Temperature-Time Lab

Overview: For this lab, you will record the change in temperature of ice water over time. After collecting your data, you will create a graph to display your data. Finally, you will answer questions and write a short conclusion.

Question: How does adding ice to water affect the temperature of the water?

Hypothesis: (remember to write a complete If/then sentence that includes both variables)

_____

_____

Test Hypothesis:

Materials:

- 2 – 250 mL beakers
- 2 thermometers
- 2 ice cubes

Method:

1. Fill each beaker with 200 mL of cold water from the faucet
2. Record the temperature of the room on your data table, using both thermometers
3. Place a thermometer in each beaker and let it sit for 1 minute, then record the temperature of the water in each beaker for 0 minutes on your data table *(*leave the thermometers in the water for the rest of the experiment)*
4. Place 2 ice cubes in beaker #2
5. Let sit for 1 minute, record the temperature of the water in each beaker
6. Repeat Step 5 until you have recorded a minimum of 12 minutes of data

Data Collection:

Room Temperature: _____ (#1)   _____ (#2)

The Effect of Ice on Water Temperature

Time (min)	Temperature (°C)	
	Water without Ice (#1)	Water with Ice (#2)
0 *(immediately before adding ice)*		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

Analyze Results:

- Create a double line graph to show your results

    - □ Title (**Hint**: look at your data table**)**

    - □ X-axis label: Time

    - □ Y-axis label: Temperature

    - □ Units on x- and y-axis **(Hint**: look at your data table**)**

    - □ Legend/Key (one color or dot shape for each beaker)

    - □ Regular Intervals: make sure your numbers are all evenly spaced, starting with 0

    - □ Scale: make sure that you skip the same amount of numbers between each mark on your axis

    - □ Data: Be sure to connect your points using a ruler

- Answer the following questions:

    1. What patterns do you see on your graph?

       _____

       _____

    2. What can you learn from your graph?

       _____

       _____

Conclusion:

1. Use QN data to answer your initial question (**How does adding ice to water affect the temperature of the water?)** What is your evidence?

   _____

   _____

   _____

   _____

2. Refer to your hypothesis. My hypothesis was _____

   _____

   _____

   It was right/wrong. (circle one)

   Why? _____

   _____

3. What errors could there have been in your experiment that would have affected your results?

   _____

   _____

   _____

Name _____
Period _____