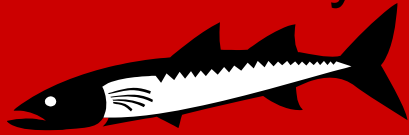


Attitude is Everything!



Thurs, Sept 28, 2017

Pick up: Enzyme CN

Please make sure  
your phones are  
in your bags.

Today you will:

1. Mark the text-Enzymes
2. Read, highlight and questions

Homework/Planner:

**Complete any Costa Questions for Cornell Notes**

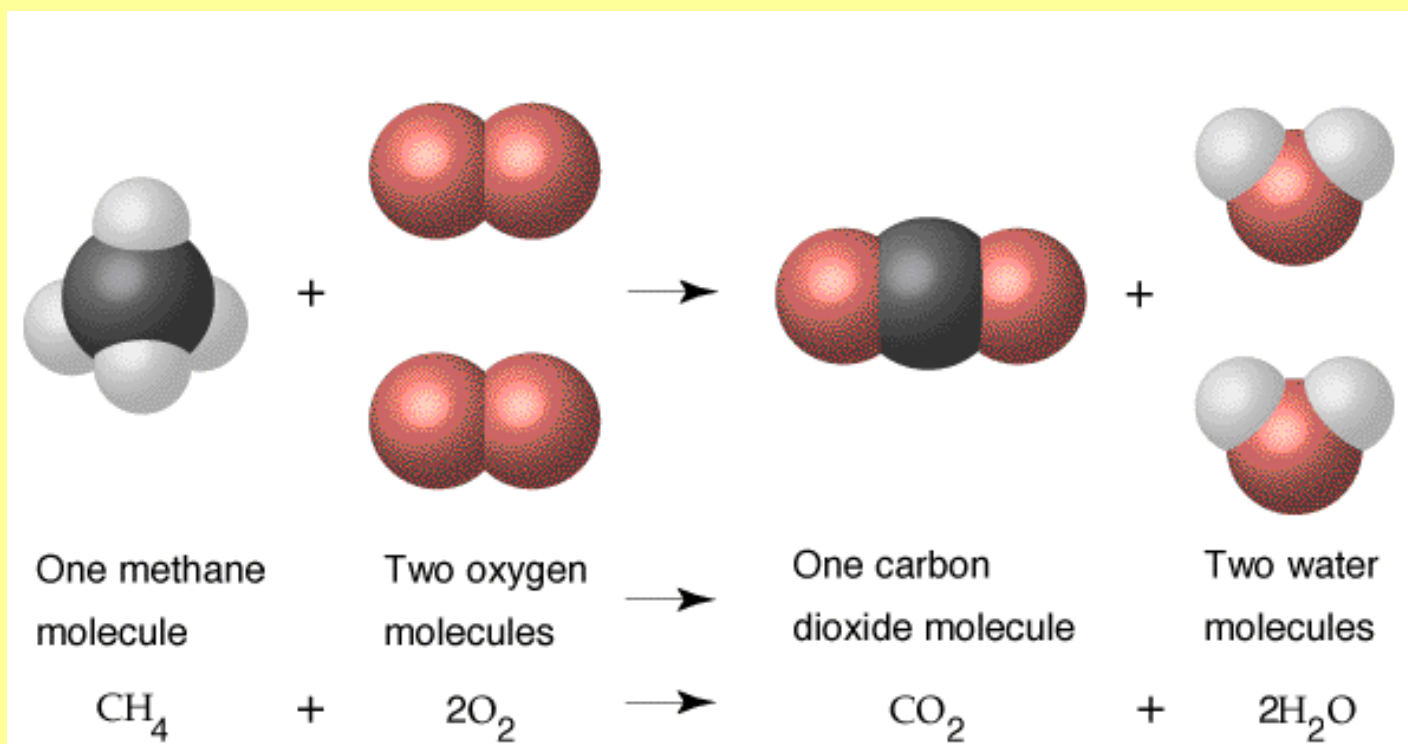
# DSQ

- Copy:
- There are approximately 3,000 of enzymes that exist in our body. Each of them has a specific function – Ex:
- Amylase=breaks down starch
- Pepsin=breaks down protein
- Lipase=breaks down fat
- Lactase=breaks down lactose (sugar found in milk products)

# Why do we study chemical reactions in biology?

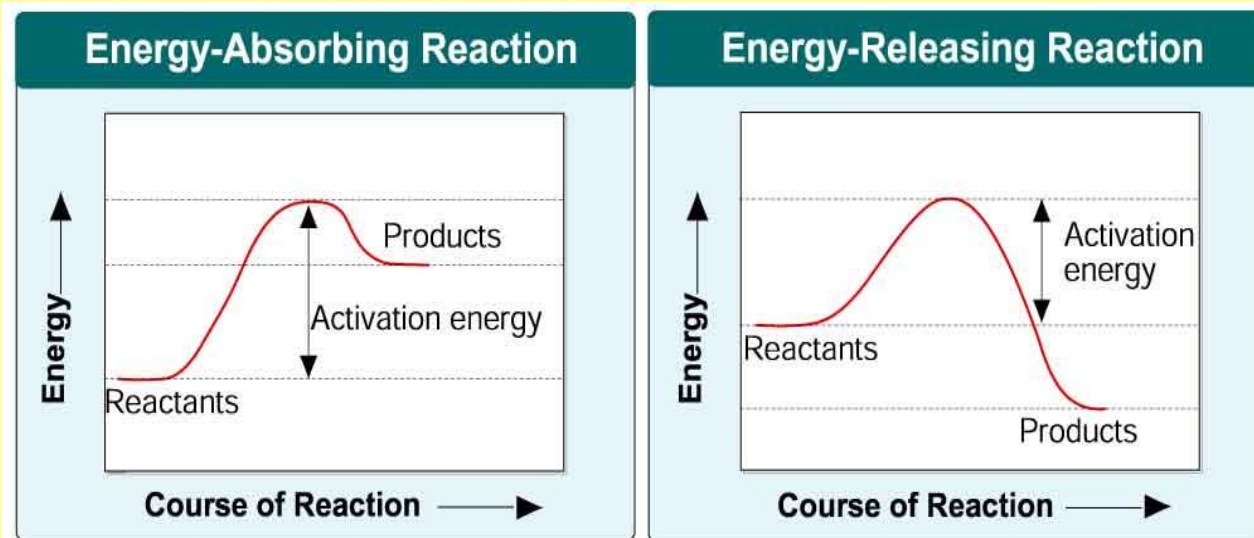
- Chemistry isn't just what life is **made of**, chemistry is also what life **does**
- Everything that happens in an organism is based on chemical reactions (growth, response to environment, etc.)

- Chemical reactions → **breaking** bonds in reactants and **forming** bonds in products



# Energy Changes

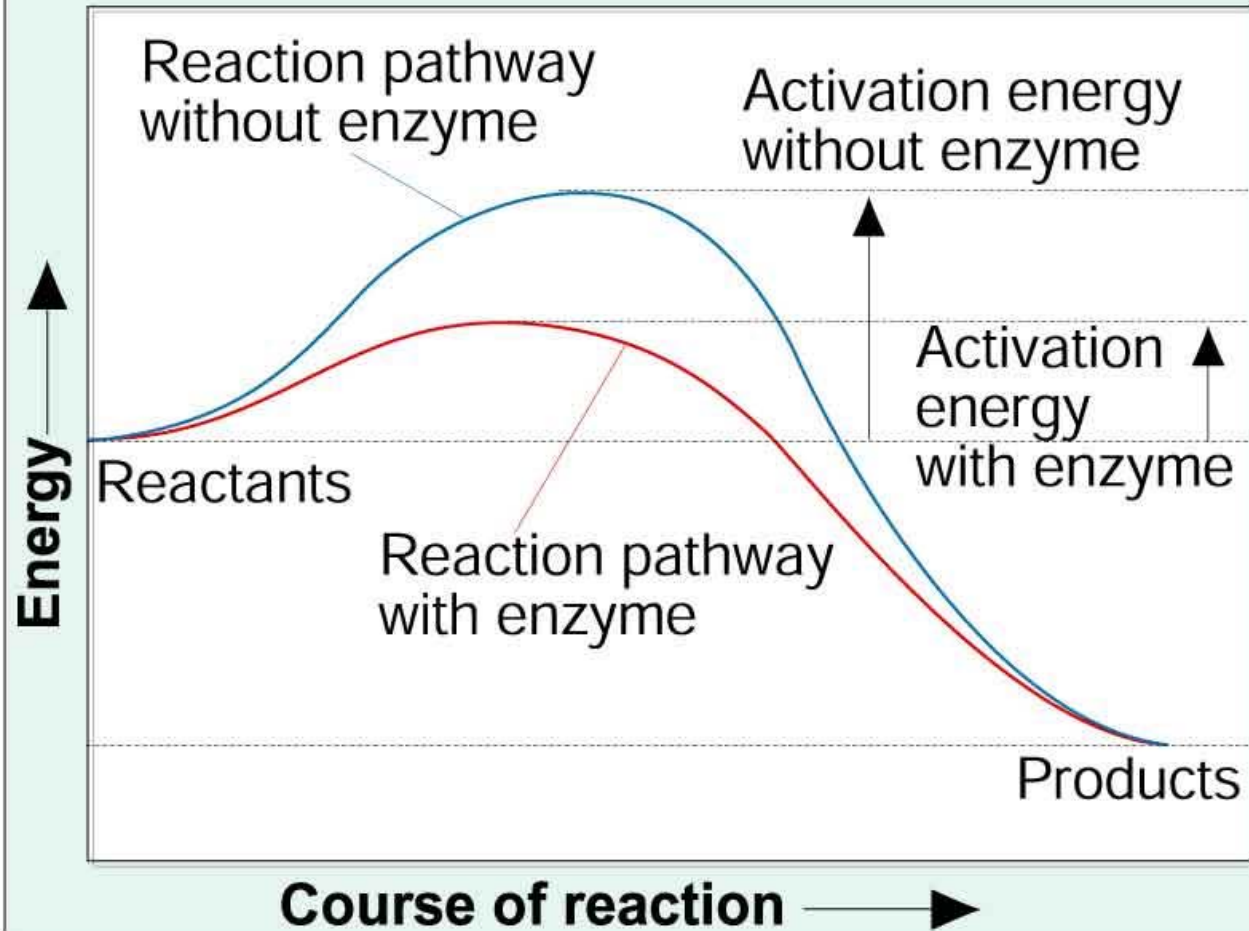
- Some reactions **release** energy and some **absorb** energy
- **Activation Energy**: the energy required to start a reaction



# Speeding up Reactions

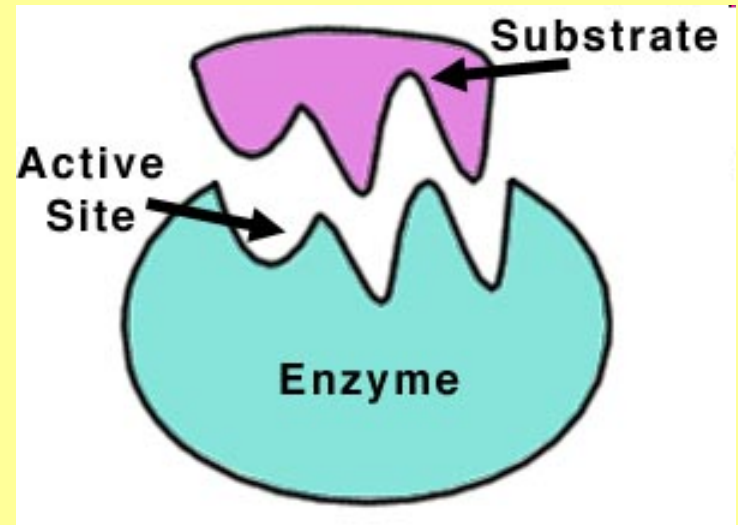
- **Slow** reactions or reactions **with high activation energies** need a catalyst
- **Catalyst** = any substance that lowers the activation energy of a reaction to “speed it up”
- **Enzymes** are catalysts that are **protein molecules.**

## Effect of Enzymes



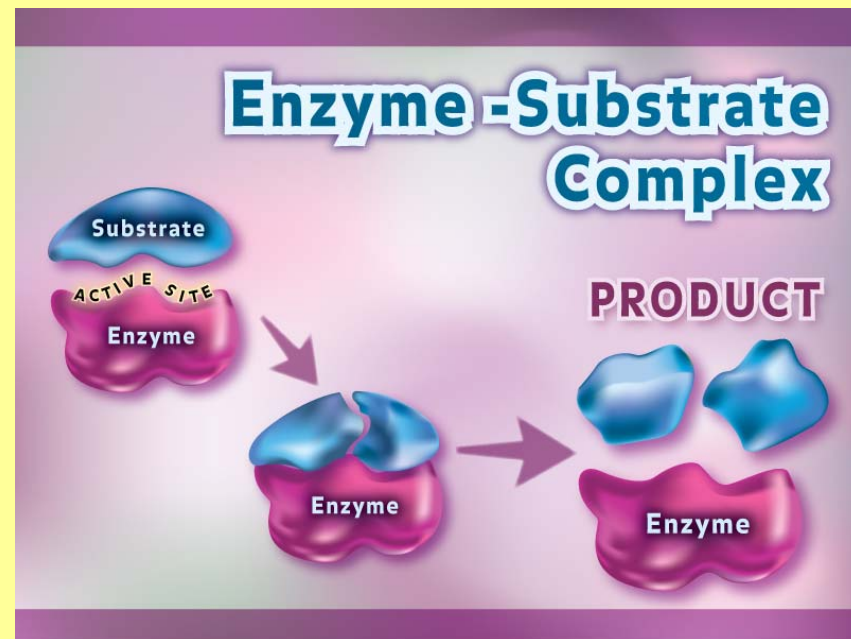
# Enzymes

- Enzymes provide a site where **reactants** can be brought together to react.
- In an enzyme-catalyzed reaction, the reactants are called **substrates**.
- Each enzyme has a specific shape and a specific portion called the **active site**, where substrates bind.

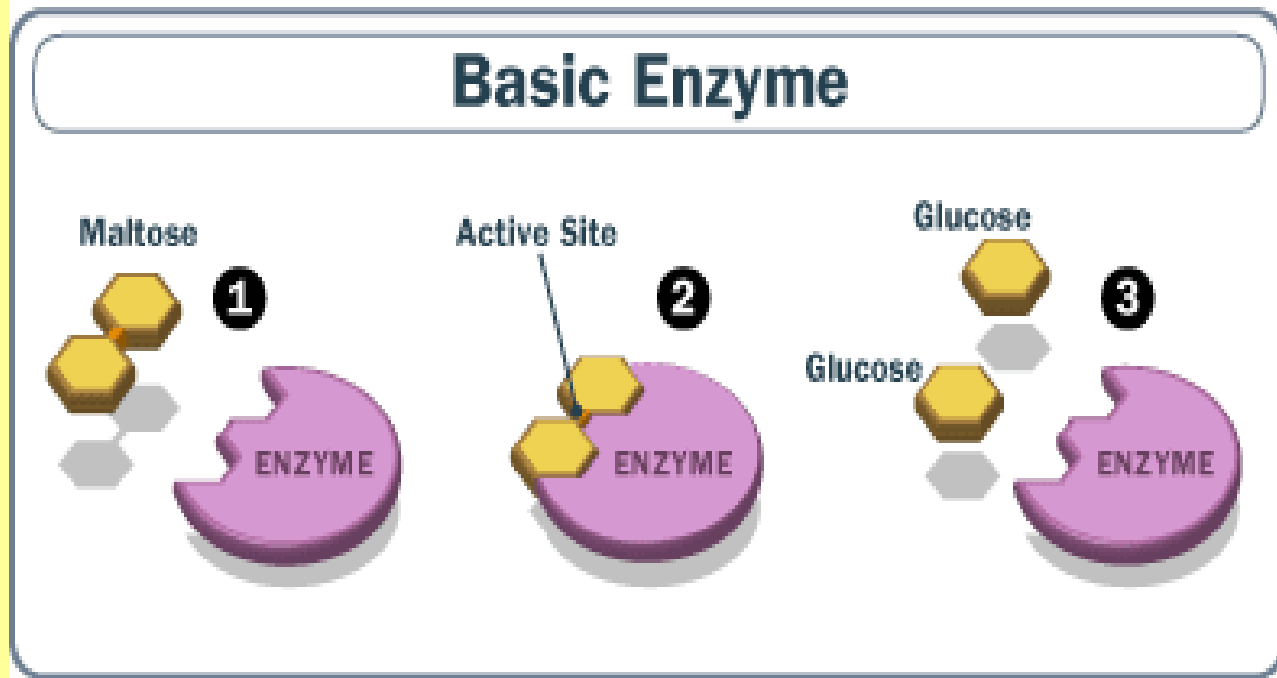




- The substrates must fit exactly into the active site. This is called the **lock and key** model.
- Once the reaction is complete, the enzyme releases the **products** of the reaction.
- Enzymes can **join** or **break** substrates into products.

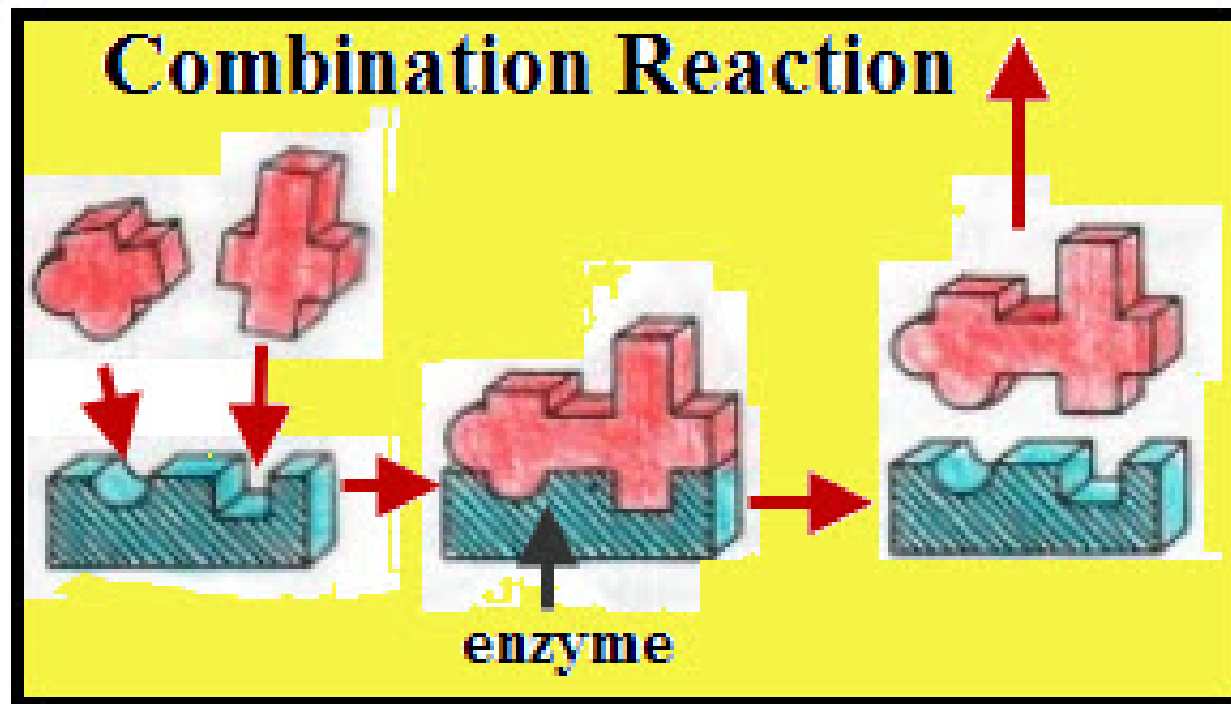


# Breaking 1 Substrate into 2 Products



<G:\Teacher Resources\Downloaded Videos\Enzyme Action.avi>

# Joining 2 Substrates into 1 Product



- Enzymes can **break** or **join** substrates into products.
- Enzymes work best at a certain **pH** and **temperature**.
- Roles of Enzymes:
  - 1) regulating chemical pathways
  - 2) making materials
  - 3) releasing energy
  - 4) transferring info

