**ENZYMES**

All enzymes are made of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Info and Vocab**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: the energy needed to START a chemical reaction.

An enzyme is a type of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which does two things 1) reduces the energy needed for a chemical reaction and 2) increases the rate of the reaction (speeds it up).

The specific reactants the enzyme works on are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and binds to it at a place called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

An exothermic chemical reaction \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy in the form of heat. An endothermic reaction \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_energy in the form of heat.

1. Color the exothermic beaker blue
2. Color the endothermic beaker red.
3. Color the direction of heat orange for both

 This is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reaction.



This is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reaction.

**Chemical Reactions Need Energy and Enzymes Can Help!!**

****Line A shows the reaction with/ without the help of an enzyme.

Line B shows the reaction with/ without the help of an enzyme.

The points on the graph with the stars mark the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Enzymes are Specific**

Enzymes are proteins, which means they are specific. This is explained in the **Lock and Key Model.**



What does the phrase “Form = Function” mean?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What happens to a protein when the shape is changed?**

**We know that when talking about proteins (and enzymes since they are made of proteins) that form = function.**

**What is the process of changing/destroying the shape of a protein/enzyme called?**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**What are 2 factors that can cause this?**

1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
2. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**What is a real life example of destroying the shape of a protein?**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Draw a diagram of what it would look like for an enzyme to go through the above process.**

**Draw a diagram of an enzyme attaching to a substrate and the products created (should have 3 steps)**

**Be sure to label: active site, substrate, enzyme, products, reactants**

\_\_\_\_\_\_\_\_\_\_\_\_\_

**What did you notice about the enzyme**

 **after the process above?**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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