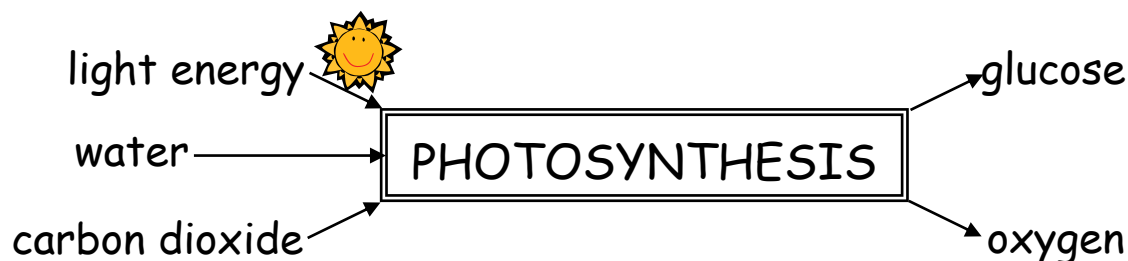


Section 9 Summary

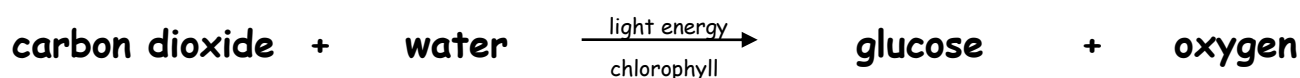
9.1 Photosynthesis

- a) Plants **make their own food** by taking in substances from the environment.
- they cannot hunt for food like animals can
 - plants must be able make all their food for themselves to survive.
- b) **Photosynthesis** is the chemical reaction in a plant where the plant makes its own food:
- **Carbon dioxide** and **water** are needed for photosynthesis
 - **glucose** and **oxygen** gas are produced
 - **light** energy powers (catalyses) the reaction



Chemicals Used Up By Photosynthesis (reactants)	Chemicals Produced By Photosynthesis (products)	Also Required For Photosynthesis to Happen
carbon dioxide	glucose	light energy
water	oxygen	green chlorophyll

- c) During **photosynthesis**
- carbon dioxide is absorbed through the leaves of plants
 - Water is drawn up through the roots
 - oxygen gas is released into the air through the leaves.
- d) The light energy required for photosynthesis is absorbed by the green chemical **chlorophyll** found in the leaves.
- e) The word equation for photosynthesis is:



Section 9 Summary

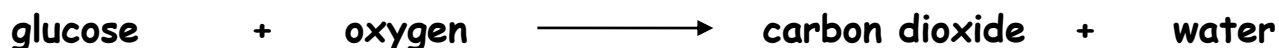
9.2 Respiration

- a) Animals **require energy** for use in a number of ways:
- warmth/heat
 - movement
 - growth
- b) Animals can obtain energy by a process called **respiration**
- **glucose** and **oxygen** are used up
 - **water** and **carbon dioxide** are produced
 - energy is also released by this reaction



Chemicals Used Up By Respiration (<i>reactants</i>)	Chemicals Produced By Respiration (<i>products</i>)
glucose	carbon dioxide
oxygen	water

- c) Animals obtain glucose by **eating food** which has come from plants.
- d) Respiration is the reverse of photosynthesis.



- e) The processes of photosynthesis and respiration maintain **constant balance** of oxygen and carbon dioxide in the air.

respiration uses up oxygen	photosynthesis makes oxygen
respiration makes carbon dioxide	photosynthesis uses up carbon dioxide

Section 9 Summary

9.3 The Greenhouse Effect

- a) Too much carbon dioxide in the atmosphere causes the **Greenhouse Effect**.
- b) **Extensive clearing of forests** reduces the amount of carbon dioxide removed from the atmosphere by photosynthesis
- rainforests in South America are cut down
 - less trees to perform photosynthesis
 - less carbon dioxide turned back into oxygen
 - more carbon dioxide in the atmosphere
- c) Increased levels of carbon dioxide in the air may also be due to increased **combustion of fuels**
- increased burning of fossil fuels e.g. coal, oil and gas
 - more carbon dioxide produced as product of combustion
- d) Increased levels of carbon dioxide in the atmosphere causes
- the atmosphere to retain more of the sun's energy as heat
 - the planet becomes warmer as a result
 - this process is also known as **global warming** or **climate change**.