YEAR 10 SCIENCE: BIOLOGY

Half Term 5 & 6

MAGHULL HIGH SCHOOL – CURRICULUM MAP

Unit: **Homeostasis and Response** **LESSONS**	1. What is homeostasis? 2. The human nervous system. 3. Reflex arc 4. Reaction times (req prac) 5. **The brain** 6. **The eye** 7. Control of body temperature	8. Human endocrine system 9. Control of blood glucose concentration 10. **Maintaining water and nitrogen balance in the body.** 11. Hormones in human reproduction	12. Contraception 13. Hormones to treat infertility (HT) 14. Negative feedback (HT) 15. **Plant hormones (req prac)** 16. **Uses of plant hormones**
Knowledge & Skills Development	• Definition of homeostasis including blood glucose concentration, body temperature and water levels as examples. • Label the parts of the human nervous system putting them in order from the start of a nervous action. • Classify actions as conscious or reflex. • Design an experiment to test reaction times, include variables and graph plotting. • Label a reflex arc. • Give advantages of reflex actions. • **Label the structures in the brain & detail functions of each.** • **Detail how neuroscientists have studied the brain over time.** • **Label the structures of the eye giving the function of each. Give details of accommodation and responses to light levels.** • **Give details of defects of the eye including myopia and hyperopia including how these are corrected.** • **Explain how body temperature is controlled using key words such as vasodilation, vasoconstriction, receptors.** • Define the endocrine system.		• Explain how blood glucose concentration is controlled when levels get too high or low. • Describe treatments and methods of control of diabetes. • **Explain how water and nitrogen levels in the body are controlled.** • **Role of the kidney including the structures and functions.** • **Effect of ADH on permeability of kidney tubules.** • **Treatment of kidney failure.** • List and give functions of the hormones involved in human reproduction. • Outline various methods of contraception and how they work. • HT – give details of hormones to treat infertility and explain how they work. • HT – outline negative feedback giving examples. • **The use of plant hormones to coordinate and control growth and responses to light and gravity. Limited to Auxins, Gibberellins and Ethene.** • **Use of plant hormones in agriculture and horticulture limited to Auxin, Ethene and Gibberellins.**
Assessment / Feedback Opportunities	**Formative Assessment** Teacher questioning Quizzes Exam style questions		**Summative assessment** End of topic assessment Exam questions in future end of topic assessments to assess recall

Key Vocabulary	Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest Homeostasis, Thermoregulatory centre, Negative feedback, 37°C, Vasodilation, Vasoconstriction, Capillaries, Endocrine system, Hormone, Pituitary Gland, Type 1 diabetes, Type 2 diabetes, Kidneys, Pancreas, Oestrogen, Ovulation, Testosterone, Menstrual Cycle, Follicle Stimulating Hormone (FSH), Luteinising Hormone (LH), Progesterone, Contraception, Central Nervous System (CNS), Receptor, Sensory neurone, Relay neurone, Motor neurone **Retina , Optic nerve Sclera Cornea Iris Pupil Ciliary muscles, Suspensory ligaments, Accommodation, Focus, Refract Myopia, Hyperopia Lens, Spectacles, laser surgery, contact lens, Cerebral cortex, Cerebellum Medulla, Tropism, Gravitropic, Phototropic, Auxins, Weed killer, Ethene, Gibberellins, Tobacco-mosaic virus (TMV), Aphid, Deficiency disease, Chlorosis, Mimicry, Mineral ions, Herbivore**
Literacy/Reading Opportunities	Subject specific vocabulary introduced before reading of related texts Word etymology from Latin and Greek roots Reading of simple and complex sentences, paragraphs, articles Scientific writing including structuring methods, comparisons and evaluations
Cross Curricular Themes	Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators
Personal Development (Including British Values, RSE, Citizenship)	The facts about the full range of contraceptive choices, efficacy and options available the facts around pregnancy including miscarriage (I6) That there are choices in relation to pregnancy (with medically and legally accurate, impartial information on all options, including keeping the baby, adoption, abortion and where to get further help) (I7) How the different sexually transmitted infections (STIs), including HIV and AIDs, are transmitted, how risk can be reduced through safer sex (including through condom use) and the importance of and facts about testing (I9)
Career Opportunities	Nursing, medicine, paramedic, sexual health worker, hospital lab worker, optician, horticulture.