

Year 10 Biology – Outline Programme of Study

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Big ideas/ topics	Chapter 1 Cell Biology	Chapter 2 Organisation	Chapter 2 Organisation	Chapter 3 Infection and response	Chapter 4 Bioenergetics	Consolidation end of Year 10 exam prep/ Start chapter 5
Key Knowledge	Structure and function of the component parts of cells including prokaryotic and eukaryotic limited to- cell wall, cell membrane, cytoplasm, nucleus, vacuole and chloroplast, mitochondria and ribosomes. Use of microscopes electron and light. Cell differentiation and specialism – including sperm, muscle, nerve, egg, root hair and palisade cell. Therapeutic cloning. Cell division - mitosis Transport in and out of cells including diffusion, osmosis and active transport. Microbiology (ss only)	Structure and function of digestive system including food tests and the role of enzymes in digestion. The structure and function of the heart, blood vessel (arteries, veins and capillaries) and blood. Including the roles of white blood cells, red blood cells, platelets and plasma.	Structure of the lungs including gas exchange and adaptations of the alveoli. Non- communicable diseases and the risk factors associated with these. These include cancer, CHD and diabetes. The structure of plant tissues and the movement of substances around the plant by transpiration (water) and translocation (sucrose).	The structure of microorganisms- viruses, bacteria, fungi and protists. Types of infectious diseases and how they are transmitted and how this can be prevented. Bacteria- salmonella and gonorrhoea. Viruses – measles, HIV and Tobacco mosaic virus. Fungi- Rose Black Spot Protists – Malaria. The work of Fleming on the development of antibiotics. How the body responds to infection including the role of White Blood Cells and vaccination. Discovery and development of new drugs. The production and uses of monoclonal antibodies (ss only) How plants defend themselves against disease (ss only)	The process of photosynthesis and the factors that affect the rate of this. And how commercial growers can manipulate these conditions. The process of respiration (aerobic and anaerobic) and how exercise can influence both breathing rate and heart rate. What metabolism is.	Use of past exam papers to improve exam technique.

Further information and reading list

- AQA [Trilogy](#) (8464) or AQA [Biology](#) (8461) specifications.
- [CGP AQA Trilogy \(8464\)](#) or [CGP AQA Biology \(8462\)](#) revision guides
- [Educake](#)
- [Focus elearning](#)
- <https://www.bbc.co.uk/bitesize/examspecs/z8xtmnbb> BBC bitesize
- [Physics maths tutor](#)
- [Savemyexams](#)
- [Freesciencelessons.co.uk](https://www.freesciencelessons.co.uk)
- [Malmesbury Science](#)
- [Biology /Chemistry/ physics](#) textbooks
- [AQA Command words](#) [Subject specific vocabulary](#)
- <https://revisionworld.com/>

Ways to support and extend student learning in this subject



Use educate to reinforce key knowledge

- Pearsons target grade 5 books.
- New scientist
- Links to past papers
- Youtube sites
- Christmas lectures
- Lesson powerpoints and other resources are also put onto google classroom.