



SUMMER | Sun Roots: Heat Absorption: The color of heat!

Summary:

There are many different types of energy. One of the most abundant sources in the garden is solar. With a little experimentation, we're going to see which colors capture the energy of the sun the best!

Before Visiting the Garden:

Gather: Six thick, colored pieces of paper; be sure to include one **black** and one **white** piece and six ice cubes! A stopwatch or timer.

Explore: *Spectrum V* by Ellsworth Kelly: Do our experiment materials look anything like Kelly's artwork?

Read: *Energy from the Sun* by Allan Fowler

In the Garden:

Energy can be neither created nor destroyed. So the best way to begin to understand it is by watching it in action. Our bodies use energy from food for moving and growing. Cars use energy from gasoline and combustion to travel around town. Plants use energy from the sun for growing.

Questions to Explore:

- What do you know about the sun? (warmth, light, etc.)
- What part of the year is the sun the warmest?
- When do our plants grow best? Winter or summer?
- What colors do you see in the garden? What color is the dirt? The leaves?

Activity:

Some colors attract the heat of the sun more than others. Can you predict which color will be the warmest? We're going to run an experiment to see which color attracts the most thermal (warm) energy from the sun.

1. Spread the pieces of paper on the ground. Place one ice cube on each piece of paper.
2. Set your stopwatch and time how long it takes for the ice cubes to melt on each piece of paper. Chart your results.
3. Which color melted the cube fastest? Do you see the warmest colors anywhere in the garden?

Gardens depend on solar energy for growth. Through a process called photosynthesis, plants convert the energy from the sun into productivity. We'll learn more about that in other lessons.

Beyond the Garden | Take a trip to your local hardware store

At the store, grab a few simple ingredients to try your hand at making a potato battery. Use the instructions below. You can also check out the paint section and make some more conclusions about color and heat.

Continue Exploring | Supporting Materials

Solar Power Activities: <http://www.solar4rschools.org/node/873>

Potato + Sunshine Battery: <http://pbskids.org/zoom/activities/phenom/potatobattery.html>