Chapter 5:

Photosynthesis

Two types of organisms:

- Autotrophs-make their own food-plants
- Heterotrophs-cannot make their own food-animals-must eat other plants or animals to obtain energy

Plant structures that produce energy:

- Chloroplasts-is a organelle that contains chlorophyll and is the site of photosynthesis
- Chlorophyll-light absorbing green pigment that is required for photosynthesis

Chloroplast structures:

- Thylakoids-flattened membranous sacs or disk-like structures; each contains 200-400 molecules of chlorophyll; this is where sunlight is converted into chemical energy
- Stroma-fluid solution surrounding thylakoids
- Grana-granum is a single stack of disks or thylakoids

Photosynthesis:

- Process in which plants transform solar energy into chemical energy-produce food
- $6CO_2 + 6H_2O \xrightarrow{\text{Light energy}} C_6H_{12}O_6 + 6O_2$

Limiting factors to Photosynthesis:

- Amounts of CO_2
- Water
- Temperature
- Light
- Fertilizer-(raw materials)

Light and dark reactions of photosynthesis:

- Light dependent-occurs in grana-produces ATP and releases oxygen-light required
- Light independent-occurs in stroma-uses ATP to convert CO_2 into sugar-no light required

***light independent is also called the Calvin cycle