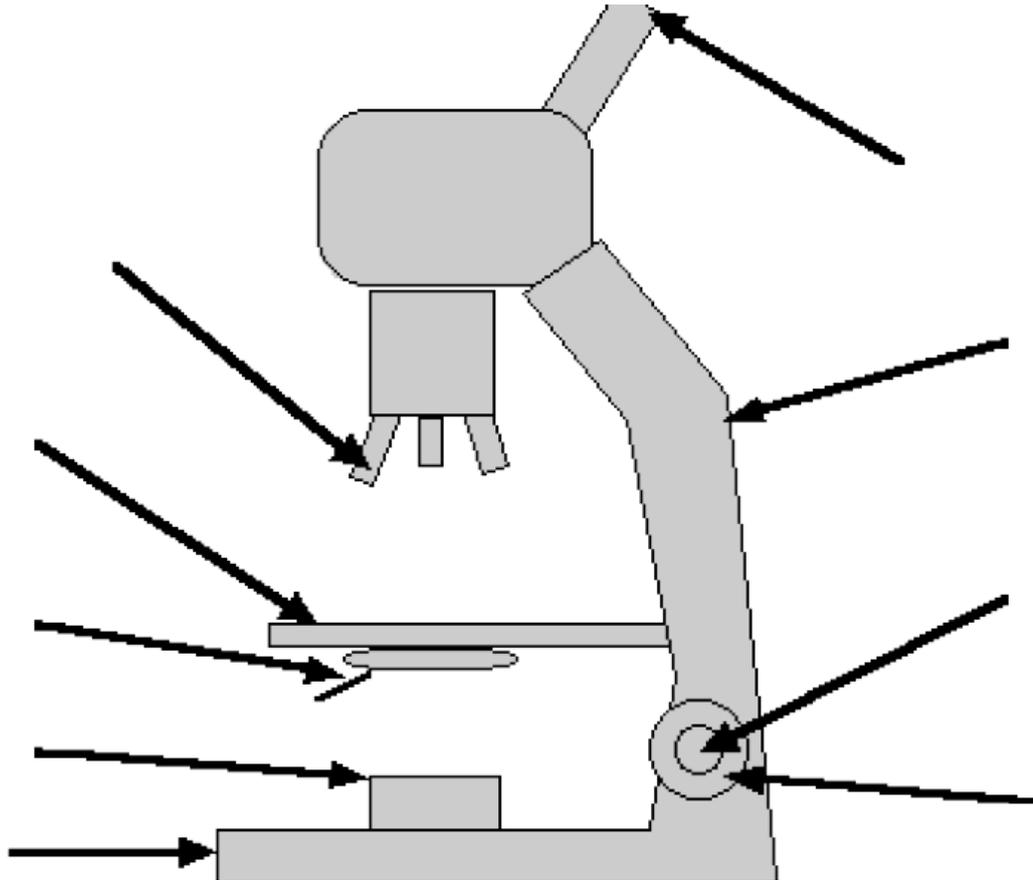


Year 11 into Year 12 A-Level Biology Transition Work

Task 1: Microscopes & Organelles

1. Label the microscope below:



2. Find out the difference between light microscopes, electron microscopes and laser scanning confocal microscopes.

Light microscopes	Electron microscopes	Laser scanning confocal microscopes

3. You will be using lots of new scientific vocabulary on the biology course. Find out the meanings of the following keywords:

a) Resolution

b) Magnification

c) Nucleolus

d) Golgi apparatus

e) Lysosome

f) Ribosome

g) Rough endoplasmic reticulum

4. You must know the following units of measurement when working with microscopes. They are all in comparison to a metre. Complete the table below.

Unit	Symbol	Equivalent in metres
kilometre	km	10^3
metre		
	mm	10^{-3}
micrometre		10^{-6}
nanometre	nm	

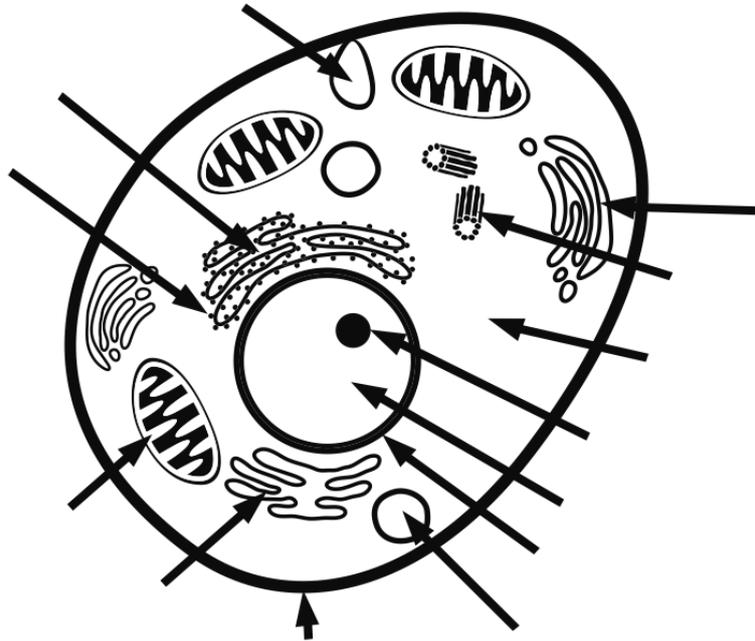
5. Place a tick in the box to indicate where the organelle is found. Some organelles can be found in both plant and animal cells.

Organelle	Plant Cell	Animal Cell
Cell Wall		
Chloroplast		
Cytoplasm		
Endoplasmic reticulum		
Golgi apparatus		
Lysosome		
Nucleolus		
Nucleus		
Plasma membrane		
Ribosome		
Vacuole		
Mitochondria		

6. Cells are categorised as either prokaryotes or eukaryotes. Find out what this means and give 1 example for each of these categories.

Prokaryote	Eukaryote

7. The diagram shows an animal cell.
Name each labelled part and give its function.



Task 2 - Maths skills for A-Level Biology

- Undertake the following conversions:
 - 0.0062 mm into μm
 - 7928 ml into dm^3
 - 213 ml into dm^3
 - 4 000 000 ns into s
 - 727 m into km
 - 0.002 km into mm
 - 1 000 000 000 mm^3 into m^3
 - 0.000 001 km^3 into m^3
 - 0.000 001 m^3 into mm^3
- Convert the following values so they make more sense to the reader.
Choose the final units yourself.
 - 0.000 000 000 1 kg
 - 1 000 000 000 mg
 - 0.000 000 3 dm^3
 - 77 890 122 nm