MOORESTOWN TOWNSHIP PUBLIC SCHOOLS
MOORESTOWN, NEW JERSEY

Moorestown Upper Elementary
Science Department

Science
Grade 5

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Course Description and Fundamental Concepts

The fifth-grade science curriculum is based on the Next Generation Science Standards. Each unit has three dimensions: disciplinary core ideas, scientific and engineering practices, and crosscutting concepts. The disciplinary core ideas focus on scientific knowledge. The science and engineering practices require involvement in scientific inquiry. The crosscutting concepts connect scientific knowledge to other areas of learning.

The four units of study are:
- Living Things and Ecosystems
- Earth Systems
- Changes in Matter
- Earth, the Moon, and the Stars

This curriculum will incorporate the three strands of Science: Earth Science, Life Science, and Physical Science. Students will be guided to develop an understanding of the role of decomposers, consumers, and producers in a healthy ecosystem. They will investigate how the geosphere, hydrosphere, atmosphere, and biosphere interact. They will develop models to examine patterns caused by the relative positions of Earth and the Sun, and identify matter as particles of matter too small to be seen.

New Jersey Student Learning Standards (NJSLS)

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

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

Unit Addressed	Standard #	Standard Description
Unit 1	RI.5.1	Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.
Unit 1	RI.5.9	Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.
Unit 1	W.5.1	Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
Unit 2	RI.5.3	Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
Unit 2	RI.5.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
Unit 2	W.5.1	Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
Unit 2	W.5.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
Unit 3	R1.5.3	Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
Unit 3	RI.5.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
Unit 3	W.5.1	Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

Unit 3	W.5.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
Unit 3	W.5.7	Conduct short research projects that use several sources to build knowledge through investigation of different perspectives of a topic
Unit 4	RI.5.3	Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
Unit 4	RI.5.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
Unit 4	W.5.1	Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
Unit 4	W.5.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

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.A-F; 2. A-D 3.A-D; 4.A-C	**Strand A**	**Technology Operations and Concepts:** *Students demonstrate a sound understanding of technology concepts, systems, and operations.*
1.A-F; 2. A-D 3.A-D; 4.A-C	**Strand B**	**Creativity and Innovation:** *Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.*
2.D; 4.B	**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.D; 1.F 2. B-D 3.D; 4.C	**Strand D**	**Digital Citizenship:** *Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.*

1.A-F; 2. A-D 3.A-D; 4.A-C	**Strand E**	**Research and Information Fluency:** *Students apply digital tools to gather, evaluate, and use information.*
1.D; 1.F 2.B; 2.D 3.B; 4.B	**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.*
1.D-F; 2. A-D 3.A-D; 4.A-C		**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.*
1.F; ; 2.B; 2.D UNIT REVIEWS	**Strand A**	**The Nature of Technology: Creativity and Innovation:** *Technology systems impact every aspect of the world in which we live.*
1.F; 2.D; 3.D	**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.D; 4.C	**Strand C**	**Design:** *The design process is a systematic approach to solving problems.*
1.A-F; 2. A-D 3.A-D; 4.A-C	**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.*
1.D-F 2.B; 2.D; 3.B 4.B	**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.A-F; 2. A-D 3.A-D; 4.A-C	**CRP1**	*Act as a responsible and contributing citizen and employee.*
1.A-F; 2. A-D 3.A-D; 4.A-C	**CRP2**	*Apply appropriate academic and technical skills.*

2.D; 4.B	**CRP3**	*Attend to personal health and financial well-being.*
1.D; 1.F 2. B-D 3.D; 4.C	**CRP4**	*Communicate clearly and effectively and with reason.*
1.A-F; 2. A-D 3.A-D; 4.A-C	**CRP5**	*Consider the environmental, social and economic impacts of decisions.*
1.D; 1.F 2.B; 2.D 3.B; 4.B	**CRP6**	*Demonstrate creativity and innovation.*
1.D-F; 2. A-D 3.A-D; 4.A-C	**CRP7**	*Employ valid and reliable research strategies.*
1.F; ; 2.B; 2.D UNIT REVIEWS	**CRP8**	*Utilize critical thinking to make sense of problems and persevere in solving them.*
1.F; 2.D; 3.D	**CRP9**	*Model integrity, ethical leadership, and effective management.*
2.D; 4.C	**CRP10**	*Plan education and career paths aligned to personal goals.*
1.A-F; 2. A-D 3.A-D; 4.A-C	**CRP11**	*Use technology to enhance productivity.*
1.D-F 2.B; 2.D; 3.B 4.B	**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](#))

The arts enable personal, intellectual, social, economic, and human growth by fostering creativity and providing opportunities for expression beyond the limits of language.
Education in the arts fosters a population that:
- Creates, reshapes, and fully participates in the enhancement of the quality of life, globally.
- Participates in the social, cultural, and intellectual interplay among people of different ethnic, racial, and cultural backgrounds through a focus on the humanities.
- Possesses essential technical skills and abilities significant to many aspects of life and work in the 21st century.
- Understands and impacts the increasingly complex technological environment.

Unit Addressed	Standard #	Standard Description
3.C	**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.*

2.B	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.D; 1.F 2.D 3.D	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.D 2.D 4.C	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 <u>may be addressed</u>*		
Unit Addressed	**Content / Standard #**	**Standard Description**
Unit 1,2,3	**5.MD.A.1**	Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.
Unit 2,3	**5.MD.B.2**	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers was redistributed equally.
Unit 4,2	**5.G.A.2**	Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.
Unit 4	**5.NBT.A.2.**	Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

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

Unit/ Topic	Month (w/Approx number of Teaching Days)
Unit 1: Living Things and Ecosystems	September (~19 days)
Unit 1: Living Things and Ecosystems	October (~19 days)
Unit 1: Living Things and Ecosystems	November (~16 days)
Unit 2: Earth's Systems	December (~15 days)
Unit 2: Earth's Systems	January (~18 days)
Unit 2: Earth's Systems	February (~18 days)
Unit 3: Changes in Matter	
Unit 3: Changes in Matter	March (~15-20 days)
Unit 3: Changes in Matter	April (~15-20 days)
Unit 4: Earth, the Moon, and the Stars	May (~18 days)
Unit 4: Earth, the Moon, and the Stars	June (~15 days)

Units

Contact the Content Supervisor for unit details.