



Sunlight has ENERGY!

Subject: This lesson explores the importance of sunlight as a source of energy

Grade Levels: K-12

Lesson length: 20 minutes

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The sun produces radiant energy (light) that travels through space to Earth. Solar energy in one form or another is the source of nearly all energy on the earth. Humans, like all other animals and plants, rely on the sun for warmth and food. However, people also use the sun's energy in many other different ways. We use the sun's energy to see and to produce heat and electricity. In this lesson, participants use UV beads and a pipe cleaner as well as a solar panel and a motor (already assembled) and go outside to observe how they work.

Objectives

- ➔ *Students will be able to identify that the sun's light has energy and by using it, we can do cool things.*

Materials

- Solar panel with alligator clips
- Hobby motor with fan blades
- UV beads



- Pipe cleaners
- Colored pencils

Instructions

- 1) Have the participants assemble the bracelet using 5-10 UV beads and a pipe cleaner. Sketch a “before” picture of the beads before sending them outside into the sun.
- 2) Have the students walk out into the sunlight and see what happens. Come back into the classroom and have them draw an “after” sketch. (The beads turn colors!)
- 3) Ask the students, “what happened?” “What do you think caused this to happen?”
- 4) Discuss how the earth gets its energy from the sun. We call this solar energy. Solar energy travels from the sun to the earth in rays. Some are light rays we can see. Some are rays we can’t see like X-rays or UV. Energy in rays is called radiant energy.
- 5) Ask participants, what other devices do we use to convert the sun’s energy into something else? (Solar panels)
- 6) What do solar panels produce? (Electricity)
- 7) Show a solar panel. Outreach leaders can assemble by using alligator clips to hook the panels to a fan motor or guide the students through. Ask the students why the fan is not spinning. What do we need to do to get the fan to spin? Go outside, place assembly in direct sunlight, and watch it spin!

Deepen Your Knowledge

- 1) Discuss the sun’s different forms of light. Some are harmful like X-rays and UV light.
- 2) We wear sunscreen to protect us from the UV light rays. Students could spray sunscreen on the beads as a separate activity. This will prevent them from changing color.