

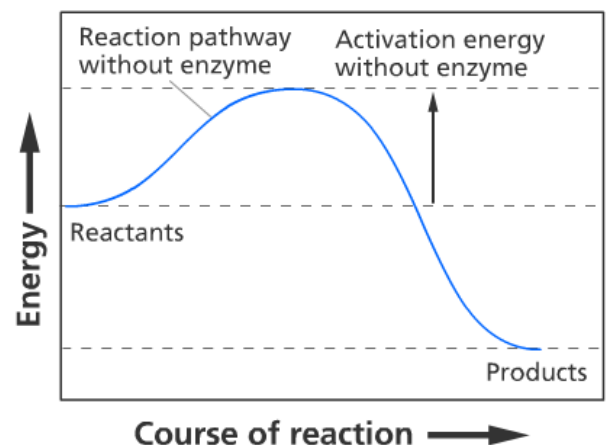
Name _____ Block _____ Date _____

Enzyme Action Tutorial Worksheet

Directions

1. Go to the Pearson Prentice Hall "Enzyme Action" online tutorial.
2. Answer the following questions based on the "Enzyme Shape Tutorial" (Animation Steps 1-10).

- What is the overall function of **enzymes**?
- What is the **activation energy** of a chemical reaction?
- What do enzymes and other **catalysts** do to the activation energy of a chemical reaction?
- What is a **substrate**?
- Describe how fast chemical reactions occur in cells *without* enzymes. _____
- What is the role of the **active site** in an enzyme?
- How is the *shape* of the substrates related to the *shape* of the active site of an enzyme?
- What is an "**enzyme-substrate complex**?"
- On the graph at right:
 - Draw and label the "reaction pathway with enzyme."
 - Label the "activation energy with enzyme."



- How does the activation energy without enzyme compare to the activation energy with enzyme?
- What is meant by the “**products**” of an enzyme-driven reaction?
- Is the enzyme “used up” or permanently changed after the chemical reaction? Explain.
- Identify two factors that can affect enzyme function.
- Describe how an enzyme-driven reaction changes as the environmental factors of the enzyme near the **optimal level**.
- What is most likely the **optimum** temperature of a human enzyme? Explain.
- What happens to an enzyme if its shape (especially its active site) changes?
- Describe one environmental factor that can change an enzyme’s shape.

Draw a diagram of **the action of enzymes**. Include the following in your diagram: *active site, enzyme, enzyme-substrate complex, product, and substrate*.