

MSAD #54 Science Curriculum

Content Area: Science
Unit: Unifying Themes

Grade: Grade 1
MLR Span: PreK-2

MLR Content Standard: A: Unifying Themes

Students apply the principles of systems, models, constancy and change, and scale in science and technology.

*Assessment

Unifying Themes:	MLR Performance Indicators	MSAD #54 Objectives	Instructional Resources/Activities
A1 Systems	<p>1.Students recognize that parts work together, and make up whole man-made and natural objects.</p> <p>a.Explain that most man-made and natural objects are made of parts.</p> <p>b.Explain that when put together, parts can do things they could not do separately.</p>	Students will	<p>Standards A-C are unifying themes and should be embedded in standards D and E. Please work to accomplish these objectives when you complete the units in standards D and E.</p> <p>a1. Soils Unit</p>
A2 Models	<p>2.Students identify models and the objects they represent to learn about their features.</p> <p>a.Describe ways in which toys and pictures are like the real things they model.</p> <p>b.Use a model as a tool to describe the motion of objects or the features of plants and animals.</p>	Students will	<p>a1. Liquids and Solids Units</p> <p>b1. Soils Unit</p>

A3 Constancy and Change	<p>3. Students observe that in the physical setting, the living environment, and the technological world some things change over time and some things stay the same.</p> <p>a. Describe the size, weight, color, or movement of things over varying lengths of time and note qualities that change or remain the same.</p>	Students will:	a1. Soils Unit
A4 Scale	<p>4. Students observe differences in scale.</p> <p>a. Compare significantly different sizes, weights, ages, and speeds of objects.</p>	Students will:	

MSAD #54 Science Curriculum

Content Area: Science
Unit: Skills & Traits

Grade: Grade 1
MLR Span: PreK-2

MLR Content Standard: B. The Skills and Traits of Scientific Inquiry And Technological Design

Students plan, conduct, analyze data from and communicate results of in-depth scientific investigations; and they use a systematic process, tools, equipment, and a variety of materials to create a technological design and produce a solution or product to meet a specified need.

Skills and Traits	MLR Performance Indicators	MSAD #54 Objectives	Instructional Resources/Activities
<p>B1 Skills and Traits of Scientific Inquiry</p>	<p>1. Students conduct and communicate results of simple investigations.</p> <p>a. Ask questions and make observations about objects, organisms and events in the environment.</p> <p>b. Safely conduct simple investigations to answer questions.</p> <p>c. Use simple instruments with basic units of measurement to gather data and extend the senses.</p> <p>d. Know what constitutes evidence that can be used to construct a reasonable explanation.</p> <p>e. Use writing, speaking, and drawing to communicate investigations and</p>	<p>Students will:</p>	<p>a-e. All Units.</p>

<p>B2 Skills and Traits of Technological Design</p>	<p>explanations.</p> <p>2.Students use a simple design process and basic tools and materials to solve a problem or create a product.</p> <p>a.Describe a design problem in their own words.</p> <p>b.Propose a way to build something or cause something to work better.</p> <p>c.Use suitable tools, materials, safe techniques, and measurements to implement a proposed solution to a design problem.</p> <p>d.Judge how well a product or design solved a problem.</p> <p>e.Present a design or solution to a problem using oral, written, or pictorial means of communication.</p>	<p>Students will</p>	<p>a-e. All Units.</p>
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MSAD #54 Science Curriculum

Content Area: Science
 Unit: Scientific & Technological Enterprise

Grade: Grade 1
 MLR Span: PreK-2

MLR Content Standard: **C. The Scientific and Technological Enterprise**
 Students understand the history and nature of scientific knowledge and technology, the processes of inquiry and technological design, and the impacts science and technology have on society and the environment.

Scientific & Technological Enterprise	MLR Performance Indicators	MSAD #54 Objectives	Instructional Resources/Activities
C1 Understandings of Inquiry	1.Students describe the use of questions and accurate communication in scientists’ work. a.Describe how scientific investigations involve asking and answering a question. b.Point out the importance of describing things and investigations accurately so others can learn about them or repeat them.	Students will	a - b. All Units.
C2 Understandings About Science and Technology	2.Students recognize that people have always engaged in science and technology and that there is a difference between the natural and designed worlds. a.Recognize that people have always had problems and invented tools and ways of doing things to solve problems. b.Distinguish between objects that occur in nature	Students will	

	and objects that are man-made.		
C3 Science, Technology, and Society	No performance indicator.		
C4 History and Nature of Science	No performance indicator.		

MSAD #54 Science Curriculum

Content Area: Science
Unit: Physical Setting

Grade: Grade 1
MLR Span: PreK-2

MLR Content Standard: D. The Physical Setting

Students understand the universal nature of matter, energy, force, and motion and identify how these relationships are exhibited in Earth Systems, in the solar system, and throughout the universe.

Physical Setting	MLR Performance Indicators	MSAD #54 Objectives	Instructional Resources/Activities
D1 Universe and Solar System	1.Students describe the movement of objects across the sky, as seen from Earth. a.Describe how the sun and moon seem to move across the sky. b.Describe the changes in the appearance of the moon from day to day.	Students will	
D2 Earth	2.Students describe the Earth’s weather and surface materials and the different ways they change. a.Explain that the sun warms the air, water, and land. b.Describe the way in which weather changes over months. c.Describe what happens to water left in an open container as compared to water left in a closed container.	Students will c1. observe and communicate the process of evaporation.	c1.See FOSS module (Solids and Liquids) TM guide for instructional activities, strategies, and assessments.

<p>D3 Matter and Energy</p>	<p>3.Students use observable characteristics to describe objects and materials and changes to physical properties of materials.</p> <p>a.Describe objects in terms of what they are made of and their physical properties.</p> <p>b.Describe changes in properties of materials when mixed, heated, frozen, or cut.</p>	<p>Students will</p> <p>a1. explore and describe a number of different solid materials.</p> <p>a2. recognize solids as different from other states of matter.</p> <p>a3. sort solids by their properties.</p> <p>a4. observe and record information about the properties of a variety of liquid materials.</p> <p>b1. combine and separate solid materials of different particle sizes.</p> <p>b2. observe what happens when solids and water are mixed.</p> <p>b3. observe what happens when liquids and water are mixed.</p> <p>b4. organize observations of mixtures.</p> <p>a5. examine samples of sand, clay, and humus using their senses.</p> <p>b5. compare the characteristics of wet and dry soils.</p>	<p>a1-a4, b1-b4.See FOSS module (Solids and Liquids) TM guide for instructional activities, strategies, and assessments.</p> <p>a5 & b5.See Carolina (Soils) TM guide for instructional activities, strategies, and assessments.</p>
<p>D4 Force and Motion</p>	<p>4.Students describe how objects move in different ways.</p> <p>a.Describe different ways things move and what it takes to start objects moving, keep</p>	<p>Students will</p> <p>a1. investigate and record the level nature of liquid as it flows from one stable position to another.</p>	<p>a1 – a2.See FOSS module (Solids and Liquids) TM guide for instructional activities, strategies, and</p>

	<p>objects moving, or stop objects.</p> <p>b. Give examples of things that make sound by vibrating.</p>	<p>a2. compare the behavior of solids and liquids in similar settings.</p>	<p>assessments.</p>
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MSAD #54 Science Curriculum

Content Area: Science
 Unit: The Living Environment

Grade: Grade 1
 MLR Span: Prek-2

MLR Content Standard: E. The Living Environment

Students understand that cells are the basic unit of life, that all life as we know it has evolved through genetic transfer and natural selection to create a great diversity of organisms, and that these organisms create interdependent webs through which matter and energy flow. Students understand similarities and differences between humans and other organisms and the interconnections of these interdependent webs.

Living Environment	MLR Performance Indicators	MSAD #54 Objectives	Instructional Resources/Activities
E1 Biodiversity	1. Students describe similarities and differences in the observable behaviors, features, and needs of plants and animals. a. Describe similarities and differences in the way plants and animals look and the things that they do. b. Describe some features of plants and animals that help them live in different environments. c. Describe how organisms change during their lifetime.	Students will a1 & b1. plant seeds in four types of soil and create a log to watch them grow.	a1 & b1. See Carolina (Soils) TM guide for instructional activities, strategies, and assessments.
E2 Ecosystems	2. Students understand how plants and animals depend on each other and the environment in which they live. a. Explain that animals use plants and other animals for food, shelter, and nesting. b. Compare different animals and plants that live in different environments	Students will	

<p>E3 Cells</p>	<p>of the world.</p> <hr/> <p>3.Students describe parts and wholes of living things, their basic needs, and the structures and processes that help them stay alive.</p> <p>a.List living things and their parts.</p> <p>b.Explain that parts of living things are so small we can only see them using magnifiers.</p> <p>c.List the basic things that most organisms need to survive.</p> <p>d.Identify structures that help organisms do things to stay alive.</p>	<p>Students will</p> <hr/> <p>a1, c1, & d1. plant seeds in glass tubes and examine the formation of roots.</p> <p>b. will conduct tests on their local soil.</p>	<hr/> <p>a1 – d1.See Carolina (Soils) TM guide for instructional activities, strategies, and assessments.</p>
<p>E4 Heredity and Reproduction</p>	<p>4.Students describe the cycle of birth, development, and death in different organisms and the ways in which organisms resemble their parents.</p> <p>a.Give examples of how organisms are like their parents and not like them.</p> <p>b.Describe the life cycle of a plant or animal (including being born, growing, reproducing, and dying).</p>	<p>Students will</p> <hr/>	<hr/>
<p>E5 Evolution</p>	<p>5.Students describe similarities and differences between present day and past organisms that helped the organisms live in their environment.</p>	<p>Students will</p> <hr/>	<hr/>

	<p>a. Describe some organisms' features that allow the organisms to live in places others cannot.</p> <p>b. Explain how some kinds of organisms that once lived on Earth have completely disappeared, although they were similar to some that are alive today.</p>	<p>a1. observe, describe, and discuss how worms compost decaying materials in the soil aiding plant growth.</p>	<p>a1. See Carolina (Soils) TM guide for instructional activities, strategies, and assessments.</p>
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