*This is the **Foundation Separate** version — Higher Tier content has been removed.*

Photosynthesis is the process by which plants, algae and some bacteria convert light energy into chemical energy stored as glucose.

Required Practical: Investigating the effect of light intensity on the rate of photosynthesis using pondweed (Elodea). Count O■ bubbles or measure volume of O■ at different distances from a lamp.

- Word equation: carbon dioxide + water → glucose + oxygen (light energy required).
- Symbol equation: 6CO■ + 6H■O → C■H■■O■ + 6O■
- Occurs in CHLOROPLASTS, which contain CHLOROPHYLL — the green pigment that absorbs red and blue light.
- Chlorophyll reflects green light — this is why plants appear green.
- Products: glucose (for respiration, starch, cellulose, proteins, fats) and oxygen (released as a by-product).
- The rate of photosynthesis can be measured by: counting O■ bubbles, measuring O■ volume, or measuring CO■ consumption.

Key Terms

Photosynthesis	Process converting CO■ and water into glucose using light energy — occurs in chloroplasts
Chlorophyll	Green pigment in chloroplasts that absorbs light energy for photosynthesis
Chloroplast	Organelle (in plant cells) where photosynthesis occurs — contains chlorophyll

■ **Exam Tip:** Learn BOTH the word equation and symbol equation. Common mistake: writing O■ as the input instead of output. In photosynthesis: CO■ and H■O are the INPUTS; glucose and O■ are the OUTPUTS.