

# Sixth Grade Science Guide

## First Nine Weeks

### **Embedded Inquiry**

- SPI 0607.Inq.1 Design a simple experimental procedure with an identified control and appropriate variables.
- SPI 0607.Inq.2 Select tools and procedures needed to conduct a moderately complex experiment.
- SPI 0607.Inq.3 Interpret and translate data in a table, graph, or diagram.
- SPI 0607.Inq.4 Draw a conclusion that establishes a cause and effect relationship supported by evidence.
- SPI 0607.Inq.5 Identify a faulty interpretation of data that is due to bias or experimental error.

### **Embedded Technology & Engineering**

- SPI 0607.T/E.1 Identify the tools and procedures needed to test the design features of a prototype.
- SPI 0607.T/E.2 Evaluate a protocol to determine if the engineering design process was successfully applied.
- SPI 0607.T/E.3 Distinguish between the intended benefits and the unintended consequences of a new technology.
- SPI 0607.T/E.4 Differentiate between adaptive and assistive engineered products (e.g., food, biofuels, medicines, integrated pest management).

### **Life Science**

#### **Standard 2 - Interdependence**

- SPI 0607.2.1 Classify organisms as producers, consumers, scavengers, or decomposers according to their role in a food chain or food web.
- SPI 0607.2.2 Interpret how materials and energy are transferred through an ecosystem.
- SPI 0607.2.3 Identify the biotic and abiotic elements of the major biomes.
- SPI 0607.2.4 Identify the environmental conditions and interdependencies among organisms found in the major biomes.

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### **Earth and Space Science**

#### **Standard 6 - The Universe**

- SPI 0607.6.1 Use data to draw conclusions about the major components of the universe.
- SPI 0607.6.2 Explain how the relative distance of objects from the earth affects how they appear.
- SPI 0607.6.3 Distinguish among a day, lunar cycle, and year based on the movements of the earth, sun, and moon.
- SPI 0607.6.4 Explain the different phases of the moon using a model of the earth, moon, and sun.

SPI 0607.6.5 Predict the types of tides that occur when the earth and moon occupy various positions.

SPI 0607.6.6 Use a diagram that shows the positions of the earth and sun to explain the four seasons.

SPI 0607.6.7 Explain the difference between a solar and a lunar eclipse.

### Standard 8 - The Atmosphere

SPI 0607.8.1 Analyze data to identify events associated with heat convection in the atmosphere.

SPI 0607.8.2 Recognize the connection between the sun's energy and the wind.

SPI 0607.8.3 Describe how temperature differences in the ocean account for currents.

SPI 0607.8.4 Interpret meteorological data to make predictions about the weather.

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### **Physical Science**

#### **Standard 10 – Energy**

- SPI 0607.10.1 Distinguish among gravitational potential energy, elastic potential energy, and chemical potential energy.
- SPI 0607.10.2 Interpret the relationship between potential and kinetic energy.
- SPI 0607.10.3 Recognize that energy can be transformed from one type to another.
- SPI 0607.10.4 Explain the Law of Conservation of Energy using data from a variety of energy transformations.

## Standard 12 - Forces in Nature

- SPI 0607.12.1 Identify how simple circuits are associated with the transfer of electrical energy when heat, light, sound, and chemical changes are produced.
- SPI 0607.12.2 Identify materials that can conduct electricity.