

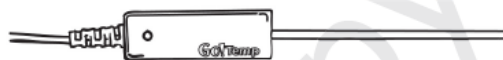
Learning to Use Go!Temp

You can use the Go!Temp temperature probe to measure the temperature of many things, like your water, air, or your hand. In this activity, you will learn how to use a Go!Temp and Logger Lite computer software.

OBJECTIVES

In this activity, you will

- Measure the temperature of your hand.
- Explore graphs produced by moving a Go!Temp between baths of different temperatures of water.
- Learn to write detailed "steps" for creating an M or W on the graph.




MATERIALS

computer with Logger Lite software installed
Go!Temp temperature probe
cup of warm water
cup of cold water
paper towels or rags to clean up spills
tray

PROCEDURE

Part I Learn About the Go!Temp

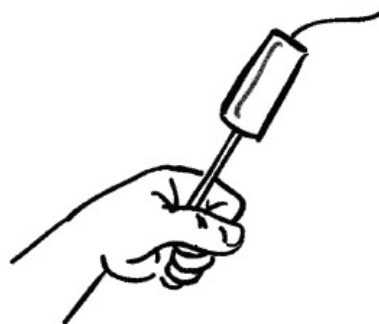
1. Make sure the Go!Temp is connected to the computer.
2. Start Logger Lite on your computer. If everything is attached correctly, the LED on the Go!Temp will be green and the Logger Lite screen will display a thermometer, a graph, a data table, and a digital meter.
3. Open the file for this activity by doing the following:
 - a. Click on the Open button, .
 - b. Open the folder called "Elementary Science."
 - c. Open the file called "01 Go Temp."

Computer 1

4. Follow these steps to get the materials ready to do this part of the activity:
 - a. Put the Go!Temp on the table and don't touch it again until you're told to do so later on.
 - b. Get a cup and fill it about half full with cold water.
 - c. Get another cup and fill it about half full with warm water.
 - d. Put the cups on the tray and be careful not to tip them over. If the cups spill, ask your teacher what to do, right away.

5. Now, collect data using the Go!Temp by following the steps below. Later, you will make observations about what happens, so pay close attention!

- a. Look at the computer screen and click to start data collection.
- b. Pick up the Go!Temp and put the tip of the metal part in your hand, as shown here.
- c. Watch how the temperature of the probe changes on the screen.
- d. After a little while, the temperature will stop changing so much. When this happens, put the metal part of the probe into the cup with the warm water. Be careful not to tip over the cup.
- e. Again, watch how the temperature of the probe changes.
- f. After a little while, the temperature will stop changing so much. When this happens, put the metal part of the probe into the cup with the cold water. Be careful not to tip over the cup.
- g. Again, watch how the temperature of the probe changes.
- h. Click to end data collection.



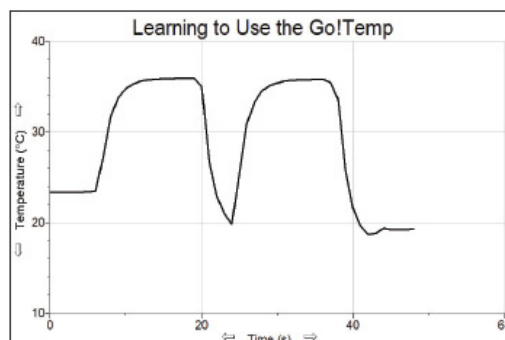
6. Answer the questions on the Observations Sheet, below, based on your observations during data collection.

Observations Sheet
1. When I put the Go!Temp in my hand, the temperature reading
2. When I put the Go!Temp into the warm water, the temperature reading
3. When I put the Go!Temp into the cold water, the temperature reading

Part II Making Letters with the Go!Temp

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

8. In this part of the activity, you will complete writing the steps necessary to create the letter **M** using a Go!Temp. An example of what this might look like is shown to the right. Think about how you would make a similar M shape and fill in the blanks below.



- Start with the Go!Temp in the air.
- Keep the Go!Temp in the air for 5 seconds.
- Put the Go!Temp in _____ (warm or cold) water.
- When the temperature stops changing a lot, move the Go!Temp into the _____ (warm or cold) water.
- When the temperature is close to the starting temperature, move the Go!Temp into the _____ (warm or cold) water.
- When the temperature stops changing a lot, move the Go!Temp into the _____ (warm or cold) water.
- When the temperature is close to the starting temperature, click .

Computer 1

9. Do the following to get the materials ready to make the letter **M**.
 - a. Put the Go!Temp on the table.
 - b. Refill your cups with warm and cold water, if needed.
10. Click **Collect** to start data collection and follow the steps you wrote in Step 8 to make a graph that looks like an **M**.
11. If the graph looks like an **M**, congratulations! You can move on to the next step. If you want to try to make the **M** again, choose **Clear All Data** from the Experiment menu and repeat the steps you wrote in Step 8.
12. After you've made the letter **M**, you will try to make the letter **W**. On the lines below, write down the steps you would take to make a letter **W**. Use the words in Step 8 as a pattern. **Hint:** You don't need to start data collection with the probe in the air.

Steps for making the letter **W**:

13. Do the following to get the materials ready to make the letter **W**:
 - a. Put the Go!Temp on the table.
 - b. Refill your cups with warm and cold water, if needed.
14. Choose **Clear All Data** from the Data menu and then follow the steps you wrote in Step 12.
15. If the graph looks like an **W**, congratulations! If your teacher says it's okay, you can try making other letters or shapes. If you want to try to make a **W** again, choose **Clear All Data** from the Data menu and repeat the steps you wrote in Step 12.

Good job!!

Vernier Lab Safety Instructions Disclaimer

THIS IS AN EVALUATION COPY OF THE VERNIER STUDENT LAB.

This copy does not include:

- **Safety information**
- **Essential instructor background information**
- **Directions for preparing solutions**
- **Important tips for successfully doing these labs**

The complete *Elementary Science with Vernier* lab manual includes 43 labs and essential teacher information. The full lab book is available for purchase at:

www.scientrific.com.au