

Energy From the Sun



Essential Question: What happens when the Sun's energy hits the Earth?

Overview

Why do temperatures on Earth change? To answer this, you need to understand how the Earth warms and cools. The energy that heats Earth comes from the Sun. What happens to the Sun's energy once it reaches our planet? There are three things that happen when the energy in sunlight hits an object. (1) The energy can be reflected, or bounce off the object. (2) The energy can be absorbed, transforming light energy into heat energy. (3) The energy can be transmitted, or pass through the object to something else. Often, a combination of these things happens. As you go through this activity, you will be looking at several objects and determining whether sunlight is absorbed, reflected, or transmitted. (Remember: our eyes detect light that is reflected off of objects, so anything you can see must have light reflecting off it.)

Materials

For each group:

- 1 sheet of black construction paper
- 1 sheet of aluminum foil
- 1 sheet of clear plastic wrap
- 1 ringstand
- 1 burette clamp
- 1 250W reflective heat lamp
- 1 120-V clip-on fixture for heat lamp

Safety

Follow standard safety rules and school safety rules for laboratory activities.

Procedure

1. Hold the piece of black construction paper up to the heat lamp. Describe what you see happening to the Sun's energy as it encounters the paper.
2. Repeat with the foil and clear plastic wrap.