

Next Generation Science Standards	KINDERGARTEN SCIENCE Engineering Design
Engineering and Design	(ETS)
<p>K-2 –ETS1-1</p> <p>K-2-ETS1-2</p> <p>K-2-ETS1-3</p>	<p>Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p> <p>Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.</p> <p>Videos: Defined Demonstrated: Bananas Sound Waves Introduction/Song Introduction Rocks are Different Classifying and Identifying The Scientific Method The Scientific Method Basic Measures</p> <p>Audio: Teacher and the Rockbots: Scientific Method Music Makes it Memorable: The Scientific Method</p> <p>Explorations: Classification</p>
	<p>Videos: Defined Demonstrated: Bananas Sound Waves Review The Scientific Method The Scientific Method</p> <p>Audio: Teacher and the Rockbots: Scientific Method Music Makes it Memorable: The Scientific Method</p> <p>Images: Caribou Young Caribou Whale, Orca</p>

	Killer Whale Breaching Lamprey, Pacific Walrus Lynxes Lying with Young Lynx walking across fallen tree Goose, Canada; resting Great Gray Owl Great Gray Owl Elephant Baby with its Mother Baboon with Young Giraffe and Calf Cow Nursing Calf Lions with Cubs Pig Family Elk Cow and calf Sheep and Lamb Duck, Mallard, with Chicks
Life Science (LS) Animals, Plants and the Environment	
<p>Understand what plants and animals and humans need to survive.</p> <p>Understand the relationship between plant/animal needs and where they live.</p>	<p>K-LS2-1. Use observations to describe patterns of what plants and animals (including humans) need to survive [Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and that living things need water.]</p> <p>K-PS2-2. Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.*[Clarification Statement: Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and knock down other objects. Examples of solutions could include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn.] [Assessment Boundary: Assessment does not include friction as a mechanism for change in speed.]</p> <p>Videos: Anywhere Science Activity: Observing Animal Differences Anywhere Science Activity: Observing Animal Movements Seeds: Observing and Describing The Living Things Around Us: Animals and Plants Three Main Parts of a Plant How Plants Are Different from and Similar to Other Living Things How Plants Are Different from Each Other Parts of a Plant Plant Parts Common Characteristics of Land Mammals </p> <p>Images: Group Observing Killer Whale </p>

[Different Parts of a Plant: Parts We Eat, Nutrients](#)

[Roots](#)

[Stems](#)

[Leaves](#)

[Roots](#)

[Stems](#)

[Leaves](#)

[Flowers](#)

[Seeds](#)

[Common Characteristics of Land Mammals](#)

[Mammal Song Reviews Concepts](#)

[Common Characteristics of Reptiles](#)

[Reptile Song](#)

[Eating](#)

[How are Insects Different from other Animals?](#)

[Common Characteristics of Fish](#)

[Fish Song](#)

[Senses](#)

[Physical Adaptations That Allow Land and Marine Mammals to Breathe Air](#)

[Introduction to the Five Senses](#)

Games:

[The Whaddaya Know Quiz Show: Plants](#)

E-Books:

[Plants and their Parts](#)

[What are Animals?](#)

Reading Passages:

[Plants and their Parts](#)

[What are Animals?](#)

Fundamentals:

[Getting to Know Plants](#)

Explorations:

[Leaves](#)

[Roots](#)

[Stems](#)

Animation:

[Animals](#)

[Plant](#)

Weather and Climate
Physical Science and Earth Systems (PS) (ES)

Understand the purpose of weather forecasting to prepare for, and respond to, severe weather.

K-PS3-1.	Make observations to determine the effect of sunlight on Earth's surface. [Clarification Statement: Examples of Earth's surface could include sand, soil, rocks, and water] [Assessment Boundary: Assessment of temperature is limited to relative measures such as warmer/cooler.]
K-PS3-2.	Use tools and materials provided to design and build a structure that will reduce the warming effect of sunlight on Earth's surface. *[Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.]
K-ESS2-1.	Use and share observations of local weather conditions to describe patterns over time. [Clarification Statement: Examples of qualitative observations could include descriptions of the weather (such as sunny, cloudy, rainy, and warm); examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month. Examples of patterns could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different months.] [Assessment Boundary: Assessment of quantitative observations limited to whole numbers and relative measures such as warmer/cooler.]
K-ESS3-2.	Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather. *[Clarification Statement: Emphasis is on local forms of severe weather.] Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather. *[Clarification Statement: Emphasis is on local forms of severe weather.]

	<p><u>Videos:</u> Introduction Five Senses Identifying Properties of Matter A Closer Look at Matter The Basic Structure of Matter Naming Attributes of Shapes Sorting by Sight</p> <p><u>Images:</u> Matter so1318 PAW</p> <p><u>E-Books:</u> Crystals of all Shapes and Sizes What is Matter? Properties of Matter</p> <p><u>Reading Passages:</u> Crystals of all Shapes and Sizes What is Matter?</p>
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	<p>Properties of Matter</p> <p><u>Fundamentals:</u> What's the Matter?</p> <p><u>Explorations:</u> Three States of Matter Size and Shape Grouping Organisms</p> <p><u>Animation:</u> Matter Classify</p>
	<p><u>Videos:</u> Introduction</p> <p><u>Explorations:</u> Thermal Energy</p> <hr/> <p><u>Videos:</u> Solar Energy How Special is our Sun? The Sun The Sun and Earth Sun and Weather How the Sun Effects Weather A Look at How Land Heats Up</p> <p><u>Images:</u> Sun: Close-up Sunset Water Vapor Evaporation and condensation of water from earth's surface</p> <p><u>E-Books:</u> The Sun</p> <p><u>Reading Passages:</u> The Sun Our Star the Sun Sunlight</p> <p><u>Brief-Constructed Responses:</u> Our Star the Sun</p> <p><u>Animations:</u></p>

	Solar Energy
Pushes and Pulls Physical Science (PS)	
Understand the effect of different strengths or different directions of pushes and pulls on the motion of an object to analyze a design solution	
K-PS2-1.	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. [Clarification Statement: Examples of pushes or pulls could include a string attached to an object being pulled, a person pushing an object, a person stopping a rolling ball, and two objects colliding and pushing on each other.] [Assessment Boundary: Assessment is limited to different relative strengths or different directions, but not both at the same time. Assessment does not include non-contact pushes or pulls such as those produced by magnets.]
K-PS2-2.	Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull. *[Clarification Statement: Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and knock down other objects. Examples of solutions could include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn.] [Assessment Boundary: Assessment does not include friction as a mechanism for change in speed.]
	<p><u>Videos:</u> What is Motion? Inanimate Objects Move Rotation Rolling Making Things Move March Run Jump Hop Skip Slide Gallop</p> <p><u>E-Books:</u> Slow Motion Moving Along</p> <p><u>Reading Passages:</u> Slow Motion Moving Along</p> <p><u>Explorations:</u> Describing Motion</p> <p><u>Animation:</u> Motion Rotate</p>

LIFE SCIENCE**(SC)**

<p>Science explains changes in life forms over time, including genetics, heredity, the process of natural selection and biological evolution</p>	<ol style="list-style-type: none">1. Sort / match baby animals and mothers2. Describe traits of Alaskan animals <p><u>Videos:</u> Alaska's Brown Bear Alaska's Sea Otters The Giant Pacific Octopus Alaska's Salmon Run Big Game Alaska More of Alaska's Wildlife Finding the Moose Other Animals: Red Foxes & Bald Eagles Wild by Nature for Kids: Caribou Walruses Babies and Families Baby Animals Penguins Lemurs Sea Otters Red Foxes Kangaroos Capybaras Polar Bears Orangutans</p> <p><u>Games:</u> The Whaddaya Know Quiz Show: Baby Animal Names</p> <p><u>E-Books:</u> Changing Appearances</p> <p><u>Reading Passages:</u> Changing Appearances</p> <p><u>Explorations:</u> Growth and Development</p>
<p>Structure, function, behavior, development, life cycles, and diversity of living organisms</p>	<ol style="list-style-type: none">3. Distinguish between plants and animals based on appearances4. Animals have features that relate to the five senses <p><u>Videos:</u></p> <p><u>Images:</u> Cone on Cycad Plant</p>

	<p>Yucca Plant Rainforest Plants Desert Plants, Palms Leaf, definition Tobacco plants of the kind grown by Native Americans Animal, Giraffe Horse Swishing Tail American Alligator, Palm Beach County, Florida. Polar Bears play fighting</p> <p>Games: The Whaddaya Know Quiz Show: Plants The Whaddaya Know Quiz Show: Amazing Animals</p> <p>Fundamentals: Getting to Know Plants</p> <p>Animation: Plant Animal</p>
<p>All organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy</p>	<p>5. Animals need food, water, air and shelter 6. Understand that animals eat plants and other animals</p> <p>Videos: Animal Shelters Water is a Basic Need All Creatures Need to Breathe All Creatures Need Food Basic Needs Food and Energy Herbivores, Carnivores, and Omnivores What is a Food Chain? What is a Food Web? Food Chains Herbivores, Carnivores, and Omnivores More Food Chains Energy Pyramid and Food Chain Oceans Alive: The Food Web</p> <p>Images: Food Chain Consumer Food Chain Producer Rocky Bottom Food Web Food Chain Carnivore, Definition Consumer, Definition</p>

[Iguana Eating Algae](#)
[Spotted Hyena Eating](#)
[Gorilla Eating](#)
[Herbivore, Definition](#)

E-Books:

[A Food Chain](#)
[Food Chains](#)
[Food Chains](#)

Reading Passages:

[World Wide Web](#)
[A Food Chain](#)
[Food Chains](#)
[Food Chains](#)

Fundamentals:

[Being Alive](#)
[Needs of Living Things](#)

Explorations:

[Organism Needs](#)
[Parts of a Food Chain](#)

Animations:

[Food Chain](#)

EARTH SCIENCE**(SD)**

Geochemical cycles

1. Sort rocks by color, size, and shape
2. Describe sources of water

Videos:[Rocks are Different](#)[Rocks are Different Sizes](#)[Identifying Rocks](#)[Bodies of Water](#)[Where do We Get our Water?](#)[Where is the Earth's Water?](#)[How do we get Water?](#)[Frozen Water](#)[Water: Earth's Important Resource](#)[Bodies of Water](#)**Images:**[Kissing Rocks](#)[Rock Formations and Water Cascades](#)[Rocks on Beach](#)[Water and Rocks](#)[Rocks Surrounded by Water](#)[Water \(1\)](#)[A Lake near Juneau, Alaska](#)[Boundary House on Stikine River, Alaska](#)[Flock of Snow Geese in pond](#)[Waves, Ocean](#)**E-Books:**[Water on Earth](#)[Earth's Freshwater Bodies](#)[The Chesapeake Bay: One of the World's Largest Estuaries](#)[Earth's Oceans](#)**Reading Passages:**[Water on Earth](#)[Earth's Freshwater Bodies](#)[The Chesapeake Bay: One of the World's Largest Estuaries](#)

	<p>Earth's Oceans</p> <p><u>Explorations:</u> Waters of the Earth Rocks</p> <p><u>Brief-Constructed Responses:</u> Waters of the Earth</p> <p><u>Animations:</u> Water Fresh Water Salt Water</p>
Forces that shape Earth	<p>3. Identify land and water features in the local area</p> <p><u>Videos:</u> Land, Air, and Water: Three Important Features on Earth Introduction Mountains Hill Valley Bodies of Water Lakes Land Near Water Plains Bodies of Water Where is the Earth's Water?</p> <p><u>Images:</u> Lake Van, Turkey Great Ocean Road, Victoria, Australia. The Yukon River from the air, Canada. Stream running through field Wildstrubel mountain, Switzerland. Valley A Plateau in Swaziland.</p> <p><u>E-Books:</u> Earth's Freshwater Bodies Earth's Oceans Water on Earth</p> <p><u>Reading Passages:</u> Water on Earth Earth's Freshwater Bodies Earth's Oceans</p>

	<p><u>Explorations:</u> Landforms</p> <p><u>Animations:</u> Ocean Stream Valley Canyon Plateau</p>
<p>Cycles influenced by energy from the sun and by Earth's position and motion in our solar system</p>	<p>4. Identify the four seasons</p> <p><u>Videos:</u> Thinking about the Seasons Spring Summer Autumn (Fall) Winter Introduction Fall Winter Spring is Here Joys of Spring Summer is Here Joys of Summer Fall is Here Why do We Have Seasons? Winter is Here Weather and Seasons The Four Seasons Review Seasons and Activities</p> <p><u>Images:</u> Weather and Seasons Same Location Weather and Seasons Same Location Weather and Seasons Same Location Weather and Seasons Same Location Season Countryside</p> <p><u>Audio:</u> There are Four Seasons</p> <p><u>Skill Builders:</u> Seasons</p>

	<p><u>E-Books:</u> Organisms and Season Change</p> <p><u>Reading Passages:</u> Organisms and Season Change</p> <p><u>Explorations:</u> The Seasons</p> <p><u>Animation:</u> Season</p>
<p>Theories regarding the origin and evolution of the universe</p>	<ol style="list-style-type: none"> 5. Recognize that objects can be made to look larger 6. Recognize that objects (e.g. sun, moon, stars) can be observed and described 7. Recognize and use a hand-lens <p><u>Videos:</u> Magnifying Glass Galileo's Telescope Far Away Objects in Space Science in Our World Seeing the Planets in the Night Sky Astronomy and Technology Used to Explore Space Learning about Our Universe Stargazing: Stars, Falling Stars, and Constellations</p> <p><u>Images:</u> Hubble Space Telescope Telescope Galileo Magnifying Glass</p> <p><u>E-Books:</u> Don't Try Counting Them</p> <p><u>Reading Passages:</u> Don't Try Counting Them Watching the Universe</p> <p><u>Animation:</u> Telescope</p>

**SCIENCE &
TECHNOLOGY**

(SE)

Solving problems involves different ways of thinking, perspectives, and curiosity

1. Recognize that tools help people do things better or more easily

Videos:

[The Six Simple Machines](#)

[Compound Machines](#)

[Archimedes and his Simple Machines](#)

[Video Quiz: Discovering Simple Machines: Compound Machines](#)

[The Lever](#)

[The Wheel and Axle](#)

[The Pulley](#)

[Simple Machines](#)

[The Inclined Plane](#)

[The Wedge](#)

[The Screw](#)

[The Lever](#)

[Wheel and Axle](#)

[Pulley](#)

Images:

[Work](#)

[Pulleys](#)

[Pulley](#)

[Lever, crowbar](#)

[Lever, screwdriver](#)

E-Books & Reading Passages:

[Simple Machines](#)

[Work and Simple Machines](#)

[Pencil Sharpening Machines](#)

Explorations:

[Types of Simple Machines](#)

[About Simple Machines](#)

Brief-Constructed Responses:

[Types of Simple Machines](#)

Animation:

	Simple Machine Pulleys
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CULTURAL, SOCIAL, PERSONAL PERSPECTIVES & SCIENCE (SF)	
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Dynamic relationships among scientific, cultural, social, and personal perspectives	<p>1. Explore local or traditional stories that explain a natural event (LOCAL)</p> <p>Videos: Characteristics and Origins of Myths How the Camel got His Hump How the Rhinoceros Got His Skin How the Leopard Got His Spots The Elephant Child</p>
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HISTORY & NATURE OF SCIENCE (SG)	
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Bases of the advancement of scientific knowledge	<p>1. Compare the results of multiple observations of a single local event (LOCAL)</p> <p>Videos: Defined Demonstrated: Bananas Sound Waves Introduction/Song Introduction Rocks are Different Classifying and Identifying The Scientific Method The Scientific Method</p> <p>Audio: Teacher and the Rockbots: Scientific Method Music Makes it Memorable: The Scientific Method</p>
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Advancements in science depend on curiosity, creativity, imagination, and a broad knowledge base	<p>2. Ask questions about the natural world</p> <p>Videos: The Question: the Starting Point for All Scientific Inquiry Defined Demonstrated: Bananas Sound Waves Review The Scientific Method The Scientific Method</p> <p>Audio: Teacher and the Rockbots: Scientific Method</p>
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	<u>Music Makes it Memorable: The Scientific Method</u>
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