6th Grade Science Essential Learnings Quarter View

Our district is committed to providing a guaranteed and viable curriculum for all students. A guaranteed curriculum ensures all students have the opportunity to learn the same essential learnings. A viable curriculum ensures it is possible for all students to learn in the allotted time. The quarter view below lists the essential learnings (EL's) students will be taught and assessed during each nine (9) week quarter. The goal is for every student to become proficient in every essential learning by the end of the school year.

Quarter 1

Introduction to science
-engineering/design process (Helping Harry lab)
-graphing
-reading a graph

Basic ecosystems mini unit
MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.
Objectives: students will understand and define biotic/abiotic factors and construct food chains and food webs while labeling producers, consumers, herbivores, omnivores, and carnivores

Quarter 2

Introduction of Wave Energy
MS-PS4-1. 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.
Objectives: students will label the parts of a wave and use amplitude to figure out how much energy a wave contains

MS-PS4-2. Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.
Objectives: students will learn the properties of a wave and utilize pictures to describe the term depicted

MS-PS4-3. Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.
Objective: students will qualitatively tell the difference between analog and digital signals

Quarter 3

Earth/Moon Systems

MS-ESS1-1. Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.
Objective: students will learn and model the moon phases and eclipses. Students will also create models to describe the tides from a view of space.

Earth/Sun Systems:

MS-ESS1-3. Analyze and interpret data to determine scale properties of objects in the solar system.
Objective: students will determine how vast the solar system is as well as learn about the planets

MS-ESS1-2. Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.
Objective: students will describe the difference between gravity and weight, as well as learn the terms of inertia

MS-ESS1-1. Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.
Objective: Students will finally identify the seasons in terms of the tilt of the Earth, number of daylight hours, and the calendar

Quarter 4

Energy in Ecosystems
MS-LS1-6. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.
Objective: students will determine the important components of photosynthesis and understand how it contributes to the food web

MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
Objective: students will know the terms limiting factors and homeostasis to describe how various resources affect an ecosystem

MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

Objective: students will understand how organisms interact with each other, including predator/prey and symbiotic relationships

MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services.
Objective: students will be able to describe how humans affect the environment, both positively and negatively