

Name:

Date:

Well done on choosing Level 3 Alternative Academic Qualification (AAQ) Human Biology (Cambridge Advanced National)! We look forward to meeting you in September – in the meantime please have go at the activities in this pack to give you an idea of the sorts of topics we will cover in your first term.



Topic area 1 – Human Cells and tissues

In this topic we will take a look at human biology at the cellular level. This has important synoptic links with diagnostic techniques and treatments.

To get you started please look up and draw the structure of a general animal cell. Include the following organelles and give a brief description of their function:

Cell surface membrane; cytoplasm; nucleus; nucleolus; mitochondria; ribosomes; smooth and rough endoplasmic reticulum; Golgi body; vesicles; lysosomes

What is the difference between cilia and microvilli? Sketch a diagram below to show the different structures.

Extension: if you want to go a step further look up how organelles are found in specialist cells – specifically the sperm cell; erythrocyte; lymphocyte

Topic area 2 – Fundamentals of genetics

In this topic we will explore genetics from the structure of DNA to population level expression of different phenotypes.

To get you started use the space below to research and create a step-by-step explanation of DNA replication. Include diagrams and a minimum of 4 steps. The following key words should help your research – DNA helicase; DNA polymerase; nucleotide; semi-conservative replication; template strand; complimentary base pairs; hydrogen bond; phosphodiester bond

Extension: to go a step further can you explain what transcription and translation are?

Looking ahead

Lastly, we would like to you to look ahead at the example health issues you will study as an AAQ Human Biology Student and do some initial research and present this as a factual poster.

Using the list of physiological disorders/diseases below, pick one and do some reading on it. Create a summary poster (complete with diagnostic methods; symptoms; treatments) to show us what you have found out. Be as creative as possible in your presentation of the poster and the best will be selected to be displayed in the laboratory.

Choose from:

Motor Neurone Disease (MND); Hypertension; Chronic Obstructive Pulmonary Disease (COPD); Crohn's disease; Polycystic Kidney Disease (PKD); Multiple sclerosis; Melanoma; Rickets; Sickle cell anaemia