

CLASS SET LAB DIRECTIONS

Endothermic vs. Exothermic Reactions Lab

Objective: The purpose is to investigate Endothermic and Exothermic reactions and to see their effect on the temperature of the environment.

Procedure:

Part A: Vinegar and Baking Soda

1. Measure the Temperature of the Vinegar.
2. In the next step: Be careful – the contents of the cup might overflow – stir constantly to keep it from overflowing.
3. Add the Baking Soda to the Styrofoam cup and take the temperature of the mixture every 10 seconds. Continue to take the temperature readings for a total of 120 sec. (2 minutes).
4. Clean up your lab materials using the sink. Rinse ALL equipment well with water.

Part B: Hydrogen peroxide and yeast

1. Measure the Temperature of the Hydrogen Peroxide solution.
2. In the next step: Be careful – the contents of the cup might overflow – stir constantly to keep it from overflowing.
3. Add the yeast to the solution and take the temperature of the mixture every 10 seconds. Continue to take the temperature readings for a total of 120 sec. (2 minutes).
4. Clean up your lab materials using the sink. Rinse ALL equipment well with water.

Name:

Period:

Data Table:

Part A:

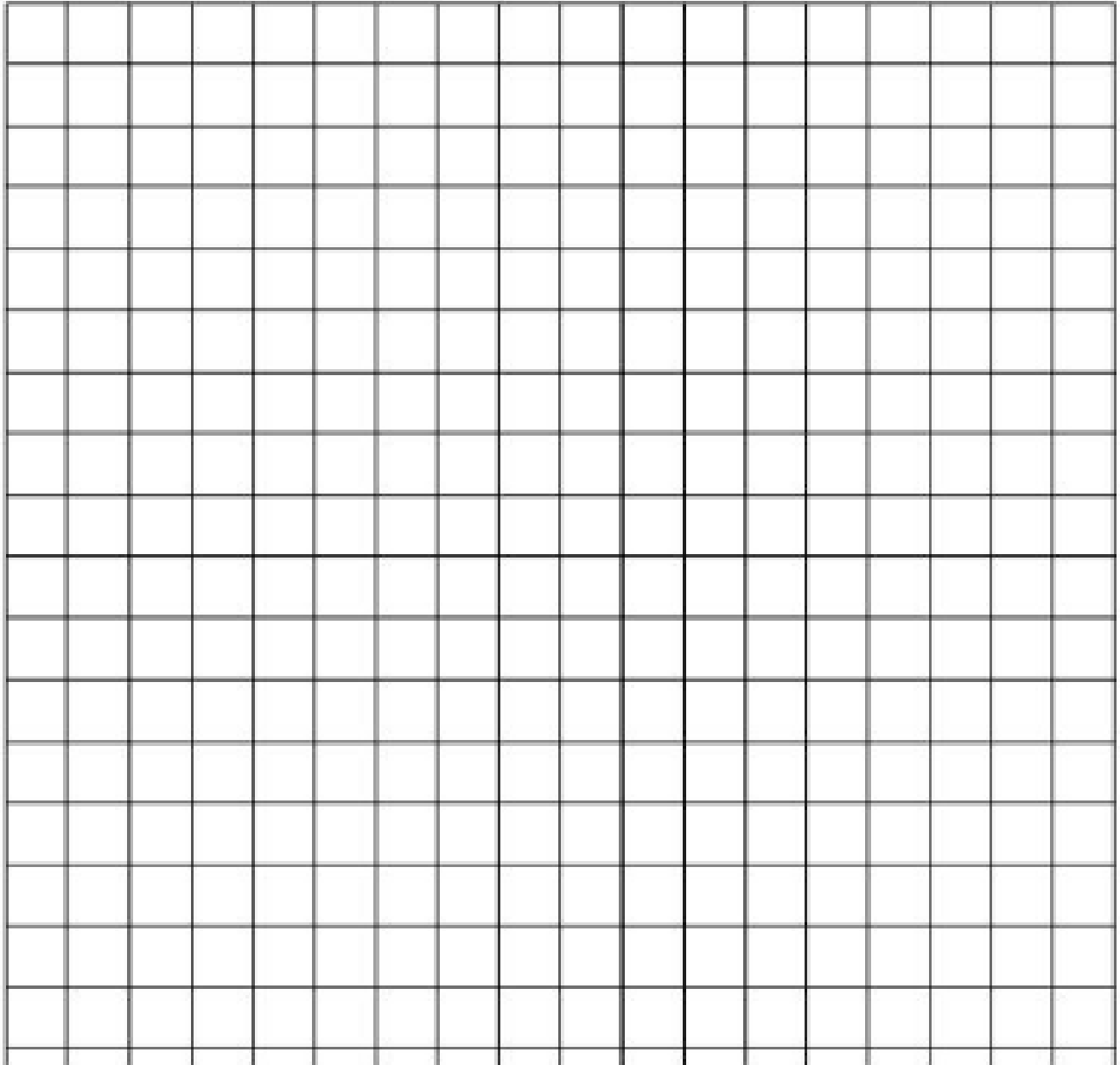
Time (sec.)	Temperature (°F)
0	
10	
20	
30	
40	
50	
60	
70	
80	
90	
100	
110	
120	

Part B:

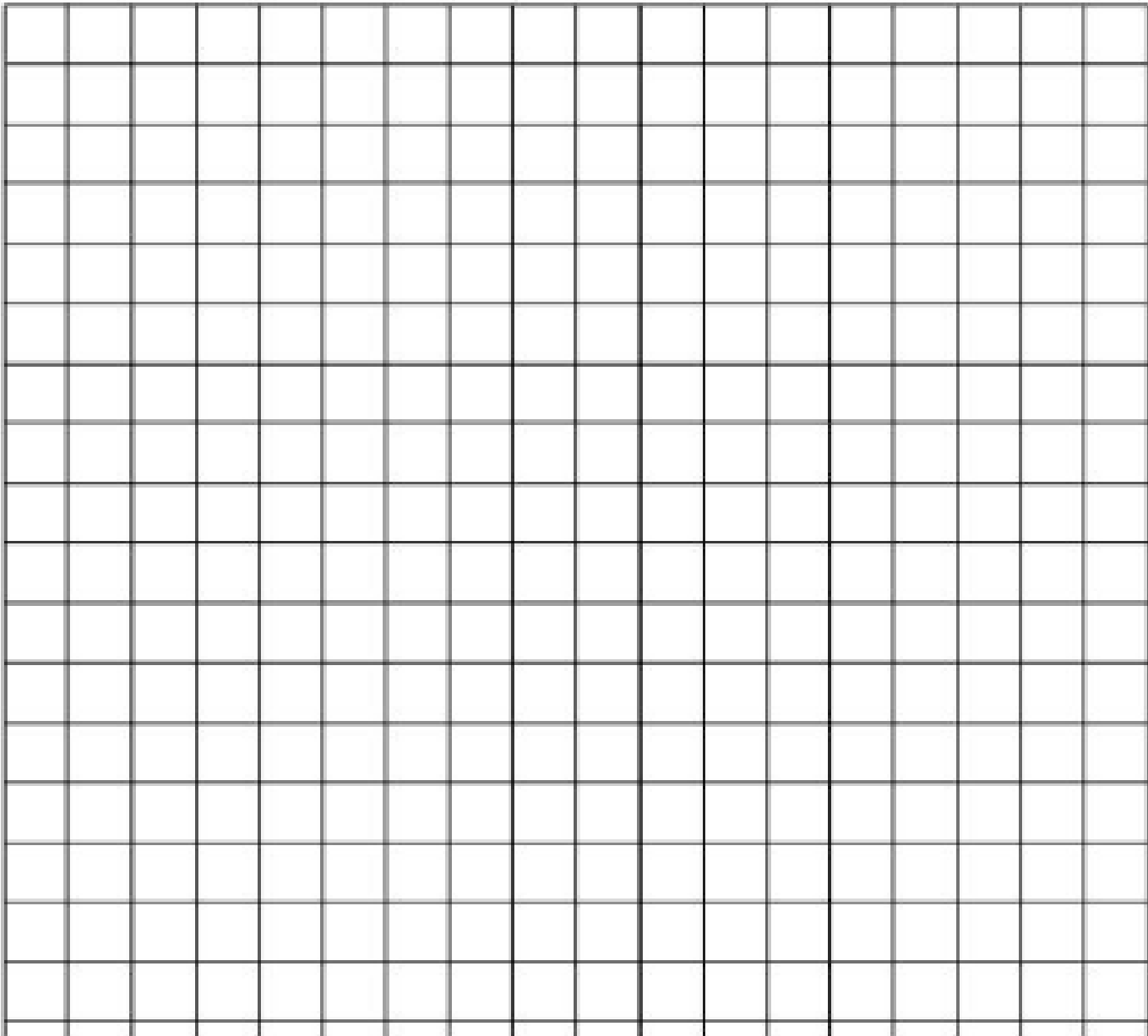
Time (sec.)	Temperature (°F)
0	
10	
20	
30	
40	
50	
60	
70	
80	
90	
100	
110	
120	

Graphs:

Part A: Make a Temperature vs. Time graph. Remember to label the title and the axes appropriately. Add a trendline and print your graph to staple to this lab sheet.



Part B: Make a Temperature vs. Time graph. Remember to label the title and the axes appropriately. Add a trendline and print your graph to staple to this lab sheet.



Questions

1. How do you know a Chemical Reaction (Chemical Change) was taking place for each reaction?
2. Which reaction was Endothermic? Why?
3. Which reaction was Exothermic? Why?
4. Explain what happens to the environment during an Endothermic Reaction.
5. Explain what happens to the environment during an Exothermic Reaction.
6. On your graphs, which variable (Time or Temperature) was the Independent Variable?
7. On your graphs, which variable (Time or Temperature) was the Dependent Variable?
8. Which statement is correct?

“The Temperature depends on the Time of the Reaction”

“The Time of the Reaction depends on the Temperature”