

Creatures of Comfort

Problem: What temperature do insects prefer? What does this say about their habitat?

Research: At which temperature are you most comfortable? Do you prefer hot or cold? Why?

Review the 5 major Colorado life zones:

Name	Elevation	Location/temperature	Rainfall	Plants	Animals

Review what an insect is. Write a definition of *insect* then draw an insect and label the important parts.

Hypothesis: Which temperature will each insect prefer? Which life zone(s) will each insect live in?

Insect	Temperature (at each min.)	Life Zone

Experiment: Materials

- One of each kind of insect
- Vials for holding insects
- Thermal gradient
- Lab sheet
- Pencil

Procedure

1. Calibrate the instrument
 - a. Plug the hot plate into the outlet and turn it to the proper temperature
 - b. Put the “hot” end on the plate
 - c. Put the “cold” end in the bucket of ice
 - d. Allow the temperature to stabilize

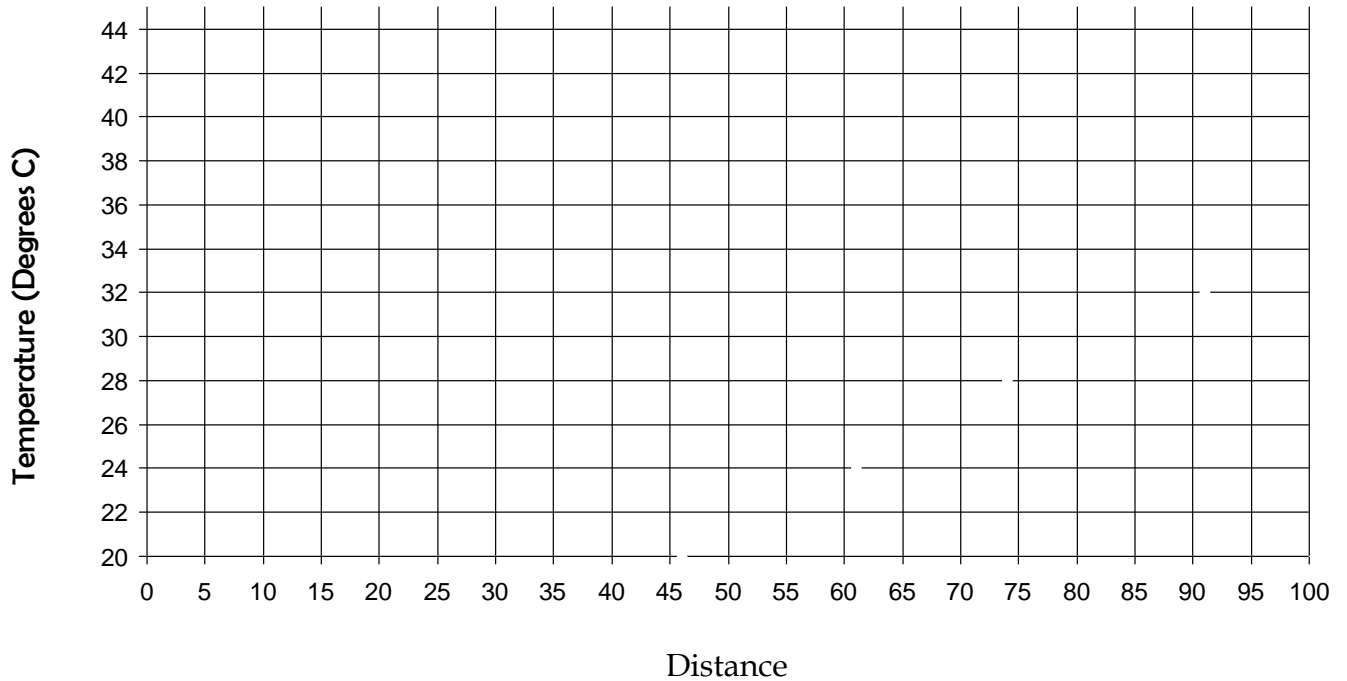
Due to limits on time, the instrument will already be stabilized by the time you arrive and you start from the following step.

- e.
- f. Using the thermometer, check the temperature at the designated intervals

Fill in the table below based on the information you discover:

Thermometer	Distance	Temperature (degrees C)
1		
2		
3		
4		
5		
6		

Using the information in the table, create a graph below:



Using the graph and the table, answer the following questions as accurately as you can:

1. What will the temperature be at 25 cm? _____
2. What will the temperature be at 45 cm? _____
3. What will the temperature be at 85 cm? _____
4. At what distance will 40 degrees be? _____
5. At what distance will 30 degrees be? _____
6. At what distance will 22 degrees be? _____

Part 2

1. Introduce one insect into each lane at the center of the gradient
2. Allow 1 minute for the insect to adjust.
3. Record the temperature in the table below

Data

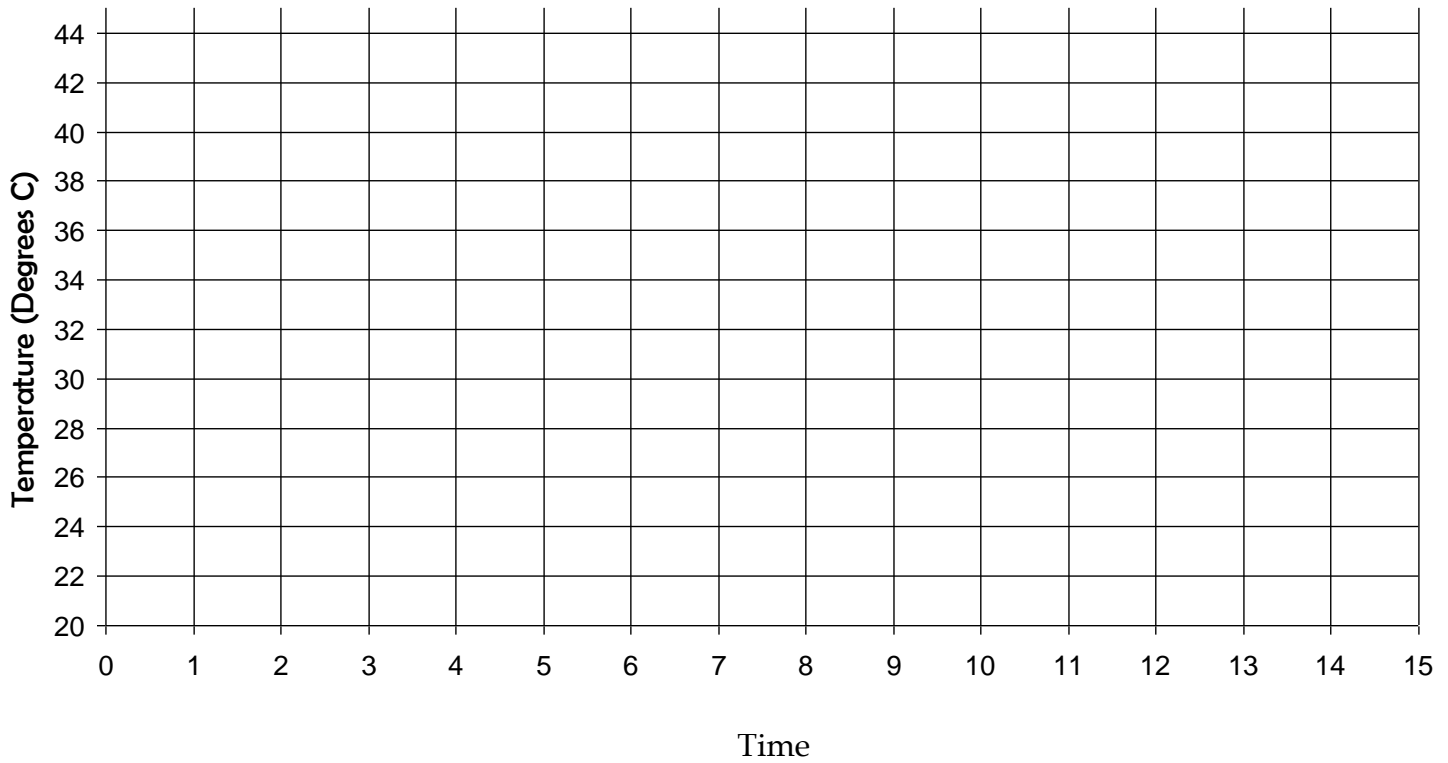
This table is for the insects that you and your group test.

Insect	Approximate Preferred Distance (cm)					Approximate Preferred Temperature (degrees C)				
		1)	2)	3)	4)	5)	1)	2)	3)	4)
	6)	7)	8)	9)	10)	6)	7)	8)	9)	10)
	11)	12)	13)	14)	15)	11)	12)	13)	14)	15)
	1)	2)	3)	4)	5)	1)	2)	3)	4)	5)
	6)	7)	8)	9)	10)	6)	7)	8)	9)	10)
	11)	12)	13)	14)	15)	11)	12)	13)	14)	15)

Results

This table is for the group data. We will also calculate the class data on the chalkboard. Make sure you copy it down accurately.

Insect	Max Temp	Min Temp	Range of Temps	Median Temp	Average Temp	Mode Temp



Write three intelligent sentences about what your tables and graph tell us about our insects' temperature preferences.

Conclusion: Did your hypothesis about temperature preference match your results? Make sure you write about each individual insect.

Based on your results, which life zone do you think each insect will likely live in? Does that match your hypothesis?

Are the results from your experiment accurate? _____. How do you know your results are accurate? What might have gone wrong that would cause inaccurate results?

How might scientists use this information? Why would this be important for scientists to know?
