

Grade 3: Plants and Animals Through Time

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>Structure and Function</u> - Students will demonstrate the ability to use evidence to support claims about the relationship among structure and function of natural and human designed objects. <u>Content Standards:</u> 3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. 3-LS2-1. Construct an argument that some animals form groups that help members survive. 3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exist in a group of similar organisms. 3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment. 3-LS4-1. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago. 3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. 3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. 3-LS4-4. Make a claim about the merit of a solution to a problem caused	Transfer	
	<i>Students will be able to independently use their learning to make informed decisions based on understanding of causal relationships in the environment.</i>	
	Meaning	
	ENDURING UNDERSTANDINGS <i>Students will understand that...</i> - similarities and differences in patterns can be used to sort and classify natural phenomena. - patterns of change can be used to make predictions. - cause and effect relationships are routinely identified and used to explain change. - observable phenomena exist from very short to very long time periods. - a system can be described in terms of its components and their interactions. - knowledge of relevant scientific concepts and research findings is important in engineering. - science assumes consistent patterns in the natural system.	ESSENTIAL QUESTIONS How does where you live affect how you live?
	Acquisition	
	<i>Students will know...</i> - that when the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die. - that being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size. - that some kinds of plants and animals that once lived on Earth are no longer found anywhere. - that fossils provide evidence about the types of organisms that lived long ago and also about the	<i>Students will be skilled at...</i> - analyzing and interpreting data on the diversity of life in plants and animals. - analyzing and interpreting data from fossils. - using evidence to distinguish between those organisms which survive well in a habitat and those which survive less well (or not at all). - making a claim and constructing an argument with evidence and data that in a particular habitat, some organisms survive better than others. - developing models to describe that organisms have unique life cycles, but all have these phases in common: birth, growth, reproduction, and death.

when the environment changes and the types of plants and animals that live there may change.	<i>nature of their environments.</i> • <i>that for any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all.</i> • <i>that populations live in a variety of habitats, and change in those habitats affects the organisms living there.</i> • <i>that reproduction is essential to the continued existence of every kind of organism.</i> • <i>that plants and animals have unique and diverse life cycles.</i> • <i>that many characteristics of organisms are inherited from their parents.</i> • <i>that other characteristics result from individuals' interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment.</i> • <i>that different organisms vary in how they look and function because they have different inherited information.</i> • <i>that the environment also affects the traits that an organism develops.</i> • <i>that sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing.</i> <u><i>student vocabulary:</i></u> <i>acquired trait, adaptation, ancestor, artificial, artificial selection, attract, behavior, birth, bones, breed, carnivore, chrysalis, communicate, constraint, cycle, death, desert, dinosaur, disease, dissect, environment, extinct, flower, forest, force, fossil, fruit, generation, graph, grassland, gravity, growth, habitat, herbivore, inherit, inherited trait, larva, leaf, life cycle, life stage, malaria, metamorphosis, natural selection, nectar, ocean, offspring, ovary, paleontologist, parasite, pattern, petal, polar, pollen, pollination, pollinator, population, predator, protection, pupa, quarry, reproduction, seed, seedling, skeleton, siblings, social behavior, species, stamen, stigma,</i>	• <i>comparing and contrasting the effects of time on the diversity of life in habitats (ie: forests/ponds, deserts, grasslands, rain forests, polar ice, tidepools.</i>
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	<i>survive, swamp, timeline, trace fossil, trait, vegetable</i> <i>teacher vocabulary: claim, design, engineer, evidence, experiment, measure, model, observe, pattern, predict, selection, variation, variety</i>	
Content Area Literacy Standards		21st Century Skills
not applicable		• <i>analyze and interpret data</i> • <i>access and evaluate information</i> • <i>communicate clearly</i>

Stage 2 - Evidence	
Evaluative Criteria	Assessment Evidence
	PERFORMANCE TASK(S):
	OTHER EVIDENCE:

Stage 3 – Learning Plan	
Summary of Key Learning Events and Instruction	
Language Arts Integration	Mathematics Integration
• RI.3.2 Determine the main idea of a text; recount the key details and explain how they support the main idea. • RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect • W.3.1 Write opinion pieces on topics or texts, supporting a point of view with reasons • W.3.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly. • W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. • SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.	• MP.5 Use appropriate tools strategically. • 3.NBT Number and Operations in Base Ten • 3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. • 3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.
Technology Integration	District Materials

