

Microscopes

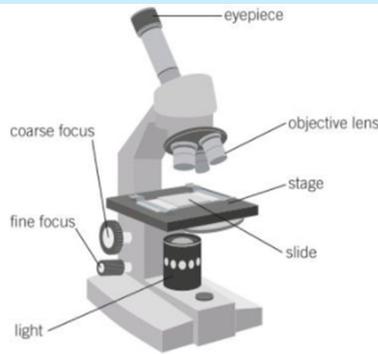
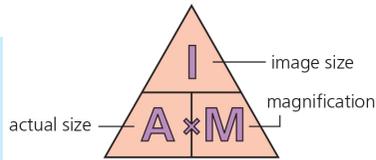


Figure 1 A light microscope

A cell under x400 magnification looks 24mm long.
 Actual size = $I \div M$
 $24 \div 400 = 0.06\text{mm}$
 $0.06 \times 1000 = 60\mu\text{m}$

The cell is 60µm long.



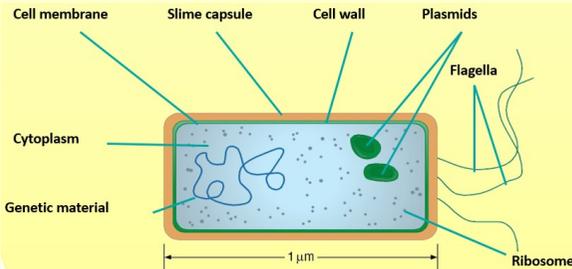
Prokaryote cells

E.g. bacteria and algae

Prokaryote



Prokaryote cells contain free DNA and no nucleus



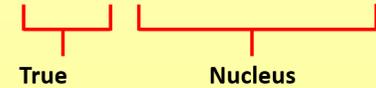
Bacteria contain no nucleus or large organelles as they are too small. They have plasmids to store unique genetics and slime

capsules to stop them drying out.

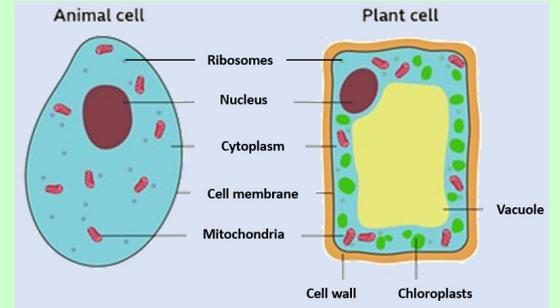
Eukaryote cells

E.g. plants and animals

Eukaryote



Eukaryote cells contain DNA within a nucleus

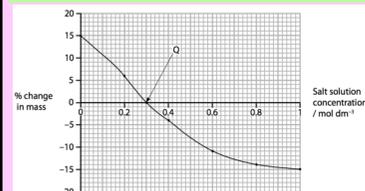
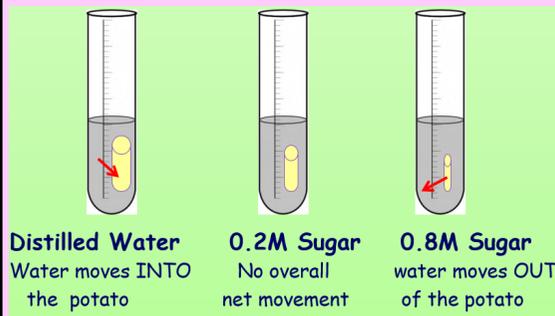


You need to know the functions of all organelles labelled above.

Osmosis Required Practical

Osmosis is the movement of water from an area of high concentration to an area of low concentration.

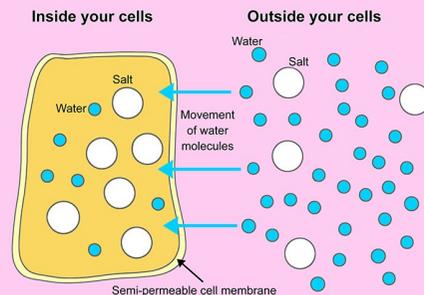
Using potatoes, find the concentration inside the cells:



Plot a graph of percentage change in mass against solution concentration. Where the % change in mass is zero. That is the concentration in the cells.

Y10 GCSE Biology B1—

Cell structure and transport



Diffusion and Active Transport

Diffusion is the movement of particles from an area of high concentration to low concentration until equilibrium is reached.

Factors that affect diffusion are: diffusion distance, temperature and concentration gradient.

Active Transport is the movement of particles from an area of low concentration to an area of high concentration with an input of energy.

Cells which do Active Transport require lots of mitochondria for respiration to release energy. E.g. Root hair cells for mineral ions.

