

Year 12 Preparation work

Applied Science

This work is designed to introduce you to one of the first topics you will encounter in applied science. A good understanding of this topic is vital as it underpins many things you will learn about.

You will need to research using the internet to be able to complete this task properly.

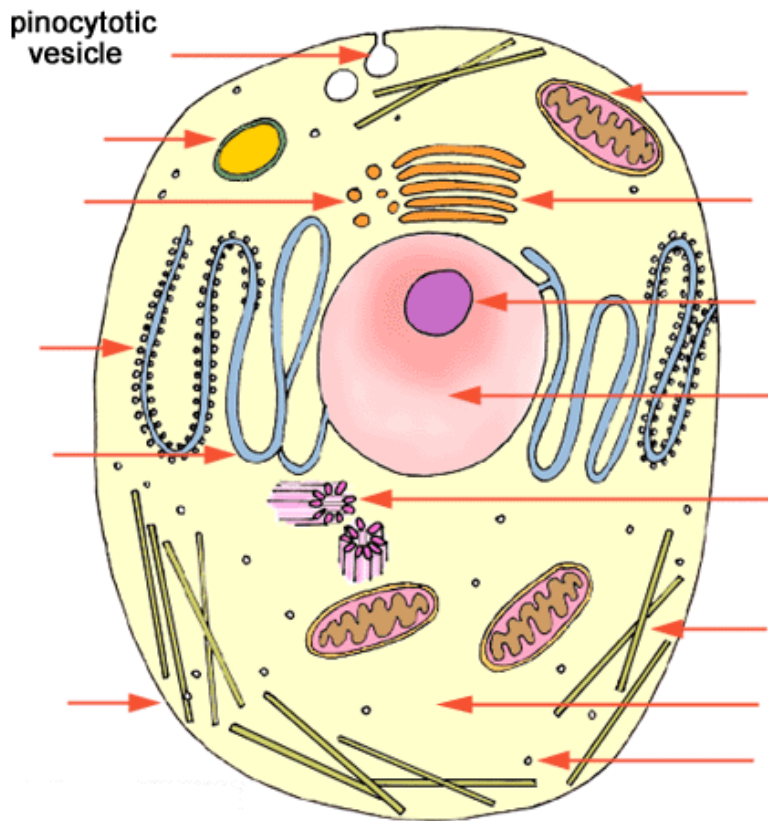
Please find a suitable website aimed at post-16 students and NOT Wikipedia or Yahoo Answers (as it will be far too complicated or just plain wrong!).

Some examples of suitable resources include (you will probably need to use more than one to help you):

- <http://www.s-cool.co.uk/a-level/biology> - Click on 'cells and organelles'.
- <http://www.biologymad.com/> - Click 'AS Biology' on the left then look for 'microscopy and cells'.
- <http://www.biologyguide.net/> - Click on cell ultrastructure.
- <http://www.mrothery.co.uk/> - Click on 'module 1' then 'cells note'.

Ultra-structure of Cells

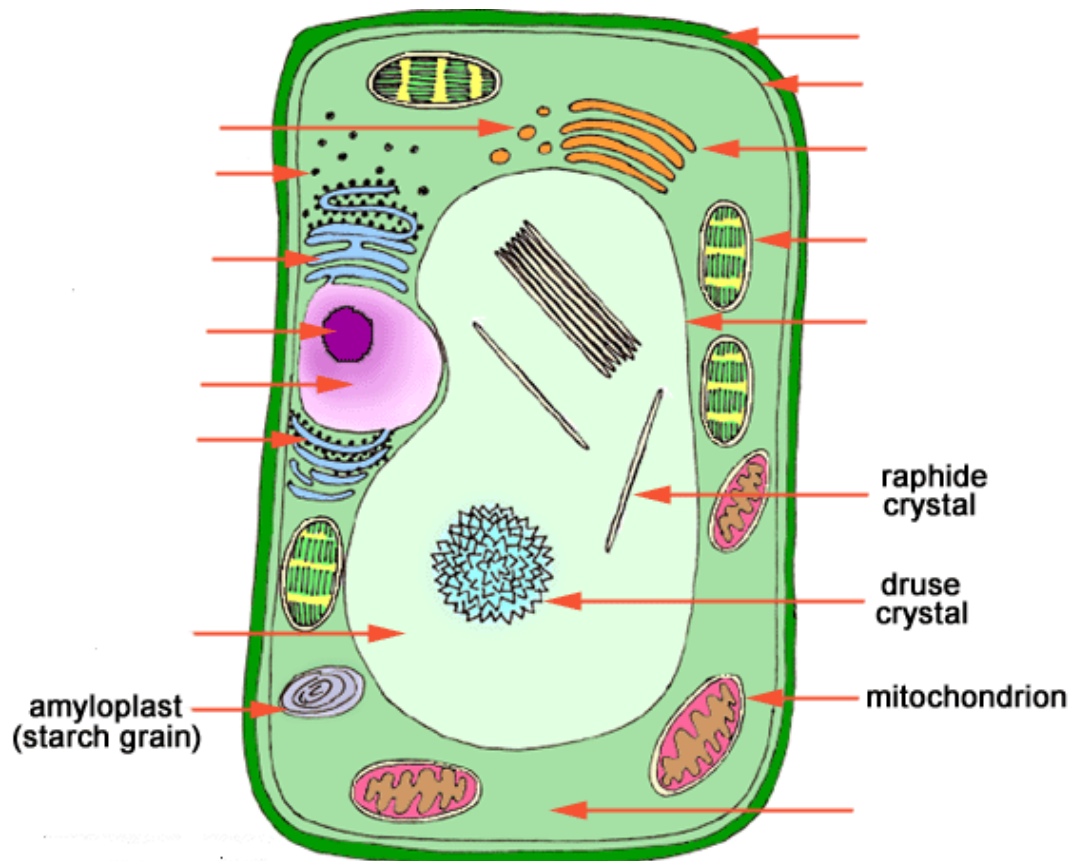
Label the diagrams of plant and animal cells below.



Animal Cell



Plant Cell



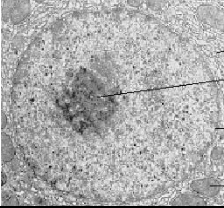
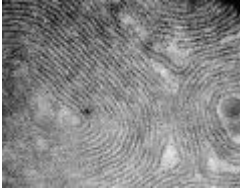

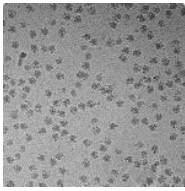

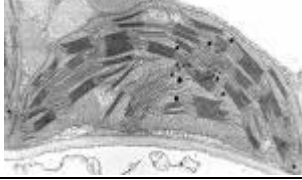


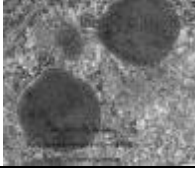
amyloplast
(starch grain)

raphide
crystal

druse
crystal

mitochondrion

Identifying Cell Organelles

EM Microscope Image	Description	Name
	<i>Network of membranes, can be rough or smooth.</i>	<i>Golgi apparatus</i>
	<i>Stack of curved membranes, packages and processes proteins.</i>	<i>Mitochondria</i>
	<i>Largest organelle, contains genetic material.</i>	<i>Endoplasmic reticulum</i>
	<i>Double membrane bound organelle, site of aerobic respiration.</i>	<i>Nucleus</i>
	<i>Tiny organelle involved in protein synthesis.</i>	<i>Centrioles</i>
	<i>Make and organise tiny structures called microtubules.</i>	<i>Ribosome</i>
	<i>Long thin extensions from cell surface, can produce movement.</i>	<i>Chloroplast</i>
	<i>Double membrane bound organelle, site of photosynthesis.</i>	<i>Lysosome</i>
	<i>Tiny bags of digestive enzymes.</i>	<i>Cilia</i>

Organelle	Structure	Function
Cell surface membrane		
Nucleus		
Mitochondria		
Chloroplast		
Golgi		
Lysosome		
Ribosome		
Rough endoplasmic reticulum		
Smooth endoplasmic reticulum		
Cell wall		
Vacuole		

Tonoplast		
Plasmodesmata		
Pits.		