Name: Date: Class:

Group member names: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Factors Affecting Enzyme Rate**

1. Choose one of the following independent variables to examine:

A. Substrate (Hydrogen peroxide) concentration B. Temperature C. pH D. Other

1. What is the ***hypothesis*** you are going to test?
2. **Independent Variable:** Specify the values of the independent variable (identified in question #1) that you will use. How will you vary the independent variable for different trials?
3. **Dependent Variable:**

What will you **measure** in your experiment? How will you measure it? When will you measure it? Will you do repeat measurements and calculate a mean?

1. **Constant (controlled) variables:**

What will you keep the same in all trials of your experiment? How will you do this?

1. **Materials and Methods:** Complete the materials list. Write a brief outline or draw a diagram of your procedures:

|  |  |  |
| --- | --- | --- |
| **Chemicals Needed:**   * Hydrogen peroxide * Source of catalase (e.g. Yeast solution or Potato) |  | **Other Equipment (add more as needed):**   * test tubes * beakers * thermometer * timer * water bath |

Procedures: Write a brief outline or draw a diagram of your procedures

(Ms. Campbell’s Stamp Goes Here)

1. **Data Collection: (5 points)**

Create an appropriate observations table (with the headings “before,” “during,” and “after”) along with an appropriate data table. Attach an additional sheet of paper if necessary.

(Ms. Campbell’s Stamp Goes Here)

1. **Carry out the experiment:**

After your plan has been checked, you can do your experiment. As you work, you may decide to change something from your original plan. That is a good thing to do. Make a record of all the changes that you make, and why you decided to make them. **Record your results in your tables above.**

1. **Conclusion: (5 points)**
   1. Graph your data (either on LoggerPro and attach, or on graph paper)
   2. Summarize and analyze your data. Decide whether your results support or disprove your hypothesis.
2. **Evaluation: (5 points)**

Discuss the reliability of your results. Were there any anomalous results? How could you improve your experiment if you did it again?