



Biology KS3 Curriculum

Year 7				
Biology				
Content: What will students know	Cells. How to use a microscope, animal and plant cells, specialised cells, multicellular organisms, unicellular organisms, diffusion.	Reproduction. Structure and function of reproductive systems in humans and plants. Fertilisation, foetal development, maternal health, birth.	Food and Digestion. Structure and function of the digestive system, balanced diet, food groups, enzymes	Microbes. Different types of microbe, helpful and harmful microbes, disease, immune system, vaccines, how diseases are spread.
Skills: What will students be able to do	Use a microscope, prepare slides, plan an experiment, label the parts of a cell, compare and contrast animal and plant cells, recognise specialised cells.	Label diagrams, relate structure to function, discussion skills, identification of factors needed for health in pregnancy.	Relate structure to function in digestive system. Perform and interpret food tests. Explain what makes a balanced diet, interpret data.	Use agar plates to grow bacteria safely, evaluate scientific models.
Other: Literacy/Numeracy/ Ethos	Concept of size, magnification, keywords identified each lesson	To correct misconceptions, use of biological terminology, data interpretation.	Data interpretation, qualitative testing. Keywords identified each lesson	Communication of scientific ideas, orders of magnitude introduced, links to everyday experiences.
Assessment:	End of topic test. AfL in lessons	End of topic test. AfL in lessons	End of topic test. AfL in lessons	End of topic test. AfL in lessons



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Year 8				
Biology				
Content: What will students know	Variation Types of variation, selective breeding, classification, DNA introduction, How science works - DNA discovery.	Breathing and Respiration - Aerobic and anaerobic respiration, breathing, respiratory system structure and function.	Plants and Ecosystems - Photosynthesis, parts of the plant, biodiversity, food chains and bioaccumulation.	Bones and Muscles - Structure of bone, skeleton, muscles, movement, muscle investigation, space travel and effect on bones and physiology.
Skills: What will students be able to do	Research skills - Rosalind Franklin, interpret data from graphs. Be able to select the correct graph type for a given set of data, classify animals using a key. Discuss ethical issues surrounding selective breeding.	Investigation skills, exercise practical. Evaluating models - lung and bell jar model.	Use real life examples to illustrate issue with bioaccumulation. Discuss impact of biodiversity loss.	Label skeleton, make models of muscles to explain how antagonistic muscles work, test bone using flame tests - link to chem. Link to Physics space topic astronaut bone density issues.
Other: Literacy/Numeracy/ Ethos	Graphs - continuous and discontinuous data. How science works - DNA discovery. Women in science.	Keywords used throughout. Links to health and real life experience.	Keywords. Use of pyramid diagrams to represent feeding relationships. Impact on environment - link to everyday life.	Keywords used throughout, links to health and real life experiences.
Assessment:	End of topic test. AfL in lessons	End of topic test. AfL in lessons	End of topic test. AfL in lessons	End of topic test. AfL in lessons.



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	Year 9: Biology					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Content: What will students know	B1 - Microscopes, cells, electron microscopes, primitive cells, DNA structure and function, enzymes, respiration.		B1 -Food testing PAGs and photosynthesis	B1 How to test a leaf for starch, photosynthesis limiting factors.	B2 - Diffusion, osmosis, completing the osmosis PAG	B2 Active transport, cell division, stem cells. Revision for end of year exam.
Skills: What will students be able to do	How to use a microscope correctly. How to stain and prepare samples to be seen under the microscope. How to draw from a microscope, how to calculate magnification and image size. How to conduct enzyme experiments, variables and data interpretation.		Qualitative testing of foods, data interpretation, forming conclusions, making predictions.	Focus on practical skills and data interpretation.	Define osmosis and make prediction about loss and gain of water in a given scenario. Calculate percentage difference and make comparisons.	Research skills - stem cell technologies
Other: Literacy/Numeracy/ Ethos	Keywords for the topic highlighted each lesson. Graph drawing and data interpretation. Standard form and rearranging equations for magnification. Orders of magnitude. Moved protein synthesis into triple groups in year 10 as a difficult concept.		Graphs, data interpretation. Keywords for the topic highlighted each lesson.	Data interpretation. Inverse law for light intensity	Percentage difference, accuracy, variables	Keywords for the topic.
Assessment:	Mini test on DNA and cells after half term. Educake homeworks		Test on all topics so far end of Jan and test review.	B1 end of unit assessment	AFL, homeworks, educake	End of year exam