

Plant vs Animal Cells

KEY IDEAS

Same: plant and animal cells both have a nucleus, cell membrane, cytoplasm and mitochondria.

Plant cells only: a rigid **cell wall**, green **chloroplasts** for photosynthesis, and one **large central vacuole**.

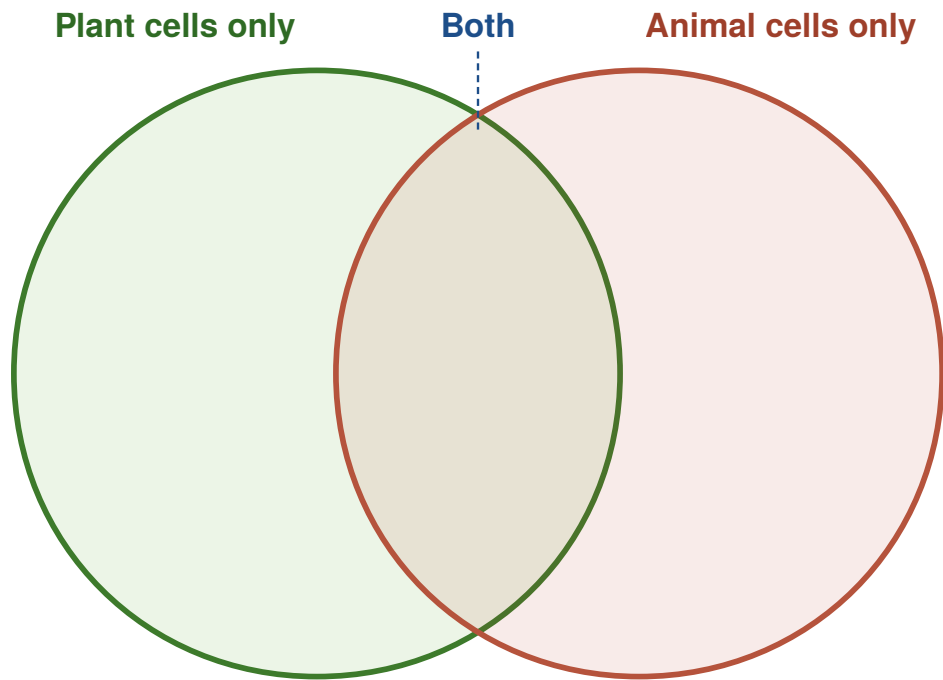
Animal cells: no cell wall, so they are flexible and round or irregular; small vacuoles (or none); usually lysosomes.

A Sort into the Venn diagram

6 marks (½ each)

Write each feature (or its number) in the correct part of the Venn diagram.

Word bank (numbered 1–12): **1.** boxy shape · **2.** cell membrane · **3.** cell wall · **4.** chloroplasts · **5.** cytoplasm · **6.** large central vacuole · **7.** lysosomes (usually) · **8.** makes its own food · **9.** mitochondria · **10.** nucleus · **11.** round or irregular shape · **12.** small vacuoles or none



B Compare plant and animal cells

6 marks (½ per box)

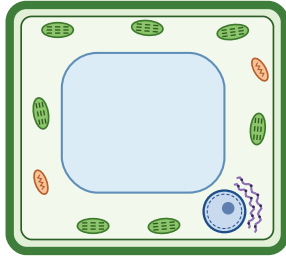
	Feature	Plant cell	Animal cell
13.	Shape		
14.	Outer layer(s)		
15.	Vacuoles		
16.	How it gets food		
17.	Extra food stored as		
18.	Colour under a microscope (unstained)		

C Mystery cells

4 marks (2 each)

Decide whether each cell is a plant or animal cell, and give two pieces of evidence.

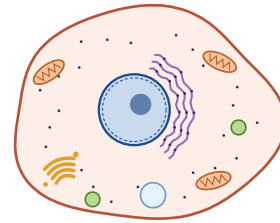
19. Mystery cell X



Plant or animal? _____

Evidence: _____

20. Mystery cell Y



Plant or animal? _____

Evidence: _____

D Plant or animal?

4 marks

	Cell	Plant or animal?	Clue
21.	A cell from a leaf that contains many small green structures		
22.	A cell gently scraped from the inside of your cheek		
23.	An onion skin cell that is box-shaped with a cell wall, but has no chloroplasts		
24.	A white blood cell with a flexible membrane that changes shape as it moves		

E Explain your thinking

6 marks (2 each)

25. Plant cells have a cell wall, but animal cells don't. Explain why plants need one and animals don't.

26. Onion skin cells have no chloroplasts. Are they still plant cells? Explain.

27. Animal cells have no chloroplasts. Where do animals get their energy, and which organelle releases it?

F Spot the mistake

4 marks (2 each)

28. A student says, "Plant cells have a cell wall instead of a cell membrane." Explain the error.

29. A student says, "Only plant cells have a nucleus, because plant cells are bigger." Explain the error.

Plant vs Animal Cells **ANSWER KEY****KEY IDEAS**

Same: plant and animal cells both have a nucleus, cell membrane, cytoplasm and mitochondria.

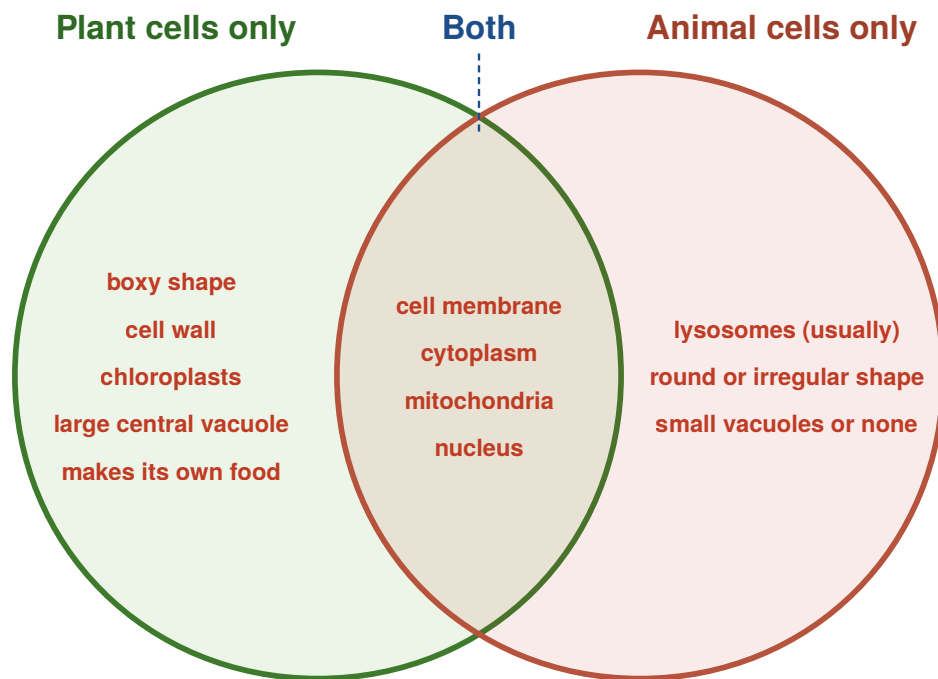
Plant cells only: a rigid **cell wall**, green **chloroplasts** for photosynthesis, and one **large central vacuole**.

Animal cells: no cell wall, so they are flexible and round or irregular; small vacuoles (or none); usually lysosomes.

A Sort into the Venn diagram**6 marks (½ each)**

Write each feature (or its number) in the correct part of the Venn diagram.

Word bank (numbered 1–12): **1.** boxy shape · **2.** cell membrane · **3.** cell wall · **4.** chloroplasts · **5.** cytoplasm · **6.** large central vacuole · **7.** lysosomes (usually) · **8.** makes its own food · **9.** mitochondria · **10.** nucleus · **11.** round or irregular shape · **12.** small vacuoles or none

**B Compare plant and animal cells****6 marks (½ per box)**

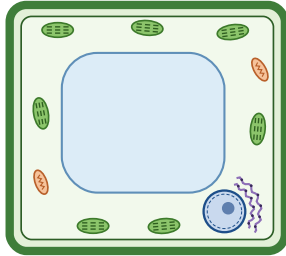
	Feature	Plant cell	Animal cell
13.	Shape	Boxy / rectangular (fixed shape)	Round or irregular (flexible)
14.	Outer layer(s)	Cell wall outside a cell membrane	Cell membrane only
15.	Vacuoles	One large central vacuole	Small vacuoles, or none
16.	How it gets food	Makes its own by photosynthesis	Eats other living things
17.	Extra food stored as	Starch	Glycogen (and fat)
18.	Colour under a microscope (unstained)	Often green (chloroplasts)	Mostly colourless

C Mystery cells

4 marks (2 each)

Decide whether each cell is a plant or animal cell, and give two pieces of evidence.

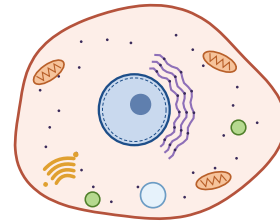
19. Mystery cell X



Plant or animal? **Plant cell**

Evidence: **cell wall, boxy shape, chloroplasts**

20. Mystery cell Y



Plant or animal? **Animal cell**

Evidence: **no cell wall, round shape, no chloroplasts**

D Plant or animal?

4 marks

	Cell	Plant or animal?	Clue
21.	A cell from a leaf that contains many small green structures	Plant	chloroplasts → leaf cell
22.	A cell gently scraped from the inside of your cheek	Animal	humans are animals
23.	An onion skin cell that is box-shaped with a cell wall, but has no chloroplasts	Plant	the cell wall shows it's a plant; onions grow underground, so no chloroplasts
24.	A white blood cell with a flexible membrane that changes shape as it moves	Animal	flexible, no cell wall

E Explain your thinking

6 marks (2 each)

25. Plant cells have a cell wall, but animal cells don't. Explain why plants need one and animals don't.

Plants have no skeleton. Stiff cell walls, pushed out by full vacuoles, hold the plant **upright**. Animals are supported by skeletons and need **flexible** cells so they can move.

26. Onion skin cells have no chloroplasts. Are they still plant cells? Explain.

Yes. They have a cell wall and a large central vacuole. The onion bulb grows underground with no light, so its cells don't need chloroplasts.

27. Animal cells have no chloroplasts. Where do animals get their energy, and which organelle releases it?

Animals **eat food** (plants or other animals). **Mitochondria** release the energy from that food in both plant and animal cells.

F Spot the mistake

4 marks (2 each)

28. A student says, "Plant cells have a cell wall instead of a cell membrane." Explain the error.

Plant cells have **both**. The cell wall is outside, and the cell membrane is just inside it.

29. A student says, "Only plant cells have a nucleus, because plant cells are bigger." Explain the error.

Both plant and animal cells have a nucleus. Size has nothing to do with it.