**LANGDON PARK SIXTH FORM**

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| **Subject: Biology**In Biology we want our students to have an inquisitive mind and be curious about the world around them. | **Year: Y13** **Term 1** | **Topic: 5.1 Hormonal and Neuronal Communication****Enquiry Question: Why does damage to the spinal cord affect so many areas of the body?** |
| ***What and Why*?** The survival of organisms relies in part on their ability to respond to stimuli. This is achieved by communication within the body, which may be chemical and/or electrical. Both systems are covered in detail in this module. Students will have studied Nervous and Hormonal systems at GCSE but this will be the first time that they would have studied in detail how an impulse is generated and apply knowledge, understanding and other skills developed in this module to new situations to solve related problems. |

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| **Tier 2 Vocabulary**StimulusImpulseSensoryretention | **Tier 2 Vocabular**FrequencyReceptorRelayMotor | **Key terms**AcethycholineAction potentialEffectorNeuroneRefractory PeriodMyelinDepolarisation | **Numeracy:**Data and action potential graphsCalculation of speed of nervous transmission |

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| **Specification point** | **Pre-reading** | **Application and Assessment (date)** | **Independent learning**  | **Extension – Cultural Capital and Reading** |
| a) the roles of mammalian sensory receptors in converting different types of stimuli into nerve impulses. (b) the structure and functions of sensory, relay and motor neurones (c) the generation and transmission of nerve impulses in mammals. (d) the structure and roles of synapses in neurotransmission.e)the organisation of the mammalian nervous systemf) the structure of the human brain and the functions of its partsg) reflex actions h) the coordination of responses by the nervous and endocrine systemsi) the structure of mammalian muscle and the mechanism of muscular contraction.j) the sliding filament model of muscular contraction and the role of ATP.k) endocrine communication by hormones.l) the structure and functions of the adrenal glandsi) the histology of the pancreas m) how blood glucose concentration is regulated n) the differences between Type 1 and Type 2 diabetes mellitus.o)the potential treatments for diabetes mellitus.p) the effects of hormones and nervous mechanisms on heart rate | Consult your issued textbooks in the first instance, then look at other textbooks in the library for alternative diagrams, other examples or further explanations. <https://faculty.washington.edu/chudler/introb.html> | Required practicalWritten TaskPractical write up.Production of scientific drawings with annotations. End of unit assessment | Research and planning on practical work.A written task on effects of drugs on synaptic transmission.[www.seneca.co.uk](http://www.seneca.co.uk)<http://www.sumanasinc.com/webcontent/animations/neurobiology.html> | <http://www.conncad.com/gallery/spines_boutons_synapses.html>[h<http://outreach.mcb.harvard.edu/animations/synapse.swf>](https://www.dailymotion.com/video/x4fjy56)<https://www.biography.com/actor/christopher-reeve> |

**Pre-assessment content review**

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| I feel secure in | I need to focus on | My action plan |

**Pre-assessment skills review**

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| I feel secure in | I need to focus on | My action plan |

**Post-assessment review**

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| Weaknesses in content knowledge | Skills I need to focus on | My action plan |
| Retest / review – teacher and student comment |

**Revision planning**

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| Spec point | Notes complete | Revision materials | Past paper Qs  | Timed conditions |
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