

Name _____

COLOR AND HEAT ABSORPTION

3rd Grade Science Unit 2: Light and Sound

GLCEs:

P.EN.03.11 Identify light and sound as forms of energy.

P.PM.03.51 Demonstrate how some materials are heated more than others by light that shines on them.

A **common misconception** at this age is that while light is reflected by mirrors, it remains on other objects

Students need to see:

Light energy can be converted to heat or thermal energy when certain materials absorb it. Some materials are heated more than others by light that shines on them.

Dark materials absorb more of the visible spectrum of light. The absorbed light energy is converted and is released as heat energy. Since more of the spectrum is absorbed there is more energy that is converted to heat. Light colored materials absorb less and reflect more of the light spectrum (less energy) so less energy is released as heat.

Vocabulary:

light source
forms of energy
thermometer
degrees Celsius
light absorption
light reflection

Colored Sand and soil, colored papers, hats?

Thermometer to see relative differences (emphasis on warmer and cooler)

Materials:

1. a thermometer (preferably an indoor/outdoor thermometer because they have the largest temperature range)
2. a 1' x 1' piece of heavy corrugated cardboard
4. a clock
5. sunlight (If you're short on sunlight, use a with a halogen floodlight, at least 100 watts. A halogen bulb is a good choice because it has a high light intensity and its light spectrum is very similar to sunlight.)
6. six pieces of construction paper) in **white**, red, **black**, green, violet, etc