Science 14

Unit C: Matter and energy in living systems

Microscopes and cells

A cork slice and a living droplet

- Robert Hooke saw box-like spaces in cork and called them cells.
- Antony van Leeuwenhoek saw living microscopic organisms moving in water.

Cell theory and the membrane

- Cell theory says living things are made of cells, and cells come from cells.
- The cell membrane is the boundary that controls what enters and leaves.

Key terms

cell theory

The explanation that living things are made of cells and that cells come from existing cells.

cell membrane

The thin boundary that controls what enters and leaves the cell.

chloroplast

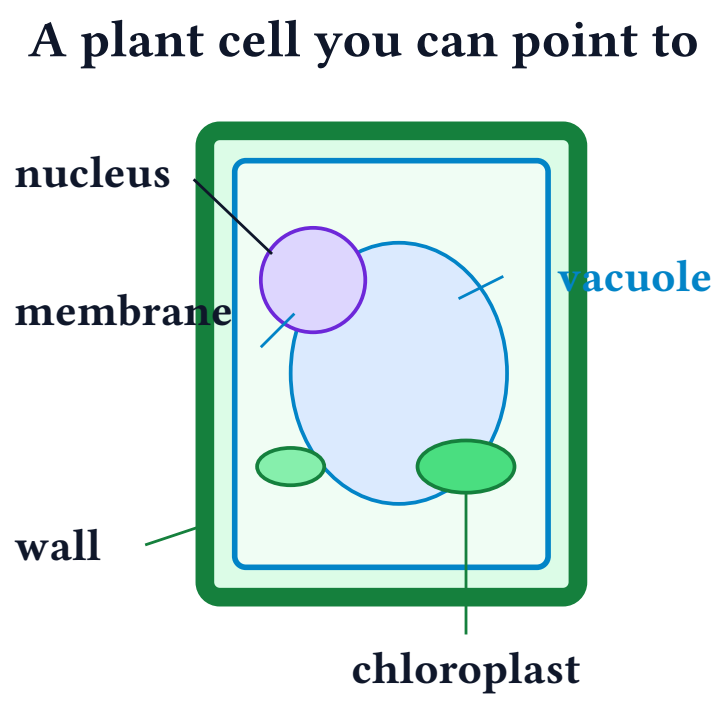
The plant cell part where photosynthesis captures light energy in glucose.

mitochondrion

The cell part where respiration releases usable energy from food molecules.

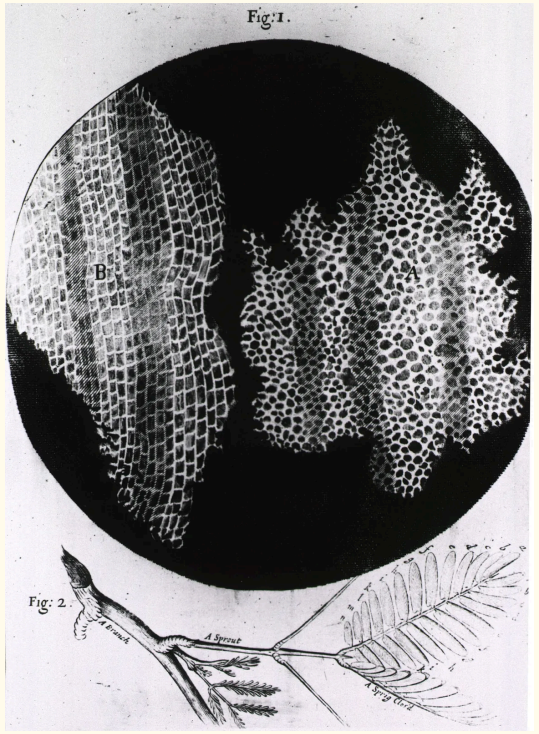
Cell parts and functions

- The nucleus holds the genetic instructions.
- The cell membrane controls what enters and leaves. The cell wall holds a plant cell up.



Hooke's cork

- A cork slice shows box-like spaces under the microscope.
- Say what Hooke contributed and what later observations added.



Leeuwenhoek's samples

- He saw living microscopic organisms moving in water.
- The full cell-theory claims grew as more observations were gathered.

Two claims and a pioneer

- State the two cell-theory claims used in this course.
- Name one pioneer who made cells visible with a microscope.

Slide labels and model critique

- Label a part when you can point to it on the slide or the diagram.
- A chloroplast on an animal cell is the error to catch.

Image credits

National Library of Medicine, Magnified view of cork tissue, public domain