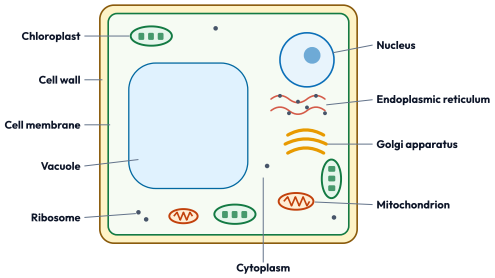
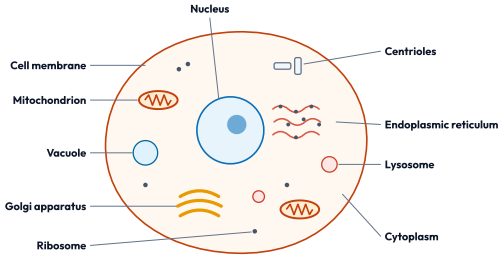
CLUECUB · REVISION NOTES

Plant and animal cells notes





Parts in both plant and animal cells

- **Nucleus:** holds the DNA and controls the cell.
- **Cytoplasm:** jelly-like fluid where many reactions happen.
- **Cell membrane:** controls what goes in and out.
- **Mitochondria:** where aerobic respiration releases energy.
- **Ribosomes:** where proteins are made.
- **ER and Golgi:** make, package and send out proteins and lipids.

Only in plant cells

- **Cell wall:** made of **cellulose**. Supports the cell and keeps its shape.
- **Chloroplasts:** contain chlorophyll. **Photosynthesis** happens here.
- **Permanent vacuole:** filled with cell sap. Keeps the cell firm.

Usually only in animal cells

- **Lysosomes:** small sacs of digestive enzymes that break down waste.
- **Centrioles:** help the cell divide.

Size and microscope maths

- Animal cells are about **10 to 30 µm** across; plant cells about **10 to 100 µm**.
- **1 mm = 1000 µm.**
- **Magnification = image size ÷ actual size.** Use the same units for both.

Eukaryotic and prokaryotic

- Plant and animal cells are **eukaryotic**: their DNA is inside a nucleus.
- Bacteria are **prokaryotic**: no nucleus, a loop of DNA and often small rings called **plasmids**. They are much smaller.

Mistakes that lose marks

- Plant cells have a cell wall **and** a cell membrane, not one instead of the other.
- **Mitochondria are in plant cells too.** Plants respire as well as photosynthesise.
- Not every plant cell has chloroplasts: **root cells** don't, because no light reaches them.
- The cell wall is **fully permeable**. The membrane is what controls entry.

Quick check

1. Name the three parts found only in plant cells.
2. What is the plant cell wall made of?
3. Where in the cell are proteins made?
4. Write the formula for magnification.
5. Why don't root cells have chloroplasts?

Answers: 1. Cell wall, chloroplasts, permanent vacuole. 2. Cellulose. 3. On the ribosomes. 4. Image size ÷ actual size. 5. No light reaches them, so they can't photosynthesise.