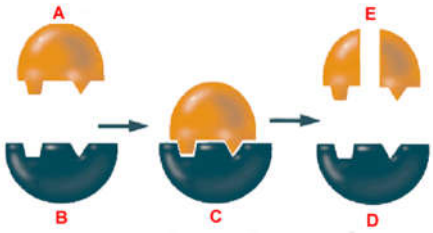
Biology
Ms. Ye

Name _____
Date _____Block_____

Enzymes

- Part of the _____ family of macromolecules
- Main role is to _____ that otherwise occur too slowly on their own
- Bind to the reactants (known as _____) but _____

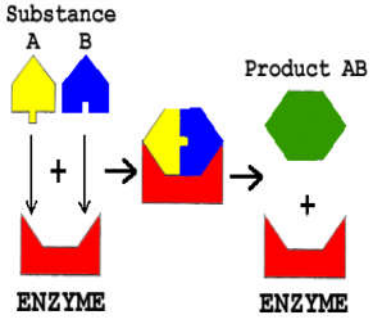
Models:



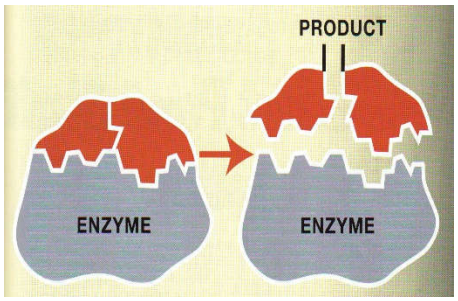
Which of these letters (A-E) represent the enzyme? What is the enzyme doing?

Which of these letters (A-E) represent the reactant?

Which of these letters (A-E) represent the product?



Picture A



Picture B

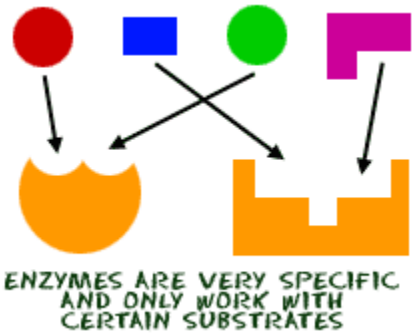
Which picture **(A or B)** represents an enzyme catalyzing a dehydration synthesis reaction? How do you know?

Which picture **(A or B)** represents an enzyme catalyzing a hydrolysis reaction (digestion)? How do you know?

Think Shape: Enzymes work like a **lock and key**

- The lock = _____
- The key = _____
- **Substrate:** _____

_____



The lock and key come together at the _____

Enzymes involved in Digesting Macromolecules

Enzyme	**Main macromolecule the enzyme helps digest**	**Where this step of digestion takes place**
Amylase		
Lipase		
Protease		

*****Helpful link for digestion part of project:** http://kitses.com/animation/swfs/digestion.swf

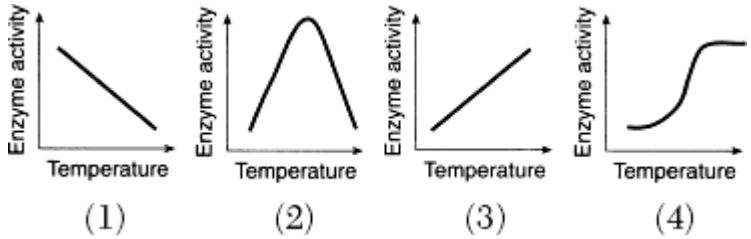
Enzymes Summary Questions

1. A characteristic enzymes that allows them to work effectively with other organic molecules is their

a. specific shape b. concentration of carbon and hydrogen atoms

c. small size d. high-energy bond

2. Enzymes have an optimum temperature at which they work best. Temperatures above and below this optimum will decrease enzyme activity. Which graph (see image) best illustrates the effect of temperature on enzyme activity?



3. Enzymes:

a. are made up of lipids b. are catalysts c. are not reusable d. operate at any temperature.

4. An enzyme works

a. with any substrate b. best at an acidic pH

c. only with its specific substrate d. best at a basic pH

5. For the diagram below, label the enzyme, substrate and active site.