



Year 9 Biology Learning Journey

YEAR GROUP: 9

SUBJECT: Biology

When?	Knowledge	Understanding	Assessment
<p>Rotation 1</p> <p>Topic 1: B1 Cell Structure</p>	<ul style="list-style-type: none"> • Use microscopy techniques to observe a cell • Compare the components of animal and plant cells • Compare eukaryotic cells and prokaryotic cells • Describe the structure and functions of specialised plant and animal cells. 	<p>Students will carry out a range of practical experiments during these topics.</p> <p>Topic 1: B1 Cell Structure key vocabulary:</p> <p>alveoli bacteria cell membrane cell wall cellulose chlorophyll chloroplasts cytoplasm eukaryotic cells mitochondria nucleus prokaryotic cells ribosomes sperm</p>	<p>Assessment: B1 Cell Structure Assessment (40 Mark)</p>
<p>Rotation 1</p> <p>Topic 2 : B1 Cell Transport</p>	<ul style="list-style-type: none"> • Compare diffusion , osmosis and active transport • Describe the importance of osmosis in plant cells and animals cells • Carry out an investigation to observe the effect of different solution types have on plant cells • Describe the factors which affect the rate of material exchange 	<p>Students will carry out a range of practical experiments during these topics.</p> <p>Topic 2 : B1 Cell Transport key vocabulary:</p> <p>active transport algae cell membrane cell wall cellulose diffusion hypertonic (osmosis)</p>	<p>Assessment: B1 Cell Transport Assessment (40 marks)</p>

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		isotonic (osmosis) osmosis partially permeable membrane phloem plasmolysis resolving power stomata turgor ventilated xylem	
Rotation 2 Topic 3: B2 Cell Division	<ul style="list-style-type: none"> Describe the cell cycle with a particular focus on mitosis Compare how cell differentiation is different in plants and animals with a focus on undifferentiated cells and their functions. Describe the potential benefits , risks and social and ethical issues associated with the use of stem cells in medical research and treatment 	Students will carry out a range of practical experiments during these topics. Topic 3: B2 Cell Division key vocabulary: adult stem cells cell cycle cloning differentiate embryonic stem cells mitosis stem cells therapeutic cloning zygote	Assessment: B2 Cell Division Assessment (40 marks)
Rotation 2 Topic 4 : B4	<ul style="list-style-type: none"> Be able to describe the different levels of organisation with a particular focus on the human digestive system Describe the basic structure of lipids, 	Students will carry out a range of practical experiments during these topics.	Assessment: B3 Organisation and the Digestive System Assessment (40 mark)

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Organisation and the Digestive System	proteins and carbohydrates. <ul style="list-style-type: none"> • Carry out an investigation to identify the main food groups. • Describe how enzymes work as a biological catalyst and carry out their function • Illustrate the different factors which affect the rate of enzyme action • Carry out an investigation to investigate the effect of pH on the rate of enzyme action 	Topic 4 : B4 Organisation and the Digestive System key vocabulary: active site amino acids amylase bile carbohydrases carbohydrates catalyst denatured differentiate digestive system enzymes fatty acids glycerol lipase lipids metabolism organ organ system proteases proteins simple sugars tissue	