Energy and Enzymes:

ATP-living organisms energy source

- ATP or adenosine triphosphate, is a single nucleotide with two extra energy-storing phosphate groups.
- ATP is formed when food molecules are broken down in chemical reactions.
- ATP is also used when molecules are made in chemical reactions.

Energy in chemical reactions

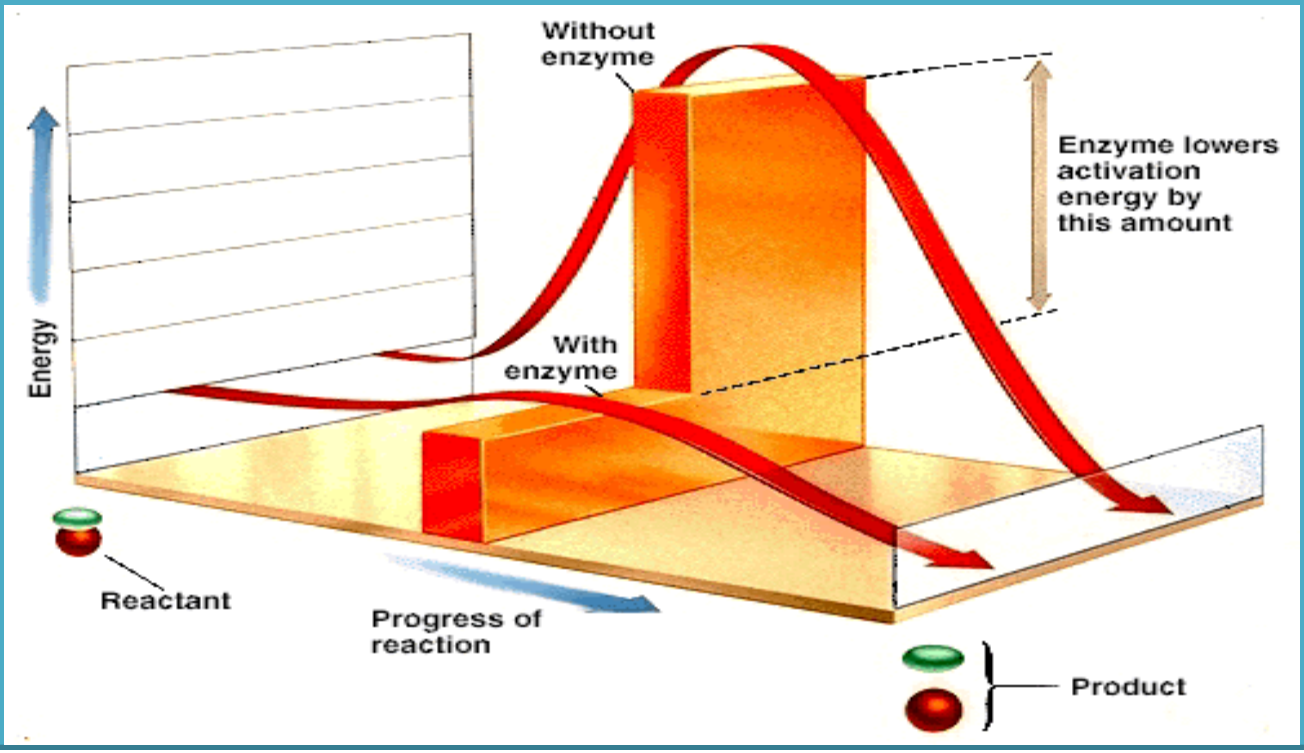
- In chemical reactions, chemical bonds are broken or formed releasing or using energy.
- Metabolism-all the chemical reactions that occur in an organism.

Enzymes

- Increase the speed of chemical rx.
- Are proteins.
- Are catalysts-they reduce the activation energy of a chemical rx.
- Can be used over and over again-reusable.

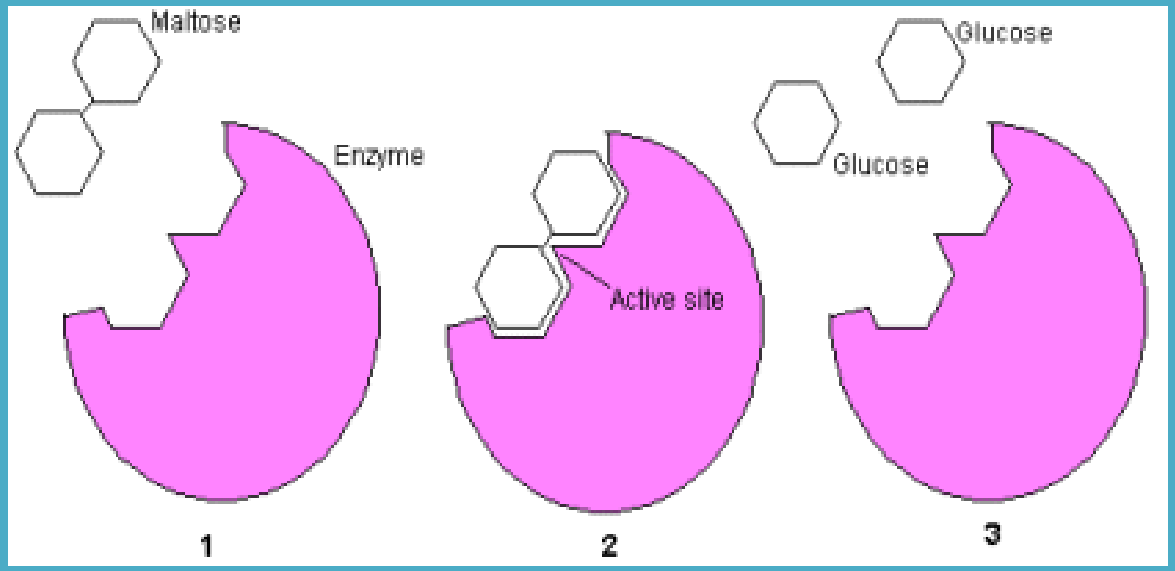
Activation energy

- Energy needed to start a chemical rx.



Enzyme specificity

- Substrate-material an enzyme act on.
- Active site is a lock and key fit-shape of enzymes act on specific substrates only.



Enzyme activity

- Changing the shape of enzyme causes it to not function.
- Temperature and pH change also alters effectiveness.

Enzyme examples

- End in “-ase”
- Protease, amylase, lipase and carbohydrase
- Proteins broken down into amino acids

  Lipids broken down into fatty acids and glycerol

  Carbohydrates broken down into simple sugars