

Photosynthesis

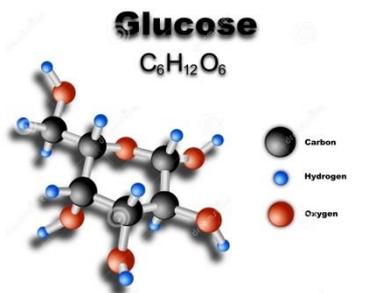
What Is Photosynthesis?

- *Photo + synthesis = Light + putting together*
- The process by which a cell captures the energy in sunlight and uses it to make food
 - Cells capture light energy from the Sun and use it to make food in the form of sugar
- This food is used to fuel cells for function and growth

What Are the Steps of Photosynthesis?



- A very complicated process, with many steps in each of the two main stages:
 - 1: Capturing the Sun's energy with chlorophyll found in the chloroplasts
 - 2: Producing Glucose (sugar) from water and carbon dioxide through chemical reactions



Capturing the Sun's Energy



- Occurs in the leaves and other green parts of the plant
 - Mostly leaves
- Chloroplasts are green organelles found here, inside the plant cells
 - Green because main pigment, chlorophyll
 - Pigments absorb light; what you see is what they reflect
 - Chloroplasts may also contain yellow and orange pigments

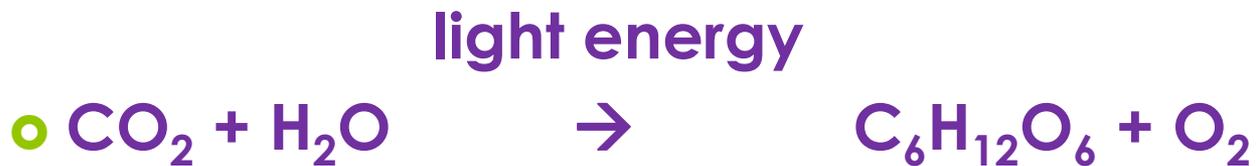
Producing Sugars



- Captured light energy is a reactor
 - Uses our raw materials: carbon dioxide and water
 - Carbon dioxide is in the air and enters through small openings on the underside of leaves called *stomata*
 - Water is absorbed by a plant's root system
- Chemical reactions produce our products: glucose and oxygen
 - "Breathe" oxygen back into the air
 - Some food is used, some is stored and/or converted

Chemically Speaking

- A chemical equation shows you the “ingredients” and “results” of a chemical reaction

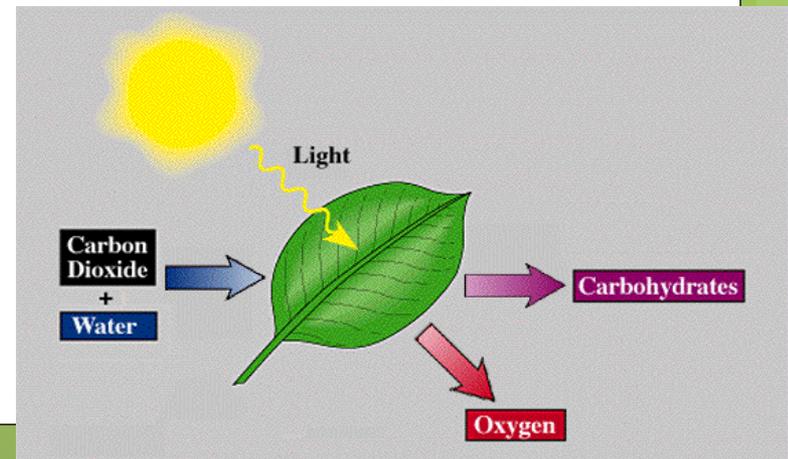


- Left side = *raw materials*
- Right side = *products*
- Arrow = “yields”
- Why isn’t light energy on either side of the arrow?

← Write this on your graphic organizer!

Ingredients and Results

- Raw Materials: Carbon dioxide + water
- Reactor: Light energy
 - From where?
- Products: Glucose + oxygen



Where Does Photosynthesis Happen?

- Like we said before, occurs in the leaves and other green parts of the plant
 - Mostly leaves
- Within plant cells, occurs within the green plant organelles called chloroplasts
 - Do human cells have chloroplasts?