

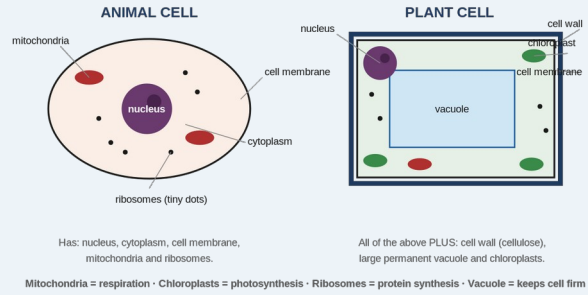
# 2.2 Cell Structure

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## 1. KEY VOCABULARY

ORGANELLE	FUNCTION
Nucleus	Controls the cell; contains DNA.
Cytoplasm	Jelly where chemical reactions happen.
Cell membrane	Controls what enters and leaves the cell.
Mitochondria	Site of aerobic respiration (releases energy).
Ribosomes	Site of protein synthesis.

## 2. ANIMAL & PLANT CELLS



## 3. WHAT PLANT CELLS HAVE AS WELL

**Cell wall:** made of cellulose — supports and strengthens the cell.

**Chloroplasts:** contain chlorophyll — site of photosynthesis.

**Large permanent vacuole:** filled with cell sap — keeps the cell firm (turgid).

## 4. ANIMAL vs PLANT — THE DIFFERENCE

FEATURE	ANIMAL	PLANT
Cell wall	No	Yes (cellulose)
Chloroplasts	No	Yes
Vacuole	Small / none	Large, permanent
Shape	Often round	Often regular / fixed

## 5. BACTERIAL CELLS

**Bacteria are different again:** they have a cell wall, cell membrane and cytoplasm, but NO nucleus.

Their DNA is a single circular loop, plus small rings called plasmids.

## 6. THE WHY

**Why plant cells have a cell wall:** it stops the cell bursting when it takes in water, and gives the plant support.

**Why cells need mitochondria:** respiration there releases the energy the cell needs for all its activities.

## 7. COMMON EXAM MISTAKES

- ✗ "Animal cells have a cell wall."
- ✓ Only plant (and bacterial/fungal) cells have a cell wall.
- ✗ "The cell wall controls what enters the cell."
- ✓ The cell MEMBRANE controls that; the wall gives support.
- ✗ "Chlorophyll and chloroplast are the same."
- ✓ Chlorophyll is the green pigment INSIDE the chloroplast.

## 8. SELF-CHECK · cover & quiz

Can you...

1. Name the organelles in an animal cell and their functions?
2. State the three extra structures in a plant cell?
3. Explain the function of the cell wall and the vacuole?
4. Describe how a bacterial cell differs?
5. Explain why a plant cell needs a cell wall?