

AAQ Medical Science – Year 11 into year 12 Summer transition work

Welcome to Medical Science! We are excited about running this course for the first time and we hope you are looking forward to studying it!

You will be completing the Level 3 AAQ BTEC National in Medical Science which is broken down into 4 units.

Unit 1: Principles of Human Physiology, Anatomy and Pathology (exam)

Unit 2: Health issues and Scientific Reporting (exam)

Unit 3: Practical Microbiology and Infectious Diseases (written assessment)

Unit 4: Diseases, Disorders, Treatments and Therapies (written assessment)

Task 1 – The Human Cell

1. Draw and label a human cell (animal cell).
2. Describe the function of the following: nucleus, nucleolus, mitochondria, ribosomes, cell membrane and cytoplasm?
3. Explain how cells become specialized (e.g., nerve, muscle, red blood cell)
4. Explain how temperature and pH affect enzyme activity.
5. What is the difference between a lysosome, ribosome and centrosome?

Task 2 - Health & Disease

1. Define communicable and non-communicable diseases with examples.
2. Explain the role of the immune system in protecting the body.
3. Conduct research using reputable sources (not wikipedia!) and create a fact file for 2 of this following: COPD, HIV, Cancer, Tuberculosis.
4. How are diseases passed from one person to another?
5. How can we prevent diseases spreading from one person to another?

Task 3 - DNA

1. What is DNA?
2. What is a double helix?
3. What is complimentary base pairing?
4. What is RNA?
5. What are the roles of mRNA, rRNA and tRNA in protein synthesis?
6. Conditions associated with metabolism of biological molecules include galactosaemia, PKU, coeliac disease and lactose intolerance. Research each condition and write a short paragraph of the causes, impact and treatment options for each condition

Task 4 - Diagnostic techniques

Research how the following diagnostic tests and write a short paragraph detailing what they measure, how they measure it, how it is reported and why the information is an important part of diagnosing illness.

1. Electrocardiogram (ECG)
2. Pulse oximetry
3. Ambulatory blood pressure monitoring
4. Respiratory rate measurement
5. Capillary refill test
6. Blood oxygen saturation
7. Electromyography
8. Reflex test
9. Amniocentesis
10. Chronic villus sampling