, and behaviors and use this information to develop a system model that can be used to understand and empirically evaluate the accuracy of models in terms of representing the underlying system. <u>Content Standards:</u> 4-PS4-2: Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. 4-LS1-1: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. 4-LS1-2: Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.	Transfer	
	Students will be able to independently use their learning to use a model to develop an argument.	
	Meaning	
	ENDURING UNDERSTANDINGS Students will understand that... - cause and effect relationships are routinely identified. - a system can be described in terms of its components and their interactions.	ESSENTIAL QUESTIONS What is the most important structure for the survival of an animal?
	Acquisition	
	Students will know... - that an object can be seen when light reflected from its surface enters the eye. - that plants and animals have both internal and external structures that serve various functions in growth, survival, behavior and reproduction. - that different sense receptors are specialized for particular kinds of information, which may be then processed by the animal's brain. Animals are able to use their perceptions and memories to guide their actions. <u>vocabulary:</u> bicep, bones, brain, cornea, dissect, experiment, function, heart, illusion, iris, joint, lens, light, model, muscle, nerves, nervous system, nocturnal, observe, pupil, retina, sensory nerves, skeleton, structure, system, tendon, vision	Students will be skilled at... - constructing an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction with evidence, data, and/or a model to support. - using a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. - identifying cause and effect relationships. - developing a model to describe that light reflecting from objects and entering the eye allows objects to be seen.
Content Area Literacy Standards		21st Century Skills
not applicable		- use systems thinking - think creatively - communicate clearly

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>
• SL.4.5 - Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes. • W.4.1 - Write opinion pieces on topics or texts, supporting a point of view with reasons and information.	• MP.4 Model with mathematics. • 4.G.A.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. • 4.G.A.3 Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.
<i>Technology Integration</i>	<i>District Materials</i>