



8th Grade Science Pacing Guide 2020-2021

4.0 Target		3.0 Target		2.0 Target		Tri 1	Tri 2	Tri 3
Unit 1: Weather and Catastrophic Events								
Develop detailed model(s) to illustrate the atmospheric circulation, oceanic circulation, and/or solar intensity of a given region and explain how these patterns have caused changes in regional climates.	ESS2-6: Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.	Develop and/or use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates with inaccuracies.		X				
Analyze and interpret patterns of various forms of data on a large scale events to identify the specific characteristics and causes of future catastrophic events.	ESS3-2: Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.	Analyze and interpret basic data on natural hazards to forecast future catastrophic events and identify technologies to mitigate their effects.		X				
Unit 2: Changes Through Time								
Analyze and interpret complex data sets or methods to determine the age of different fossils.	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.	Identify 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.		X				
Analyze patterns in DNA or morphology to explain ancestry and infer descent.	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.	Identifies similarities and differences among modern organisms and fossil organisms to show relationships.			X			
Unit 3: Genetic Variation and Engineering								
Explore research/data to construct a written explanation and/or model (using qualitative and quantitative data) for examples of genetic variations in specific populations. Analyze the impact of specific genetic changes on the probability of survival and reproduction in different environments.	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.	Construct an explanation based on evidence with some errors that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.			X			
Model exceptional understanding of advanced technologies and explain the influence on inheritance of traits.	LS4-5: Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.	Identify and describe ways humans influence the inheritance of desired traits in organisms.			X			
Unit 4: Human Impact and Interaction								
Explain how the molecular structures of greenhouse gases influence energy in Earth's atmosphere.	ESS3-5: Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.	Identify the factors that can cause a rise in global temperatures.						X
Construct an argument based on student collected empirical evidence that illustrates how potential changes to physical or biological components of ecosystems affect populations.	LS2-4: Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.	Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations with some inaccuracies.						X
Design and implement a method for monitoring/reducing personal human impact over a period of time	ESS3-3: Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.	Apply scientific principles to design a less effective method for monitoring human impact on the environment.						X
Engineering Design								
N/A	ETS1-1: Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.	N/A					X	
N/A	ETS1-2: Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.	N/A					X	
N/A	ETS1-3: Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.	N/A					X	
N/A	ETS1-4: Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.	N/A					X	