Barnsley Academy – (Year 11 and B5 - Homeostasis) Curriculum
Scheme of Work – 2023-24

Term 1 – Week 1				
	1	2	3	4
Lesson Focus	Human Nervous system	Reflex arc	Reaction time required practical	The Brain
Prerequisite Knowledge	Organ systems Basic cell biology Nerve cells (specialised)	Organ systems Basic cell biology Nerve cells (specialised)	Variables in a practical Hypothesis Plotting a graph	Cell biology B1 Specialised cells – nerves/ neurones Reflex vs conscious action B5
Core Knowledge	State the stimuli and location of receptors. Collect data on skin receptors and make conclusions. Describe the reaction pathway in response to a stimulus.	Describe what happens at a synapse Label a diagram of a reflex arc, using key terms correctly Describe the reflex response to stated stimuli	Identify variables to change, measure and control Collect, record and process data accurately Display data collected Write a conclusion using evidence collected	Name the main parts of the brain and describe their function. Suggest the damaged part of the brain from information provided. Identify the benefits and risks of procedures carried out on the brain and nervous system. Evaluate the use of cloned stem cell therapy for treating brain disorders.
Expert Model /Guided Practice/Agreed Approach (Procedural Knowledge)	Pathway though the nervous system for planning an answer Stimulus –receptor – sensory – Brain – Motor – Effector	Pathway though the nervous system for planning an answer Key difference between conscious and reflex response Slide 20 – expert model for 6 markers	Teacher demo of ruler drop, explaining the reason for each step Video of ruler drop Expert model of plotting graphs	Expert model on the skill ‘Evaluate’. Slides 31 and 32 provide a WAGOLL for a good evaluation question.
Independent Practice	IP 1 – Match the receptor to the organ IP2 – Mini practical ion pairs IP3 – reaction pathway for 2 stimuli	IP1 – label the synapse and describe what happens here IP2 – Label the reflex arc IP3- Describing a reflex response	IP1 – Identifying variables IP2 – Carry out the practical IP3 – plot a graph IP4 – Exam question	IP1 – Memory task – label the brain and describe each lobe function. IP2 – Read the information on treating the brain, identify the risks and benefits of each.

		IP4 –Exam question		
Assessment (Informal/Formal)	Live marking WB checks Circulation	Live marking WB checks Circulation Exam question	Live marking WB checks Circulation Exam question	Live marking WB checks Circulation Exam question
Resources			https://www.youtube.com/watch?v=Fm02i4vEi5Q	
Specific SEN(D)/EAL support				

Term 1 Week 2				
	1	2	3	4
Lesson Focus	The eye and vision	Correcting vision	Hormones and glands	Glucose regulation
Prerequisite Knowledge	8PL – light Nervous system B5	8PL – Refraction	Organ systems Basic cell biology	Osmosis – concentration of solutions Solute, solvent and solution
Core Knowledge	Label the parts of the eye and describe their functions. Describe how an image is focussed onto the retina. Describe how the process of accommodation allows the eye to focus on near and far objects.	Describe 2 common vision defects. Interpret ray diagram to explain what causes long and short sighted vision. Explain how vision defects can be corrected. Evaluate different remedies for vision problems.	Describe how the endocrine system brings about responses in the body. Label the main endocrine glands of the body and their functions. Compare hormonal responses with nervous responses. Explain the concept of negative feedback and describe the action of thyroxine and adrenaline (HT)	Describe how blood glucose levels are monitored. Explain how insulin controls blood glucose levels in the body **(HT) Explain the role of glucagon in blood glucose level maintenance and how negative feedback is used.** Describe and explain a blood glucose graph.

Expert Model /Guided Practice/Agreed Approach (Procedural Knowledge)	Slide 23 – Modelling accommodation of the eye	Slide 15 – Expert model – lenses and why we use them.	Video endocrine system Slide 24 expert model negative feedback	Slides 9 – 11 animation and teacher demo of high and low blood glucose concentrations. Scaffolded steps – slide 19
Independent Practice	IP1 - Describe the reaction pathway that causes the pupil size to decrease (recap/ practice from previous lesson) IP2 – Read the descriptions of the structure of the eye and match them to the diagram. IP3 -Describe how an image is formed on the retina and sent to the brain. IP4- Describe how the eye accommodates to see close and far away objects.	IP1 – compare the ray diagrams that represent long and short sightedness, include where light enters the eye, refraction, focal point. IP2 – Explain how corrective lenses can be used to treat myopia. IP3 – Exam questions	IP1 – Describe what a hormone is. IP2 – label endocrine system and describe the role of each. IP3 – Exam question thyroxin IP4- compare the endocrine and nervous system	IP 1 – Describe the bodies response to high blood glucose levels. IP2 – 6-mark question, controlling blood glucose. IP3 – Exam question
Assessment (Informal/Formal)	Live marking, exam question, WB checks, circulation	Live marking, exam question, WB checks, circulation	Live marking WB checks Circulation Exam question	Live marking, exam question, WB checks, circulation
Resources				
Specific SEN(D)/EAL support				Scaffold on slide 18 to support written answer

Term 1 Week 3				
	1	2	3	4
Lesson Focus	Thermoregulation	Glucose regulation	Kidneys and osmoregulation	Kidney transplants and treatment
Prerequisite Knowledge		Osmosis – concentration of solutions Solute, solvent and solution	Cells, tissues, organs B1 Osmosis and diffusion B1	
Core Knowledge	Describe how blood temperature is monitored. Describe some of the body's temperature control mechanisms. Explain how the control mechanisms work.	Describe how blood glucose levels are monitored. Explain how insulin controls blood glucose levels in the body **(HT) Explain the role of glucagon in blood glucose level maintenance and how negative feedback is used.** Describe and explain a blood glucose graph.	Describe ways in which water is gained and lost by the body and how this is monitored. Explain the role of ADH in water balance. Describe the function of the kidneys in producing urine. Describe and explain the differences in blood composition before and after filtration.	
Expert Model /Guided Practice/Agreed Approach (Procedural Knowledge)	Slide 6 – Expert model on negative feedback loop. Slide 13 – Expert model on exam technique (describe and explain).	Slides 9 – 11 animation and teacher demo of high and low blood glucose concentrations. Scaffolded steps – slide 19	Slides 10-13 modelling absorption/ filtration	
Independent Practice	IP1 – Describe and explain the response to an increase in temperature. IP2 – Describe and explain the response to a decrease in temperature. IP3 – Exam question.	IP 1 – Describe the bodies response to high blood glucose levels. IP2 – 6-mark question, controlling blood glucose. IP3 – Exam question	IP1 – Describe how water levels are controlled in the body. IP2 – How the kidneys produce urine. IP3 – Exam questions.	

Assessment (Informal/Formal)	Live marking, exam question, WB checks, circulation	Live marking, exam question, WB checks, circulation	Live marking, exam question, WB checks, circulation	Live marking, exam question, WB checks, circulation
Resources				
Specific SEN(D)/EAL support	Slide 21 – scaffold for answering 6 marker on thermoregulation.	Scaffold on slide 18 to support written answer		

Term 1 Week 3				
	1	2	3	4
Lesson Focus	Menstrual cycle	Fertility treatment (HT)	Contraception	Plant hormones
Prerequisite Knowledge	Female reproductive organs sand hormones	Hormones in human reproduction	7BR – male and female reproductive organs Female hormones	Plant cells, tissues and organs B2 – cross section of leaf What is a hormone
Core Knowledge	Describe the roles of male and female reproductive hormones. Describe the stages of the menstrual cycle. Name and state the role of hormones involved in the menstrual cycle. • Explain the interactions of FSH, LH, oestrogen and progesterone in the menstrual cycle (HT ONLY) Extract and use information from graphs showing hormone levels (HT ONLY)	Describe the roles of male and female reproductive hormones. Describe the stages of the menstrual cycle. Name and state the role of hormones involved in the menstrual cycle. **Explain the interactions of FSH, LH, oestrogen and progesterone in the menstrual cycle (HT ONLY)** **Extract and use information from graphs showing hormone levels (HT ONLY)**	Describe how different methods of contraception prevent pregnancy. Interpret data on the effectiveness of contraception. Evaluate different contraceptive methods.	Recall the name and function plant hormones. Explain the responses to light and gravity by plants. Investigate the effect of light or gravity on seedlings.

Expert Model /Guided Practice/Agreed Approach (Procedural Knowledge)	Slide 24 – naming the steps to answer exam question	Slide 8 – expert model of steps in IVF	Slide 24 – expert model of command word 'Evaluate'	Slide 13 – modelling tropisms
Independent Practice	IP1 – label the reproductive organs IP2 – Describe the stages of the menstrual cycle. IP3 – Exam question (6 marks)	IP1 – Using the image describe the process of IVF. IP2 – Evaluate process of IVF. IP3- Interpret IVF data	IP1 – Describing hormonal vs non-hormonal contraceptives. IP2 – Exam question IP3 – Evaluate risks and benefits of contraceptives. IP4 – Exam question	IP1 – Discuss in pairs the responses of each scenario provided. IP2 – Explain the growth response shows for each diagram. IP3- Darwin's tropism exam question (Describe and explain). IP4 – use data to answer questions on RP. IP5 – Exam questions.
Assessment (Informal/Formal)	Live marking, exam question, WB checks, circulation	Live marking, exam question, WB checks, circulation	Live marking Exam questions WB checks	Live marking, exam question, WB checks, circulation
Resources	Video – menstrual cycle			Slide 25 – video embedded in PP. RP growth of seedlings.
Specific SEN(D)/EAL support	Higher and foundation version of lesson			