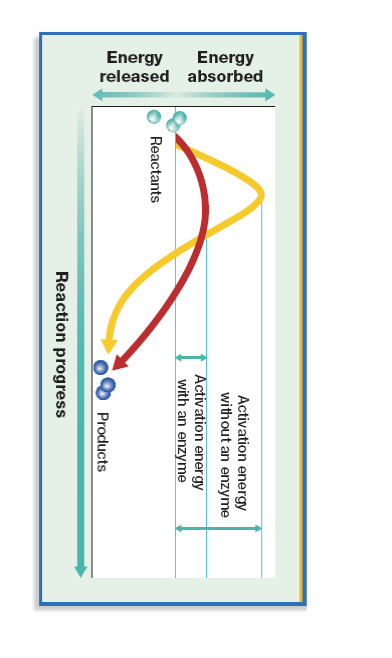
**Biochemistry: Energy and Enzymes - Ch 2. Sect 3**



**REVIEW OF Chemical Reactions**

A chemical reaction is when one or more \_\_\_\_\_\_\_\_\_\_\_\_\_change to create \_\_\_\_\_\_\_ or \_\_\_\_\_ different substances.

\_\_\_\_\_\_\_\_\_\_ bonds are \_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_bonds are \_\_\_\_\_\_\_\_\_\_\_.

**Getting it going…**

Activation Energy: amount of energy required to get a reaction\_\_\_\_\_\_\_\_\_\_\_\_

1. Often, the amount of energy needed to\_\_\_\_\_\_\_\_\_\_ a reaction is very \_\_\_\_\_\_\_\_\_ and the reaction itself takes a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* takes a lot of energy to \_\_\_\_\_\_\_\_\_\_bonds and the \_\_\_\_\_\_\_\_\_\_\_ have to come together in the \_\_\_\_\_\_\_\_\_ way

**Making a Reaction GO…**

**Catalyst:** 1.

2.

**What is an Enzyme?** Enzymes are \_\_\_\_\_\_\_\_\_\_\_\_\_ in \_\_\_\_\_\_\_\_\_ things.

1.

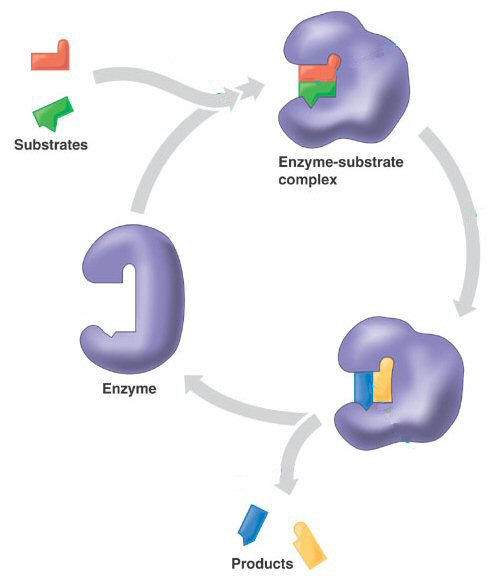
2.

3.

Most reactions are \_\_\_\_\_\_\_\_\_ or require \_\_\_\_\_\_ \_\_\_\_\_\_\_\_ energy than can be produced inside the body.

A catalyst is\_\_\_\_\_\_\_\_\_\_ for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to work.

**How Enzymes Work…**



Enzymes fit like a lock and key with a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

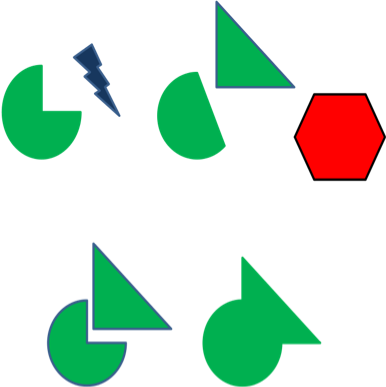
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are the \_\_\_\_\_\_\_\_\_\_\_\_\_of a chemical reaction.
* An enzyme is shaped very \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_to react with only its \_\_\_\_\_\_\_\_\_.

Steps of Enzyme Substrate interaction

1. Enzyme \_\_\_\_\_\_\_\_\_ to substrate
2. Enzyme-substrate complex \_\_\_\_\_\_\_\_(Enzyme “hugs” substrates)
3. New \_\_\_\_\_\_\_\_\_\_\_formed

What do you notice about the enzyme in the picture to the right?

Enzymes require \_\_\_\_\_\_\_\_\_\_\_\_ environments. (THINK HOMEOSTASIS!!)



1. Temperature
2. pH
3. Salts

**What effects enzymes?**

If the enzyme’s environment changes – then the \_\_\_\_\_\_\_\_\_\_ changes (DENATURES) which results in NO REACTION!

**EXAMPLE OF A CHEMICAL PATHWAY**

Letters = reactants and products

Numbers = enzymes

1

2

A 🡪 B 🡪 C

* SO what does this mean…”If an enzyme is missing or not functioning properly, then homeostasis is lost.”

Example

1.

2.