Name _____ Class _____ Date _____

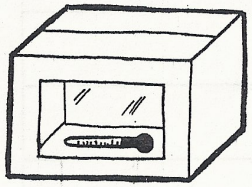
33.2A
Catch the Sun!
Instructions

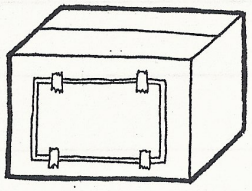
In this activity, you will use cardboard boxes to construct two "homes." Each will have a plastic "window." One home's window will be covered with cardboard. You will then place your homes in the sun and record the air temperature inside of each for thirty minutes.

Your teacher will explain how to construct your "home."

When you cut the cardboard out to form the windows, save one piece to use as a window cover.

The thermometer can either be placed in the home where it is visible through the window, or it can be suspended in the "ceiling" (box top) in such a way that the bulb is inside the home near the ceiling and the temperature can be read from the outside of the box.





When the thermometer has stabilized, record the starting temperature in each "home." Then place both "homes" in the sun with the windows facing toward the sun. Be sure to position them in a place where they won't become shaded before they have been in the sun for thirty minutes.

Record the temperature of each house every five minutes for thirty minutes.

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33.3
Catch the Sun! Questions

1. Which "home" heated up faster?

   _____

2. Which "home" got warmer?

   _____

3. Which home do you think would cool off faster at night?

   _____

4. If this were a real home, how could you increase the amount or rate of heating?

   _____

   _____

5. If this were a real home, what could you do to decrease the amount or rate of heating?

   _____

   _____

6. What would be the implications of this activity if you were designing a home to be built in the following places:

   a. Anchorage, Alaska: _____

   b. Phoenix, Arizona: _____

   c. Sydney, Australia: _____

7. Besides space heating, how can solar energy be used?

   _____

   _____

   _____

   _____

8. What are some of the advantages and disadvantages of solar energy?

   Advantages:

   _____

   _____

   Disadvantages:

   _____

   _____

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33.2B
Catch the Sun! Data

Record the starting temperatures after the thermometers have stabilized. Then take readings every five minutes for thirty minutes.

Description of the "Home" (Materials, Dimensions, Color, Window Area, and so on)	*Temperature Readings (°C) After This Many Minutes*						
	Start	*5*	*10*	*15*	*20*	*25*	*30*
(With Window Covered) Dimensions: _____ × _____ × _____ Volume: _____ Window Area: _____ × _____ = _____ Materials: Other Notes:							
(With Window Not Covered) Dimensions: _____ × _____ × _____ Volume: _____ Window Area: _____ × _____ = _____ Materials: Other Notes:							