

Biology Curriculum Map - Year 10

Term	Units of Study	Curriculum Guidelines	NC –Aims / Focus Points
Autumn 1	<ul style="list-style-type: none"> • Animal and plant cells • Cell specialisation • Stem cells • Plant and animal cells • Microscopy 	<p>Display diagrams of a plant and animal cell</p> <p>Observe prepared slides of specialised cells</p> <p>Watch the stem cell story at Europe’s stem cell website.</p> <p>Observe images of different types of bacterial, plant and animal cells research the differences between a light microscope and an electron</p>	<p>Label diagrams of animal and plant cells.</p> <p>Explain the need for differentiation in a multicellular organism.</p> <p>Define the term ‘stem cell’.</p> <p>Describe the differences between eukaryotic and prokaryotic cells</p> <p>Describe the differences in magnification and resolution of light and electron microscopes</p>
Autumn 2	<ul style="list-style-type: none"> • Culturing microorganisms • Chromosomes • Mitosis and the cell cycle • Diffusion • Osmosis 	<p>Preparation of inoculating plates.</p> <p>Draw and label diagrams showing cell, nucleus, chromosome and gene.</p> <p>Discuss how organisms grow and relate this to cell division.</p> <p>Observe demos and suggest explanations:</p> <p>Explain the movement of water molecules as a special type of diffusion through a partially permeable membrane.</p>	<p>Know that bacteria multiply by simple cell division.</p> <p>Describe what a chromosome is and where chromosomes are found in the cell.</p> <p>Describe simply how and why body cells divide</p> <p>Define the term ‘diffusion’.</p> <p>Apply knowledge of osmosis to unfamiliar situations and make predictions.</p>
Spring 1	<ul style="list-style-type: none"> • Organisational hierarchy • The human digestive system. • Properties of enzymes 	<p>Organisation using models and images of the human body and organs.</p>	<p>Describe the functions of the digestive system to digest and absorb foods.</p>

	<ul style="list-style-type: none"> • The heart and blood vessels. • Plant transport systems. 	<p>Recap the functions of the digestive system Define the terms 'catalyst' and 'enzyme'.</p> <p>Show pictures of a single and a double circulatory system.</p> <p>Demonstrate capillary action</p>	<p>Describe the functions of the heart and circulatory system.</p> <p>Describe the organs that make up the plant transport system.</p>
Spring 2	<ul style="list-style-type: none"> • Communicable diseases • Culturing microorganisms • Viral, bacterial and fungal diseases in humans • Human defence systems • Vaccination 	<p>Show BBC video clip on microorganisms Use agar plates Describe the symptoms, mode of transmission, prevention and treatment for measles, HIV and AIDS, salmonella and gonorrhoea.</p> <p>Label a diagram to show how the body defends itself against the entry of pathogens.</p> <p>Edward Jenner</p>	<p>Define the term pathogen and state the four main groups of pathogen.</p> <p>Describe how microorganisms can be safely grown on agar plates.</p> <p>Find out about the symptoms, mode of transmission, prevention and treatment for measles, HIV and AIDS, salmonella and gonorrhoea.</p> <p>Describe the body's first line defences.</p> <p>Describe what a vaccine contains</p>
Summer 1	<ul style="list-style-type: none"> • Photosynthetic reaction • Rate of photosynthesis • Limiting factors • Use of glucose 	<p>Test leaves for starch Required practical Interpret graphs and explain limiting factors.</p> <p>View exhibition of plant products</p>	<p>Write the word and symbol equation for photosynthesis State factors that can limit the rate of photosynthesis.</p> <p>Glucose test:</p>
Summer 2	<ul style="list-style-type: none"> • Aerobic respiration • Anaerobic respiration • Response to exercise • Metabolism 	<p>Anaerobic respiration in muscle cells</p> <p>Mini-practical:</p>	<p>Write the word equation for aerobic respiration.</p> <p>Define the term 'anaerobic'</p>

		<p>Discuss what metabolism means and examples of the reactions that make up metabolism.</p>	<p>Describe and explain the changes that occur in the body during exercise Define the term 'metabolism'</p>
--	--	---	---