



## Year 9 Biology Curriculum Map

<b>Overview</b>	<p>Year 9 GCSE Biology begins with the fundamental concept of the cell. Cells are the basic unit of all forms of life. We study the structure of different types of cells, and how structural differences between types of cells enables them to perform specific functions within the organism. Fundamental processes of diffusion, osmosis and active transport are needed to understand how substances enter cells. The development of organisms requires cells to divide and differentiate. We finish year 9 looking at how stem cell technology, a new branch of medicine that allows doctors to repair damaged organs by growing new tissue from stem cells.</p>		
<b>Year 9</b>	Spring 4	Summer 1	Summer 2
<b>Topic</b>	B1 Cells and Organisation		B2 Cell Division
<b>Knowledge</b>	<p>Cell structure: Difference between eukaryotes and prokaryotes. Detailed structure and function of animal and plant cells.</p> <p>Cell specialisation: adaptations of cells in animals and plants.</p> <p>Microscopy: Theory of microscope use, and limitations with different types of microscope</p> <p>Transport into and out of cells: Diffusion, Osmosis in animal and plant cells and active transport.</p>		<p>Cell differentiation: how cells develop from stem cells into specialised cells.</p> <p>Chromosomes: structure of chromosomes</p> <p>Mitosis and the cell cycle: events in the cell cycle</p> <p>Stem cells: Therapeutic cloning, the use of stem cells in medicine and ethical issues related to their use.</p>
<b>Skills</b>	<p>Recognise, draw and interpret images of cells.</p> <p>Students should be able to carry out calculations involving magnification, real size and image size</p> <p>Students should be able to express answers in standard form if appropriate.</p> <p>Use prefixes centi, milli, micro and nano.</p>		<p>Evaluate the practical risks and benefits, as well as social and ethical issues, of the use of stem cells in medical research and treatments.</p>
<b>Assessment</b>	Topic tests.		Formal exam covering 'B1', Cells and Organisation