MOORESTOWN TOWNSHIP PUBLIC SCHOOLS
MOORESTOWN, NEW JERSEY

Moorestown Township Elementary Schools
Science Department

Science Curriculum
Grade 2

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Prepared by: Julie Wagner, Sarah Bottinelli, Scott Rowan, and Michelle Dzamko
Supervisor: Gavin Quinn

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Course Description and Fundamental Concepts

Science class in second grade will help students formulate answers to questions such as: “How does land change and what are some things that cause it to change? What are the different kinds of land and bodies of water? How are materials similar and different from one another, and how do the properties of the materials relate to their use? What do plants need to grow? How many types of living things live in a place?”

- Students are expected to develop an understanding of what plants need to grow and how plants depend on animals for seed dispersal and pollination.
- Students are also expected to compare the diversity of life in different habitats. An understanding of observable properties of materials is developed by students at this level through analysis and classification of different materials.
- Students are able to apply their understanding of the idea that wind and water can change the shape of the land to compare design solutions to slow or prevent such change. Students are able to use information and models to identify and represent the shapes and kinds of land and bodies of water in an area and where water is found on Earth.

The crosscutting concepts of patterns; cause and effect; energy and matter; structure and function; stability and change; and influence of engineering, technology, and science on society and the natural world are called out as organizing concepts for these disciplinary core ideas.

In the second grade performance expectations, students are expected to demonstrate grade appropriate proficiency in 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. Students are expected to use these practices to demonstrate understanding of the core ideas.

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New Jersey Student Learning Standards (NJSLS)

Subject/Content Standards
Include grade appropriate subject/content standards that will be addressed

Standard #	Standard Description
2-PS1-4	**2-PS1 Matter and Its Interactions**
2-PS1-1	Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
2-PS1-2	Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.
2-PS1-3	Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.
2-PS1-4	Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.
2-LS2-1-2	**2-LS2 Ecosystems: Interactions, Energy, and Dynamics**
2-LS2-1	Plan and conduct an investigation to determine if plants need sunlight and water to grow. [Assessment Boundary: Assessment is limited to testing one variable at a time.]
2-LS2-2	Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.
2-LS4-1	**2-LS4 Biological Evolution: Unity and Diversity** Make observations of plants and animals to compare the diversity of life in different habitats.
2-ESS1-1	**2-ESS1 Earth's Place in the Universe** Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
2-ESS2-3	**2-ESS2 Earth's Systems** Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.* [Clarification Statement: Examples of solutions could include different designs of dikes and windbreaks to hold back wind and water, and different designs for using shrubs, grass, and trees to hold back the land.]

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2-ESS2-2	Develop a model to represent the shapes and kinds of land and bodies of water in an area. [Assessment Boundary: Assessment does not include quantitative scaling in models.]
2-ESS2-3.	Obtain information to identify where water is found on Earth and that it can be solid or liquid
K-2ETS1	**K-2-ETS1 Engineering Design**
K-2-ETS1-1.	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.
K-2-ETS1-2.	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.
K-2-ETS1-3.	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

English Companion Standards

List grade-level appropriate companion standards for History, Social Studies, Science and Technical Subjects (CTE/Arts) 6-12. English Companion Standards are required in these subject/content areas.

Unit Addressed	Standard #	Standard Description
1-3	NJSLSA.R1.	Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
1-3	NJSLSA.R2.	Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
1-3	NJSLSA.R3.	Analyze how and why individuals, events, and ideas develop and interact over the course of a text.
1-3	NJSLSA.R4.	Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
1-3	NJSLSA.R5.	Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.

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1-3	NJSLSA.R6.	Assess how point of view or purpose shapes the content and style of a text.
1-3	NJSLSA.R7.	Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
1-3	NJSLSA.R8.	Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
1-3	NJSLSA.R9.	Analyze and reflect on how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.
1-3	NJSLSA.R10.	Read and comprehend complex literary and informational texts independently and proficiently with scaffolding as needed.
1	W.2.7	Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).
1-3	W.2.8	Recall information from experiences or gather information from provided sources to answer a question.
1-3	RI.2.3	Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.
1	RI.2.8	Describe how reasons support specific points the author makes in a text.
1	W.2.1	Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a concluding statement or section.
1-3	RI.2.1	Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
1-3	SL.2.2	Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.

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21st-Century Skills and Technology Integration (Standard 8)
List appropriate units below for which strands (A through F) will be addressed

Standard 8.1 (K-12)		**Educational Technology:** *All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.*
Unit Addressed	**Strand Letter**	**Standard Description**
1	**Strand A**	**Technology Operations and Concepts:** *Students demonstrate a sound understanding of technology concepts, systems, and operations.*
2	**Strand B**	**Creativity and Innovation:** *Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.*
1	**Strand C**	**Communication and Collaboration:** *Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.*
1, 2, 3	**Strand D**	**Digital Citizenship:** *Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.*
3	**Strand E**	**Research and Information Fluency:** *Students apply digital tools to gather, evaluate, and use information.*
2	**Strand F**	**Critical thinking, problem-solving, and decision making:** *Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.*
Standard 8.2 (K-5)		**Technology Education, Engineering, Design, and Computational Thinking - Programming:** *All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.*
3	**Strand A**	**The Nature of Technology: Creativity and Innovation:** *Technology systems impact every aspect of the world in which we live.*

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2, 3	**Strand B**	**Technology and Society:** *Knowledge and understanding of human, cultural and societal values are fundamental when designing technological systems and products in the global society.*
1-3	**Strand C**	**Design:** *The design process is a systematic approach to solving problems.*
1,2	**Strand D**	**Abilities for a Technological World:** *The designed world is the product of a design process that provides the means to convert resources into products and systems.*
3	**Strand E**	**Computational Thinking: Programming:** *Computational thinking builds and enhances problem-solving, allowing students to move beyond using knowledge to creating knowledge.*

Career Ready Practices (Standard 9)
List appropriate units below for which CRPs will be addressed

Unit Addressed	Standard #	Standard Description
1,2,3	**CRP1**	*Act as a responsible and contributing citizen and employee.*
1,2,3	**CRP2**	*Apply appropriate academic and technical skills.*
1,2,3	**CRP3**	*Attend to personal health and financial well-being.*
1,2,3	**CRP4**	*Communicate clearly and effectively and with reason.*
3	**CRP5**	*Consider the environmental, social and economic impacts of decisions.*
1,2,3	**CRP6**	*Demonstrate creativity and innovation.*
1,2,3	**CRP7**	*Employ valid and reliable research strategies.*
1,2,3	**CRP8**	*Utilize critical thinking to make sense of problems and persevere in solving them.*
1,2,3	**CRP9**	*Model integrity, ethical leadership, and effective management.*
1	**CRP10**	*Plan education and career paths aligned to personal goals.*
1, 2	**CRP11**	*Use technology to enhance productivity.*
1,2,3	**CRP12**	*Work productively in teams while using cultural global competence*

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Interdisciplinary Connections
List any other content standards addressed as well as appropriate units

Visual & Performing Arts Integration (Standard 1)
List appropriate units below for which standards (1.1 through 1.4) may be addressed

Unit Addressed	Standard #	Standard Description
1,2,3	**Standard 1.1**	**The Creative Process:** *All students will demonstrate an understanding of the elements and principles that govern the creation of works of art in dance, music, theatre, and/or visual art.*
3	**Standard 1.2**	**History of the Arts and Culture:** *All students will understand the role, development, and influence of the arts throughout history and across cultures.*
1,2,3	**Standard 1.3**	**Performing/Presenting/Producing:** *All students will synthesize those skills, media, methods, and technologies appropriate to creating, performing, and/or presenting works of art in dance, music, theatre, and/or visual art.*
1,2,3	**Standard 1.4**	**Aesthetic Responses & Critique Methodologies:** *All students will demonstrate and apply an understanding of arts philosophies, judgment, and analysis to works of art in dance, music, theatre, and/or visual art.*

Other Interdisciplinary Content Standards
List appropriate units below for any other content/standards that may be addressed

Unit Addressed	Content / Standard #	Standard Description
2	*2.MD.D.10*	• *Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.*
2	*MP.2*	• *Reason abstractly and quantitatively.*

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Pacing Guide (All Dates are approximate based on the school calendar)

Unit/ Topic	Month (w/Approx number of Teaching Days)
Unit 1 Plant and Animal Survival	**September (~19 days)**
Unit 1 Plant and Animal Survival	**October (~19 days)**
Unit 1 Plant and Animal Survival	**November (~16 days)**
Unit 2 Materials and Their Uses	**December (~15 days)**
Unit 2 Materials and Their Uses	**January (~18 days)**
Unit 2 Materials and Their Uses	**February (~18 days)**
Unit 3 Earth's Surface	**March (~15-20 days)**
Unit 3 Earth's Surface	**April (~15-20 days)**
Unit 3 Earth's Surface	**May (~18 days)**
Unit 3 Earth's Surface	**June (~15 days)**

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Units

Contact Content Supervisor for Unit Details.

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