Life Science Unit 4- Desired Results

ESTABLISHED GOALS:

MS-LS4-1: Analyze and intercept data for patterns in the fossil record that document the existence, diversity, extinction, and change the life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past
[Clarification Statement: Emphasis is on finding patterns of changes in the level of complexity of anatomical structures in organisms and the chronological order of fossil appearance in the rock layers]

MS-LS4-2: Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern fossil organisms to infer evolutionary relationships. [Clarification Statement: Emphasis is on explanations of the evolutionary relationships among organisms in terms of similarity or differences of the gross appearance of anatomical structures.]

Transfer
Students will be able to independently use their learning to…
Support a scientific explanation or argument based on evidence
Observe and explore a given system or concept to deepen scientific understanding

Meaning

UNDERSTANDING:
Students will understand that…

Graphs, charts, and images can be used to identify patterns in data. (MS-LS4-1)

Patterns can be used to identify cause and effect relationships. (MS-LS4-2)

Phenomena may have more than one cause, and some cause and effect relationships in systems can only be

Meaning

ESSENTIAL QUESTIONS

How do organisms change over time in response to changes in the environment?

Acquisition
Students will know…

Evidence of Common Ancestry and Diversity:

The collection of fossils and their placement in chronological order (e.g., through the location of the sedimentary layers in

Acquisition
Students will be skilled at…

Analyze and interpret data to determine similarities and differences in findings. (MS-LS4-1)

Apply scientific ideas to construct an explanation for real world phenomena, examples, or events. (MS-LS4

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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.[Clarification Statement: Emphasis is on inferring general patterns of relatedness among embryos of different organisms by comparing the macroscopic appearance of diagrams or pictures.] **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. [Clarification Statement: Emphasis is on using simple probability statements and proportional reasoning to construct explanations.] **MS-LS4-5:** Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms. [Clarification Statement: Emphasis is on synthesizing information from reliable sources about the influence of humans on genetic outcomes in artificial selection (such as genetic modification, animal husbandry, gene therapy); and, on the positive and	**Natural Selection:** ● Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. (MS-LS4-3) ● Natural selection leads to the predominance of certain traits in a population, and the suppression of others (MS-LS4-4) ● In artificial selection, humans have the capacity to influence certain characteristics of organisms by selective breeding. One can choose desired parental traits determined by genes, which are then passed to offspring. (MS-LS4-5) **Adaptation:** ● Adaptation by natural selection acting over generations is one important process by which species change over time in response to changes in environmental conditions. (MS-LS4-6) ● Traits that support successful survival and reproduction in the new environment become more common; those who do not become less common. Thus, the distribution of traits in a population changes. (MS-LS4-6)	● Gather, read, and synthesize information from multiple appropriate sources and assess the credibility, accuracy, and possible bias of each publication and methods used and describe how they are supported or not supported by evidence. (MS-LS4-5) ● Use mathematical representation to support scientific conclusions and design solutions. (MS-LS4-6)

negative impacts these technologies have on society as well as the technologies leading to these scientific discoveries.] **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. [Clarification Statement: Emphasis is on using mathematical models, probability statements, and proportional reasoning to support explanations of trends in changes to population over time.]		

Stage 2 - Evidence

Evaluate Criteria	Assessment Evidence
	PERFORMANCE TASK(S):
	OTHER EVIDENCE: 6th Grade Introduction to Life Science Quarter 4 District Assessment: Biological Evolution - Unity and Diversity

Stage 3 - Learning Plan

Summary of Key Learning Events and Instruction