

Color and Light

In school the children investigated ways of using the sun as an energy source. In this activity you and your child will investigate how the color of an object affects the amount of light it absorbs from the sun.

WHAT YOU NEED:

- * six paper cups
- * red, black, white, yellow, blue and green paint, crayons or markers
- * rubber bands
- * thermometer
- * milliliter measuring cup
- * white paper

7. Set the cups in direct sunlight.

8. Record on the chart the temperature of the water in each cup at half hour periods, for a total of 2 hours.

9. Is there any difference in the temperature of the water in the cups? Which colors seem to be the "hot colors"? Which colors seem to be "cool colors"?

WHAT TO DO:

Have your child follow these steps:

1. Cut out a lid for each of six paper cups using plain white paper.
2. Paint or color one cup and one lid each color: red, black, white, yellow, blue, green.
3. Put 200 ml of cold water in each cup.
4. Attach a lid to each cup with a rubber band.
5. Stick the thermometer through the lid of each paper cup.
6. Take the temperature of the water in each cup with the thermometer. All cups should have the same temperature to start.

RECORD CHART

	Temperature After:			
	30 min..	1 hour	1 hour 30 min.	2 hours
Red				
Blue				
Green				
Yellow				
Black				
White				

SUMMARY: When the light strikes a dark colored object, a great deal of the light is absorbed and converted to heat energy. When light strikes a light colored object, only a small amount of light is absorbed and converted to heat energy.

EXTENSIONS:

Further Investigation:

* Does water color make a difference? Set up a controlled experiment using food coloring to find out.

*On the basis of the evidence from the experiments, what color house would you advise a friend to buy who was moving to Florida? Would the same advice apply to clothing colors?

Literary Connections:

Burgess, Jan. 1988. *Energy From the Sun*. Lexington, Massachusetts: Schoolhouse Press, Inc.
Dunn, Andrew. 1993. *How Things Work: Heat*. New York: Thomas Learning.

Related Web Site:

http://www.exploratorium.edu/snacks/give_and_take.html