

KEVICC KS3 Curriculum:	Subject: Science	Key terms and vocabulary.
Year: 9 Term: Across the year	Topic: Biology	<i>Which words will be explicitly taught &amp; how frequently will understanding be checked? How will assimilation of new vocab be checked?</i>
<p><b>What is the essential knowledge from this unit? What do students need to remember and understand?</b></p> <p><u>Autumn term – Cells and Transport</u></p> <p>This unit introduces students to the common features of all cells from those in the smallest bacteria to giant redwoods as well as starting to identify the specialisations that allow complexity. The ability of cells to regulate the transport materials is crucial to maintain life and this is investigated.</p> <p>Key Practicals – using microscopes; investigating osmosis in plant cells</p> <p><u>Spring Term – Cell Division</u></p> <p>Students will investigate the process for cell division and specialisation.</p> <p>Themes include the cell cycle, differentiation of cell types in plant and animal cells; cloning plants and the special properties of stem cells and the ethical issues around them.</p> <p>Key practical – cloning plant tissues</p> <p><u>Summer term – Organisation and the digestive system</u></p> <p>Students will look at how organisms are organised into cells, tissues, organs and organ systems. The digestive system is studied in detail as an example of a complex system where different process require different conditions. Enzymes are introduced and their structure and function is described as well as the chemicals inside food.</p> <p>Key practicals: Testing for different chemicals in food and the effect of pH on enzyme activity.</p>		<p>Keywords:</p> <p>active transport, algae, alveoli, bacteria, cell membrane, cell wall, cellulose, chlorophyll, chloroplasts, cytoplasm, diffusion, eukaryotic cells, hypertonic, hypotonic, isotonic, mitochondria, nucleus, osmosis, partially permeable membrane, permanent vacuole, phloem, plasmolysis, prokaryotic cells, resolving power, ribosomes, sperm, stomata, turgor, ventilated, xylem.</p> <p>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.</p>
<p><b>What prior learning supports understanding of this content?</b></p> <p><u>Cells and Transport</u> – from Y7 students have already studies a unit on an introduction to cells that also included movement of nutrients.</p> <p><u>Cell Division</u> - In Y7 students looked at reproduction in plants and animals.</p> <p><u>Organisation and the Digestive system</u> – In Y7 students looked a body systems and Year 8 work included work on health and lifestyle that included diet and nutrition</p>	<p><b>How does this content link to future learning?</b></p> <p><u>Cells and Transport</u> – students go on to look at enzymes in more detail and the energy processes inside of cells.</p> <p><u>Cell Division</u> – students study the similarities and differences between cell division for growth and reproduction</p> <p><u>Organisation and the Digestive system</u> – the GCSE course looks at other organs and systems including the brain, eye, kidney and nervous system.</p>	
<p><b>Reading:</b> <i>Where in the unit are students supported to read complex academic text?</i></p> <p>Reading activities from textbook and comprehension activities in the integrated Skills Tests that run throughout the year. Scientific literacy also includes reading graphs and tables in order to extract meaning from data.</p>	<p><b>Writing:</b> <i>Independent writing tasks and how they are structured</i></p> <p>Writing skills include concise and accurate communication that includes appropriate keywords. Scientific literacy includes the ability to draw graphs and tables to effectively communicate data. Conclusions to practical work is the most important form of scientific communication.</p>	
<p><b>Key assessments:</b></p> <p>Biology questions in Autumn , Spring 1, Spring 2 and Summer assessments</p> <p>Skills tests 1 to 13 which are set as independent learning tasks.</p> <p><b>How will feedback be received?</b> Students will be given feedback via DIRT sheets after each topic, regular feedback on skills tasks 12 times a year and tests 4 times a year. The students will be actively involved in all of these processes via 'purple pen'.</p> <p><b>What will be seen in books?</b> Books will include notes on the content and practical/skills along with feedback via DIRT sheets (see above), skills sheets and tests will be found with purple pen relating to them all.</p>		<p>Vocabulary will be modelled by teachers and tested in periodic short tests and scientific literacy is marked during feedback. Scientific communication is directly reported to parents as part of the college report.</p>