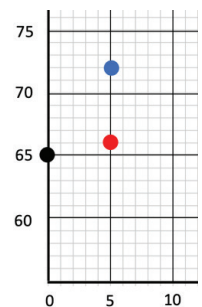


# Heat It Up!

Use the graph on page 3 to track the temperatures inside and outside of your prototype as it heats up and cools down. The y-axis (vertical) shows the temperature, and the x-axis (horizontal) shows time. Here's what to do:

- 1 Choose a range of numbers for the vertical axis. Your starting number will depend on the current outdoor temperature. If it's cold right now, you might start at 20 degrees and increase to 85. Or, if it's a hot time of year, you could start at 75 degrees and increase to 150. Add numbers to the y-axis in increments of 5.
- 2 Set up your key. The key tells important information about your graph. Choose one color to track the temperature inside your house. Choose a different color to show the temperature outside, in the shade. Color the bubbles in the key with the colors you've selected.
- 3 Find a place that will be in the shade for at least 40 minutes. Place one thermometer there and take the temperature. Record it with a black dot on your graph at line 0. The black dot represents the starting temperature, which should be the same both inside the house and outside.
- 4 Pick a place that will be in the sun for at least 20 minutes, since you won't be able to move your house during that time. Place it on a flat, sunny surface.
- 5 Make sure you can see the thermometer through the window or door of your model house. Then close up your house, tape the roof, window, and door shut, and set a timer for 5 minutes.
- 6 After 5 minutes, take a temperature reading of the inside of your house and mark it on your graph at line 5, using the color you chose. Also check the outdoor temperature and record it on your graph at line 5, using the color you chose. Your graph might look something like this (house temperature is blue, outdoor temperature is red, starting temperature is black).



- 7 Continue taking temperature readings every 5 minutes for another 15 minutes. Remember to also record the outdoor temperature each time.
- 8 Without opening your house, move it to the shade. Set the timer for 5 minutes and take another temperature reading. Record both the house and the outdoor temperatures on your graph at line 25.
- 9 Continue taking and recording the temperature every 5 minutes for an additional 15 minutes.
- 10 Collect your prototype and go indoors. Use a ruler to connect the dots on your graph using the colors in your key. Make two lines using the starting temperature. One line will show the changes in temperature inside your prototype. A second line will show the changes in outdoor temperature.

Name: \_\_\_\_\_

