

What is Science? Inquiry & Design (Approximately 2 weeks as per Pacing Guide)

Inquiry and design runs through each unit. Please see the following:

- K-5 Scope and Sequence (please see the Inquiry & Design section):
http://static.pdesas.org/content/documents/CF-Science_K-5_Scope_Sequence.pdf
- Inquiry Design & Big Idea and Essential Questions:
http://static.pdesas.org/content/documents/CF-Science_LTTG_BI_EQ_Inquiry.pdf
- K-12 Inquiry and Design (Science Practices)
http://static.pdesas.org/content/documents/CF_Science_K-12_Inquiry_Design_Continuum.pdf
- Framework Connected with Standards
http://static.pdesas.org/content/documents/CF-Science_Kindergarten.pdf

Unit 1: Earth and Space Science (Approximately 3 weeks as per Pacing Guide)

Big Idea	Essential Questions	Concepts	Competencies	Vocabulary
The Earth is a complex and dynamic set of interconnected systems (e.g. geosphere, hydrosphere, atmosphere, biosphere) that interact over a wide range of temporal and spatial scales.	How and why is the Earth constantly changing?	Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time.	Use and share observations of local weather conditions to describe patterns over time.	Sunny Changes Cloudy Cold /Cool Describe Foggy Hot Observe Partly Cloudy Patterns Predict Rainy Snowy Warm weather Windy

		Sunlight warms the Earth's surface.	Make observations to determine the effect of sunlight on the Earth's surface.	Changes Describe Earth Surface Sunlight Observe Predict
			Use tools and materials to design and build a structure that will reduce (or increase) the warming effect of sunlight on an area.	Build Canopy Cool Materials Structure Sunlight Tent Tools Umbrella Warming effect
		Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events.	Ask questions to obtain information about the purpose of weather forecasting to prepare for and respond to weather.	Conditions Design Evaluate Hazard Natural Natural hazard Process Region Solution Weather
		Plants and animals can change their environment	Use evidence to show how plants and animals are able to change their environment to meet their needs.	Needs

Unit 2: Physical Science: (Approximately 4-5 weeks/January as per Pacing Guide)

Big Idea	Essential Questions	Concepts	Competencies	Vocabulary
Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.	How can one explain the structure, properties, and interactions of matter?	Different materials are suited to different purposes.	Analyze data from testing objects made from different materials to determine if a proposed object functions as intended.	Data Test
		A variety of objects can be built up from small parts.	Design an object built from a small set of pieces to solve a problem and compare solutions designed by peers given the same set of pieces	Problem Solve
Interactions between any two objects can cause changes in one or both.	How can one explain and predict interactions between objects within systems?	Pushes and pulls can have different strengths and directions.	Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.	Cause and Effect Explanation Motion Push Pull Speed
		Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it.		
		Objects pull or push each other when they collide or are quickly connected and can change motion.	Analyze data to determine if a design solution works as intended to change the direction or speed of an object with a push or a pull.	Cause and Effect Design Speed
		A bigger push or pull makes things speed up or slow down more quickly.	Plan and conduct a simple test to compare the effects of different strengths or different directions of pushes and pulls on the motion of an	Investigation Speed

K Scope & Sequence

			object.	
		When objects touch or collide, they push on one another and can change motion.	Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or pull.	Data Design Solution
Interactions of objects or systems of objects can be predicted and explained using the concept of energy transfer and conservation.	How is energy transferred and conserved?	The more an object is pushed or pulled makes things speed up or slow down	Carry out investigations to provide evidence that energy is being transferred or conserved by objects.	Conserved Energy Investigation Transfer
		The amount and position of mass affect how an object moves.		Balance Conserved Energy Investigation Mass Rotate Transfer

Unit 3: Life Science:(Approximately 5 weeks/March as per Pacing Guide)

Big Idea	Essential Questions	Concepts	Competencies	Vocabulary
All organisms are made of cells and can be characterized by common aspects of their structure and functioning.	How do organisms live, grow, respond to their environment, and reproduce?	Animals need food (plants and other animals) and water in order to live and grow.	Use observations to describe what animals need to survive.	Environment Leaves Organism Patterns Roots Stems Structure Survive
		Plants need water and light in order to live and grow.	Use observations to describe what plants need to survive.	Cause and effect Leaves Environment Organism Roots Stems Structure Survive
		Living things need water, air, and resources from the land, and they live in places that have the things they need.	Use a model to explain the relationship between the needs of different plants or animals and the places they live.	Habitat Model Needs Relationship
		Animals have identifiable structures and behaviors.	Observe and describe structures of organisms and functions of the	Function Patterns

			structures	Structure
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Unit 4: Earth and Space Science (Approximately 2 weeks/April as per Pacing Guide)

The Earth's surface processes affect and are affected by human activities.	How do Earth's processes and human activities affect each other?	People can make choices to reduce impact on the environment.	Describe ways to reduce impact of humans on the land, water, and air.	Air Choices Impact Land Water
		Things that people do to live can affect the world around them.	Describe and communicate solutions to reduce impact of humans on land, water, and air.	Recycle Reduce Reuse Solutions
		Living things need water, air, and resources from the land. Organisms live in places that have the things they need.	Using evidence, state an argument how plants and animals can change the environment to meet their needs.	Argument Evidence

Review science concepts for the remainder of the school year.

K Scope & Sequence