

Photosynthesis and Respiration

Chapter 18: Photosynthesis and Respiration · Topic 1

Key Concept

Photosynthesis occurs in plant leaves, using sunlight, water, and carbon dioxide to produce glucose (food) and release oxygen.

The chemical equation for photosynthesis is: $6\text{CO}_2 + 6\text{H}_2\text{O} + \text{sunlight} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$.

Respiration occurs in all living cells, breaking down glucose using oxygen to release energy, producing carbon dioxide and water as byproducts.

Photosynthesis and respiration are complementary processes, with photosynthesis producing what respiration needs, and vice versa.

Quick Revision Notes

- Photosynthesis makes food using sunlight.
- It occurs in plant leaves.
- It uses sunlight, water and carbon dioxide.
- It produces glucose and releases oxygen.
- Respiration releases energy from food.
- It occurs in all living cells.
- It uses oxygen and produces carbon dioxide, water.
- Photosynthesis and respiration are complementary.

Practice Questions

- 1 Write the equation for photosynthesis.
- 2 Discuss where respiration occurs.
- 3 Explain how photosynthesis and respiration are complementary.
- 4 Research what happens during respiration.
- 5 Discuss why plants need sunlight.
- 6 Explain why we need oxygen for respiration.