

DATE OF APPROVAL

ELEMENTARY STEELS VERTICAL ARTICULATION

TRIMESTER
1
TRIMESTER
2
TRIMESTER
3

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Project		<i>Designing a Severe Weather Bag</i>	<i>Designing an Animal Sanctuary</i>	<i>Record & Observe Life Cycle of Butterfly</i>	<i>Design & Build a Cart that can stop at a specific location</i>	<i>Create a model of energy transfer or transformation</i>	<i>Create a model showing the cycling of matter in an ecosystem</i>
Theme		Weather	Plant & Animal Survival	Organisms & Their Habitat	Investigating Forces	Energy Transfer	Energy & Matter in Ecosystems
Project		<i>Designing a Mini Golf Course</i>	<i>Building a Communication Device</i>	<i>Repurpose/ Design Something New</i>	<i>Research & Create a Presentation on an Endangered Animal</i>	<i>Analyzing the Structure & Function of a Living Thing Research</i>	<i>Investigating Chemical Reactions</i>
Theme		Pushes & Pulls	Exploring Light & Sound	Properties of Matter	Habitats & Change	Structure & Functions of Living Things	Investigating Matter
Project		<i>Creating a Model for an Animal, Plant, or Person to live in</i>	<i>Creating a Model showing how the Sun impacts the moon</i>	<i>Record & Create a Travel Journal Based on National Park Virtual Visits</i>	<i>Design a solution to stop hail damage</i>	<i>Model a tool or concept that will reduce the impact of a natural disaster.</i>	<i>Carbon Footprint Research Project</i>
Theme		Needs of Plants & Animals	Sun, Moon & Stars	Exploring Land & Water	Weather & Climate	Processes That Shape Earth	Solar System & Our Place In IT

Life Science

Phsycial Science

Earth & Space Science



Unit 1: Overview

Topics & Vocabulary Terms	Structure and Function in Plants and Animals -animal, body part, purpose, structure, safe, survive,flower, leaf, plant, root, stem,mimic, problem, solution Parents and Offspring: Traits and Inheritance -offspring, parent, species, trait, compare, contrast, describe, observe Growth and Development -behavior, survive, communicate, pattern
Projects & Artifacts	Designing an Animal Sanctuary
Resources	Core Knowledge: Plant and Animal Survival [Teacher Guide & Student Reader] STEELS Routine

Unit 2: Overview

Topics & Vocabulary Terms	Sound and Vibration: hear, sound, loud, quiet, soft, volume, cause, sound, vibrate Light: dark, light, lit, bright, dim, see Light & Materials: object, shadow, block, materials, surface, Beam, change, direction, light beam, mirror, shiny, Reflect
Projects & Artifacts	Build and test a device that uses sound or light to communicate over a distance.
Resources	Core Knowledge: Exploring Light & Sound [Teacher Guide & Student Reader] STEELS Routine

Unit 3: Overview

Topics & Vocabulary Terms	The Sun and Its Predictable Patterns -daytime, moon, nighttime, sky, star, sun,direction, east, north, pattern, south, star, sun, west, predict Annual Patterns of Sunrise and Sunset -identify, investigate, notice, observe,sunrise, sunset The Moon and Its Predictable Patterns -daytime, moon, nighttime, sky, star, sun,east, moon, rise, set, west,moon, pattern, predictable Stars and Their Predictable Patterns -Big Dipper, constellation, Polaris (North Star), star, constellation, pattern, predictable, star,constellation, data, pattern, predict
Projects & Artifacts	Students create models of the 8 phases of the Moon cycle.
Resources	Core Knowledge: Sun, Moon, & StarsI [Teacher Guide & Student Reader] STEELS Routine

Unit 1: Plants & Animal Survival

STAGE 1 | DESIRED RESULTS

Structure and Function

3.1.1.A Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

Growth and Development of Organisms

3.1.1.B Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.

Inheritance of Traits

3.1.1.C Make observations to construct an evidence based account that young plants and animals are like, but not exactly like, their parents.

Transfer

The structure, function, growth, and development of plants and animals help them survive.

Meaning

Big Ideas:

- Organisms have characteristic structures, functions, and behaviors that allow them to grow, reproduce, and die.
- The characteristic structures, functions, and behaviors of organisms change in predictable ways as they progress from birth to old age
- Offspring resemble but are not identical to, their parents due to traits being passed from one generation to the next via genes.

Essential Questions:

- How do the structures of organisms enable life's functions?
- How do organisms grow and develop?
- How are the characteristics of one generation related to the previous generation?

Acquisition

Knowledge:

- I know that different animals use their body parts in different ways to see, hear, grasp objects, protect

Skills:

- I can use materials to design a device that solves a specific problem or a solution to a specific problem.

	themselves, move from place to place, and seek, find, and take in food, water and air. • I understand that plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. • I know that animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. • I understand that adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. • I know that young animals are very much, but not exactly like, their parents. Plants	• I can read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world. • I can make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.
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	also are very much, but not exactly, like their parents.	
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Unit 2: Exploring Light & Sound

STAGE 1 | DESIRED RESULTS

Wave Properties

3.2.1.A Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.

Electromagnetic Radiation

3.2.1.B Make observations to construct an evidence based account that objects can be seen only when illuminated.

3.2.1.C Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.

Information Technologies and Instrumentation

3.2.1.D Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.

Transfer

Sound and Light waves can be used to communicate information

Meaning

Big Ideas:

- Waves are repeating patterns of motion that transfer energy and information without transferring matter.
- Electromagnetic radiation (e.g., radio, microwaves, light) can be modeled as a wave pattern of changing electric and magnetic fields that interact with matter.
- Electromagnetic radiation (e.g., radio, microwaves, light) can be modeled as a wave pattern of changing electric and magnetic fields that interact with matter.
- Useful modern technologies and instruments have been designed based on an understanding of waves and their interactions with matter.

Essential Questions:

- What are the characteristic properties and behaviors of waves?
- What is light? How can one explain the varied effects that involve light? What other forms of electromagnetic radiation are there?
- What is light? How can one explain the varied effects that involve light? What other forms of electromagnetic radiation are there?
- How are instruments that transmit and detect waves used to extend human senses?

Acquisition

Knowledge:

- I know that some materials allow light to pass through them, others allow only some light through, and others block

Skills:

- I can plan and conduct investigations collaboratively to produce evidence to answer a question.

	all the light and create a dark shadow on any surface beyond them, where light cannot reach. • I understand mirrors can be used to redirect a light beam. • I understand objects can be seen if light is available to illuminate them or if they give off their own light. • I know people also use a variety of devices to communicate (send and receive information) over long distances.	• I can make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. • I can use tools and materials provided to design a device that solves a specific problem.
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Unit 3: Sun, Moon, & Star

STAGE 1 | DESIRED RESULTS

The Universe and Its Stars

3.3.1.A Use observations of the sun, moon, and stars to describe patterns that can be predicted.

Earth and the Solar System

3.3.1.B Make observations at different times of year to relate the amount of daylight to the time of year.

Transfer

The patterns of the apparent movements of the sun, moon, and stars can be observed from Earth.

Meaning

Big Ideas:

- We can infer information about stars based on observations we make from Earth.
- Observations of the sky can be explained by predictable patterns of the movement of Earth, moon, sun and planets.

Essential Questions:

- What is the universe, and what is Earth's place in it?
- What is the universe, and what goes on in stars?
- What are the predictable patterns caused by Earth's movement in the solar system?

Acquisition

Knowledge:

- I understand patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted.
- I know seasonal patterns of sunrise and sunset can be observed, described, and predicted.

Skills:

- I can use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.
- I can make observations (firsthand or from the media) to collect data that can be used to make comparisons.