

St. Raphael the Archangel

Science

First Grade 2017-2018

Learning Goals - Students Will:

Waves, Light, and Sound

1. **Make observations to construct an evidence-based account that objects can be seen only when illuminated.**
2. **Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.**
3. **Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound make materials vibrate.**
4. **Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.**

Structure, Function, and Information Processing

1. **Identify and compare the physical structures of a variety of animals (e.g., sensory organs, beaks, appendages, body covering).**
2. **Identify and compare the physical structures of a variety of plants (e.g., stem, leaves, flowers, seeds, roots).**
3. **Identify the basic needs of most animals and plants.**
4. **Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.**
5. **Predict and investigate the growth of plants when growing conditions are altered (e.g., dark vs. light, water vs. no water).**
6. **Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.**
7. **Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.**

Space Systems, Patterns, and Cycles

1. Compare temperatures in different locations (e.g., inside, outside, in the sun, in the shade).
2. Make observations at different times of year to relate the amount of daylight to the time of year.
3. Observe, measure, record weather data throughout the year (i.e., cloud cover, temperature, precipitation, wind speed) by using thermometers, rain gauges, wind socks.
4. Use observations of the sun, moon, and stars to describe patterns that can be predicted.

Engineering Design

1. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
2. 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.
3. 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.

Matter and Energy

1. Describe the change in temperature of an object as warmer or cooler.
2. Identify the source of energy that causes an increase in the temperature of an object (e.g., Sun, stove, flame, light bulb).
3. Measure and compare the mass of objects (more/less).

Force and Motion

1. Compare the speeds (faster vs. slower) of two moving objects.
2. Describe ways to change the motion of an object (i.e., how to cause an object to go slower, go faster, go farther, change direction, stop).
3. Identify the force (i.e., push or pull) required to do work (move an object).