

# Year 8~ Curriculum Map for Biology (dept.)

What are the intended aims for this year's curriculum? To be able to explain how the human body works, what improves the efficiency of our body and what can damage it. Students should also be able analyse the impact humans have on our atmosphere and how plants benefit us.

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
	Topic(s): The Body (cells, tissues and organs)	Topic(s): Inheritance	Topic(s): Evolution	Topic(s): Drugs	Topic(s): Plants	Topic(s): The atmosphere
	Aim of A&R	Aim of A&R	Aim of A&R	Aim of A&R	Aim of A&R	Aim of EoY exam
'Big idea(s)' / fundamental concepts	How would you develop your body to become an Olympic athlete?	What makes you, you?	Do only the fittest survive?	Is it worth it?	Can we live without them?	How does the atmosphere effect you?
Knowledge to be learnt	Structure and function of the human Skelton. How the muscles aid the Skelton to move. Healthy diet and the human digestive system.	Identify genetic and environmental variation. Development/inheritance of genetic disorders. Development of genetic disorders via mutations. Be able to complete punnet squares. To be able to recall the structure of DNA	How mutations can lead to adaptions in a species/ two distinct species. How changes to an environments can lead to natural selection/extinction. Survival of the fittest. Competition for resources including how organisms interact in an ecosystem (food chains and webs)	Structure of the respiratory system and the long and short term effects of recreational drugs such as smoking. The benefits of vaccinations.	Photosynthesis and gas exchange system in plants. Testing leaves for starch and identifying starch as a glucose/carbohydrate storage. Word and symbol equations for photosynthesis. Uptake or water and nutrients via the soil. How plants compete for resources in an ecosystems.	How carbon is added and taken away from our atmosphere and how the carbon dioxide levels are rising. How Nitrogen is cycled within our atmosphere and how bacteria plays a role.
Key vocabulary	Antagonistic, ligament, tendons, bone marrow, carbohydrates, enzymes, lipids, benedict's solution, iodine, Biuret solution, starch, obesity, deficiency, ethanol	Mutations, allele, DNA, double helix, variation, inheritance, species, chromosome, genes, hereditary, reproduction, offspring, adenine, thymine, guanine, cytosine, punnet squares	Darwin, inheritance, competition, natural selection, fossils, extinction, producer, consumer, autotrophs, heterotrophs, Lamarck's theory of evolution	Alveoli, trachea, bronchi, bronchiole, cardiovascular disease, hallucinogens, depressants, stimulants, legal high, vaccination, immunity, antibodies, antigens, phagocytes, lymphocytes, inoculation, injection.	Stomata, gas exchange, guard cells, chlorophyll, chloroplasts, glucose, concentration gradient, active transport, diffusion, photosynthesis, iodine,	Atmosphere, ozone layer composition, carbon dioxide, oxygen, nitrogen, methane, climate change, temperature, greenhouse effect, photosynthesis, population, human activity, food security
The role of reading and comprehension	Reading government guidelines on nutritional information	Reading and viewing videos of case studies of individuals with genetic disorders	Researching Darwin and comparing his ideas to Lamarck's theory	Edwards Jenner's story of vaccination of smallpox	Practical method of testing leaves for starch	Interpreting the carbon cycle
The role of independent extended writing	The journey a cheese sandwich makes through the digestive system	Create an information page on how genetic disorders develop and how they are passed on	Compare and contrast Darwin's theory of evolution and Lamarck's theory, going into explain why Darwin's theory was so unpopular at the time.	To be able to explain what vaccinations are and how they work	Be able to explain how a plants have adapted to carry out gas exchange	Explain the issues with greenhouse gasses and the effect it is having on our atmosphere and what we can do to reduce this
The role of maths/ numeracy	Energy provide by foods Calculate % loss and the calorie intake of certain foods	Calculating % chance of inheritance	Population. % calculations. Interpreting graphical information		Calculating average (number of stomata on a leaf)	Interpreting graphical information on composition of gases in our atmosphere
Links to careers/ aspirations	Physiotherapist, sports coach, dietician, PE teacher	Forensics DNA testing	Ecologist, zoologist marine biologist	NHS support in quitting smoking, community support in drug awareness	Botanist	Climate change analyst Environmental scientist Nature presenter
Core skills	To be able to: identify the key food groups and be able to test for them. Analyse how these groups affect the body and calculate the energy intake and usage.	To be able to: extract DNA from fruit and explain how this is done	To be able to: explain how birds have adapted to their environment using a model of tweezers and seeds	To be able to: understand how diseases can travel using a practical model of STI infection (milk, starch and iodine practical)	To be able to: To be able to test leaves for starch and explain why starch is found in leaves	To be able to: explain how to test for the presence of carbon dioxide using a limewater test and how the increase in levels could be controlled.
Dept. enrichment activities	Guest speaker/ CCCU sports science taster day		Trip to Darwin's home in Kent	Guest speaker on illegal drugs Use of PSHE drugs boxes	Sampling areas for different organisms	
Home learning opportunities	Antagonistic muscle model Articulated hand model Label the bones in the body Keep a food diary	Research genetic disorders Human genome project. What is it and why is it important	Build food chains and food webs from exotic places		Attend a local garden centre and observe the different forms of plants. How are they different? Explain how these differences make them more likely to survive.	How can you reduce your carbon footprint?