

Name: _____ Date: _____

Which Gets Hotter: LAND OR WATER?

OBJECTIVE: You will determine if land or ocean absorbs heat faster and discuss the implications of your findings on the Earth's weather system.

Materials: Obtain 3 identical waterproof containers, three thermometers, a reflector lamp and ring stand, room temperature water, and light and dark room temperature sand. Mark the color of your two sand samples on the data table

Preparation: Fill one container about half full with light sand, one with dark sand, and the third with water to the same level. Place the thermometers upright into the sand and water, submerging the ball of the thermometer into the material. Place the containers under the light source so that they all obtain equal amounts of light rays from it. Make sure the thermometers are upright and not receiving direct light.

Procedure: Before you turn the light on, take the initial temperature, adjusting the water's temperature if needed to match the sand's temperature. Turn the light on and measure the temperature of each material in Celsius every 5 minutes. Record on the data table below. After 40 minutes, turn off the light and record the falling temperatures for about 30 minutes. Graph the results on the graph paper provided, using different colors or patterns for each material. Answer the questions below.

DATA: Color of light sand: _____

Color of dark sand: _____

Time:	0														
Water Temp:	°C														
Light Sand:															
Dark Sand:															

ANALYSIS:

1. Please describe the results of your experiments for the three cups:
2. What can you conclude from these results? (I.e., which material heats and cools the fastest/slowest?)
3. What do these results indicate about the heating of the Earth?
4. Explain how these results affect the weather on the Earth **in detail**. What do you think would happen if the Earth were covered with over 70% land instead of water?



