Strand I Thinking and Practice

Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically. (Note: Strand I may be covered with just about all units in the Houghton Mifflin Science program)

Essential Question: How do scientists work?

Category	Kindergarten	End Learning - Mastery	Assessment(s)	Resources
Process of Investigation SCIENTIFIC METHOD **Benchmark I:** Use scientific methods to observe, collect, record, analyze, predict, interpret, and determine reasonableness of data.	1. Use observation and questioning skills in science inquiry. 2. Ask and answer questions about surroundings and share findings with classmates. 3. Record observations and data with pictures, numbers, and/or symbols.	Observe, discuss, and record data.	Not assessed	Unit B Where Plants and Animals Live Animal Reports p. 39n Leveled readers: ▪ A Bear Needs A Place To Climb ▪ Mouse's Meadow ▪ Our Home is the Pond -Lesson 1 What Are Living and Nonliving Things? P. 44-45 ▪ Science Songs track 3 ▪ National Geographic video – Living and Nonliving Things -Lesson 2 What Do Living Things Need? P. 48-49 -Lesson 3 Where Do Animals Find Food? P. 51-53 ▪ Animal Menus p. 39p ▪ Lesson 5 Investigate- Finding Food p. 50 ▪ Health Link- Twig, Twig, Worm p. 53 -Lesson 4 What Lives in a Pond? P. 56-59 ▪ Create a pond ▪ p. 39p or

				Investigate- Model Pond Life p. 54 ▪ National Geographic video- Plant Habitats ▪ Field Trip idea: Ashley Pond to identify and sketch pond life -Lesson 5 What Lives in a Meadow? P. 66-67 ▪ Use Over in the Meadow to list meadow animals p. 39p ▪ Lesson 5 Investigate- Making Meadow Homes p. 62-63 ▪ Science Songs track 4 Optional Literature Link p. 39: ▪ <u>Animal Babies in Ponds and Rivers</u> ▪ <u>Over in the Meadow</u> ▪ <u>On the Way to the Beach</u>

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Process of Investigation SCIENTIFIC THINKING **Benchmark II:** Use scientific thinking and knowledge and communicate findings.	1. Communicate observations and answer questions about surroundings.	Demonstrate the ability to discuss an end product.	Not assessed	Unit C Looking At Earth Leveled Readers: ▪ <u>I Can See</u> ▪ <u>I Can Take Care of the Earth</u> ▪ <u>Rocks, Rocks, Rocks</u> Optional Literature p. 69i: ▪ <u>Recycle Every Day</u> ▪ <u>Under One Rock</u> Art Center- Earth Bottles p. 69n Science Center- Rock Collection p. 69o -Lesson 1 What Are Earth's Materials? P. 74-75 ▪ Science Songs track 5 ▪ National Geographic video- This is Our World -Lesson 2 What is Earth's Land Like? P. 78-79 ▪ Soil samples p.69p ▪ Lesson 2 Investigate- Land Materials p. 76-77

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Process of Investigation **MATH SKILLS** **Benchmark III:** Use mathematical skills and vocabulary to analyze data, understand patterns and relationships, and communicate findings.	1. Observe and describe the relative sizes and characteristics of objects.	Communicate similarities and differences of objects.	none	Unit C Looking At Earth National Geographic Video- Paper -Lesson 3 What Can I Learn About Earth's Water? P. 82-83 ▪ Lesson 3 Investigate- Model Waves p. 80-81 ▪ Math Link- Salty Water p. 83 -Lesson 4 How Does the Land Change? P. 88-89 ▪ Milk Carton Soil p. 69n -Lesson 5 How Can I Care For the Earth? ▪ Science Songs track 6

Stand II – Content of Science

Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

Essential Question: What are different materials used for?

Category	Kindergarten	End Learning Mastery	Assessment(s)	Resources
Strand II: Content of Science **PHYSICAL SCIENCE Forms of Matter** **Benchmark I:** Recognize that matter has different forms and properties.	1. Observe that objects are made of different types of materials (e.g., metal, plastic, cloth, wood). 2. Observe that different materials have different properties (e.g., color, odor).	Categorize objects by specific properties.	none	Unit E -Lesson 2 How Can I Sort Objects? P. 144-147 ▪ Big Book p. 48 ▪ Math link: Sock bar graph p. 139 ▪ National Geographic Video- Fabric ▪ Investigate lesson 3 Make Changes p. 140-141 -Lesson 4 What Are Things Made of? ▪ Big Book p. 50 ▪ Investigate lesson 4- Sort By Materials p. 144-145 ▪ National Geographic Video- Plastic

Stand II – Content of Science

Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

Essential Question: Does everything move the same way?

Category	Kindergarten	End Learning Mastery	Assessment(s)	Resources
Strand II: Content of Science **PHYSICAL SCIENCE Properties of Matter** **Benchmark II:** Know that energy is needed to get things done and that energy has different forms.	1. Observe how energy does things (e.g., batteries, the sun, wind, electricity).	Identify different sources of energy.	none	Unit F Things That Move -Lesson 2 What Things Make Heat? P. 168-169 ▪ Big Book p. 58 ▪ Investigate 2 p. 166-167 Make Heat ▪ Leveled Science book: <u>Heat And Eat</u> (on level) ▪ National Geographic Video- Blue Dragon- Shadow Play

Stand II – Content of Science

Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

Essential Question: Can we change the way objects move?

Category	Kindergarten	End Learning Mastery	Assessment(s)	Resources
Strand II: Content of Science **PHYSICAL SCIENCE Forces of Matter** **Benchmark III:** Identify forces and describe the motion of objects.	1. Observe that things move in many different ways (e.g., straight line, vibration, circular). 2. Know that the position and motion of an object (direction or speed) are changed by pushing or pulling it.	Experiment with different objects to observe how they move.	none	Unit F Things That Move -Lesson 4 How Things Move p.178-179 ▪ Investigate 4 How Things Move p. 176-177 -Lesson 5 Pushes and Pulls p. 184-185 ▪ Investigate 5- Soft Push, Hard Push p. 182-183 ▪ **Optional literature**: Duck in a Truck by Jez Alborough ▪ National Geographic Video: Blue Dragon- Slipping and Sliding

Strand II Content of Science – LIFE SCIENCE

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Essential Question: How do we tell the difference between plants and animals?

Category	Kindergarten	End Learning Mastery	Assessment(s)	Resources
Strand II: Content of Science **LIFE SCIENCE Forms & Structure** **Benchmark I:** Know that living things have diverse forms, structures, functions, and habitats.	1. Identify major structures of common living organisms (e.g., stems, leaves, and roots of plants; arms, wings, and legs of animals). 2. Observe that differences exist among individual living organisms (e.g., plants, animals) of the same kind.	Explain the difference between plant and animal life.	none	Unit A. Looking at Plants and Animals- p. 1-2 -Lesson 1- What Body Parts Do Animals Have? P. 6-7 ▪ Teacher Read Aloud: What Am I? P. 1j ▪ Children take turns pretending to be different animals and rest of class guesses ▪ Lesson 1 Investigate- Make Animal Models p. 4-5 ▪ Science Investigation Notebook p. 2- Make Animal models ▪ Math Link p. 7 How Many Legs? ▪ Focus On: Your Body Parts p. 8-9 ▪ Math Link- Body Parts Graph p. 8 -Lesson 5 Plant Parts p. 26-27 ▪ Lesson 5 Investigate- Plant Parts p. 24-25 ▪ Science Investigation notebook p. 6 ▪ Art Link- Plant Collage p. 27

Strand II Content of Science – LIFE SCIENCE

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Essential Question: How are living things like their parents?

Category	Kindergarten	End Learning Mastery	Assessment(s)	Resources
Strand II: Content of Science **LIFE SCIENCE Life Forms in the Environment** **Benchmark II:** Know that living things have similarities and differences and that living things change over time	1. Observe and describe similarities and differences in the appearance and behavior of living organisms (e.g., plants, animals). 2. Observe that living organisms (e.g., plants, animals) closely resemble their parents.	Match young organisms to their parents by comparing similarities and differences.	none	Unit A Leveled Books ▪ What Will I Be? ▪ I Can Hop, Can You? ▪ A Walk in My Woods -Lesson 3 How Do Animals Grow and Change? P. 18-19 ▪ Lesson 3 Investigate- Frogs Grow and Change p. 16-17 Lesson 4- Bird Sort p. 22-23 ▪ National Geographic Video Animal Games parts 1 and 2 -Lesson 6 Plants Grow and Change p. 30-31 ▪ Lesson 6 Investigate- Measure Plant Growth p. 28-29 ▪ Art Link; Seed Pictures p. 31 ▪ Unit A Literature Link: Seeds! Seeds! Seeds! p. 1i -Lesson 7 Compare Trees p. 36-37 ▪ Lesson 7 Investigate p. 34-35

Strand II Content of Science – LIFE SCIENCE

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Essential Question: How do our senses help us learn?

Category	Kindergarten	End Learning Mastery	Assessment(s)	Resources
Strand II: Content of Science **LIFE SCIENCE Life Forms in the Environment** **Benchmark III:** Know the parts of the human body and their functions	1. Use the senses (e.g., sight, hearing, smell, taste, touch) to observe surroundings, and describe the observations. 2. Identify the parts of the human body (e.g., legs, arms, head, hands) and the functions of these parts.	Describe your surroundings based on their senses. Label human body parts and their functions.	none	Unit E Observing Objects -Lesson 1 How Do I Use My Senses? P. 134-135 ▪ Discuss PI 130 and take students out to do their own bubble observations ▪ Poem- We All Go Traveling By p. 131 ▪ Lesson 1 Investigate- Snack in a Bag p. 132-133 ▪ Lesson 6 Investigate- Feely Boxes

Strand II Content of Science – EARTH AND SPACE SCIENCE

Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

Essential Question: What do you see in the night sky and how do those objects change?

Category	Kindergarten	End Learning Mastery	Assessment(s)	Resources
Strand II: **Content of Science** **EARTH & SPACE SCIENCE** **Universe/Solar System** **Benchmark I:** Know the structure of the solar system and the objects in the universe	1. Observe that there are many objects in the night sky and that some are brighter than others. 2, Describe the location and movements of objects in the sky (e.g., stars, sun, moon).	Identify objects in the sky.	none	Unit D Looking At the Sky -Lesson 6 What Can I See in the Sky? P. 120-121 ▪ Science Songs track 8 ▪ Leveled readers: The Sky At Night; Sun Up, Sun Down ▪ What Can I See in the Sky? (The Cloud Book) p. 95 -Lesson 7 How Does the Sun Seem To Move? P. 126-127 ▪ Reaching All Learners- Songs about the sun p. 127 ▪ Lesson 7 Investigate Sun Moves p. 124-125

Strand II Content of Science – EARTH AND SPACE SCIENCE

Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

Essential Question: What kinds of weather changes do we see?

Category	Kindergarten	End Learning Mastery	Assessment(s)	Resources
Strand II: **Content of Science** **EARTH & SPACE SCIENCE** **Earth** **Benchmark II:** Know the structure and formation of Earth and its atmosphere and the processes that shape them	1. Observe that changes in weather occur from day to day and season to season. 2. Observe that the sun warms the land and water and they warm the air.	Observe and discuss daily/seasonal weather.	none	Unit D Looking At the Sky -Lesson 1 How Can I Describe the Weather? P. 100-101 ▪ Science Songs track 7 ▪ Lesson 1 Investigate- Observe Weather p. 98-99 ▪ National Geographic Video- Hot Days -Lesson 2 What Is Winter Weather? P. 104-105 ▪ National Geographic Video- It's Freezing ▪ Reaching All Learners- Act Out Hibernation p. 105 -Lesson 3 What Is Spring Weather? P. 108-109 -Lesson 4- What is Summer Weather? P. 112-113 ▪ Lesson 4 Investigate- Hot Spot p. 110-111 -Lesson 5- What is Fall Weather? P. 115-117 ▪ Art Link- Fall Leaves p. 117 Everyday Math- Recording weather data -Lesson 7 How Does the Sun Seem to Move? P. 126-127 ▪ Lesson 7 Investigate Sun Moves p.124-125

Strand III Science & Society – DISCOVER / INVENT Scientific Influence

Standard I: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.

Essential Question: How does science help us?

Category	Kindergarten	End Learning Mastery	Assessment(s)	Resources
Strand III: Science and Society **Discover / Invent Scientific Influence** **Benchmark I:** Describe how science influences decisions made by individuals and societies	1. Recognize that germs exist and may cause disease. 2. Describe how science helps provide products we use every day (e.g., gasoline for cars; electricity for lights, refrigerators, TVs; gas or electricity for heating, cooking).	Recognize that healthy habits keep us well. Recognize that science changes the way we live our lives.	none	Note: See Health Curriculum Focus On: Biography- Deb Barker, Wildlife Photographer ▪ Focus on photography as a scientific discovery that has enabled us to use science to learn more as well as to bring pleasure as an art form

<u>KEY</u>
magenta – introduce
green – develop
master – red
progress – black
extend - turquoise