MOORESTOWN TOWNSHIP PUBLIC SCHOOLS
MOORESTOWN, NEW JERSEY

Moorestown Township Elementary Schools
Science Department

Science Curriculum
Kindergarten

Date: February 14, 2020
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Course Description and Fundamental Concepts

Science in kindergarten helps students formulate answers to questions such as: “What happens if you push or pull an object harder? Where do animals live and why do they live there? What is the weather like today and how is it different from yesterday?”

● Students are expected to develop an understanding of patterns and variations in local weather and the purpose of weather forecasting to prepare for, and respond to, severe weather.
● Students are able to apply an understanding of the effects of different strengths or different directions of pushes and pulls on the motion of an object to analyze a design solution.
● Students are expected to develop an understanding of what plants and animals (including humans) need to survive and the relationship between their needs and where they live.

The crosscutting (universal) concepts of patterns; cause and effect; systems and system models; interdependence of science, engineering, and technology; and influence of engineering, technology, and science on society and the natural world are called out as organizing concepts for these disciplinary (science) core ideas.

Students are expected to demonstrate grade-appropriate proficiency in asking questions, developing and using models, planning and carrying out investigations, analyzing and interpreting data, designing solutions, engaging in argument from evidence, and obtaining, evaluating, and communicating information. Students are expected to use these practices to demonstrate their 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
K-PS2-1.	Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.
K-PS2-2	Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.
K-PS3-1	Make observations to determine the effect of sunlight on the Earth's surface.
K-PS3-2	Use tools and materials provided to design and build a structure that will reduce the warming effect of sunlight on the Earth's surface.
K-ESS2-1	Use and share observations of local weather conditions to describe patterns over time.
K-ESS3-2	Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.*
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- ETS1-3	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
K-LS1-1	Use observations to describe patterns of what plants and animals (including humans) need to survive
K-ESS2-2	Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.
K-ESS3-1	Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.
K-ESS3-3	Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.
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.

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English Companion Standards

List grade-level appropriate companion standards for English Companion Standards are required in these subject/content areas.

Unit Addressed	Standard #	Standard Description
Unit 2	W.K.7 SL.K.3	Participate in shared research and writing projects. Ask and answer questions in order to seek help, get information, or clarify something that is not understood.
Units 1 & 4	RI.K.1 SL.K.3	With prompting and support, ask and answer questions about key details in a text. Ask and answer questions in order to seek help, get information, or clarify something that is not understood
Unit 3	SL.K.5 RI.K.1 W.K.2	Add drawings or other visual displays to descriptions as desired to provide additional detail. With prompting and support, ask and answer questions about key details in a text. Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.

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**
	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 processes using technology.*
1,2,3,4	**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.*

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	Strand D	**Digital Citizenship:** *Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.*
	Strand E	**Research and Information Fluency:** *Students apply digital tools to gather, evaluate, and use information.*
	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.*
	Strand A	**The Nature of Technology: Creativity and Innovation:** *Technology systems impact every aspect of the world in which we live.*
	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.*
2	**Strand C**	**Design:** *The design process is a systematic approach to solving problems.*
3	**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.*
2	**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

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	CRP1	*Act as a responsible and contributing citizen and employee.*
1,2,3	**CRP2**	*Apply appropriate academic and technical skills.*
	CRP3	*Attend to personal health and financial well-being.*
1,2,3,4	**CRP4**	*Communicate clearly and effectively and with reason.*
3,4	**CRP5**	*Consider the environmental, social and economic impacts of decisions.*
2	**CRP6**	*Demonstrate creativity and innovation.*
	CRP7	*Employ valid and reliable research strategies.*
1,2,4	**CRP8**	*Utilize critical thinking to make sense of problems and persevere in solving them.*
	CRP9	*Model integrity, ethical leadership, and effective management.*
	CRP10	*Plan education and career paths aligned to personal goals.*
	CRP11	*Use technology to enhance productivity.*
3	**CRP12**	*Work productively in teams while using cultural global competence*

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
1,2,3,4	**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	**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.*

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	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
1,2,4	**Math / K.MD.A.1**	Describe measurable attributes of objects, such as length or weight. .
1,2,3,4	**Math / K.MD.A.2**	Directly compare two objects with a measurable attribute in common, to see which object has "more of"/ "less of" the attribute, and describe the difference
1,4	**Math/ K.CC.A**	Know number names and the count sequence.
1,4	**Math/MP.2**	Reason abstractly and quantitatively.
1,4	**Math/MP.4**	Model with mathematics.
1,4	**Math/K.CC.A**	Know number names and the count sequence.
1,4	**Math/K.MD.B.3**	Classify objects into given categories; count the number of objects in each category and sort the categories by count.

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Pacing Guide

Unit/ Topic	Month (w/Approx number of Teaching Days)
Weather	September (~19 days)
Weather	October (~19 days)
Weather	November (~16 days)
Weather	December (~15 days)
Pushes and Pulls	January (~18 days)
Pushes and Pulls	February (~18 days)
Plants and Animals	March (~15-20 days)
Plants and Animals	April (~15-20 days)
Weather	May (~18 days)
Weather	June (~15 days)

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Units

Contact the Content Supervisor for Unit Details.

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