Learning to Use a Light Probe

Is it sunny outside or cloudy? Are the lights on in your room? How bright is it where you are sitting? Is it brighter if you are close to a light bulb or next to the window? You can use the Light Probe to measure the brightness of light around you.

OBJECTIVES

In this activity, you will

- Learn to use the Light Probe.
- Measure different light levels in your room.
- Make letters on the computer screen.

MATERIALS

computer with Logger Lite software installed
Go!Link interface
TI Light Probe
light source

PROCEDURE

Part I Learn About the Light Probe

1. Make sure the Light Probe is plugged into the Go!Link and that the Go!Link is attached to the computer.

2. Start Logger Lite on your computer. If everything is attached correctly, the LED on the Go!Link will be green and the Logger Lite screen will display a graph, a data table, and a digital meter.

3. Open the file for this activity by doing the following:

   a. Click the Open button,  .

   b. Open the folder called "Elementary Science."

   c. Open the file called "31 Light Probe."

4. Now, collect data using the Light Probe by following the steps below. In the next step, you will record your observations about what happens, so pay close attention to what happens on the screen when you do different things.

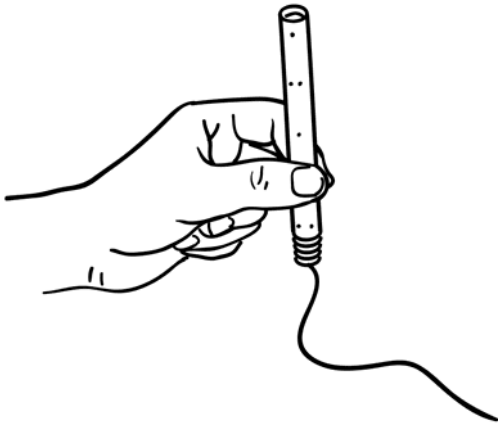
   a. Look at the computer screen and click ▸ Collect to start data collection.

   b. Point the tip of the Light Probe directly at the light source and hold it still for a few seconds. Pay attention to what happens on the screen.

   c. Slowly rotate the Light Probe away from the Light Probe and point it at the ground. Try to make the light level change very slowly.

   d. Finally, cover the tip of it with your hand.

   e. Click ■ Stop to end data collection, if it has not ended already.



5. On the Observations Sheet below, write down what happened when you did different things to the Light Probe. **Tip:** Click the Examine button, , and move the cursor along the data to see the exact light levels that were recorded.

Observations Sheet
1. When I pointed the probe at the light source, the light level
2. When I rotated the probe towards the ground,
3. When I covered the tip with my hand, the light level
4. The lowest light level was _____ . The highest was _____ .

Part II Making Letters with the Light Probe

6. From the Data menu at the top of the screen, choose Clear All Data.

7. In this part of the activity, you will complete writing the steps necessary to create the letter **W** on the graph. Think about how you would do this and fill in the blanks below.

   a. Start with the Light Probe pointing _____ (towards or away from) the light source. (**Tip:** There are live readings in the Meter window on the computer screen. Use these to help you decide where to point the probe.)

   b. Keep pointing in the same direction for a few seconds.

   c. Slowly, move the Light Probe _____ (towards or away from) the light source.

   d. Slowly, move the Light Probe _____ (towards or away from) the light source.

   e. Slowly, move the Light Probe _____ (towards or away from) the light source.

   f. Slowly, move the Light Probe _____ (towards or away from) the light source.

   g. Hold the probe still for a few seconds and then, click ■ Stop.

8. Click ▶ Collect to start data collection and follow the steps you wrote in Step 7.

9. If the graph looks like a **W**, congratulations! You can move on to the next step. If you want to try to **W** again, choose Clear All Data from the Data menu and repeat the steps you wrote in Step 7.

10. After you've made the letter **W**, you will try to make the letter **M**. On the lines below, write down the steps you would take to make a letter **M**. Use the words in Step 7 as a pattern.

    Steps for making the letter **M**:

11. Choose Clear All Data from the Data menu and follow the steps you wrote in Step 10.

12. If the graph looks like the **W**, congratulations! If you want to try to make a **W** again, choose Clear All Data from the Data menu and do the steps you wrote in Step 10 another time.

    Good job!!