**Notes**

Photosynthesis (PSN) - plants capture & use light energy

- Occurs in green things
  - algae
  - plants

- Foundation of food web
- Light (hv) energy used to produce sugars
  - In chloroplasts
    - Organelles of PSN
    - Membranes
      - Grana - capture hv
      - Contains electron (e⁻) transport chain

Light - Energy

Light is a wave
- part of EM spectrum
  - IR < ROYGBIV < UV
- R=760nm  V=380nm

Light is a Particle
- Quanta - packets of energy
  - $E=hc/\lambda$
  - $E=energy; h=Planck's constant, c=speed of light, L=wavelength$
  - Violet more energetic
  - Light must be absorbed to have bio effect
  - Pigments absorb light
    - chlorophyll - green
    - carotenoids - orange
  - absorption spectrum
    - plants use red & blue
    - reflect green! reason plants are green!

PSN produces sugars & oxygen

$$6CO_2+6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$$

**Summary:**
Photosynthesis occurs in chloroplasts within the cells of green plants. Energy is captured from light and used to make sugars from water and atmospheric water. Red and blue light are the more usable than green.

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Figure 3.1 Cornell note-taking system - sample from a lecture on photosynthesis