

Name: _____ Period: _____

Title: Enzyme Action

Purpose: To see how enzymes affect the breakdown of proteins, carbohydrates and fats and to also see if temperature affects the speed of “digestion”.

Materials: 3 test tubes (tt), beaker, 3 foods, water, 1 enzyme solution, 3 stoppers, 3 foods: _____, _____, _____,

Procedure:

Our enzyme is: _____

1. Watch as your teacher sets up the control for this experiment. These foods will have no enzymes placed in the solution they are placed in.
2. Place a small amount of each different food in each tt
3. Label each tt and place tt in beaker
4. Add 5 dropper-fulls of your enzyme to each tt
5. Some tables will place their test tubes in the incubator or near a heat source.
6. Let sit over night
7. Check the next day and see which test tubes show the best breakdown of the food.

Prediction: Which enzyme will digest the egg white best?

Data:

| Food | Pepsin | | Pancreatin | | Invertase | | Amylase | |
|------|--------|------|------------|------|-----------|------|---------|------|
| | Normal | Heat | Normal | Heat | Normal | Heat | Normal | Heat |
| | | | | | | | | |
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Analysis:

1. What did the control show in this experiment?
2. Which type of foods did each enzyme digest best?

pepsin:

pancreatin:

amylase:

invertase:

3. Which food seemed most resistant to "digestion"?
4. Why might this be so?
5. Why do enzymes have to be specific?
6. How did heat affect the action of enzymes?
7. Why can't humans digest cellulose?
8. How did pH affect the action of enzymes?

Conclusion: Explain 2 things you learned.