

Grade 7: Change Over Time

Stage 1 Desired Results		
ESTABLISHED GOALS: <u>Competencies:</u> <i>Patterns- Students will observe, predict, and analyze patterns in order to support evidence based claims about relationships (e.g., cause and effect, structure and function, macroscopic and microscopic).</i> <i>Nature of Science- Students will work collaboratively and individually to generate testable questions or define problems in terms of given constraints and criteria; plan and conduct investigations or apply engineering design practices to analyze and interpret data, and construct and communicate evidence-based explanations or possible optimal solutions.</i> <i>Students will demonstrate the ability to analyze and summarize text and integrate knowledge to make meaning of discipline-specific materials.</i> <i>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.</i> <i>Students will demonstrate the ability to speak purposefully and effectively by strategically making decisions about content, language use, and discourse style.</i> <u>Content Standards:</u> MS-LS4-1 Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past. MS-LS4-2 Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships. MS-LS4-3 Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.	Transfer	
	<i>Students will be able to independently use their learning to analyze and interpret evolutionary relationships.</i>	
	Meaning	
	ENDURING UNDERSTANDINGS <i>Students will understand that...</i> - there are multiple pieces of evidence that support the theory of evolution. - populations change due to natural selection; speciation can occur over a long period of time. - there are patterns in common ancestry.	ESSENTIAL QUESTIONS - Why do species evolve? - How do human traits show connection to other life forms?
	Acquisition	
	<i>Students will know...</i> - that the collection of fossils and their placement in chronological order (e.g., through the location of the sedimentary layers in which they are found or through radioactive dating) is known as the fossil record. It documents the existence, diversity, extinction, and change of many life forms throughout the history of life on Earth. - that anatomical similarities and differences between various organisms living today and between them and organisms in the fossil record, enable the reconstruction of evolutionary history and the inference of lines of evolutionary descent. - that comparison of the embryological development of different species also reveals similarities that show - that relationships not evident in the fully-formed anatomy. - that natural selection leads to the predominance of	<i>Students will be skilled at...</i> - analyzing and interpreting data for past patterns to predict future patterns. - using theories to objectively explore and describe the natural world. - investigating changes over time and revising or reinterpreting knowledge based on new evidence. - drawing conclusions and developing scientific explanations.

● MS-LS4-4 Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. ● MS-LS4-6 Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.	certain traits in a population, and the suppression of others. ● that adaptation by natural selection acting over generations is one important process by which species change over time in response to changes in environmental conditions. Traits that support successful survival and reproduction in the new environment become more common; those that do not become less common. Thus, the distribution of traits in a population changes. <u>vocabulary:</u> fossil, ancestor, evolution, natural selection, artificial selection, variation, theory, DNA, mutation, extinct, geologic time scale, embryo, homologous structures, adaptation	
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. ● 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		● <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>

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>	