

# Clinton-Glen Gardner School District



## Curriculum Management System

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**SCIENCE**

**Grade: 5**

**August 2016**

**\* For adoption by all regular education programs as specified and for adoption or adaptation by all Special Education Programs in accordance with Board of Education Policy #2200.**

**Board Approved: August 24, 2016**

# CLINTON-GLEN GARDNER SCHOOL DISTRICT

## ADMINISTRATION

**Dr. Seth Cohen, Superintendent/Principal**  
**Mrs. Lisa J. Craft, Business Administrator**  
**Mrs. Jacqueline Turner, Assistant Principal**  
**Mrs. Jenine Kastner, Supervisor of Special Services**

## BOARD OF EDUCATION

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**Charles Sampson**

## **Acknowledgments**

**The following individuals are acknowledged for their assistance in the preparation of this Curriculum Management System:**

**Writers' Names:   Kate Lascelle  
                          Stacy Viotto**

# **Clinton-Glen Gardner School District**

## **Mission**

The Clinton-Glen Gardner School District is a community who values traditions. Our MISSION is to nurture and cultivate each child to be a compassionate, curious, and creative thinker, entrusted and empowered to build and lead the future.

## **Philosophy**

Science, engineering, and technology influence and permeate every aspect of modern life. Some knowledge of science and engineering is required to engage with the major public policy issues of today as well as to make informed everyday decisions, such as selecting among alternative medical treatments or determining how to invest public funds for water supply options. In addition, understanding science and the extraordinary insights it has produced can be meaningful and relevant on a personal level, opening new worlds to explore and offering lifelong opportunities for enriching people's lives. In these contexts, learning science is important for everyone, even those who eventually choose careers in fields other than science or engineering.

The Next Generation Science Standards (NGSS) are K–12 science content standards. Standards set the expectations for what students should know and be able to do. The NGSS were developed by states to improve science education for all students.

A goal for developing the NGSS was to create a set of research-based, up-to-date K–12 science standards. These standards give local educators the flexibility to design classroom learning experiences that stimulate students' interests in science and prepares them for college, careers, and citizenship. The CPS Science Curriculum is designed to address the goals and philosophy of the New Jersey Next Generation Science Standards.

**Grade 5  
Science  
Scope and Sequence**

**Quarter I**

<p><b>Unit 1: Properties of Matter</b></p> <ul style="list-style-type: none"> <li>• Modeling particles</li> <li>• Properties of materials</li> </ul>	<p><b>Unit 2: Changes to Matter</b></p> <ul style="list-style-type: none"> <li>• Conservation of mass</li> <li>• Substances and compounds</li> </ul>
(The ones that apply for these units are in bold)	
<p><u>21<sup>st</sup> Century Skills</u></p> <ol style="list-style-type: none"> <li>1. Creativity &amp; Innovation</li> <li><b>2. Critical Thinking &amp; Problem Solving</b></li> <li><b>3. Communication &amp; Collaboration</b></li> <li>4. Media Literacy</li> <li><b>5. Information Literacy</b></li> <li><b>6. Information, Communication &amp; Technology</b></li> </ol>	<p><u>Cross Cutting Concepts</u></p> <ol style="list-style-type: none"> <li>1. Patterns</li> <li><b>2. Cause and Effect</b></li> <li><b>3. Scale, Proportion and Quantity</b></li> <li>4. System and System Models</li> <li>5. Energy and Matter: flows, cycles and conservation</li> <li>6. Structure and Function</li> <li>7. Stability and Change</li> </ol>
<p><u>21<sup>st</sup> Century Themes</u></p> <ol style="list-style-type: none"> <li>1. Global Awareness</li> <li>2. Financial, Economic, Business and Entrepreneurial Literacy</li> <li>3. Civic Literacy</li> <li>4. Health Literacy</li> <li>5. Environmental Literacy</li> </ol>	<p><u>Scientific and Engineering Practices</u></p> <ol style="list-style-type: none"> <li>1. Asking questions or defining a problem</li> <li><b>2. Developing and using models</b></li> <li><b>3. Planning and carrying out investigations</b></li> <li>4. Analyzing and interpreting data</li> <li><b>5. Using mathematics and computational thinking</b></li> <li>6. Constructing explanations or designing a solution</li> <li>7. Engaging in an argument from evidence</li> <li>8. Obtaining, evaluating and communicating information</li> </ol>

Technology Infusion

<http://www.state.nj.us/education/>, Internet, Web Quests, content-related websites, wireless laptop computers, Chromebooks, computer laboratory, classroom computers, SMART Boards, CDs, DVDs, webinars, video streaming, podcasting

## Differentiation

Refer to CPS Differentiation Tool Kit

## Assessment

District End of Unit Benchmark

Various opportunities during lab investigations for formative assessment and anecdotal notes

**During Work Period adjust lessons for individual students and small groups of students based on formative and summative data (Go back and re-teach for those that did not meet standard on benchmark and plan accordingly for those that exceeded benchmark)**

## Quarter II

### Unit 3: Water on the Earth

- Types of water on Earth (salt, glacial, fresh)
- Water distribution

### Unit 4: Earth Systems

- Geosphere, biosphere, hydrosphere and atmosphere
- Earth's resources, environments and human impact

(The ones that apply for these units are in bold)

#### 21<sup>st</sup> Century Skills

1. Creativity & Innovation
- 2. Critical Thinking & Problem Solving**
- 3. Communication & Collaboration**
4. Media Literacy
- 5. Information Literacy**
- 6. Information, Communication & Technology**

#### Cross Cutting Concepts

1. Patterns
- 2. Cause and Effect**
- 3. Scale, Proportion and Quantity**
4. System and System Models
5. Energy and Matter: flows, cycles and conservation
6. Structure and Function
7. Stability and Change

#### 21<sup>st</sup> Century Themes

1. Global Awareness
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#### Scientific and Engineering Practices

1. Asking questions or defining a problem
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## Quarter III

### Unit 5: Energy and Matter in Ecosystems

- Sun's energy and the biosphere
- Photosynthesis
- Organelles

### Unit 6: Interdependent Relationships in Ecosystems

- Interconnectedness of food webs (producers, consumers and decomposers)
- Balance of ecosystems

(The ones that apply for these units are in bold)

#### 21<sup>st</sup> Century Skills

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2. **Critical Thinking & Problem Solving**
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**Quarter IV**

**Unit 7: Space Science**

- Gravity
- Day/night, seasons and relative positions of the Sun, Earth and other celestial bodies

(The ones that apply for these units are in bold)

21<sup>st</sup> Century Skills

1. **Creativity & Innovation**
2. **Critical Thinking & Problem Solving**
3. **Communication & Collaboration**
4. **Media Literacy**
5. **Information Literacy**
6. **Information, Communication & Technology**

Cross Cutting Concepts

1. **Patterns**
2. **Cause and Effect**
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Scientific and Engineering Practices

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Suggested days of Instruction	Curriculum Management System	Topic: Properties of Matter	
	Subject/Grade Level: Grade 5 Science	Goal 1: The Properties of Matter Unit is to provide students with opportunities to question the world around them, discover and model the structure of matter in order to better understand the particles that are too small to be seen, but that all matter has mass and takes up space.	
	Objectives / Cluster Concepts / Disciplinary Core Ideas (DCIs) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
Sept.	<p>1.1 Develop a model to describe that matter is made of particles too small to be seen. (5-PS1-1.)</p> <p>1.2 Make observations and measurements to identify materials based on their properties. (5-PS1-3.)</p>	<p><b>Essential Questions:</b></p> <p>What is matter and what is it like? How can we model it?            What characteristics determine a substance's identity?            What happens to matter when it is squeezed, heated or cooled?</p> <p><b>Conceptual Understandings:</b></p> <p>Matter of any type can be subdivided into particles that are too small to be seen, but even then the matter still exists and can be detected by other means.</p> <p>All matter takes up space and has mass.</p> <p>Measurements of a variety of properties can be used to identify substances.</p> <p>While the amount of matter is represented by mass, on Earth (due to constant gravity) mass is analogous to weight. Mass and weight are not distinguished at this level.</p> <p>As matter changes state or is mixed with additional matter the amount of matter remains constant.</p>	<p><b>Learning Activities:</b></p> <p>Building Models of atoms and molecules            PheT simulations            Properties of Matter            Measuring Matter            'The Mass of Gases in a Balloon' lab            'The Mass of an Ice Cube, before and after melting" lab            Design a lift...</p> <p><b>Assessment Models:</b></p> <p>Quizzes/ tests            Science Notebook            Comprehension Checkpoints            Group Discussions            Google classroom "blogs"            Lab Reports</p> <p><b>Additional Resources:</b></p> <p>Brain Pop videos            PheT simulations: Build an Atom; Build a Molecule; States of Matter Basics and Properties of Gases  <a href="https://phet.colorado.edu/en/simulations/category/chemistry">https://phet.colorado.edu/en/simulations/category/chemistry</a>            Scale Model of the Universe:  <a href="http://htwins.net/scale2/">http://htwins.net/scale2/</a></p>

Suggested days of Instruction	Curriculum Management System <b>Subject/Grade Level:</b> <b>Grade 5</b> <b>Science</b>	<b>Topic: Changes to Matter</b>	
	<b>Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's)</b> <b>The student will be able to:</b>	<b>Essential Questions, Conceptual Understandings</b>	<b>Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model</b>
Oct.	<p>2.1 Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling or mixing substances the total weight of matter is conserved. (5-PS1-2.)</p> <p>2.2 Conduct an investigation to determine whether the mixing of two or more substances results in new substances. (5-PS1-4.)</p>	<p><b>Essential Questions:</b></p> <p>In what ways does matter change? When matter changes, does its weight change? How can changes in matter be represented graphically? Can substances be combined? Can new substances be created?</p> <p><b>Conceptual Understandings:</b></p> <p>Matter is made of particles that move more when energy is added.</p> <p>The amount of matter is conserved when it changes form and even when it seems to vanish.</p> <p>Graphs are an effective way to show data.</p> <p>When different substances are combined new substances are created that have unique properties from the original substances.</p>	<p><b>Learning Activities:</b></p> <p>Physical and Chemicals Properties Mystery Matter Chemical Reaction lab</p> <p><b>Assessment Models:</b></p> <p>Quizzes/ tests Science Notebook Comprehension Checkpoints Group Discussions Google classroom "blogs" Lab Reports</p> <p><b>Additional Resources:</b></p> <p>Brain Pop videos PheT simulations</p>

Suggested days of Instruction	Curriculum Management System	<b>Topic: Water on Earth</b>	
	<u>Subject/Grade Level:</u> <b>Grade 5 Science</b>	<b>Goal 3:</b> The Earth Systems Unit provides students with opportunities to collect, describe and graph data as evidence of the distribution of water on Earth. Students will identify various sources of water on Earth (atmosphere, oceans, lakes, rivers, glaciers, ground water and polar ice caps). They will also describe and graph the relative amounts of water and fresh water to describe Earth's water distribution (excluding the atmosphere).	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) <b>The student will be able to:</b>	<b>Essential Questions, Conceptual Understandings</b>	<b>Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model</b>
Dec.	3.1. Describe and graph the amounts and percentages of fresh water in various reservoirs to provide evidence about the distribution of water on Earth. (5-ESS2-2.)	<p><b>Essential Questions:</b></p> <p>Where is water located on Earth? How much water is in each location? How are graphs helpful in communicating information?</p> <p><b>Conceptual Understandings:</b></p> <p>The majority of Earth's water is in the ocean.</p> <p>Only a small amount of Earth's fresh water is available for human use.</p> <p>Graphs illustrate the limited amount of fresh water that is available for human use.</p>	<p><b>Learning Activities:</b></p> <p>Fresh Water on Earth Model Graphing water on Earth</p> <p><b>Assessment Models:</b></p> <p>Quizzes/ tests Science Notebook Comprehension Checkpoints Group Discussions Google classroom "blogs" Compare/ contrast essays Lab Reports</p> <p><b>Additional Resources:</b></p> <p>The Water Page.com: <a href="http://www.thewaterpage.com/ultimate-water-cycle.htm">http://www.thewaterpage.com/ultimate-water-cycle.htm</a></p>

<b>Suggested days of Instruction</b>	<b>Curriculum Management System</b>	<b>Topic: Earth Systems</b>	
	<b>Subject/Grade Level:</b> <b>Grade 5</b> <b>Science</b>	<b>Goal 4:</b> The purpose of the Earth Systems Unit is for students to describe the many ways in which the geosphere, biosphere, hydrosphere and atmosphere interact and the importance of these resources for the environment and humans.	
	<b>Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's)</b> <b>The student will be able to:</b>	<b>Essential Questions, Conceptual Understandings</b>	<b>Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model</b>
Jan.-March	<p>4.1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere and /or atmosphere interact. (5-ESS2-1.)</p> <p>4.2 Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment. (5-ESS3-1.)</p>	<p><b>Essential Questions:</b></p> <p>What is a system?</p> <p>What are the major natural systems of our Earth (geosphere, biosphere, hydrosphere and atmosphere)?</p> <p>What resources do each of these components contain?</p> <p>How are these components related and dependent on each other?</p> <p>How do elements of the geosphere, hydrosphere and atmosphere cycle?</p> <p>How do humans activities effect the land, oceans, air and other living things?</p> <p><b>Conceptual Understandings:</b></p> <p>A system is a set of connected things or parts that form a whole.</p> <p>The Earth's major systems are the geosphere, biosphere, hydrosphere and atmosphere.</p>	<p><b>Learning Activities:</b></p> <p>Model of the geosphere Model of the hydrosphere Water cycle Erosion lab Model of the atmosphere Global Winds and Currents poster project Weather Patterns Weather vs Climate</p> <p><b>Assessment Models:</b></p> <p>Quizzes/ tests Science Notebook Comprehension Checkpoints Group Discussions Google classroom "blogs" Compare/ contrast essays Lab Reports Poster Project and presentations</p> <p><b>Additional Resources:</b></p> <p>Red Bull Strato Jump video: <a href="http://www.redbullstratos.com/the-mission/world-record-jump/">http://www.redbullstratos.com/the-mission/world-record-jump/</a> Jump video with data: <a href="https://www.youtube.com/watch?v=raiFrxbHxV0">https://www.youtube.com/watch?v=raiFrxbHxV0</a> Weather Underground, Maps and Current</p>

<b>Suggested days of Instruction</b>	<b>Curriculum Management System</b> <u><b>Subject/Grade Level:</b></u> <b>Grade 5</b> <b>Science</b>	<b>Topic: Earth Systems</b>	
	<b>Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's)</b> <b>The student will be able to:</b>	<b>Essential Questions, Conceptual Understandings</b>	<b>Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model</b>
		<p>These systems interact to affect Earth's surface materials, cycles and processes.</p> <p>Patterns and cycles within these systems can be graphed to better understand phenomenon, ie weather and climate.</p> <p>Solid, molten rock and sediments; water and ice; air and living things are components of these systems that interact and affect each other.</p> <p>Human activities in agriculture, industry and everyday life have (and continue) to effect land, vegetation, streams, ocean, and air.</p> <p>People can protect Earth's resources.</p>	<p>Conditions:  <a href="https://www.wunderground.com/us/nj/clinton?MR=1">https://www.wunderground.com/us/nj/clinton?MR=1</a>  Water Life  game:<a href="http://games.noaa.gov/oscar/welcome.html">http://games.noaa.gov/oscar/welcome.html</a></p>

Suggested days of Instruction	Curriculum Management System	<b>Topic: Energy and Matter in Ecosystems</b>	
	<u>Subject/Grade Level:</u> <b>Grade 5 Science</b>	<b>Goal 5:</b> The Unit, Energy and Matter in Ecosystems, focuses on building models to describe the movement of matter and energy through ecosystems- from the sun, through plants, animals and decomposers. Students will identify the importance of energy for plants, to produce food from chiefly water and air, and animals for body repair, growth, motion and to metabolism.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) <b>The student will be able to:</b>	<b>Essential Questions, Conceptual Understandings</b>	<b>Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model</b>
March	<p>5.1. Use models to describe that energy in animals' food was once energy from the sun. (5-PS3-1.)</p> <p>6.2 Support an argument that plants get the materials they need for growth chiefly from air and water. (5-LS1-1.)</p> <p>6.3 Develop a model to describe the movement of matter among plants, animals, decomposers and the environment. (5-LS2-1.)</p>	<p><b>Essential Questions:</b></p> <p>How do plants and other organisms get the energy that they need?</p> <p>How can plants make food from sun, water and air?</p> <p>How does energy move through an ecosystem?</p> <p><b>Conceptual Understandings:</b></p> <p>Photosynthesis is a chemical process that converts the Sun's energy into plant matter using air and water.</p> <p>Food give organisms energy necessary for life processes, most can be traced back to plants.</p> <p>Organisms that eat one another, transferring energy between them, are part of an ecosystem. A balanced ecosystem has all the organisms and resources needed to support the life in that system.</p>	<p><b>Learning Activities:</b></p> <p>Energy from the Sun</p> <p>PBS Learning Media: Illuminating Photosynthesis- Food chains: producers, consumer and decomposers</p> <p>PBS Learning media (3 classes) Producer, Consumers and Decomposers</p> <p>Composting with red wigglers</p> <p><b>Assessment Models:</b></p> <p>Quizzes/ tests</p> <p>Science Notebook</p> <p>Comprehension Checkpoints</p> <p>Group Discussions</p> <p>Google classroom "blogs"</p> <p>Lab Reports</p> <p><b>Additional Resources:</b></p> <p>Brain Pop videos</p> <p>PBS Learning Media:  <a href="http://nj.pbslearningmedia.org/resource/tdc02.sci.life_stru.methusweb/illuminating-photosynthesis/">http://nj.pbslearningmedia.org/resource/tdc02.sci.life_stru.methusweb/illuminating-photosynthesis/</a></p>

<b>Suggested days of Instruction</b>	<b>Curriculum Management System</b> <b>Subject/Grade Level:</b> <b>Grade 5</b> <b>Science</b>	<b>Topic: Energy and Matter in Ecosystems</b>	
	<b>Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's)</b> <b>The student will be able to:</b>	<b>Goal 5:</b> The Unit, Energy and Matter in Ecosystems, focuses on building models to describe the movement of matter and energy through ecosystems- from the sun, through plants, animals and decomposers. Students will identify the importance of energy for plants, to produce food from chiefly water and air, and animals for body repair, growth, motion and to metabolism.	<b>Essential Questions, Conceptual Understandings</b>
			PBS Learning Media (cont'): <a href="http://nj.pbslearningmedia.org/resource/tdc02.sci.life.oate.lp_energyweb/producers-consumers-decomposers/">http://nj.pbslearningmedia.org/resource/tdc02.sci.life.oate.lp_energyweb/producers-consumers-decomposers/</a>  Savannah Ecology: Patterns and Processes video: <a href="http://www.hhmi.org/order-materials/holiday-lecture/patterns-and-processes-ecology">http://www.hhmi.org/order-materials/holiday-lecture/patterns-and-processes-ecology</a>  Bill Nye the Science Guy: Wetlands video



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	<b>Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's)</b> <b>The student will be able to:</b>	<b>Essential Questions, Conceptual Understandings</b>	<b>Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model</b>

Suggested days of Instruction	Curriculum Management System <u>Subject/Grade Level:</u> <b>Grade 5 Science</b>	<b>Topic: Interdependent Relationships in Ecosystems</b>	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) <b>The student will be able to:</b>	<b>Essential Questions, Conceptual Understandings</b>	<b>Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model</b>
April-May	<p>6.1. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations (MS-LS2-4.)</p> <p>7.2 Define a simple design problem reflecting a need or want that includes specific criteria for success and constraints on materials and time. (3-5-ETS1-1.)</p> <p>7.3 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. (3-5-ETS1-2.)</p> <p>7.4 Plan and carryout fair tests in which variable are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. (3-5-ETS1.3.)</p> <p>7.5 Evaluate competing design solutions for maintaining biodiversity and ecosystem services. (MS-LS2-5.)</p>	<p><b>Essential Questions:</b></p> <p>How are biotic and abiotic factors in an ecosystem connected?</p> <p>How are the populations of organisms affected by factors within and from outside of an ecosystem?</p> <p><b>Conceptual Understandings:</b></p> <p>Organisms and their populations are dependent on environmental factors (both living and nonliving).</p> <p>Food webs depicted the interconnectedness of biotic factors in an ecosystem and can represent the flow of energy through that ecosystem.</p> <p>Matter in an ecosystem moves from producers through consumer and decomposers to soil and back to producers in a never-ending cycle.</p> <p>Species and pollutants introduced into an ecosystem can upset the balance of that system.</p>	<p><b>Learning Activities:</b></p> <p>Classification of organisms- taxonomy Trout in the Classroom- learning about riparian areas Designing water filtering solutions challenge Ecosystem research project Composting project (Making soil) Sandy Hook field Trip- comparison of different marine ecosystems and identification of human impacts</p> <p><b>Assessment Models:</b></p> <p>Ecosystem Research Project Quizzes/ tests Science Notebook Comprehension Checkpoints Group Discussions Google classroom “blogs” Compare/ contrast essays Lab Reports</p> <p><b>Additional Resources:</b></p> <p>Kids Do Ecology website: <a href="http://kids.nceas.ucsb.edu/biomes/">http://kids.nceas.ucsb.edu/biomes/</a></p> <p>Trout Unlimited website for students: <a href="http://www.streamexplorers.org/">http://www.streamexplorers.org/</a></p>

<b>Suggested days of Instruction</b>	<b>Curriculum Management System</b> <u><b>Subject/Grade Level:</b></u> <b>Grade 5</b> <b>Science</b>	<b>Topic: Interdependent Relationships in Ecosystems</b>	
	<b>Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's)</b> <b>The student will be able to:</b>	<b>Goal 6:</b> The Interdependent Relationships in Ecosystems Unit allows students the opportunity to make decisions about the importance of biodiversity in ecosystems by applying their knowledge of biotic and abiotic factors, the transfer of energy between factors and the resulting effects on populations. Connections between humans, including social, political and economic considerations, and ecosystems will also be addressed.	<b>Essential Questions, Conceptual Understandings</b>
			New Jersey Sea Grant Consortium, lesson plans for teachers: <a href="http://njseagrant.org/education/resources-for-educators/lesson-plans/">http://njseagrant.org/education/resources-for-educators/lesson-plans/</a>

Suggested days of Instruction	Curriculum Management System	<b>Topic: Space Science</b>	
	<b>Subject/Grade Level:</b> <b>Grade 5 Science</b>	<b>Goal 7:</b> Over the course of the unit on Space Science students will understand that there are patterns, daily, of the length and direction of shadows, day and night and seasonal appearance of some stars in the night sky. Gravity is an important force that causes (the Earth to orbit the Sun and also causes) objects to fall towards Earth's surface.	
	<b>Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's)</b> <b>The student will be able to:</b>	<b>Essential Questions, Conceptual Understandings</b>	<b>Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model</b>
April-June	<p>7.1. Support an argument that the gravitational force exerted by Earth on objects is directed down. (5-ESS2-1.)</p> <p>5.2 Support the argument that differences in the apparent brightness of the Sun compared to other stars is due to their relative distances from Earth. (5-ESS1-1.)</p> <p>5.3 Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night and the seasonal appearance of some stars in the night sky. (5-ESS1-2.)</p>	<p><b>Essential Questions:</b></p> <p>Why do objects, on Earth, that are dropped fall down?</p> <p>What causes day and night and the length and direction of shadows to change?</p> <p>Why do some stars appear only at certain times of the year?</p> <p>Why do some stars, including the sun, appear brighter than others?</p> <p><b>Conceptual Understandings:</b></p> <p>Earth's gravity causes objects near its surface to be pulled down.</p> <p>The Earth orbits the Sun causing patterns that can be predicted and observed.</p> <p>The Sun appears brighter than other stars due to its distance from Earth.</p>	<p><b>Learning Activities:</b></p> <p>Gravity lab Observations of shadows cause by the Sun Model of the Sun and Earth system Constellations StarLab week</p> <p><b>Assessment Models:</b></p> <p>Quizzes/ tests Science Notebook Comprehension Checkpoints Group Discussions Google classroom "blogs" Compare/ contrast essays Lab Reports</p> <p><b>Additional Resources:</b></p> <p>H.A Rey, <a href="#">Finding the Constellations</a> RVCC StarLab lesson guides for teachers</p>

<b>Suggested days of Instruction</b>	<b>Curriculum Management System</b> <b>Subject/Grade Level:</b> <b>Grade 5</b> <b>Science</b>	<b>Topic: Space Science</b> <u><b>Goal 7:</b></u> Over the course of the unit on Space Science students will understand that there are patterns, daily, of the length and direction of shadows, day and night and seasonal appearance of some stars in the night sky. Gravity is an important force that causes (the Earth to orbit the Sun and also causes) objects to fall towards Earth's surface.	
	<b>Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's)</b> <b>The student will be able to:</b>	<b>Essential Questions, Conceptual Understandings</b>	<b>Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model</b>