KCSD96

23-24 Grade 6 Science Pacing Guide

4.0 Target	3.0 Target	T1	T2	T3

Light & Matter:
Why do we sometimes see different things when looking at the same object?

| Students have multiple ways to demonstrate extension. For more information or to see a scoring rubric, contact your child's teacher. | **PS4-2: WAVE REFLECTION, ABSORPTION, AND TRANSMISSION** -Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials. (Structure and Function) | X | | |

Thermal Energy:
How can containers keep stuff from warming up or cooling down?

| Students have multiple ways to demonstrate extension. For more information or to see a scoring rubric, contact your child's teacher. | **PS1-4: THERMAL ENERGY AND PARTICAL MOTION** - Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed. (Cause and Effect)
 PS3-3: THERMAL ENERGY TRANSFER SOLUTION - Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer. (Energy and Matter)
 PS3-4: THERMAL ENERGY TRANSFER - Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample. (Scale, Proportion, and Quantity)
 PS3-5: ENERGY TRANSFER TO OR FROM AN OBJECT - Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object. (Energy and Matter)
 ***PS4-2: WAVE REFLECTION, ABSORPTION**, AND TRANSMISSION** -Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials. (Structure and Function)" | X | | |

Weather, Climate, & Water Cycling:
Why does a lot of hail, rain, or snow fall at some times and not others?

| Students have multiple ways to demonstrate extension. For more information or to see a scoring rubric, contact your child's teacher. | **ESS2-4: CYCLING OF WATER THROUGH EARTH'S SYSTEMS** - Develop a model to describe the cycling of water through earth's systems driven by energy from the sun and the force of gravity. (Energy and Matter)
 ESS2-5: INTERACTING AIR MASSES AND WEATHER - Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions. (Cause and Effect)
 ESS2-6: ATMOSPHERIC AND OCEANIC CIRCULATION - 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. (Systems and System Models)
 ***PS4-2: WAVE REFLECTION, ABSORPTION, AND TRANSMISSION** - Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials. (Structure and Function) | | X | |

Plate Tectonics & Rock Cycling:
What causes Earth's surface to change?

| Students have multiple ways to demonstrate extension. For more information or to see a scoring rubric, contact your child's teacher. | **ESS1-4: GEOLOGIC TIME SCALE** - Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history. (Scale, Proportion, and Quantity)
 ESS2-1: CYCLING OF EARTH'S MATERIALS - Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process. (Stability and Change)
 ESS2-2: GEOSCIENCE PROCESSES AT VARYING SCALES - Construct an explanation based on evidence for how geoscience processes have changed earth's surface at varying time and spatial scales.
 ESS 2-3: EVIDENCE OF PLATE TECTONICS - Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions. (Patterns)" | | X | |

Natural Hazards:
Where do natural hazards happen and how do we prepare for them?

Students have multiple ways to demonstrate extension. For more information or to see a scoring rubric, contact your child's teacher.	ESS3-2: NATURAL HAZARDS - Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. (Patterns) *PS4-1: WAVE PROPERTIES - Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave. (Patterns)"			X

Cells & Systems:
How do living things heal?

Students have multiple ways to demonstrate extension. For more information or to see a scoring rubric, contact your child's teacher.	LS1-1: CELL THEORY - Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells. (Scale, Proportion, and Quantity) LS1-2: CELL PARTS & FUNCTIONS - Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function. (Structure and Function) LS1-3: INTERACTING BODY SYSTEMS - Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. (Systems and System Models) LS1-8: INFORMATION PROCESSING - Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories. (Cause and Effect) *LS4-3: EMBRYOLOGICAL EVIDENCE OF COMMON ANCESTRY - 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."			X

Engineering Design

Does Not Extend	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.	X	X	X
Does Not Extend	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.	X	X	X
Does Not Extend	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.	X	X	X
Does Not Extend	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.	X	X	X