



YEAR 13 TERM 1

'An ambitious curriculum that meets the needs of all'

Medium Term Planning - Topic: The nervous system

Curriculum Intent	
Skills/National Curriculum Links	<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"> • The components of the nervous system • The reflex arc • Nerve nets • Neurones • The nervous impulse • The synapse • The effects of drugs
Spiritual, moral, social, and cultural development	<p>SMSC: Drugs and their impact on the nervous system PSHE/British Values: Drugs and their impact on the nervous system Skills Builder: Practical work, independent investigation, data handling and analysis</p>
Numeracy	Interpretation of action potential graphs
Literacy	<p>Vocabulary Tier 2: nervous system, peripheral, stimulus, response, receptor, impulse, synapse, stimulant, sedative Vocabulary Tier 3: white matter, grey matter, dorsal root ganglion, sensory neurone, relay neurone, motor neurone, nerve net, axon, myelin sheath, Nissl granules, node of Ranvier, Schwann cell, dendrites, resting potential, polarised, depolarised, hyperpolarised, ions, voltage-gated channels, action potential, absolute refractory period, relative refractory period, threshold potential, neurotransmitter, organophosphate, psychoactive drugs, Reading: 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. Writing: 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. Oracy: 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>
Becoming future ready	Careers/Employability: 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.
Adaptation	Throughout this topic, quality first teaching will provide adaptive teaching accessible to all students:
QFT/SEND Provision	<p>By product: Assessments have opportunities for students to achieve all grades, with structured questions and opportunities for development of extended writing for all abilities. By Intervention: by providing different levels of supervision and support in theory and in practical lessons. By Progressive Questioning: exploring pupils' understanding through interactive dialogue. By Grouping: according to prior attainment, gender, social preference. By Task: 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. By Offering Optional Activities: In class or as homework, to extend learning. This QFT/SEND provision will be explicit within the lesson-by-lesson schemes of work.</p>

Implementation Curriculum Delivery	<p>To be able to:</p> <ul style="list-style-type: none"> • Understand that the nervous system controls and coordinates actions by detecting stimuli, processing the information and initiating responses. • Understand that stimuli are detected by receptors and responses are brought about by effectors. • Describe the structure of the mammalian spinal cord • Contrast the simple nerve net system of the Cnidarian <i>Hydra</i> with the human nervous system • Describe the passage of nervous impulses in a reflex arc • Describe the structure of a motor neurone • Explain the transmission of a nervous impulse in terms of how an action potential is generated • Describe the factors affecting the speed of conduction of the nervous impulse • Describe the synapse as a junction between two conducting cells • Explain synaptic transmission by means of the neurotransmitter acetylcholine • Explain how organophosphates and psychoactive drugs affect synaptic transmission
Learning Outcomes (Knowledge)	<p>Red denotes interleaving; aspects of knowledge covered previously.</p>
Current learning to be developed in the future within:	Homeostasis and the kidney
Assessment	Refer to assessment maps for formative and summative assessment opportunities.
Impact	Attainment and Progress – Refer to assessment results / data review documentation.

