

1st grade Scope & Sequence

Units 1-4: Inquiry and Design

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.p
- Framework with Connected Standards
http://static.pdesas.org/content/documents/CF-Science_Grade1.pdf

Unit 1 & 4: Life Science (Approximately 2 weeks first marking period and 4 weeks as per the 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?	Organisms have external structures that serve various functions in growth, survival, behavior, and reproduction.	Observe and categorize living and nonliving things by external characteristics.	Organism Structures
		Organisms have external structures that help them survive, grow and meet their needs.	Make observations and describe the different parts of organisms that help them survive, grow, and meet their needs	Grow Movement Observations Parts (roots, leaves, flowers, stems, fruit) Reproduce Survival /Survive

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			Design a model that replicates the function of an organism's structure.	Behavior Model
		Parents and offspring engage in behaviors that help the offspring to survive.	Observe and determine patterns in behavior of parents and offspring that help offspring survive.	Behavior Observe Offspring Patterns
Organisms have external structures that help them survive, grow and meet their needs.	Organisms have external structures that help them survive, grow and meet their needs.	Organisms have external structures that help them survive, grow and meet their needs	Classify plants and animals according to physical characteristics they share.	Classify Physical characteristic
		Every human made product is designed by applying knowledge of the natural world and is built using materials from nature.	Use materials to design a solution to a human problem by mimicking how plant or animals use their external parts to help them survive, grow and meet their needs.	Mimic Problem Solution
Heredity refers to specific mechanisms by which characteristics or traits are passed from one generation to the next via genes, and explains why offspring resemble, but are not identical to, their parents.	How are the characteristics of one generation passed to the next? How can individuals of the same species and even siblings have different characteristics?	Young animals are very much but not exactly like their parents. Plants also are very much, but not exactly, like their parents.	Make observations and to construct an evidence-based account that young plants and animals are alike but not exactly like their parents.	Similar Vary
		Adult plants and animals have young. In many kinds of animals, parents and the offspring engage in behaviors that help the offspring to survive.	Note patterns in characteristics or behaviors that appear in adult and offspring (e.g. hair color, eye color,).	Offspring Patterns
		Offspring resemble their parents, but can also vary in many ways.	Conduct an investigation (e.g. plant seeds, eggs) and cite evidence of change from young to adult.	Characteristics Evidence Inherit Offspring Parents

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		Plants and animals have a life cycle.	Observe and compare the stages of life cycles of organisms (plants & animals).	Plants Animals Life cycles
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Unit 2:Earth and Space Science: (Approximately 6 weeks as per the Pacing Guide)

Big Idea	Essential Questions	Concepts	Competencies	Vocabulary
The universe is composed of a variety of different objects, which are organized into systems each of, which develops according to accepted physical processes and laws	What is the universe, and what is Earth's place in it?	Observable changes and patterns in the sky are caused by motions in the Earth-moon-sun system.	Use observations of stars, moon, and sun in the day and night sky to describe patterns that can be predicted.	Changes Describe Moon Observe Pattern Predict Star Sun System
		The motion of the sun, moon and earth relates to time. (days, months, years).	Use observations to compare the motion of the sun, earth and moon as it relates to time.	Earth Moon Motion Sun
		Observable changes and patterns in the sky are caused by motions in the Earth-moon-sun system.	Observe and describe patterns of objects in the sky that are cyclic and can be predicted.	Patterns
		Patterns of the motion of the sun, moon and stars in the sky can be observed, described and predicted.	Observe, describe, and predict patterns of daily change in the appearance and visibility of the moon and sun.	Predict Sky Sunrise Sunset

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		Seasonal patterns of sunrise and set can be observed, described and predicted.	Observe, describe, and predict patterns of seasonal change in the timing and position of sunrise and sunset	Sunrise Sunset
		Through the use of tools and or media objects can be observed more clearly than with the naked eye.	Use scientific tools such as binoculars or telescopes to enhance observations	Binocular Telescope Tools

Unit 3: Physical Science: (Approximately 6 weeks as per the Pacing Guide)

Big Idea	Essential Questions	Concepts	Competencies	Vocabulary
Waves are a repeating pattern of motion that transfers energy from place to place without overall displacement of matter.	How are waves used to transfer energy and information?	Sound can make matter vibrate, and vibrating matter can make sound.	Plan and conduct investigations to provide evidence that vibrating materials can make sound.	Energy Investigation Materials Sound Vibration Waves
		An object can be seen when light reflected from its surface enters the eyes.	Investigate and explain that for an object to be seen, light must be reflected off the object and enter the eye.	Energy Light Reflection Surface Wave
		Light travels from place to place.	Make observations to construct an evidence-based account that light travels from place to place.	Light

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		Mirrors can be used to reflect light.	Plan and conduct an investigation to redirect light beams using mirrors.	Light beam Mirror Reflection
		Materials allow light to pass through them in varying degrees.	Investigate to determine the effect of placing objects made of different materials in a beam of light.	Materials Opaque Translucent Transparent
		Objects can be seen if light is available to illuminate the object or if they give off their own light.	Make observations to construct an evidence-based account that objects can be seen when illuminated.	Illuminate Light
		A variety of devices are used to communicate over long distances.	Use tools and materials to design a device that uses light or sound to solve the problem of communicating over a distance.	Communicate Distance Sound
		People depend on various technologies in their lives; human lives would be different without technology	Design and build a device that uses light to communicate.	Communicate Design Device