

Animal Cell Structures and Plant Cell Structures

Blackline Master 1.6.1 Diagram for labelling: Parts of Plant and Animal Cells Seen in an Electron Microscope

Follow diagrams on page 12, 13, 18 and 19

Parts of the Animal Cell: (divided by the role they play in the cell)

A- Control:

- Nucleus: controls the activities of the cell (control centre: brain).
- Chromosomes: inside the nucleus, they contain the “genetic material” of the cell, strands of DNA (construction plan, blueprint).

B- Materials:

- Cell Membrane: controls materials (nutrients and waste) in and out of the cell (door, gate-keeper).
- Cytoplasm: watery fluid, allows materials to be transported in the cell, stores materials.

C- Materials storage:

- Vacuole: filled with fluid, stores water and nutrients such as sugar and minerals.

D- Structures that help cells move

- Flagellum: “tail” that allows cells to move; found on some cells. Means “little whip”. Example: slime mould called “myxomycetes”, a yellow, orange and red mould found on decaying wood, leaves and organic matter.
- Cilia: “tiny hairs” that allow cells to move; found on some cells. Means “eyelash”. Example: paramecium

Parts of the Plant Cell: (divided by the role they play in the cell)

They have the same structures as the animal cell and other structures not found in animal cells. The cell membrane is hard to see in plant cells. They are more “rectangular” than animal cells.

C- Materials storage:

- Vacuole: filled with fluid, takes up a larger part of the cytoplasm of a plant cell; stores water and nutrients.

E- Protection:

- Cell wall: protects and supports the plant cell. It is rigid and controls gases, water and some minerals leaving and entering the cell through small pores.

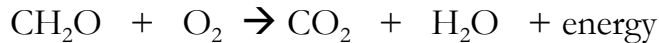
F- Food production

- Chloroplasts: contain chlorophyll (green); they allow plants to make their own food using light from the sun (photosynthesis). They are not present in animal cells.

G- Energy:

- Mitochondria: provides energy for the cell. Cellular respiration occurs here, mitochondria release energy by combining sugar molecules with oxygen to form carbon dioxide and water.

Cellular respiration allows living things to release energy from food.



H- Protein Manufacturing:

- Ribosomes: protein molecules are manufactured there using information from the nucleus and molecules from the cytoplasm. Proteins are large molecules that are needed for cell growth, for repair and for reproduction.

I- Material Transport:

- Endoplasmic Reticulum: folded membranes that carry materials through the cytoplasm. Sometimes ribosomes are attached to the endoplasmic reticulum and it is then called “rough” endoplasmic reticulum.

J- Protein Storage:

- The Golgi Apparatus: used for protein storage. Also puts proteins into packages called **vesicles**. Vesicles carry the protein molecules to the surface of the cell where they are released to the outside.

K- Recycling:

- Lysosomes: contain special proteins that break down large molecules into smaller molecules. The smaller molecules can be reused as building blocks for other large molecules. They also kill and digest invading organisms.