**Enzyme Activity**

**Name: Date: Block:**

**Introduction:** Enzymes are special proteins that can help to speed up chemical reactions in your body. For example, the enzyme Lactase helps you to digest and break down the sugar Lactose, which is found in dairy products.

**Materials:** toothpicks, ice, blind fold, tennis balls

**Task:** In this activity you will work in groups of three. One team member will be acting as the “**Enzyme,**” one group member will be the timer, and one group member will be the recorder of data. Please record your role in the space provided. All of you will be the scientists in charge of analyzing your data and answering the questions below.

**Enzyme:**

**Timer:**

**Recorder:**

**Procedure:** First you will spread out **30 toothpicks** on your desk. Make sure to use the entire surface. Give your enzyme **10 seconds** to pick up the toothpicks one at a time and break them in half. Count how many toothpicks were broken and record this in your data table. Next, blindfold your enzyme and repeat the task. Next, have your enzyme hold an ice cube in one hand while breaking the toothpicks (they may switch hands back and forth if needed because it is too cold). Lastly, have the enzyme hold a tennis ball in both hands while they break toothpicks. Record the number of toothpicks broken in your data chart for each trial.

**Data Table**

|  |  |
| --- | --- |
| **TRIAL** | **Number of Toothpicks** |
| **Normal** |  |
| **Blind Folded** |  |
| **Ice** |  |
| **Tennis Balls** |  |

Graph your data. Be sure to discuss the most appropriate graph for this data with your group members, and label the graph well!

**Questions:**

1. Explain what an enzyme is and why they are important to you.
2. What represented normal enzyme activity in this lab?
3. What do the blind folded trial, iced hands trial and tennis ball hand trial represent and why? Explain.
4. Using your data table and graph, analyze your results. What do they show you?
5. Explain how a very high fever can affect your body in terms of enzymes.

**Help me, Mrs. Newsome**

1. What do you not understand about proteins and enzymes?
2. What could I do to help you learn the material better?
3. If you were trying to explain how enzymes work to someone else your age that has never heard of them, how would you describe them and how they work?