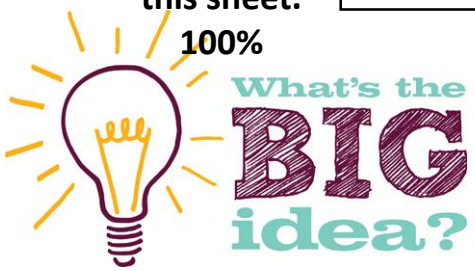
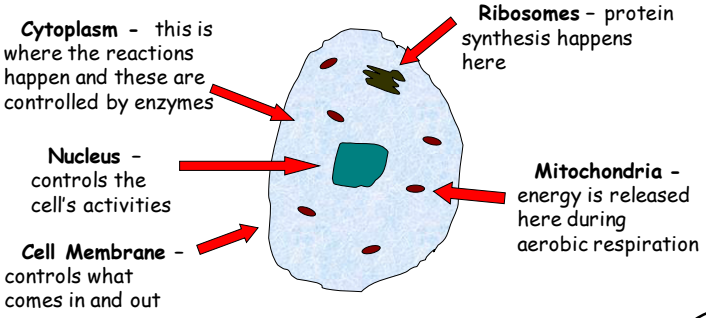
You need to know the content of this sheet. 100%

100% Sheet
Cell Structure and Division



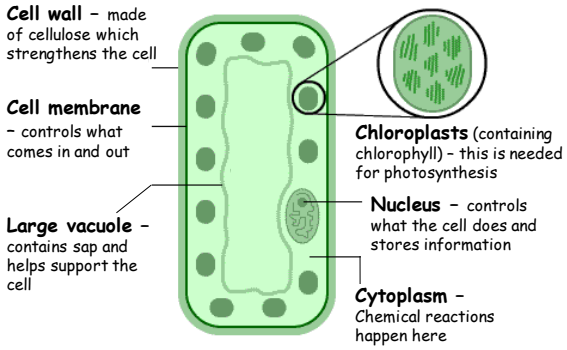
Organisms

are organised on a cellular basis and require a supply of energy or materials.

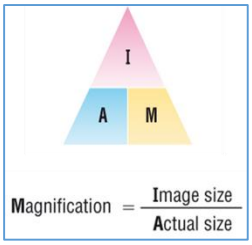


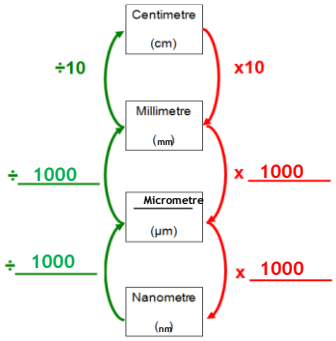
Xylem cells are used by the plant to transport water and soluble mineral salts from the roots to the stem and the leaves.

Phloem cells are tubes used by the plant to transport dissolved food to the whole plant for respiration and storage.



Magnification and unit conversions





You need to be able to:

- how microscopy techniques have developed over time
- • explain how electron microscopy has increased understanding of sub-cellular structures.

Light and electron microscopes:

An electron microscope has much higher magnification and resolving power than a light microscope. This means that it can be used to study cells in much finer detail. This has enabled biologists to see and understand many more sub-cellular structures.

Cell	Special features
Red blood cell	Flexible to fit in small capillaries. No nucleus to make space for oxygen
Nerve Cell	Long and thin with outer insulation to carry electrical signals
Sperm Cell	Lots of mitochondria to provide energy for swimming
Egg cell	Large store fat to provide energy
Root hair cell	Large surface area to absorb water from the soil
Ciliated cell	Small cilia (hairs) to move dust out of the throat
Palisade leaf cell	Lots of Chloroplasts to provide energy from photosynthesis

Describe the differnce between animal and plant cells:

State the fucntion and adaptations of the following cells:

Root hair cells:

Palisade cell:

Nerve cell:

Sperm cell:

Red blood cell:

Egg cell:

A plant cell in a photograph measures 15 mm across. If the actual size of the cell is 0.015 mm, what is the magnification in the photograph?