*This is the **Foundation Combined** version — Higher Tier and Separate-only content removed.*

Photosynthesis converts light energy into chemical energy (glucose), providing the energy base for almost all food chains.

Required Practical: Investigating light intensity and photosynthesis using pondweed.

- Equation: 6CO■ + 6H■O → C■H■■O■ + 6O■ (light energy required, in chloroplasts)
- Limiting factors: light intensity, CO■ concentration, temperature
- Leaf structure: palisade (packed with chloroplasts, near surface), spongy mesophyll (air spaces for CO■), stomata (gas exchange), xylem (water in), phloem (sugar out)
- Glucose uses: respiration, starch, cellulose, proteins (+ nitrates), sucrose, lipids

Key Terms

Limiting factor	Factor in shortest supply controlling rate of photosynthesis
Chlorophyll	Green pigment absorbing light energy

■ **Exam Tip:** Know all 6 uses of glucose. List questions worth 4+ marks often ask for them all: respiration, starch, cellulose, amino acids/proteins, sucrose, lipids/oils.