

# 6<sup>th</sup> grade Science Syllabus 2017-2018 school year

1<sup>st</sup> nine week standards will be taught- August 4-October 6

2<sup>nd</sup> nine week standards will be taught- October 16-December 15

3<sup>rd</sup> nine week standards will be taught- January 3-March 9

4<sup>th</sup> nine week standards will be taught- March 12-May 25

## 1<sup>st</sup> Nine Weeks-at-a-Glance

The following skills should be embedded with content throughout the entire year.

Ongoing	
Embedded Inquiry	<p><b>SPI 0607.Inq.1</b> Design a simple experimental procedure with an identified control and appropriate variables.</p> <p><b>SPI 0607.Inq.2</b> Select tools and procedures needed to conduct a moderately complex experiment.</p> <p><b>SPI 0607.Inq.3</b> Interpret and translate data in a table, graph, or diagram.</p> <p><b>SPI 0607.Inq.4</b> Draw a conclusion that establishes a cause and effect relationship supported by evidence.</p> <p><b>SPI 0607.Inq.5</b> Identify a faulty interpretation of data that is due to bias or experimental error.</p>
Embedded Technology and Engineering	<p><b>SPI 0607.T/E.1</b> Identify the tools and procedures needed to test the design features of a prototype.</p> <p><b>SPI 0607.T/E.2</b> Evaluate a protocol to determine if the engineering design process was successfully applied.</p> <p><b>SPI 0607.T/E.3</b> Distinguish between the intended benefits and the unintended consequences of a new technology.</p> <p><b>SPI 0607.T/E.4</b> Differentiate between adaptive and assistive engineered products (e.g., food, biofuels, medicines, integrated pest management).</p>

The following content should be the focus for this Nine Weeks.

Standard 2	Interdependence	
Strand	Standard	Links
Interactions	<p><b>SPI 0607.2.1</b> Classify organisms as producers, consumers, scavengers, or decomposers according to their role in a food chain or food web</p> <p><b>SPI 0607.2.2</b> Interpret how materials and energy are transferred through an ecosystem</p> <p><b>SPI 0607.2.3</b> Identify the biotic and abiotic elements of the major biomes</p> <p><b>SPI 0607.2.4</b> Identify the environmental conditions and interdependencies among organisms found in the major biomes.</p>	<p><a href="#">Food Chain</a></p> <p><a href="#">BrainPop</a> - Symbiosis - Biomes</p> <p><a href="#">Internet4Classrooms</a> - Biotic and Abiotic</p> <p><a href="#">Learn360</a> - Biomes</p> <p><a href="#">Internet4Classrooms</a> - Interdependence</p>

Standard 8	The Atmosphere	
Strand	Standard	Links
Weather and Climate	<p><b>SPI 0607.8.1</b> Analyze data to identify events associated with heat convection in the atmosphere.</p> <p><b>SPI 0607.8.2</b> Recognize the connection between the sun's energy and the wind.</p> <p><b>SPI 0607.8.3</b> Describe how temperature differences in the ocean account for currents.</p>	<p><a href="#">BrainPop</a> - Wind Energy</p> <p><a href="#">Internet4Classrooms</a> - Wind</p> <p><a href="#">BrainPop</a> - Solar Energy</p> <p><a href="#">BrainPop</a> - Ocean Currents</p>

	<p><b>SPI 0607.8.4</b> Interpret meteorological data to make predictions about the weather.</p>	<p><a href="#">Ocean Currents and Climates</a></p> <p><a href="#">BrainPop</a> - Weather</p> <p><a href="#">Weather</a> - Multiple Links</p> <p><a href="#">Energy Forms &amp; Changes Simulation</a></p> <p><a href="#">Energy Forms &amp; Changes Worksheet</a></p> <p><a href="#">PhET</a> - Natural Selection Lesson</p> <p><a href="#">NOAA</a> - Weather Education</p>
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## 2<sup>nd</sup> Nine Weeks-at-a-Glance

The following skills should be embedded with content throughout the entire year.

Ongoing	
Embedded Inquiry	<p><b>SPI 0607.Inq.1</b> Design a simple experimental procedure with an identified control and appropriate variables.</p> <p><b>SPI 0607.Inq.2</b> Select tools and procedures needed to conduct a moderately complex experiment.</p> <p><b>SPI 0607.Inq.3</b> Interpret and translate data in a table, graph, or diagram.</p> <p><b>SPI 0607.Inq.4</b> Draw a conclusion that establishes a cause and effect relationship supported by evidence.</p> <p><b>SPI 0607.Inq.5</b> Identify a faulty interpretation of data that is due to bias or experimental error.</p>
Embedded Technology and Engineering	<p><b>SPI 0607.T/E.1</b> Identify the tools and procedures needed to test the design features of a prototype.</p> <p><b>SPI 0607.T/E.2</b> Evaluate a protocol to determine if the engineering design process was successfully applied.</p> <p><b>SPI 0607.T/E.3</b> Distinguish between the intended benefits and the unintended consequences of a new technology.</p> <p><b>SPI 0607.T/E.4</b> Differentiate between adaptive and assistive engineered products (e.g., food, biofuels, medicines, integrated pest management).</p>

The following content should be the focus for this Nine Weeks.

Standard 6	The Universe	
Strand	Standard	Links
Earth in Space	<p><b>SPI 0607.6.3</b> Distinguish among a day, lunar cycle, and year based on the movements of the earth, sun, and moon.</p> <p><b>SPI 0607.6.4</b> Explain the different phases of the moon using a model of the earth, moon, and sun.</p> <p><b>SPI 0607.6.5</b> Predict the types of tides that occur when the earth and moon occupy various positions.</p>	<p><a href="#">Lunar Cycle</a></p> <p><a href="#">Earth/Sun Rotation</a></p> <p><a href="#">Lunar Challenge</a></p> <p><a href="#">Moon Phases Lesson Plan</a></p>

	<p><b>SPI 0607.6.6</b> Use a diagram that shows the positions of the earth and sun to explain the four seasons.</p> <p><b>SPI 0607.6.7</b> Explain the difference between a solar and a lunar eclipse.</p>	<p><a href="#">Oreo Activity</a></p> <p><a href="#">BrainPop</a> - Tides</p> <p><a href="#">Moon Tides</a></p> <p><a href="#">BrainPop</a> - Seasons</p> <p><a href="#">Internet4Classrooms</a> - Seasons</p> <p><a href="#">Solar and Lunar Eclipses</a></p> <p><a href="#">BrainPop</a> - Eclipse</p>
Outer Space	<p><b>SPI 0607.6.1</b> Use data to draw conclusions about the major components of the universe.</p> <p><b>SPI 0607.6.2</b> Explain how the relative distance of objects from the earth affects how they appear.</p>	<p><a href="#">BrainPop</a> - Universe</p> <p><a href="#">Internet4Classrooms</a> - Universe</p> <p><a href="#">NASA Pictures</a></p> <p><a href="#">PhET</a> - My Solar System</p> <p><a href="#">NASA for Students</a></p> <p><a href="#">Lunar Cycle Prediction</a></p>

### 3<sup>rd</sup> Nine Weeks-at-a-Glance

The following skills should be embedded with content throughout the entire year.

Ongoing	
Embedded Inquiry	<p><b>SPI 0607.Inq.1</b> Design a simple experimental procedure with an identified control and appropriate variables.</p> <p><b>SPI 0607.Inq.2</b> Select tools and procedures needed to conduct a moderately complex experiment.</p> <p><b>SPI 0607.Inq.3</b> Interpret and translate data in a table, graph, or diagram.</p> <p><b>SPI 0607.Inq.4</b> Draw a conclusion that establishes a cause and effect relationship supported by evidence.</p> <p><b>SPI 0607.Inq.5</b> Identify a faulty interpretation of data that is due to bias or experimental error.</p>
Embedded Technology and Engineering	<p><b>SPI 0607.T/E.1</b> Identify the tools and procedures needed to test the design features of a prototype.</p> <p><b>SPI 0607.T/E.2</b> Evaluate a protocol to determine if the engineering design process was successfully applied.</p> <p><b>SPI 0607.T/E.3</b> Distinguish between the intended benefits and the unintended consequences of a new technology.</p> <p><b>SPI 0607.T/E.4</b> Differentiate between adaptive and assistive engineered products (e.g., food, biofuels, medicines, integrated pest management).</p>

The following content should be the focus for this Nine Weeks.

<b>Standard 10</b>	<b>Energy</b>	
Strand	Standard	Lessons
Energy Transformation	<p><b>SPI 0607.10.1</b> Distinguish among gravitational potential energy, elastic potential energy, and chemical potential energy.</p> <p><b>SPI 0607.10.2</b> Interpret the relationship between potential and kinetic energy.</p> <p><b>SPI 0607.10.3</b> Recognize that energy can be transformed from one type to another.</p> <p><b>SPI 0607.10.4</b> Explain the Law of Conservation of Energy using data from a variety of energy transformations.</p>	<p><a href="#">Potential Energy</a></p> <p><a href="#">Roller Coaster Energy</a></p> <p><a href="#">Temperature Effects Potential Energy</a></p> <p><a href="#">BrainPop</a> - Kinetic Energy</p> <p><a href="#">Forms of Potential Energy</a></p> <p><a href="#">BrainPop</a> - Energy</p> <p>PowerPoint <a href="#">on Energy</a> (several)</p> <p><a href="#">Transfer of Energy Transformation</a></p> <p><a href="#">Law of Conservation of Energy</a></p> <p><a href="#">BrainPop</a> - Forms of Energy</p> <p><a href="#">PhET</a> - Conservation of Energy</p>

#### 4<sup>th</sup> Nine Weeks-at-a-Glance

The following skills should be embedded with content throughout the entire year.

<b>Ongoing</b>	
<b>Embedded Inquiry</b>	<p><b>SPI 0607.Inq.1</b> Design a simple experimental procedure with an identified control and appropriate variables.</p> <p><b>SPI 0607.Inq.2</b> Select tools and procedures needed to conduct a moderately complex experiment.</p> <p><b>SPI 0607.Inq.3</b> Interpret and translate data in a table, graph, or diagram.</p> <p><b>SPI 0607.Inq.4</b> Draw a conclusion that establishes a cause and effect relationship supported by evidence.</p> <p><b>SPI 0607.Inq.5</b> Identify a faulty interpretation of data that is due to bias or experimental error.</p>
<b>Embedded Technology and Engineering</b>	<p><b>SPI 0607.T/E.1</b> Identify the tools and procedures needed to test the design features of a prototype.</p> <p><b>SPI 0607.T/E.2</b> Evaluate a protocol to determine if the engineering design process was successfully applied.</p> <p><b>SPI 0607.T/E.3</b> Distinguish between the intended benefits and the unintended consequences of a new technology.</p> <p><b>SPI 0607.T/E.4</b> Differentiate between adaptive and assistive engineered products (e.g., food, biofuels, medicines, integrated pest management).</p>

The following content should be the focus for this Nine Weeks:

<b>Standard 12</b>	<b>Forces in Nature</b>	
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Strand	Standard	Lessons
Electricity	<p><b>SPI 0607.12.1</b> Identify how simple circuits are associated with the transfer of electrical energy when heat, light, sound, and chemical changes are produced.</p> <p><b>SPI 0607.12.2</b> Identify materials that can conduct electricity.</p>	<p><a href="#">Blobz Guide to Circuits</a></p> <p><a href="#">BrainPop</a> - Energy</p> <p><a href="#">Interactive Clips</a></p> <p><a href="#">ppt Presentations</a></p> <p><a href="#">PhET</a> - Conductivity</p> <p><a href="#">Static Electricity</a></p>

Student projects assigned throughout the year may include the following:

Wax Museum- students use speaking and listening skills to show knowledge of those who made an impact on Science

Table Top Demonstrations- students use speaking and listening skills to show knowledge of how to do or make something

Oral Speeches- students use speaking and listening skills to present about a subject

Students may work IXL and Study Island objectives throughout the year