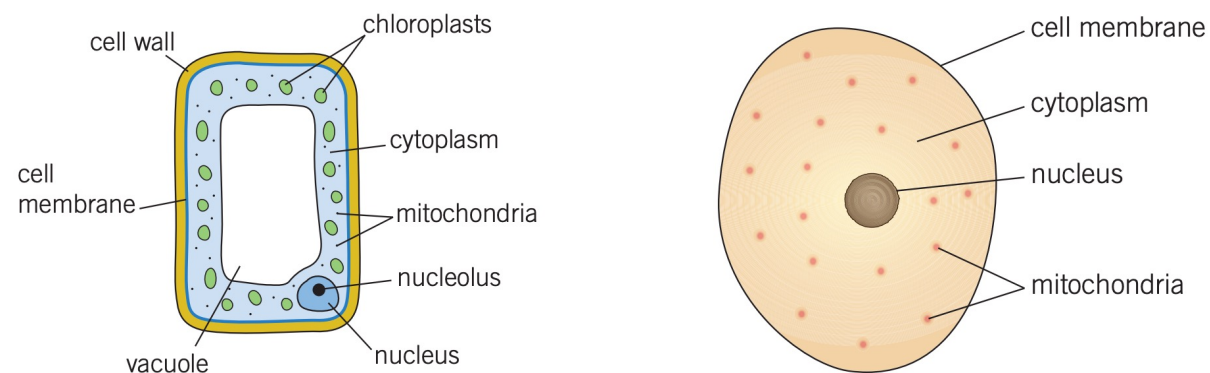


Must Remember

- Cells are building blocks of life – they are the smallest units in an organism.
- Scientists use microscopes to observe small objects in detail.
- Animal cells contain a nucleus, cytoplasm, cell membrane, and mitochondria.
- Plant cells also contain chloroplast, a vacuole, and a cell wall.



- Cytoplasm is where the chemical reactions in a cell take place.
- The cell membrane is a barrier that controls what moves in and out of the cell.
- The nucleus controls the cells, and contains genetic material needed to make new cells.
- Respiration occurs in the mitochondria – this chemical reaction transfers energy.
- The cell wall strengthens the cell and provides support.
- The vacuole contains a watery liquid called cell sap. It keeps the cell firm.
- Photosynthesis takes place into the chloroplasts.
- Specialised cells have changed their shape and structure so that they are suited to carry out a particular job.

Nice to know that...

- Cells can only be seen under a microscope. A microscope magnifies an object using lenses. The specimen must be thin so light can pass through, and a dye can be added to make the object easier to see.
- Nerve cells, red blood cells, sperm cells, leaf cells, and root hair cells are specialised cells.
- The function of a red blood cell is to transport oxygen around the body, they contain haemoglobin, have no nucleus, and are disk shaped to increase surface area.



Maritime Futures – Unicellular Organisms

Unicellular organisms are composed of one cell. Amoeba and euglena are examples of unicellular organisms that live in fresh water. An amoeba is a unicellular organism consisting of a cell membrane, cytoplasm, and a nucleus. Euglenas appear green as they contain chloroplasts for photosynthesis. Their eye spot locates light, and they use their flagellum to swim towards it. In low light levels they can engulf food.

Key Terms

- **cell:** the smallest functional units in an organism
- **cell membrane:** surrounds the cell, controls what enters and leaves the cell
- **cell wall:** the plant cell component that surrounds the cell, providing support
- **chloroplasts:** the plant cell component where photosynthesis takes place
- **cytoplasm:** jelly like substance where chemical reactions occur
- **microscope:** an instrument used to magnify objects
- **mitochondria:** site of respiration – a chemical reaction that releases energy
- **nucleus:** the cell component that controls the cell and contains genetic material

Further Study

[BBC Bitesize – Cells to systems](#)