

# GOOD SHEPHERD EPISCOPAL SCHOOL

## 6<sup>th</sup> Grade Science Year at a Glance

Month	Unit/ Content Focus	Skills	NGSS Aligned
<b>August</b>	Expectations Lab Safety	Lab Safety	N/A
<b>September</b>	Lab Safety Scientific Method Metric	Lab safety Metric Scientific Method Plan and carry out an investigation- Paper Airplane Lab	<p>Convert within metric units using common prefixes. Estimate lengths, weights, and volumes using the metric system.</p> <p>Explain why scientists keep track of their findings. Define the steps of the scientific method.</p> <p>MS-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</p> <p>ETS1.A: Defining and Delimiting Engineering Problems The more precisely a design task's criteria and constraints can be defined, the more likely it is that the designed solution will be successful. Specification of constraints includes consideration of scientific principles and other relevant knowledge that are likely to limit possible solutions and potential impacts on people and the natural environment that may limit possible solutions.</p>

<p><b>October</b></p>	<p>Gravity Newton's Law and Forces CO2 Cars</p>	<p>Design a solution to a problem Plan an investigation Construct and interpret graphical displays of data</p>	<p>PS2-4 Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects. PS2-1 Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.* PS2-3 Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object. PS3-1 Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.</p>
<p><b>November</b></p>	<p>Newton's Laws and Forces Cont. Earth/Sun System Galaxies Cont.</p>	<p>Design a solution to a problem Plan an investigation Construct, analyze and interpret graphical displays of data Develop and use a model Collect analyze and interpret data Ask questions to clarify evidence</p>	<p>PS2-1 Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.* PS2-3 Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object. PS3-1 Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.  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. ESS1-2 Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system. ESS1-3 Analyze and interpret data to determine scale properties of objects in the solar system.</p>

<p><b>December</b></p>	<p>Earth/Sun System Galaxies Cont. Gravity</p>	<p>Collect analyze and interpret data Ask questions to clarify evidence Develop and use a model Gather and Synthesize information</p>	<p>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. ESS1-2 Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system. ESS1-3 Analyze and interpret data to determine scale properties of objects in the solar system.</p>
<p><b>January</b></p>	<p>COE - Waves, Coastal Ecosystems, and Caves Atomic Theory</p>	<p>Using mathematical models Engineering design Constructing explanations based on evidence Develop and use a model</p>	<p>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 of a wave. ESS3-3 Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment (see also 5th grade standard) ESS2-2 Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales. PS1-1 Develop models to describe the atomic composition of simple molecules and extended structures.</p>
<p><b>February</b></p>	<p>Atomic Theory Weather</p>	<p>Develop and use a model Analyze and interpret data Ask scientific questions Collect data</p>	<p>PS1-1 Develop models to describe the atomic composition of simple molecules and extended structures. 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. ESS3-2 Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. ESS3-5 Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century. ESS2-5 Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.</p>

<b>March</b>	Weather Climate Change/Energy	Develop and use a model Analyze and interpret data Ask scientific questions Collect data	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. ESS3-2 Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. ESS2-5 Collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions. ESS3-5 Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.
<b>April</b>	Climate Change/Energy Population Dynamics	Ask scientific questions Constructing explanations based on evidence Analyze and interpret data	ESS3-5 Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century. LS2-2 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations. LS2-1 Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
<b>May</b> FINALS	Population Dynamics	Constructing explanations based on evidence Use scientific principles to evaluate designs for function and effectiveness	LS2-3 Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations. *If time allows - LS2-5 Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

*This YAG will change. It is meant only to provide a quick look at the topics that will be addressed during the school year. Class progress, ERB testing, school trips, and inclement weather will all merit YAG adjustments.*