

North East School District PA Core Curriculum Map

Science

Third Grade



INTRODUCTION

North East School District has adopted Pennsylvania Department of Education's Standards Aligned System for Science Academic Standards as well as has integrated the concepts from the national standards for science by Next Generation Science.


The performance expectations in third grade help students formulate answers to questions such as: "What is typical weather in different parts of the world and during different times of the year? How can the impact of weather-related hazards be reduced? How do organisms vary in their traits? How are plants, animals, and environments of the past similar or different from current plants, animals, and environments? What happens to organisms when their environment changes? How do equal and unequal forces on an object affect the object? Students are expected to develop an understanding of the similarities and differences of organisms' life cycles. An understanding that organisms have different inherited traits, and that the environment can also affect the traits that an organism develops, is acquired by students at this level.

Third graders are expected to develop an understanding of the idea that when the environment changes some organisms survive and reproduce, some move to new locations, some move into the transformed environment, and some die. Students are able to determine the effects of balanced and unbalanced forces on the motion of an object and the cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.

In the third-grade performance expectations, students are expected to demonstrate grade-appropriate proficiency in asking questions and defining problems; developing and using models, planning and carrying out investigations, analyzing and interpreting data, constructing explanations and designing solutions, engaging in argument from evidence, and obtaining, evaluating, and communicating information.

This document describes what students should know and be able to do in the following eight areas:

- ◇ 3.1. Biological Sciences
- ◇ 3.2. Physical Sciences: Chemistry and Physics
- ◇ 3.3. Earth and Space Sciences
- ◇ 3.4. Technology and Engineering Education

<p><u>SCIENCE</u></p> 	<p><u>Science 3</u></p>	<p><u>GRADE 3</u></p>
<p>The target objective of 3rd Grade Science is to formally introduce the students to a variety of science topics in the following four domains:</p> <p style="text-align: center;"> <i>The Nature of Science</i> <i>Biological Science</i> <i>Physical Science</i> <i>Earth and Space Science</i> </p> <p>The course begins with a Biological/Life Science unit focusing mainly on plants, including their parts, purpose, and their interactions within an ecosystem. A unit on Physical Science follows that includes an introduction to matter, energy, and principles of force and motion. The Earth Science unit consists of studying changes in our Earth’s surface, Earth’s resources, weather and clouds, and finally Earth’s rotation and revolution. The Nature of Science is interspersed throughout the curriculum as we touch on processes, procedures, scientific method, and patterns in nature, as well as reasoning and analysis.</p> <p><u>PA CORE Reporting Categories & Assessment Anchors</u></p> <p><u>The Nature of Science</u> S.3.A.1 → Reasoning and Analysis. S.3.A.2 → Processes, Procedures, and Tools of Scientific Investigations. S.3.A.3 → Systems, Models, and Patterns.</p> <p><u>Biological Sciences</u> S.3.B.1 → Structure and Function of Organisms. S.3.B.2 → Continuity of Life. S.3.B.3 → Ecological Behavior and Systems.</p>		

	<p>Physical Sciences S.3.C.1 → Structure, Properties, and Interaction of Matter and Energy. S.3.C.2 → Forms, Sources, Conversion, and Transfer Energy. S.3.C.3 → Principles of Motion and Force.</p> <p>Earth and Space Sciences S.3.D.1 → Earth Features and Processes That Change Earth and Its Resources. S.3.D.2 → Weather, Climate, and Atmospheric Processes. S.3.D.3 → Composition and Structure of the Universe.</p>			
MONTH/QUARTER	CONCEPTS	STANDARDS/ ELIGIBLE CONTENT	ASSESSMENTS	RESOURCES
<p>SEPTEMBER</p>	<p>Parts of a plant and their systems - roots, stem, leaves, flowers, seeds, photosynthesis</p> <p>Basic needs of a plant</p> <p>The process of selection and how it relates to physical characteristics that are passed onto offspring</p> <p>Read and explore non-fiction texts in order to pull out facts</p>	<p>Nature of Science <i>Reasoning & Analysis</i></p> <p>S.3.A.1.1.1 Distinguish between fact and opinion.</p> <p>Nature of Science <i>Processes, Procedures, and Tools of Scientific Investigations</i></p> <p>S.3.A.2.1.2 Make predictions based on observations.</p>	<p>Science Journals</p> <p>Parts Of A Plant Poster</p> <p>Life Science Packet</p> <p>Teacher Observation</p> <p>Questioning</p>	<p>Mystery Science Mystery 4: <i>How could you make the biggest fruit in the world?</i></p> <p>National Geographic Explorer</p> <p>Cloze reading passages</p> <p>New Path Learning Review Game</p> <p>Life Science Packet</p>

		<p>S.3.A.2.2.1 Identify appropriate tools or instruments for specific tasks and describe the information they provide.</p> <p>Biological Sciences <i>Structure and Function of Organisms</i></p> <p>S.3.B.1.1.1 Identify and describe the functions of basic structures of animals and plants (roots, stem, leaves)</p> <p>S.3.B.1.1.3 Describe the basic needs of plants and animals and their dependence on light, food, air, water, and shelter.</p>	<p>Photosynthesis Relay Race Game</p> <p>FOSS Parts Of A Tree Cards And Poster</p> <p>Tree Parts Memory Cards</p> <p>Videos/Songs Found On Youtube</p> <p>Teachers Pay Teachers</p> <p>Celery, Leaves, Plants</p> <p><i>"Tops And Bottoms"</i> By Janet Stevens</p> <p>Vocabulary Games</p> <p>Versatiles Book/Tiles</p> <p>www.kahoot.it</p> <p>Teacher-Made Materials And Charts</p> <p>Hand Lenses</p>
--	--	---	--

		<p>Biological Sciences <i>Continuity Of Life</i></p> <p>S.3.B.2.1.2 Identify and describe plant and animal characteristics that are necessary for survival.</p> <p>S.3.B.2.2.1 Identify physical characteristics (i.e. height, hair color, eye color) that could be passed onto offspring.</p> <p>S.3.B.2.2.2 Identify similar physical characteristics in parents and their offspring.</p>		
MONTH/QUARTER	CONCEPTS	STANDARDS/ ELIGIBLE CONTENT	ASSESSMENTS	RESOURCES
OCTOBER	<p>Life Cycle of a Flowering Plant</p> <p>Life Cycle of a Fruit Tree</p> <p>Parts of a Seed</p>	<p>Biological Sciences <i>Structure and Function of Organisms</i></p> <p>S.3.B.1.1.4 Describe how plants and</p>	<p>Student-Made Anchor Chart</p> <p>Science Journals</p> <p>Life Science Packet</p>	<p>Mystery Science</p> <p>National Geographic Explorer</p> <p>Readers Theaters</p>

	<p>Plant Adaptations - Behavioral</p>	<p>animals go through life cycles.</p> <p>Biological Sciences <i>Continuity Of Life</i></p> <p>S.3.B.2.1.1 Identify adaptations of plants and animals that have helped them to survive.</p> <p>S.3.B.2.1.3 Identify characteristics for plant and animal survival in different environments (i.e. desert, forest, ocean).</p>	<p>Parts Of A Plant/Vocabulary Quiz</p> <p>Teacher Observation</p> <p>Scientific Questioning</p>	<p>Life Science Packet</p> <p>Photosynthesis Relay Race Game</p> <p>FOSS Parts Of A Tree Cards And Poster</p> <p>Plant Adaptation Flip Book</p> <p>Plant Adaptation PPT</p> <p>Plant Adaptation Chart Sort</p> <p>Teacher-Made Charts And Materials</p> <p>Tree Parts Memory Cards</p> <p>Videos/Songs Found On Youtube</p> <p>Teachers Pay Teachers</p> <p>Celery, Leaves, Plants</p>
--	---------------------------------------	--	--	--

				Versatiles Book/Tiles
NOVEMBER	<p>Basic Needs</p> <p>Ecosystems</p> <p>Changes in Ecosystems</p> <p>Living and Nonliving</p> <p>Facts and Opinions</p>	<p>Biological Sciences <i>Structure and Function of Organisms</i> S.3.B.1.1.3</p> <p>Biological Sciences <i>Ecological Behavior and Systems</i> S.3.B.3.1.1 Identify the living and nonliving components of an ecosystem.</p> <p>S.3.B.3.1.2 Describe the interactions between living and nonliving components of an ecosystem.</p> <p>S.3.B.3.2.2 Describe how changes in environment can affect the ecosystem.</p> <p>S.3.B.3.2.3 Describe how human interactions with the environment impact an</p>	<p>Basic Needs Chart</p> <p>Ecosystem Packet</p> <p>Teacher Observation</p> <p>Science Journals</p> <p>Triorama Biome Project</p> <p>Biome Poster Presentation</p>	<p>Study Island</p> <p>Mystery Science</p> <p>www.pbskids.org</p> <p>Plumlanding</p> <p>Interactive Games</p> <p>National Geographic Explorer</p> <p>Ecosystem Packet</p> <p>Living And Non-Living Scavenger Hunt</p> <p>Teacher-Made Charts And Materials</p> <p>Fact And Opinion Sort</p> <p>Videos/Songs Found On Youtube</p> <p>Teachers Pay Teachers</p> <p>Versatiles Book/Tiles</p>

		ecosystem.		
MONTH/QUARTER	CONCEPTS	STANDARDS/ ELIGIBLE CONTENT	ASSESSMENTS	RESOURCES
DECEMBER	Facts and Opinions Characteristics of plants and animals that help with survival Physical Properties	<p><u>Nature Of Science</u> <i>Reasoning & Analysis</i> S.3.A.1.1</p> <p><u>Biological Sciences</u> <i>Structure and Function of Organisms</i> S.3.B.2.1.2 Identify and describe plant and animal characteristics that are necessary for survival.</p> <p><u>Physical Sciences</u> <i>Structure, Properties, and Interaction of Matter and Energy</i> S.3.C.1.1.1 Describe matter in terms of its observable properties. S.3.C.1.1.2 Classify matter using</p>	Readers Theater Presentation Fact And Opinion Works In Science Notebooks Teacher Observation Science Journals	Mystery Science National Geographic Explorer Videos/Songs Found On Youtube Versatiles Book/Tiles Teacher-Made Charts And Materials Readers Theater Script Fact And Opinion Sort

		observable physical properties.		
JANUARY	<p>Observable Physical Properties of Matter</p> <p>Physical Properties of Matter</p> <p>Mixtures and Solutions</p> <p>States of Matter</p>	<p><u>Nature of Science</u> <i>Processes, Procedures, and Tools of Scientific Investigations</i></p> <p>S.3.A.2.1.2</p> <p>S.3.A.2.2.1</p> <p><u>Physical Sciences</u> <i>Structure, Properties, and Interaction of Matter and Energy</i></p> <p>S.3.C.1.1.1</p> <p>S.3.C.1.1.2</p> <p>S.3.C.1.1.3 Classify a substance as a solid, liquid, or gas.</p>	<p>Physical Science Unit Pretest</p> <p>Physical Properties Booklet</p> <p>Science Journals</p> <p>Teacher Observation</p> <p>Classifying Physical Properties</p> <p>Root Beer Float Activity</p> <p>Vocabulary Quiz</p>	<p>www.kahoot.it</p> <p>Mystery Science</p> <p>Balance Scales</p> <p>“Who Am I?” Game</p> <p>Versatiles Book/Tiles</p> <p>Mystery Items/Bags</p> <p>Classifying Items Bags</p> <p>Teacher-Made Charts And Materials</p> <p>Crackers For Sorting Lab</p> <p>Chex Mix</p> <p>Cheerios For Atoms Lab</p> <p>Magnet Boxes</p> <p>Flipbooks</p>

				<p>Matching/Sorting "I Have, Who Has" Game</p> <p>Anchor Charts</p> <p>Physical Science Packet</p> <p>Root Beer Float Supplies</p> <p>Construction Paper</p> <p>Rulers</p>
MONTH/QUARTER	CONCEPTS	STANDARDS/ ELIGIBLE CONTENT	ASSESSMENTS	RESOURCES
FEBRUARY	<p>Water Cycle</p> <p>Energy Types and Changes</p> <p>Motion and Force</p>	<p><u>Nature of Science</u> <i>Processes, Procedures, and Tools of Scientific Investigations</i></p> <p>S.3.A.2.1.2</p> <p>S.3.A.2.2.1</p>	<p>Matter Quiz</p> <p>Water Cycle Work</p> <p>Science Journals</p> <p>Teacher Observation</p>	<p>www.kahoot.it</p> <p>Mystery Science</p> <p>www.readworks.org</p> <p>Teacher-Made Charts And Materials</p> <p>Water Cycle Pages</p>

		<p>Physical Sciences <i>Structure, Properties, and Interaction of Matter and Energy</i></p> <p>S.3.C.1.1.1</p> <p>S.3.C.1.1.4 Recognize and identify how water goes through phase changes (i.e. evaporation, condensation, freezing, melting).</p> <p>S.3.C.1.1.5 Describe how the properties of matter can be changed.</p> <p>Physical Sciences <i>Forms, Sources, Conversion, And Transfer Of Energy</i></p> <p>S.3.C.2.1.1</p>		<p>www.youtube.com Versatiles Book/Tiles</p> <p>Magic School Bus</p> <p>Snap Circuit Kits</p> <p>Batteries</p> <p>Lightbulbs</p> <p>Flash Lights</p> <p>Energy Centers</p> <p>Motion And Force Centers</p>
--	--	--	--	---

		<p>Identify basic forms and sources of energy.</p> <p>S.3.C.2.1.2 Identify simple transformations of energy (i.e. eating food to get energy, rubbing hands together to create heat, etc.).</p> <p>S.3.C.2.1.3 Identify characteristics of sound (pitch, loudness).</p> <p><u>Physical Sciences</u> <i>Principles Of Motion And Force</i></p> <p>S.3.C.3 Observe and identify changes in an object's motion.</p> <p>S.3.C.3.1.1 Identify and describe an object's motion (i.e. start/stop, push/pull, up/down, left/right,</p>		
--	--	---	--	--

		<p>faster/slower, spinning).</p> <p>S.3.C.3.1.2 Describe an object’s position in terms of its relationship to another object or stationary background (i.e. behind, beside, on top of, above, below, etc.).</p>		
FEBRUARY/MARCH	<p>Landform Maps and Models</p> <p>Rapid and Slow Changes to Earth</p> <p><u>The Nature Of Science</u> <i>Systems, Models, And Patterns</i></p> <p>S.3.A.3.2 Use models to illustrate</p>	<p><u>Earth And Space Sciences</u> <i>Earth Features And Processes That Change Earth And Its Resources</i></p> <p>S.3.D.1.1 Describe various materials that make up Earth.</p> <p>S.3.D.1.2 Identify and describe the types of Earth’s natural resources.</p> <p>S.3.D.1.3 Identify and describe the ways that cause Earth’s</p>	<p>Salt Dough Landform Maps</p> <p>Readers Theater Presentations</p> <p>www.readworks.org</p> <p>Teacher Observation</p> <p>Science Journals</p>	<p>Readers Theater Scripts</p> <p>www.readworks.org</p> <p>Teacher-Made Charts And Materials</p> <p>Salt Dough Project - Signupgenius, Parent Donations And Volunteers</p> <p>www.youtube.com</p> <p>Landform Maps</p> <p>U.S. Maps</p>

	simple concepts. →→→→→→→→	surface to be in a state of constant change.		Map Museum Guests
MONTH/QUARTER	CONCEPTS	STANDARDS/ ELIGIBLE CONTENT	ASSESSMENTS	RESOURCES
MARCH	Rapid and Slow Changes to Earth Soil Formation and Composition Renewable and Nonrenewable Resources	<u>Earth And Space Sciences</u> <i>Earth Features And Processes That Change Earth And Its Resources</i> S.3.D.1.1 S.3.D.1.1.2 Describe the content of soil as weathered rock and decomposed organic material S.3.D.1.2 S.3.D.1.3	Story Of Soil Comic Strip www.readworks.org Cloze Reading Passage Quiz Teacher Observation Science Journals	www.youtube.com Mystery Science Formation Of Soil Pages Story Of Soil Versatiles Book/Tiles National Geographic www.readworks.org Teacher-Made Materials & Charts Weathering Cookie Activity Supplies- Eye Droppers, Cookies, Recording Sheet www.kahoot.it

<p>APRIL</p>	<p>Scientific Process And Projects</p>	<p><u>The Nature Of Science Processes, Procedures, And Tools Of Scientific Investigations</u></p> <p>S.3.A.2.1 Apply skills necessary to conduct an experiment or design a solution to solve a problem.</p> <p>S.3.A.2.1.1 Generate questions about objects, organisms, and/or events that can be answered through scientific investigations.</p> <p>S.3.A.2.1.2 Make predictions based on observations.</p> <p>S.3.A.2.1.3 Identify variables in a simple investigation.</p>	<p>Science Fair Project www.readworks.org</p> <p>Teacher Observation</p> <p>Science Journals</p>	<p>Mystery Science</p> <p>Variety Of Science Fair Project Resources</p> <p>www.readworks.org</p>

MONTH/QUARTER	CONCEPTS	STANDARDS/ ELIGIBLE CONTENT	ASSESSMENTS	RESOURCES
<p>MAY/JUNE</p>	<p>Weather Conditions, Variables, and Instruments</p> <p>Earth’s Rotation and Cycle</p>	<p><u>Earth And Space Sciences</u> <i>Weather, Climate, And Atmospheric Processes</i></p> <p>S.3.D.2.1 Identify basic weather conditions and how they are measured.</p> <p>S.3.D.2.1.1 Recognize that clouds have different characteristics that relate to different weather conditions.</p> <p>S.3.D.2.1.2 Describe how weather variables (i.e. temperature, wind speed, wind direction, and precipitation) are observed and measured.</p>	<p>www.readworks.org</p> <p>Teacher Observation</p> <p>Science Journals</p> <p>Vocabulary Quiz</p>	<p>www.readworks.org</p> <p>Weather Instruments</p> <p>Vocab Cards/Games</p> <p>www.kahoot.it</p> <p>Mystery Science</p> <p>Weather Centers/Stations</p> <p>Versatile Book/Tiles</p>

		<p>S.3.D.2.1.3 Identify appropriate instruments to study and measure weather elements [i.e. thermometer (temperature), wind vane (direction), anemometer (speed), rain gauge (precipitation)].</p> <p><u>Earth And Space Sciences</u> <i>Composition And Structure Of The Universe</i></p> <p>S.3.D.3.1 Describe Earth’s position and relationship to the Sun and Moon.</p> <p>S.3.D.3.1.1 Describe how the Earth rotates on its axis once every 24 hours giving rise</p>		
--	--	---	--	--

		to the cycle of day and night.		
--	--	--------------------------------	--	--