

Biology A level

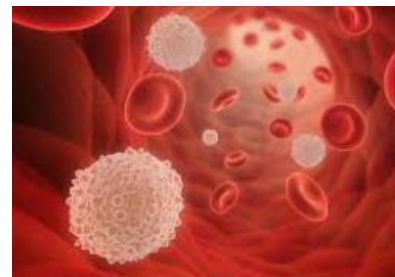
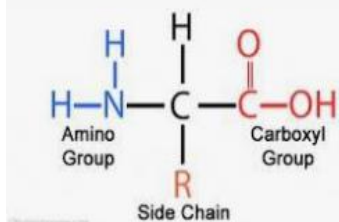


- Biology is a fascinating course that covers a wide range of topics, exploring them in much more detail whilst maintaining a broad view of the bigger picture. The course aims to encourage learners to develop essential knowledge and understanding of different areas of the subject and how they relate to each other. Learners develop and demonstrate a deep appreciation of the skills, knowledge and scientific methods required to develop competence and confidence in a variety of practical, mathematical and problem solving skills.
- The study of Biology opens up exciting career possibilities. From conservation to cancer research, biologists are tackling important 21st Century challenges. Biology is also a great subject choice for people who wish to pursue a career in health and clinical professions, such as Medicine, Dentistry, Veterinary Science, Physiotherapy, Pharmacy, Optometry, Nursing, Zoology, Marine Biology and Forensic science

- Year 1 provides the foundations for Year 2, It also builds on many familiar concepts explored at GCSE such as cell structure and biological molecules, enzymes and biological membranes, exchange and transport in plants/animals as well as biodiversity, evolution and disease.

This bridging work will enable you to revisit content from GCSE, while becoming familiar with newer, more detailed content in preparation for Key stage 5. It will also help to instil valuable independent study skills, which will be part of your success later at sixth form and beyond!

Amino Acid Structure



Assignment 1 - Protein structure.

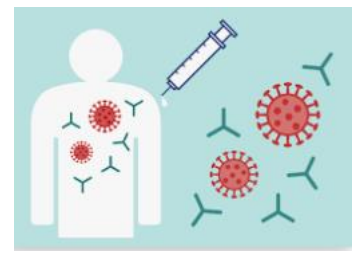
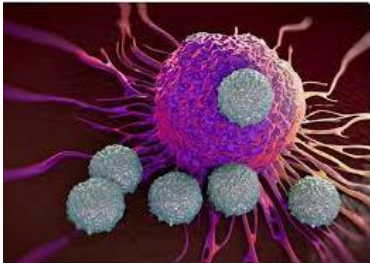
- Research the 4 levels of protein structure. These are primary, secondary, tertiary and quaternary.
- Knowledge of biological molecules is so important for understanding enzymes, genetics, mutations and more!

Description of the assignment

- What are the 4 levels of protein structure?
- What is the structure of an amino acid? How are amino acids different? Why is this so relevant?
- Why is the primary level of protein structure so important on the final overall shape of the protein?
- What decides protein structure?
- How important is protein as a biological molecule? What is made of protein in the mammalian body?

Useful links

- <https://alevelbiology.co.uk/notes/protein-structure/>
- <https://www.khanacademy.org/science/biology/macromolecules/proteins-and-amino-acids/a/orders-of-protein-structure>



Assignment 2

Disease and its transmission.

This unit goes into details about the transmission of disease, the bodily defences and how responses can be specific and non-specific. A very current, and relevant unit!

Description of the assignment

1. Choose from TB/HIV/Malaria/Athlete's foot/Covid 19
2. Describe the main symptoms and means of transmission. Also explain which type of pathogen it is (e.g. Bacteria/fungus/virus/protocista)
3. Explain the non-specific defences including how inflammation occurs and the mechanisms behind blood clotting.
4. Describe and explain primary and secondary immune response, including the role of cytokines and opsonins.

Useful links



<https://thealevelbiologist.co.uk/blood-clotting/>
<http://astarbiology.com/edexcel/blood-clots/>
<https://www.khanacademy.org/science/high-school-biology/hs-human-body-systems/hs-the-immune-system/a/hs-the-immune-system-review>
<https://alevelbiologystudent.weebly.com/126-specific-immune-system.html>

