



# YEAR 12 TERM 1

'An ambitious curriculum that meets the needs of all'

## Medium Term Planning - Topic: Adaptations for transport in animals

<b>Curriculum Intent</b>	<p>Developing knowledge from GCSE Biology or GCSE Combined Science, pupils will be taught, following National Curriculum guidelines, the following this topic:</p> <ul style="list-style-type: none"><li>• Features of a transport system</li><li>• Transport in mammals</li><li>• Structure &amp; function of blood vessels</li><li>• The heart</li><li>• Blood</li><li>• Transport of oxygen</li><li>• Transport of carbon dioxide</li><li>• Tissue fluid</li></ul> <p>Specified practical work:</p> <ul style="list-style-type: none"><li>• Dissection of a mammalian heart</li><li>• Scientific drawing of an artery and vein</li></ul>
<b>Skills/National Curriculum Links</b>	
<b>Spiritual, moral, social, and cultural development</b>	<p><b>SMSC:</b> Ethical issues surrounding dissection <b>PSHE/British Values:</b> Heart diseases <b>Skills Builder:</b> Interpretation of data</p>
<b>Numeracy</b>	<p>Calculation of heart rate Interpretation of cardiac cycle pressure graph</p>
<b>Literacy</b>	<p><b>Vocabulary Tier 2:</b> Cardiac, circulation, artery, vein, capillary, valve, affinity, cooperative, foetal <b>Vocabulary Tier 3:</b> Pulmonary, systemic, endothelium, tunica media, tunica externa, arteriole, venule, systole, diastole, sino-atrial node, atrio-ventricular node, electrocardiogram, erythrocyte, lymphocyte, haemoglobin, Bohr effect, chloride shift, carbaminohaemoglobin, tissue fluid, lymph, <b>Reading:</b> Students are given opportunity to develop their skills in specified tasks that develop disciplinary literacy. Throughout the A Level Biology course they develop their understanding of the requirements of exam questions and the key terminology in questions. In addition, they read practical methodology and translate this to actions in laboratory tasks. <b>Writing:</b> Students construct answers independently and through class teaching. Their answers range from single word answers to the planning and writing of 9-mark "extended writing" tasks that require linking of multiple concepts from a topic or across topics. These often develop students' ability to construct written evaluations of contrasting situations, or data, where the use of comparative connectives are required. <b>Oracy:</b> Students are regularly given the opportunity to practice their scientific vocabulary in class discussion, through choral response, pair or group discussion and in giving instruction to others during practical activities.</p>
<b>Becoming future ready</b>	<p><b>Careers/Employability:</b> A Level Biology students from Crompton House progress on to a wide range of undergraduate degrees, degree apprenticeships and into work. Opportunities to develop effective communication skills, concise written work, following written and verbal instructions as well as extending their problem solving skills are all key skills identified by business leaders for future success.</p>
<b>Adaptation</b>	<p>Throughout this topic, quality first teaching will provide adaptive teaching accessible to all students:</p> <p><b>By product:</b> Assessments have opportunities for students to achieve all grades, with structured questions and opportunities for development of extended writing for all abilities.</p> <p><b>By Intervention:</b> by providing different levels of supervision and support in theory and in practical lessons.</p> <p><b>By Progressive Questioning:</b> exploring pupils' understanding through interactive dialogue.</p> <p><b>By Grouping:</b> according to prior attainment, gender, social preference.</p> <p><b>By Task:</b> Pupils are involved in the identification of targets which are meaningful to them and in the selection of an appropriate task to develop specific skills further.</p> <p><b>By Offering Optional Activities:</b> In class or as homework, to extend learning.</p> <p>This QFT/SEND provision will be explicit within the lesson-by-lesson schemes of work.</p>
<b>QFT/SEND Provision</b>	
<b>Implementation Curriculum Delivery</b>	<p>To be able to:</p> <ul style="list-style-type: none"><li>• Explain why multicellular animals need transport mechanisms</li><li>• Explain the significance of and the difference between open and closed circulatory</li></ul>

<b>Learning Outcomes (Knowledge)</b>	<p>systems and single and double circulations</p> <ul style="list-style-type: none"> <li>• Explain the relationship between the structure and function of arteries, veins and capillaries</li> <li>• Describe the passage of blood through the heart</li> <li>• Describe the cardiac cycle and interpret graphs showing pressure changes during the cycle</li> <li>• Explain the electrical control of the heartbeat</li> <li>• <b>Describe the structure of blood cells</b></li> <li>• Describe the differences between blood, plasma, tissue fluid and lymph</li> <li>• Describe the role of <b>haemoglobin</b> in the transport of oxygen and carbon dioxide</li> <li>• Describe and explain the effects of raised carbon dioxide concentration on the oxygen dissociation curve</li> <li>• Describe the transport of carbon dioxide in terms of the chloride shift</li> <li>• Describe the formation of tissue fluid and its importance in the exchange of materials</li> </ul> <p>Red denotes interleaving; aspects of knowledge covered previously.</p>
<b>Current learning to be developed in the future within:</b>	<p>The kidney Respiration Immunology</p>
<b>Assessment</b>	<p>Refer to assessment maps for formative and summative assessment opportunities.</p>
<b>Impact</b>	<p>Attainment and Progress – Refer to assessment results / data review documentation.</p>

