

CONCEPTS	2 nd GRADE SCIENCE MASTERY CORE OBJECTIVES
SCIENCE AS INQUIRY (SA) AND PROCESS	
Process of science Chapter 1 “Hands-On Standards Science”	<ol style="list-style-type: none"> 1. Ask questions, predict, observe, describe, measure, classify, make generalizations, infer, and communicate 2. Observe and describe their world to answer simple questions <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>
Attitudes and approaches to scientific inquiry	<ol style="list-style-type: none"> 3. Answer “how do you know?” questions with reasonable answers with teacher guidance <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>
Interactions with the environment provide an opportunity for understanding scientific concepts	<ol style="list-style-type: none"> 4. Observe local conditions that impact plants <p>Videos: How Habitats Become Threatened Changes in Habitats How is Land Threatened? Protecting Our Earth Positive Effects from Earth Day Humans and the Forest How Human Activity Affects the Diversity of Life on Earth Three Types of Diversity Threatened by Human Activity</p> <p>Images: Ozone pollution, leaf damaged by (2)</p>

	<p>Ozone pollution, leaf damaged by (1) Acid rain, damage to trees by (1)</p> <p><u>E-Books:</u> Human Effects on Ecosystems</p> <p><u>Reading Passages:</u> Human Effects on Ecosystems</p>
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PHYSICAL SCIENCE (SB)	
<p>Structure and properties of matter</p> <p>Chapter 1 “Hands-On Standards Science”</p>	<p>1. Classify matter according to color, size, shape, texture, and weight</p> <p><u>Videos:</u> Nature's Way: Discovering Natural Textures Colors Nature's Way: Discovering Natural Colors What is Matter? Properties of Matter Introduction Five Senses Identifying Properties of Matter A Closer Look at Matter The Basic Structure of Matter</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? Properties of Matter</p> <p><u>Fundamentals:</u> What's the Matter</p> <p><u>Animation:</u> Matter BBC Properties of Matter → EXCELLENT!!</p>

<p>Energy can be transformed, transferred, and conserved</p> <p><u>Conductors – SB activity</u></p> <p><u>Electricity Handout</u></p>	<p>2. Explore materials that can be used as insulators or conductors (i.e., fur, metal, wood, plastic)</p> <p><u>Videos:</u> <u>Insulators and Conductors Electricity</u> <u>How Electricity Works</u> <u>Static and Current Electricity, Conductors and Insulators</u> <u>Conductors, Insulators, Ohms</u> <u>Electrical Circuits</u> <u>Current Electricity: Circuits, Conductors, and Insulators</u> (until 2:20)</p> <p><u>Images:</u> <u>Insulators on a Power Line</u> <u>conduct Insulators on power line large conductor, metal</u></p> <p><u>Animation:</u> <u>Insulate</u></p>
<p>Interactions between matter and energy and the effects of these interactions on systems</p> <p>What’s the Matter, Mr. Snowman? (in Dropbox)</p>	<p>3. Recognize that a specific temperature change causes water to freeze or melt</p> <p><u>Videos:</u> <u>Melting and Freezing</u> <u>Phase Changes and Water: Liquid, Solid, and Gas</u> <u>Telling Temperature: What is Freezing?</u> <u>Adding Energy: Melting</u> <u>Losing Energy: Freezing</u></p> <p><u>Images:</u> <u>Ice over Creek, Freezing</u> <u>Freeze Frost on Grass large</u> <u>Temperature Glacier along water with mountains medium</u> <u>Melt</u> <u>Ice Melting on Fields Below the Clouds</u> <u>Melting point_S01173_PAW</u></p> <p><u>Animation:</u> <u>Freeze</u> <u>Freezing Point</u> <u>Melt</u></p>

<p>Motions, forces, their characteristics, relationships, and effects</p> <p>[Tie with SE 1 standard.]</p> <p>PUSH & PULL</p> <p>Activity 5, p. 157</p> <p>Hands-On Science (Kepler)</p>	<p>4. Describe how MAGNETS can be used to make things move without being touched</p> <p>Videos:</p> <p>What Kind of Things do Magnets Attract?</p> <p>Magnets Push and Pull</p> <p>Magnets Attract and Repel: Magnetic Poles</p> <p>Does a Magnet Have to Touch Something to Attract It?</p> <p>Similar Magnetic Poles Repel, Different Magnetic Poles Attract</p> <p>Images:</p> <p>repel Magnets repelling each other 1 large</p> <p>E-Books:</p> <p>Magnets</p> <p>Reading Passages:</p> <p>Magnets</p> <p>Animation:</p> <p>Magnets</p> <p>Repel</p>
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LIFE SCIENCE (SC)	
<p>Science explains changes in life forms over time, including genetics, heredity, the process of natural selection and biological evolution</p> <p>FIELD GUIDE PROJECT</p> <p>Students create local field guides for the Chamber of Commerce. These also go online at Seward, Alaska: Through Young Eyes.</p>	<ol style="list-style-type: none"> Sort plants based on physical characteristics Describe traits of plants <p>Videos:</p> <p>Different Parts Of A Plant: Parts We Eat, Nutrients</p> <p>Flowers</p> <p>Introduction</p> <p>Roots</p> <p>Stems</p> <p>Leaves</p> <p>Different Types of Plants</p> <p>Intro and Song</p> <p>Roots</p> <p>Stem</p> <p>Leaves</p> <p>Flowers</p> <p>Seeds</p> <p>How Plants Are Different from and Similar to Other Living</p>

	<p>Things</p> <p><u>Images:</u> Tobacco plants, 1990. Papyrus plants growing in the Nile Delta. Agave plants for mescal near Tlacolula, Mexico. Rainforest Plants (1) Liverwort Plants with Penny as a Scale Fern Trees and other Plants in the Rainforest Desert Plants; Flowering Echinocereus Desert Plants; Mammalaria Insectivorous Plant</p> <p><u>E-Books:</u> Plants and Their Parts</p> <p><u>Reading Passages:</u> Plants and Their Parts</p> <p><u>Fundamentals:</u> Getting To Know Plants</p> <p><u>Explorations:</u> Stems Leaves Roots Plants</p> <p><u>Animation:</u> Plant Flowering Plant Structure</p>
<p>Structure, function, behavior, development, life cycles, and diversity of living organisms</p>	<p>3. Sort plants into groups based on appearances</p> <p>4. Identify external features of plants</p> <p><u>Videos:</u> How are Plants Different From Each Other? Parts of a Plant Plants All Around Us Three Main Parts of a Plant Plant Parts Different Kinds of Plants Desert</p>

[Wetlands](#)

[Ocean](#)

[Valley](#)

[Mountains](#)

[Tropics](#)

[Rainforest](#)

[Plants](#)

[Types of Stems](#)

Images:

[Tobacco plants, 1990.](#)

[Papyrus plants growing in the Nile Delta.](#)

[Agave plants for mescal near Tlacolula, Mexico.](#)

[Rainforest Plants \(1\)](#)

[Liverwort Plants with Penny as a Scale](#)

[Fern Trees and other Plants in the Rainforest](#)

[Desert Plants; Flowering Echinocereus](#)

[Desert Plants; Mammalaria](#)

[Insectivorous Plant](#)

E-Books:

[Plants and Their Parts](#)

Reading Passages:

[Plants and Their Parts](#)

Fundamentals:

[Getting To Know Plants](#)

Explorations:

[Stems](#)

[Leaves](#)

[Roots](#)

[Plants](#)

Animation:

[Plant](#)

[Flowering Plant](#)

[Structure](#)

All organisms are linked to each other and their physical environments through the transfer and transformation of matter and energy

5. Describe a simple plant habitat
6. Describe simple producer / consumer relationship

Videos:

[Desert](#), [Wetlands](#), [Ocean](#), [Valley](#), [Mountains](#), [Tropics](#), [Rainforest](#), [Plants in the Mountains](#), [Plants in the Deserts](#), [Plants in the Water](#), [Plants in the Rainforest](#), [Plants in the Woods](#), [Plants of the Rainforest](#), [Rainforest Habitat](#), [Producers and Consumers](#), [Herbivores](#), [Carnivores and Omnivores](#), [Producers and Consumers](#), [Photosynthesis and Food Chains](#)

Images:

[Papyrus plants growing in the Nile Delta](#).
[Agave plants for mescal near Tlacolula, Mexico](#).
[Rainforest Plants \(1\)](#)
[Liverwort Plants with Penny as a Scale](#)
[Fern Trees and other Plants in the Rainforest](#)
[Desert Plants; Flowering Echinocereus](#)
[Desert Plants; Mammalaria](#)
[Insectivorous Plant](#)
[Blackhawk Habitat, Arizona](#)
[Waterfowl Habitat](#)
[Habitat, Definition](#)
[Rainforest Stream](#)
[Estuary, Coastal](#)
[Horses are Consumers](#)
[consumer Lions with kill large](#)
[food chain Consumer definition large](#)
[food chain Producer definition large](#)

E-Books:

[Producers and Consumers](#)

Reading Passages:

[Producers and Consumers](#)

Animation:

[Wetland](#), [Deciduous Forest](#), [Rainforest](#), [Habitat](#), [Producer](#), [Consumer](#)

EARTH SCIENCE (SD)

Geochemical cycles

Rock and Water Cycle
Unit

1. Sort, classify and describe **ROCKS** by color, size, shape, texture, and weight
2. Create a simple illustration that depicts understanding of the **WATER CYCLE**

Videos:

[What are Rocks?](#), [Rocks are Different](#), [Rocks: An Introduction](#), [Rocks are Different Sizes](#), [Identifying Rocks](#), [The Water Cycle](#), [Water Cycle](#), [Water Cycle: Transpiration, the Right Balance](#), [The Water Cycle](#), [What is the Water Cycle?](#), [Fresh and Saltwater Make the Water Cycle Go 'Round](#), [Water](#), [What is So Special About Water?](#)

Images:

[Kissing Rocks](#), [Rock Formations and Water Cascades](#), [Rocks on Beach](#), [Water and Rocks](#), [Rocks Surrounded by Water](#), [Water cycle Water evaporating large](#), [Water Cycle Water Cycle](#), [Water cycle Water condensed into droplets large](#)

Skill Builders:

[The Water Cycle](#)

Games:

[The Whaddaya Know Quiz Show: The Water Cycle](#)

E-Books:

[By the Side of the Road](#)

Reading Passages:

[By The Side of the Road](#)

Explorations:

[Water Cycle](#)

[Under the Weather](#)

Brief-Constructed Responses:

[Water Cycle](#)

Animation:

[Water Cycle](#)

[Boulder](#)

[Precipitation](#)

<p>Forces that shape Earth</p>	<p>3. Identify land and water features on the Earth</p> <p>Videos: Introduction, Mountains, Hill, Valley, Bodies of Water, Lakes, Land Near Water, Desert Landforms, Plains, North American Landscape, Wetlands</p> <p>Images: Landform, Mountain Landform Red Canyon Colorado National Monument large landform Prairie 2 large A glacier in the Sierra Nevada. Butte, Mitten; side view Desert Pavement Valley Lake After Storm A Plateau in Swaziland Butte, Definition</p> <p>Explorations: Landforms</p> <p>Animation: Landforms Mountain Valley Delta Wetlands</p>
<p>Cycles influenced by energy from the sun and by Earth's position and motion in our solar system</p>	<p>4. Identify and record patterns that occur during the four seasons (e.g., weather, daylight)</p> <p>Videos: 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, Summer Begins, Summer Ends, Winter Begins, Daylight in Winter, Spring Begins, Spring Ends, Fall Begins, Why Leaves Change Color in Fall, Fall Ends, Weather and Seasons, The Sun and the Seasons, The Four Seasons, Learning About the Seasons, Weather Patterns</p> <p>Images: Weather and Seasons Same Location Weather and Seasons Same Location Weather and Seasons Same Location</p>

	<p>Weather and Seasons Same Location Season Countryside</p> <p><u>E-Books:</u> Organisms and Seasonal Change</p> <p><u>Reading Passages:</u> Organisms and Seasonal Change</p> <p><u>Fundamentals:</u> Cycles in the Sky</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 small objects can be magnified. 6. Recognize the objects (e.g., sun, moon, stars) have patterns of change that can be observed and described 7. Recognize and use a simple microscope <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> Optical_S02187_SDD Binoculars Hubble Space Telescope Telescope_Galileo Magnifying Glass Magnify</p> <p><u>E-Books:</u> Don’t Try Counting Them</p> <p><u>Reading Passages:</u></p>

	<p>Don't Try Counting Them</p> <p>Explorations: Watching the Universe Astronomy</p> <p>Animation: Telescope Microscope</p>
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SCIENCE & TECHNOLOGY (SE)

<p>Solving problems involves different ways of thinking, perspectives, and curiosity</p> <p>[Tie with SB4 standard]</p> <p><u>EVAN MOORE E-BOOK</u></p> <p>Push & Pull Activity 3 Hands-On Science (Kepler)</p>	<p>1. Recognize that tools help people do things better or more easily</p> <p>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</p> <p>Images: Work, Pulleys, Pulley, Lever, crowbar, Lever, screwdriver</p> <p>E-Books: Simple Machines Work and Simple Machines Pencil Sharpening Machines Let's Play While We Work Simple but Important</p> <p>Reading Passages: Simple Machines Work and Simple Machines Pencil Sharpening Machines Let's Play While We Work Simple but Important</p> <p>Explorations: Types of Simple Machines About Simple Machines</p> <p>Brief-Constructed Responses:</p>
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	Types of Simple Machines <u>Animation:</u> Simple Machine Pulleys
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CULTURAL, SOCIAL, PERSONAL PERSPECTIVES & SCIENCE (SF)

Dynamic relationships among scientific, cultural, social, and personal perspectives	1. Identify tools used in everyday life. <u>Videos:</u> The Six Simple Machines Compound Machines Archimedes and his Simple Machines
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HISTORY & NATURE OF SCIENCE (SG)

Bases of the advancement of scientific knowledge <u>Tie with KPBSD S.S. HS-A6; CS-B1:</u> Literature reflects customs & cultural diversity Qutekcak Tribe classroom visit	1. Explore local or traditional stories that explain a natural event (LOCAL) <u>Videos:</u> Why Mosquitoes Buzz in People’s Ears Turkey Girl (Pueblo) Native American Mythology An Oral Tradition: Iroquois Story Telling The Thunderbird
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