Curriculum Map: First Grade Science

Course: 1 Science Sub-topic: General

Grade(s): 1

Course Description: In 1st grade science, students will experience three science domains; Life Science, Physical Science, and Earth and Space Science. In each domain, hands on learning opportunities will be provided.

In Physical Science, students will explore topics realted to Matter (properties, interactions) and Energy (transference, reflection, surface, light and sound waves).

In Life Science, students will explor topics related to Plant and Animal Life (structure, behavior, adaptation, characteristics, life cycles)

In Earth and Space Science, students will learn about topics related to Space (systems, motion, patterns) and Earth (change, processes).

Unit: Physical Science

Unit Description: ***Physical Science-***

Matter

Unit Essential Questions: How can one explain the structure, properties, and interactions of matter?

How can on explain and predict interactions between objects within systems?

Unit Big Ideas: Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.

Interactions between any two object can cause changes in one or both.

Unit Materials: textbook, science kit, Teacher Pay Teacher, Tradebooks, internet, outdoor envirnonment

Unit Assignments:

Lesson	Objective	Standards	Assessment	Resources
Matter				

This Curriculum Map Unit has no Topics to display

Unit: Physical Science

Unit Description: ***Physical Science-***

Energy

Unit Essential Questions: How can one explain and predict interactions between objects within systems?

How is energy transferred and conserved?

How are waves used to transfer energy and information?

Unit Big Ideas: Interactions of objects or systems of objects can be predicted and explained using the concept of energy transfer and conservation.

Waves are a repeating pattern of motion that transfers energy from place to place wthout overall displacement of matter.

Unit Materials: textbook, science kit, Teacher Pay Teacher, tradebooks, internet, outdoor environment

Unit Assignments:

Lesson	Objective	Standards	Assessment	Resources
Energy	Plan and conduct investigations to provide evidence that vibrating materials can make sound. (1-PS4-1)	3.2.3.B5 3.2.4.B5 3.2.1.B5		
	Investigate and explain that for an object to be seen, light must be reflected off the object and enter the eye. (1-PS4-2)	3.2.3.B5 3.2.4.B5 3.2.1.B5		
	Make observations to construct an evidence-based account that light travels from place to place. Plan and conduct an investigation to redirect light beams using mirrors (1-PS4-3)	3.2.3.B5 3.2.3.B5 3.2.4.B5		
	Investigate to determine the effect of placing objects made of differnt materials in a beam of light. (1-PS4-2) Make observations to construct an evidence-based account that objects can be seen when illuminated.	3.2.3.B5 3.2.1.B5 3.2.1.B7		
	Use tools and materials to design a device that uses light or sound to solve the problem of communicating over a distance.	3.4.3.D1 3.2.1.B7		
	Design and build a device that uses light to communicate.	3.2.1.B7 3.4.3.E4		

Unit Key Terminology & Definitions:

Energy

Investigation

Materials

Sound

Vibration

Waves

Light

Reflections

Surface

Mirror

Opague

Translucent

Transparent

Illuminate

Light

Communicate

Distance

Sound

Design

Device

This Curriculum Map Unit has no Topics to display

Unit: Life Science

Unit Description:	***Life Science-*** Plant and Animal Life
Unit Essential Questions:	How do organisms live, grow, respond to their environment, and reproduce? Organisms have external structures that help them survive, grow, and meet their needs. How and why do organisms interact with their environment and what are the effects of these interactions?

How are the characteristics of one generation passed to the next? How can individuals of the same species and even siblings have different characteristics?

Unit Big Ideas:

All organisms are made of cells and can be characterized by common aspects of their structure and functioning.

All organizsms are made of cells and can be characterized by common aspects of their structure.

Organisms have external structures that help them survive, grow, and meet their needs.

Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment.

Heredity refers to specific mechanisms by which characteristics or traits are passed from one generation to hte next via genes, and explains why offspring resemble, but are not identical to, their parents.

Biological evolution explains both the unity and diversity of species and provides a unifying principle for the history and diversity of life on Earth.

Unit Materials:

textbook, science kit, Teacher Pay Teacher, tradebooks, internet, outdoor environment

Unit Assignments:

Lesson	Objective	Standards	Assessment	Resources
Plant and Animal Life	Observe and categorize living and non living things by external characteristics. (l-LS1-1)	3.1.4A 3.1.4.B		
	Make observations and describe the different parts if organisms that help them survive, grow, and meet their needs. (1-LS1-2)	3.1.2.C		
	Design a model that replicates the function of an organism's structure. (1-LS1-1)	3.1.4.A		
	Observe the determine patterns in behavior of parents and offspring that help offspring survive.	3.1.2C		
	Classify plants and animals according to physical characteristics they share.	3.1.4.A		
	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. (1-LS3-1)	3.1.4A 3.6.4.A		
	Make observations and to construct an evidence- based account that young plants and animals are alike, but not exactly like their parents. (1-LS3-1)	3.1.4B 3.1.4C 3.1.KB1		
	Note patterns in characteristics or behaviors that appear in adult and offspring (e.g. hair color, eye color) (1-LS1-2)	3.1.4.B.1 3.1.B5		
	Conduct an investigation (e.g. plant seeds, eggs) and cite evidence of change from young to adult.(1-LS3-1)	3.1.4.B 3.1.4.C		

	Observe and compare the stages of life cycles of organisms (plants and animals)	3.1.K.A3 3.1.K.A.3

Unit Key Terminology & Definitions:

Organism

Structures

Grow

Movement

Observations

Parts (roots, leaves, flowers, stems, fruit)

Reproduce

Survival

Survive

Behavior

Model

Observe

Offspring

Patterns

Classify

Physical characteristics

Mimic

Problem

Solution

Similiar

Vary

Characteristics

Evidence

Inherit

Offspring

Parents

Plants

This Curriculum Map Unit has no Topics to display

Unit: Earth and Space Science

Unit Description: ***Earth and Space Science-***

Space

Unit Essential Questions: What is the universe, and what is Earth's place in it?

Unit Big Ideas: The universe is composed of a variety of different objects, which are organized into systems each of which, develops according to accepted physical proceses and laws.

Unit Materials: textbook, science kit, Teacher Pay Teacher, tradebooks, internet, outdoor environment

Unit Assignments:

Lesson	Objective	Standards	Assessment	Resources
Space	Observable changes and patterns in the sky are caused by motions in the Earth, moon,sun system.	3.32.B1 3.3.4.B1 3.3.4B2 3.3.PKB.1		
	The motion of the sun,moon,and earth relates to time. (1-ESS1-2)	3.3.2B1 3.3.4B2		

	3.3.3B1
	3.3.3B3

Unit Key Terminology & Definitions:

Changes

Describe

Moon

Observe

Pattern

Predict

Star

Sun

System

Earth

Motion

This Curriculum Map Unit has no Topics to display

Unit: Earth and Space Science

Unit Description: ***Earth and Space Science-***

Earth

Unit What is the universe, and what is Earth's place in it?

Essential Questions:

How and why is Earth constantly changing?

How do Earth's processes and human activities affect each other?

Unit Big Ideas:

What is the universe, and what is Earth's place in it?

Unit Materials:

textbook, science kit, Teacher Pay Teacher, tradebooks, internet, outdoor environment

Unit Assignments:

Lesson	Objective	Standards	Assessment	Resources
Earth	Observe and describe patterns of objects in the sky that are cyclic and can be predicted (1-ESS1-2)	3.3.2.B1 3.3.4.B2 3.3.3.B1 3.3.3.B3		
	Observe, describe, and predict patterns of daily change in the appearance and visibility of the moon and sun. (1-ESS1-2)	3.3.3.B1 3.3.4.B2		
	Observe, describe, and predict patterns of seasonal change in the timing and position of sunrise and sunset (1-ESS1-2)	3.3.2.B1		
	Use scientific tools such as binoculars or telescopes to enhance observations.	3.3.4.B1 3.3.4.B2		

Unit Key Terminology & Definitions:

Patterns

Predict

Sky

Sunrise

Sunset

Binocular

Telescope

Tools

This Curriculum Map Unit has no Topics to display