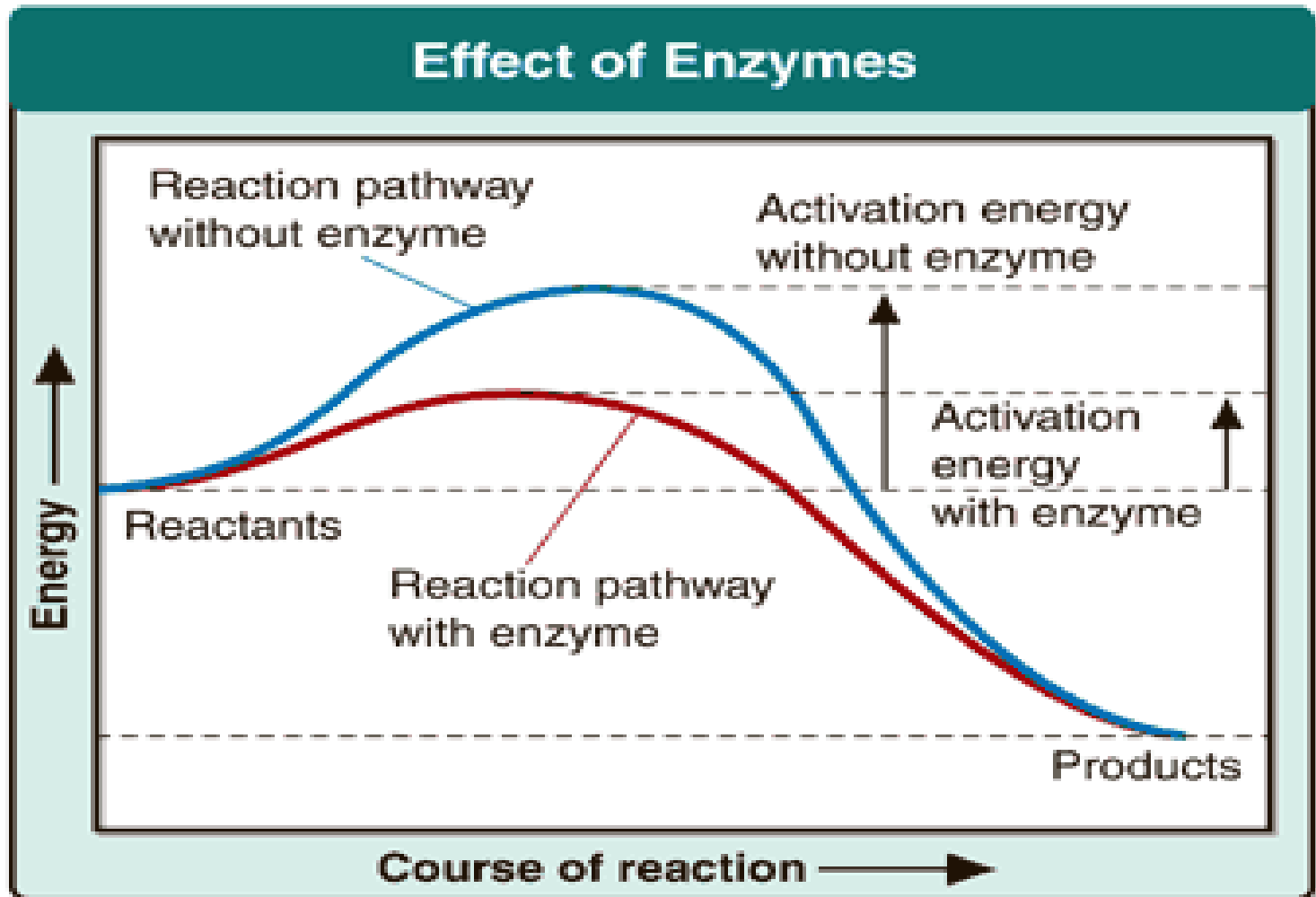


# Pre Lab

Introduction to Enzymes

# Enzymes

- **Enzymes** are PROTEINS that act as **biological catalysts**. Enzymes speed up reactions in cells.



**Enzymes = Proteins = Catalysts**

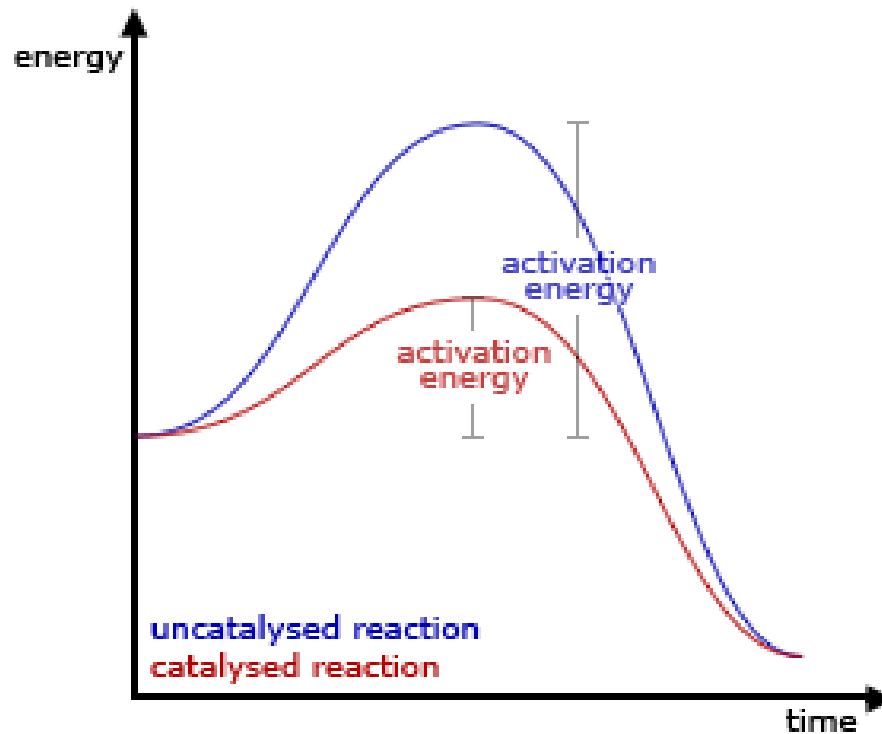
Enzymes Lower activation energy!

SO:

Enzymes make reactions happen **FASTER**  
without Using As Much Energy!

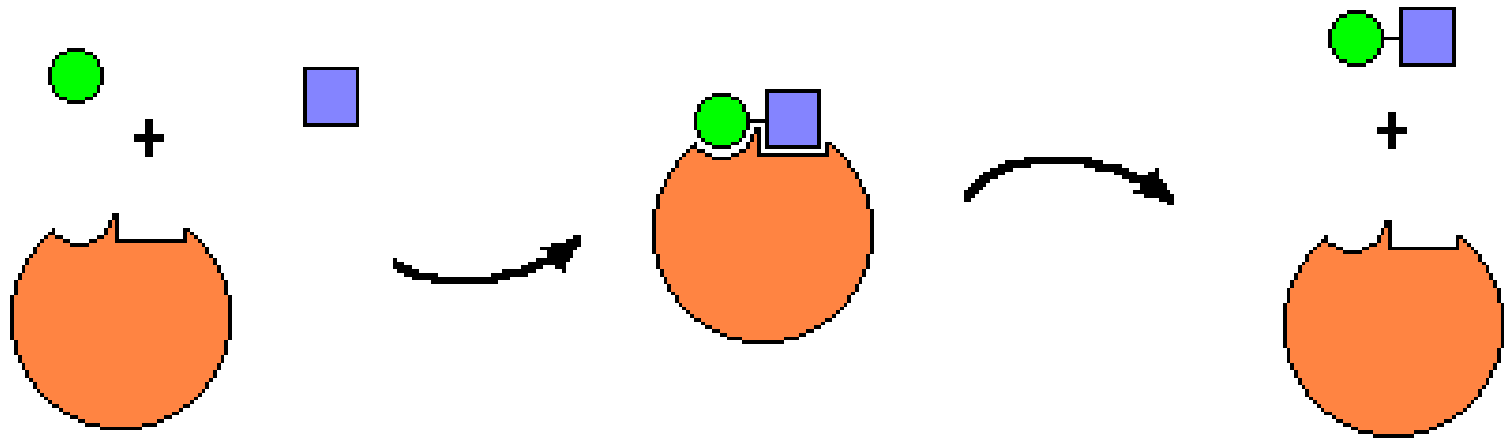
# Catalysts

A catalyst speeds up the rate of a reaction by lowering the amount of activation energy needed to start the reaction.



# Enzyme-Substrate Complex

A lock will only accept one key just as an enzyme will only accept a specific substrate.



After the substrates have bound to the activation site the substrates will react with one another.

Once the reaction is complete then the products are released and the enzyme is free to bind additional reactants (substrates).

What affects how an enzyme works?

# Coenzyme

A coenzyme **helps** an enzyme.

Like having two friends bring me dance partners instead of one.

# Things that make enzymes work s l o w e r or stop completely.

## 1. The wrong Temperature.

Can denature (break / fold) an enzyme

## 2. The wrong pH

Can also denature the enzyme

3. An inhibitor. (something that blocks an enzyme from working properly)



If we did not have enzymes/catalysts the reactions in our bodies would happen too slowly for us to function.

We would DIE!!!

Let's do a lab to demonstrate how  
enzymes work.