SCIENCE · BIOLOGY AGES 11–14

Plant vs Animal Cells

Plant cells have every part an animal cell has, plus three extras: a cell wall, chloroplasts and a large vacuole.

Plant cell	Animal cell
NUCLEUS	
Yes. Holds the DNA and controls what the cell does.	Yes. Holds the DNA and controls what the cell does.
CELL MEMBRANE	
Yes, just inside the wall. Controls what enters and leaves.	Yes, as the outer layer. Controls what enters and leaves.
CYTOPLASM	
Yes. Jelly-like fluid where most reactions happen.	Yes. Jelly-like fluid where most reactions happen.
MITOCHONDRIA	
Yes. Release energy from glucose by respiration.	Yes. Release energy from glucose by respiration.
RIBOSOMES	
Yes. Build proteins.	Yes. Build proteins.
CELL WALL	
Yes. Tough cellulose layer that supports the cell.	No. Only a flexible membrane.
CHLOROPLASTS	
Yes, in green parts. Carry out photosynthesis.	No.
VACUOLE	
One large permanent vacuole of cell sap keeps the cell firm.	Small temporary vacuoles, if any.
TYPICAL SHAPE	
Regular and box-like, held by the wall.	Irregular and rounded.

Common mix-up

Plant cells have mitochondria too. Chloroplasts make glucose by photosynthesis; mitochondria release energy from it by respiration, day and night.

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