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| --- | --- |
| Name: | Date: |
| Honors Biology 1 2 3 4 5 6 7 8 9 | Teacher: McQuade |

What question are you exploring: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is your **Hypothesis**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the **independent variable** in your experiment going to be?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the **dependent variable** in your experiment going to be?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What will you use as a **control group** to compare your results to?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are some **control variables** you will need to keep constant between your control group and your experimental group? Name at least 5 for now, you may figure out there are more later.

List the **materials** you think you might need for this experiment below:

Methods Considerations

Start determining your methods! Here are some things to consider

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| --- | --- | --- | --- |
| Temperature | pH | Salt | Source |
| What temperatures can you get water to?  Can you hold water at that temperature for extended periods of time?  If you need to change the temperature of water  Should you treat the enzyme or the hydrogen peroxide?  How will you measure temperature?  How will you make sure to use the same amount of enzyme in every trial?  How much hydrogen peroxide will you use?  How many trials should you run? | What are some different solutions we can get at different pH levels?  Should you treat the enzyme or the hydrogen peroxide?  How long should you treat the enzyme/ hydrogen peroxide before running the test?  How will you measure pH?  Is it safe to mix your acids/ bases with hydrogen peroxide?  How do your acids/ bases need to be disposed of?  How will you make sure to use the same amount of enzyme in every trial?  How much hydrogen peroxide will you use?  How many trials should you run? | What percent salt is in saline solution?  Should you use deionized water or tap water?  Should you treat the enzyme or the hydrogen peroxide?  How long should you treat the enzyme or peroxide with the salt solution before beginning the reaction?  How will you make sure to use the same amount of enzyme in every trial?  How much hydrogen peroxide will you use?  How many trials should you run? | How will you make sure to use similar amounts of tissue (enzyme)?  How many trials will you run?  How much tissue (enzyme will you use)?  How much peroxide will you use each time?  What can you use as a control group and why?  Where will you dispose of used tissue samples? |

Procedure: Develop your procedure below. Write the step in the left column. In the right column identify whether that steps is setting up your independent variable or your control group, measuring your dependent variable, keeping your controlled variables constant, or a step necessary to have equipment set up (E). If you run out of room continue on your own paper.

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| Step | IV, DV, CV, CG, E |
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