

Year 9 Biology Sept 2021 B6 fact sheet

You will also be using some of your knowledge from B4 (Gas exchange and respiration) and B5 (Genetics and Evolution).

- 1) Photosynthesis requires light energy for it to take place.
- 2) Photosynthesis takes place in the chloroplasts.
- 3) The green pigment in the chloroplasts is called chlorophyll.
- 4) Glucose and oxygen are the products of photosynthesis.
- 5) Carbon dioxide and water are the reactants for photosynthesis
- 6) Carbon dioxide is an example of a greenhouse gas.
- 7) Glucose is stored within the plant.
- 8) There are more chloroplasts in the upper layers of a leaf.
- 9) Xylem transports water in the plant.
- 10) Phloem transports sugars in a plant.
- 11) Xylems only transport water upward.
- 12) Phloem transport sugars upward and downward.
- 13) The movement of gases through leaves is called diffusion.
- 14) Stomata are controlled by guard cells.
- 15) Stomata allow gases in and out of the leaf.
- 16) Stomata is plural, stoma is singular.
- 17) Stomata are mainly located on the underside of leaves.
- 18) Carbon dioxide, light and temperature are limiting factors of photosynthesis.
- 19) The main food groups are carbohydrates, fats, proteins, vitamins, minerals, water, fibre.
- 20) Digestion can be broken down into physical and chemical.

From B4

- Aerobic respiration is the chemical reaction inside mitochondria that releases energy from food
- Energy is used to power all the chemical processes necessary for life
- The formula for aerobic respiration is
$$\text{Oxygen} + \text{Glucose} \longrightarrow \text{Water} + \text{Carbon dioxide (+ energy)}$$
- Respiration without oxygen is called anaerobic respiration and involves the partial breakdown of glucose releasing less energy
- The equation for anaerobic respiration is
$$\text{Glucose} \longrightarrow \text{Lactic Acid (+ energy)}$$
- The lungs are the organs of breathing and gas exchange
- Oxygen diffuses into the blood through the alveoli in the lungs
- Carbon dioxide diffuses from the blood into the alveoli and is then breathed out of the body
- Gas exchange in the lungs is effective because the alveoli provide a large surface area, are moist and thin and have a good blood supply

From B5

Genetic characteristics are controlled by our DNA.

DNA is found in the nucleus of a cell on **Chromosomes** and has a **double helix** structure.

There are **23 pairs** of chromosomes in a body cell nucleus.

The **Double helix** is made up of base pairs, **A + T and C + G**. Your unique combination of these gives you your unique genetic characteristics.

Evolution is the process where organisms develop over millions of years from simple lifeforms.

Darwin's theory of evolution is Natural selection. The best adapted organisms survive and reproduce.

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