

PREPARING TO STUDY A LEVEL BIOLOGY

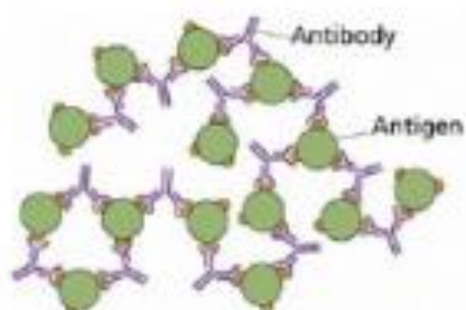
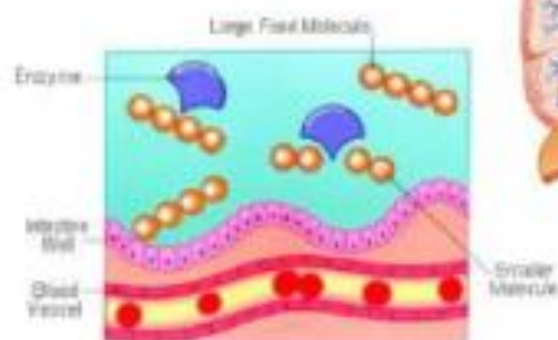
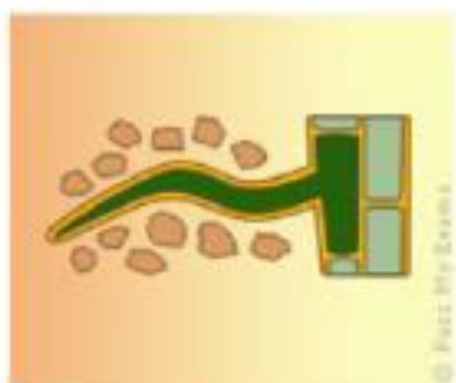
WHAT SHOULD I ALREADY KNOW FROM GCSE?

TASK 1

These are some topics from your GCSE course that you will re-visit in your AS Biology course. Some might need some extra research though.

This is best done as a poster, but you can actually choose any format you wish. Make sure you use images (given below) to prompt you and include them in your work or any additional images from other sources.

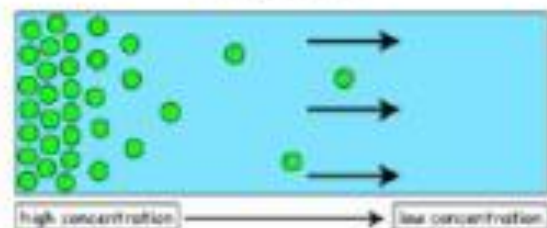
- Enzymes - lock and key, effect of temp/pH, uses
- Digestion of starch in the human gut
- Lactose intolerance
- Food tests – glucose and starch
- Bile and emulsification
- Structure of red blood cells – haemoglobin
- Diffusion and osmosis
- Active transport e.g. root hair cells
- Transpiration in plants – stomata
- Cell division – mitosis and meiosis
- Variation – genes and environment
- Breathing – role of diaphragm
- Immune system – antibodies and antigens
- Heart disease – cholesterol, heart attacks etc



Progression of plaque build up in coronary artery



Diffusion

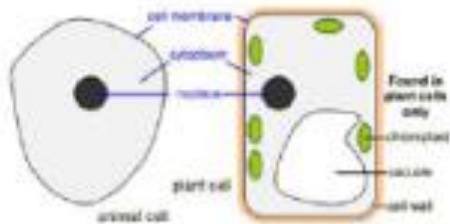
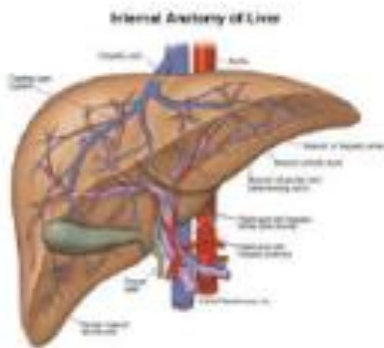
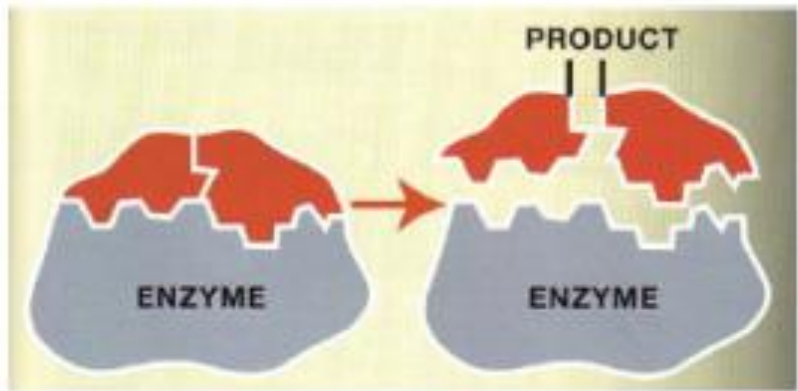
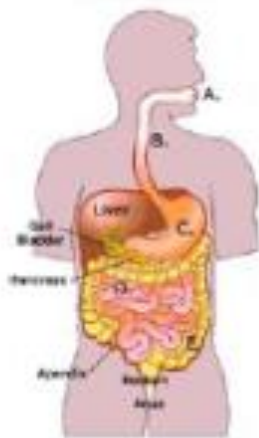


● solute

Solute transport is from the left to the right; movement of the solutes is due to the concentration gradient (dc/dx).

#ADAM



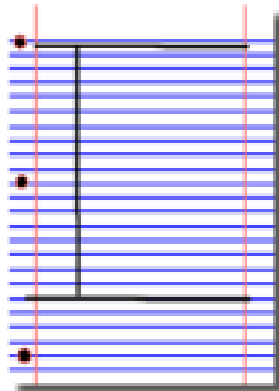


When producing a poster you could use the following tips to organise your work.

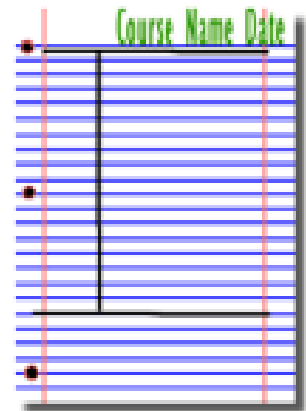
Task 2

Research, reading and note making are essential skills for A level Biology study. For the following task you are going to produce 'Cornell Notes' to summarise your reading.

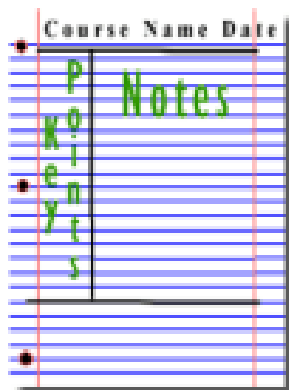
1. Divide your page into three sections like this



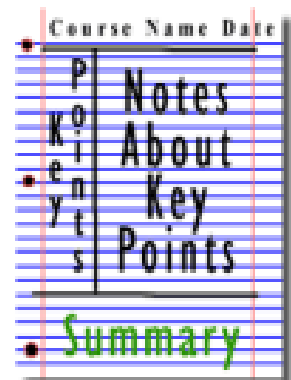
2. Write the name, date and topic at the top of the page



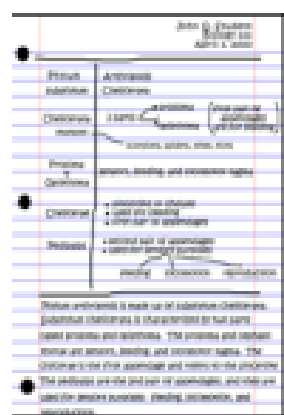
3. Use the large box to make notes. Leave a space between separate ideas. Abbreviate where possible.



4. Review and identify the key points in the left hand box



5. Write a summary of the main ideas in the bottom space



Exchange and Transport

Organisms need to exchange substances selectively with their environment and this takes place at exchange surfaces. Factors such as size or metabolic rate affect the requirements of organisms and this gives rise to adaptations such as specialised exchange surfaces and mass transport systems. Substances are exchanged by passive or active transport across exchange surfaces. The structure of the plasma membrane enables control of the passage of substances into and out of cells.

Read the information on these websites (you could make more Cornell notes if you wish):

<http://www.s-cool.co.uk/a-level/biology/gas-exchange>

<http://www.s-cool.co.uk/a-level/biology/nutrition-and-digestion/revise-it/human-digestive-system>

And take a look at these videos:

<http://ed.ted.com/lessons/insights-into-cell-membranes-via-dish-detergent-ethan-perlstein>

<http://ed.ted.com/lessons/what-do-the-lungs-do-emma-bryce>

Task:

Create a poster or display to go in your classroom in September. Your poster should either: compare exchange surfaces in mammals and fish, or compare exchange surfaces in the lungs and the intestines. You could use a Venn diagram to do this.

Your poster should:

- Describe diffusion, osmosis and active transport
- Explain why oxygen and glucose need to be absorbed and waste products removed
- Compare and contrast your chosen focus.

<https://www.s-cool.co.uk/a-level/biology/gas-exchange>

<https://s-cool.co.uk/a-level/biology/nutrition-and-digestion/revise-it/4221-human-digestive-system-coming-soon>

<https://ed.ted.com/lessons/insights-into-cell-membranes-via-dish-detergent-ethan-perlstein>

<https://ed.ted.com/lessons/what-do-the-lungs-do-emma-bryce>

Cells

The cell is a unifying concept in biology, you will come across it many times during your two years of A level study. Prokaryotic and eukaryotic cells can be distinguished on the basis of their structure and ultrastructure. In complex multicellular organisms, cells are organised into tissues, tissues into organs and organs into systems. During the cell cycle genetic information is copied and passed to daughter cells. Daughter cells formed during mitosis have identical copies of genes while cells formed during meiosis are not genetically identical.

Read the information on these websites (you could make more Cornell notes if you wish):

<http://www.s-cool.co.uk/a-level/biology/cells-and-organelles>

<http://www.bbc.co.uk/education/guides/zvjycdm/revision>

And take a look at these videos:

<https://www.youtube.com/watch?v=gcTuQpuJyD8>

<https://www.youtube.com/watch?v=L0k-enzoeOM>

<https://www.youtube.com/watch?v=qCLmR9-YY7o>

Task:

Produce a one page revision guide to share with your class in September summarising one of the following topics: Cells and Cell Ultrastructure, Prokaryotes and Eukaryotes, or Mitosis and Meiosis.

Whichever topic you choose, your revision guide should include:

- Key words and definitions
- Clearly labelled diagrams
- Short explanations of key ideas or processes.

<https://www.s-cool.co.uk/a-level/biology/cells-and-organelles>

<https://www.youtube.com/watch?v=gcTuQpuJyD8>

<https://www.youtube.com/watch?v=L0k-enzoeOM>

<https://www.youtube.com/watch?v=qCLmR9-YY7o>