

Key Words

Cell	The smallest living unit of an organism. Contains different parts to carry out life processes.	Cell membrane	Surrounds the cell and controls what moves into or out of it.
Uni-cellular	Living things made up of only one cell.	Cytoplasm	Jelly-like substance where most chemical reactions happen in the cell.
Multi-cellular	Living things made up of many types of cells.	Mitochondria	Part of the cell where energy is released from food.
Tissue	Group of the same cells that work together to do the same function.	Ribosome	Part of the cell where proteins are made.
Organ	Group of different tissues that work together to carry out a	Cell wall	Not found in animal cells. Strengthens the cell. In plant cells it is made of cellulose.
Organ system	Group of organs that work together.	Vacuole	Area of cell containing liquid. Stores some nutrients in a plant cell.
Light	Piece of equipment that uses lenses to produce a magnified image.	Chloroplast	Found in plant cells. Absorb light energy to make food for the plant.

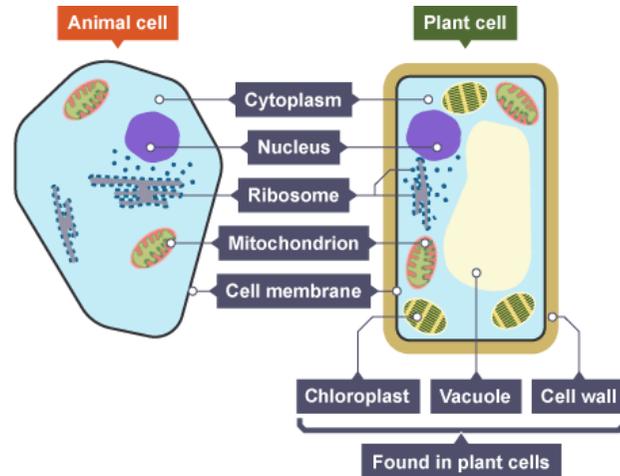
Learning Sequence

1. Organisation in organisms
2. Plant and animal cells
3. Specialised cells
4. Using a microscope
5. Exploring cells

Assessment

Formative - Using a microscope

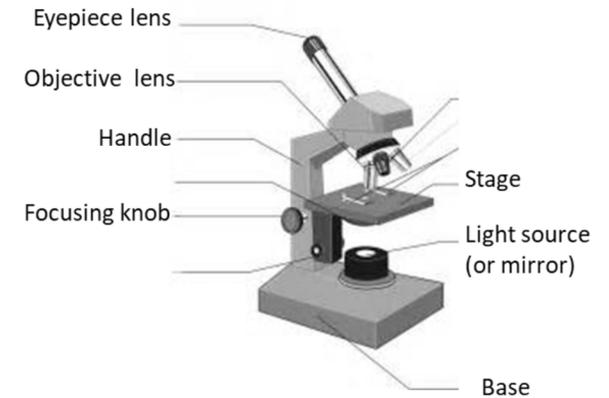
Test - Cells



Animal cells and plant cells: Nucleus, cell membrane, cytoplasm, mitochondria, ribosomes.

Plant cells only: Chloroplasts, cell wall, vacuole.

Microscopes

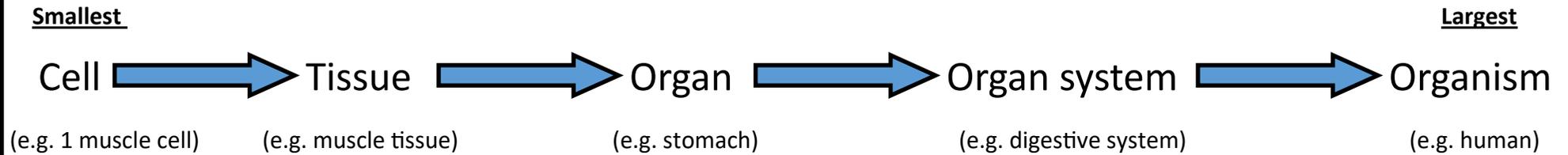


You need to remember the names of each part of a microscope and the equation for calculating total magnification:

$$\text{Total magnification} = \text{eyepiece lens magnification} \times \text{objective lens magnification}$$

Organisation

Multicellular organisms are composed of cells which are organised into tissues, organs and organ systems to carry out life processes. There are many types of cell. Each has a different structure or feature so it can do a specific job. You need to understand the order of organisation:



Examples of organ systems in the body

Muscular skeletal system: Muscles and bones working together to cause movement and support

Circulatory system: Transports substances around the body.

Nervous system: Sends electrical impulses to control things in our body.

Immune system: Protects the body against infections.

Reproductive system: Produces sperm and eggs, and is where the foetus develops.

Digestive system: Breaks down and then absorbs food molecules.

Multicellular organisms have lots of organ systems working together.

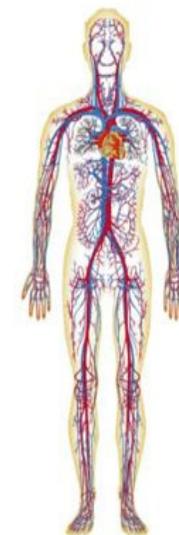
Here are some examples of where some of the organ systems in the human body carry out their role:



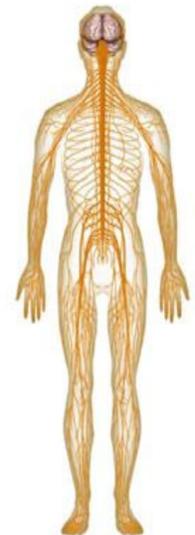
Skeletal System



Muscular System



Circulatory System



Nervous System