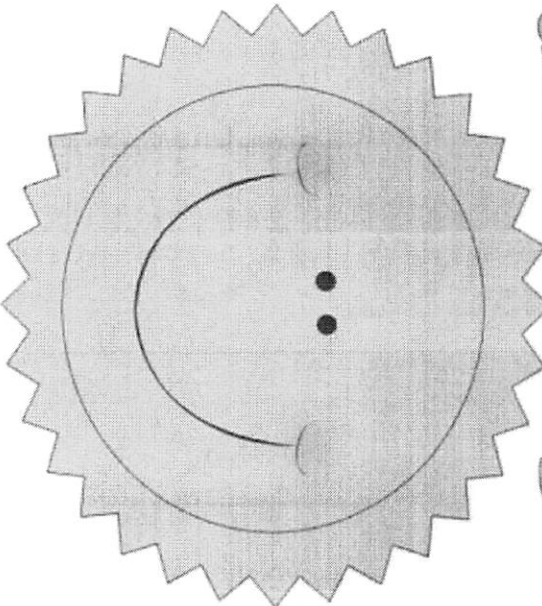


Fun in the Sun

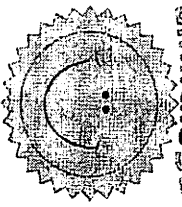


Solar Cooker Challenge

Using the Next Generation Science

Standards and STEM to make and bake!

Created by the Science School Yard



Solar Cooking Lesson

Materials needed:

Pipe cleaners, tin foil, cardboard, aluminum foil, plastic wrap, pizza boxes, cardboard boxes, foam core, black construction paper, bubble wrap, pringle containers, magnifying glasses, clear plastic bags, glue sticks, rubber bands, car reflectors, thermometers, post its, and marshmallows

Student goal:

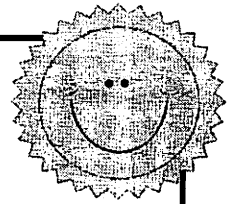
Students will create a solar cooker to test how energy such as light energy can be converted to heat energy.

The sun is a natural resource and its use can affect the environment in multiple ways. By creating a solar cooker that will eat food, students will be able to make observations and collect data to provide that evidence.

Science set-up and procedures:

1. Students will work in teams to design and create a solar cooker that will heat a marshmallow.
2. Students will plan and carry out their design solution, collect data on temperature and softness of the marshmallow as they test their experiment.
3. Students will adjust and refine their design and solve any problems that may arise as they test their solar cooker.
4. Students will complete all sheets for assessment and understanding of concepts.

Solar Cooker Challenge



Today, you will be creating a solar cooker to test how light energy converts to heat energy.

So, what was the scientific process you took?

Take a few minutes to research ideas online. How does your idea compare?

Each group engineered a design. Share it in the box provided.

Math is a key component to any design. Include measurements in your drawing.

Our solar cooker design and measurements.

Temperature of the solar cooker:

At the start of the experiment: _____ F

5 minutes: _____ F

10 minutes: _____ F

At the end of the experiment: _____ F

Explain your observations. Share how light energy converted to heat energy.

Making a solar oven

First, _____

Next, _____

Then, _____

Finally, _____

Picture, labels, and caption of our solar cooker.

Computer Connections

http://www.eia.gov/kids/energy.cfm?page=solar_home-basics

Using the website Energy Kids, answer the following questions:

1. Solar energy is: _____
2. When was a solar thermal cooker used for the first time? _____
3. When converted to thermal (heat) energy, solar energy can be used for:
 - a. _____
 - b. _____
 - c. _____
 - d. _____
4. Solar energy can be converted to electricity in two ways:
 - a. _____
 - b. _____
5. What is one benefit of solar energy? _____
6. What is one limitation of solar energy? _____

7. Make a connection. How do you use sun as a source of energy? Draw and label a picture:
