

Toothpickase Lab Activity

Data Collection:

Reaction Rate of Toothpickase

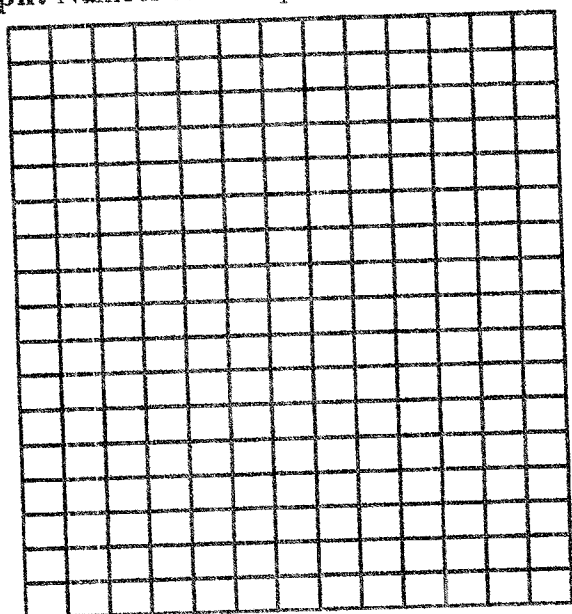
Time (seconds)	Number of Toothpicks Broken (Group)	Number of Toothpicks Broken (Class Average)	Average Reaction Rate # broken toothpicks/time change (seconds)
0			-----
10			
30			
60			
120			

Calculations:

Calculate the average rate of enzyme activity by dividing the number of toothpicks broken (column 3) by the change in time (column 1) Record the rate in the chart above.

$$\text{Reaction Rate} = \frac{\text{Average Number Toothpicks Broken}}{\text{Time Interval (seconds) (10, 30, 60, or 120)}}$$

Graph: Number of Toothpicks Broken Over Time



Questions:

1. What represented the enzyme?
2. What represented the substrate?
3. What represented the active site?
4. What happens to the reaction rate as the toothpicks run out? Why?
5. What would happen to the reaction rate if the number of toothpicks was doubled? Why?
hands

6. What would happen to the reaction rate if your hands were very cold?

7. List 3 facts you learned about enzymes in the activity.