

Year 9 Curriculum Map : Biology			
	Autumn	Spring	Summer
Assessment Objectives	AO1 - Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures (40%) AO2 - Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures. (40%) AO3 - Analyse information and ideas to: interpret and evaluate; make judgements and draw conclusions; develop and improve experimental procedures. (20%)		
Unit Length	Topic: B7 – Cell Biology and Organisation 2	Topic: B8 – Health and Disease.	Topic: B9 Ecology.
Key Learning Outcomes	1) Prokaryotic and Eukaryotic cells 2) Calculating Magnification 3) Specialised cells 4) Cell transport 5) Circulatory system 6) Respiratory system 7) Enzymes and digestion 8) Progress assessment 9) Nervous system 10) Reflex actions 11) Endocrine system 12) Leaf organisation 13) Gas exchange in the leaf 14) Plant transport systems 15) End of Unit assessment. 16) Reteach and DIRT	1) Health 2) Mental health 3) Mental health additional reading 4) Pathogens and communicable disease 5) Growing bacteria 6) Practical: growing bacteria 7) Culturing bacteria problem solver 8) Culturing bacteria problem solver DIRT 9) HIV treatments 10) Plant communicable diseases 11) Progress Assessment 12) Body defences 13) White blood cells 14) Vaccinations 15) Vaccinations DIRT 16) Non-communicable disease 17) Cancer 18) Cancer treatments 19) Recreational drugs 20) Inherited disease 21) Other health conditions 22) End of Unit assessment. 23) Reteach and DIRT	1) Ecosystems 2) Habitats 3) Competition 4) Making an ecosystem 5) Ecosystem DART 6) Adaptations 7) Progress assessment 8) Discovering adaptations 9) Natural selection problem solver 10) Natural selection problem solver DIRT 11) Sampling 12) Sampling practical 13) Human impact 14) Improving human impact 15) End of Unit assessment. 16) Reteach and DIRT
Prior knowledge	<u>Year 6</u> Transport of nutrients in blood Single celled organisms in living things Year 7:	<u>Year 6</u> Single celled organisms in living things Year 7:	<u>Year 3</u> Plant reproduction inc. Parts/functions <u>Year 4</u> Constructing food chains and understanding predators and prey

	<ul style="list-style-type: none"> • Cells as the fundamental unit of living organisms, including how to observe, interpret and record cell structure using a light microscope • The functions of the cell wall, cell membrane, cytoplasm, nucleus, vacuole, mitochondria and chloroplasts • The similarities and differences between plant and animal cells • The role of diffusion in the movement of materials in and between cells • The structural adaptations of some unicellular organisms • The hierarchical organisation of multicellular organisms: from cells to tissues to organs to systems to organisms • Reproduction in humans and puberty <p>Year 8:</p> <ul style="list-style-type: none"> • The structure and functions of the gas exchange system in humans, including adaptations to function • The mechanism of breathing to move air in and out of the lungs, using a pressure model to explain the movement of gases, including simple measurements of lung volume • The dependence of almost all life on Earth on the ability of photosynthetic organisms, such 	<ul style="list-style-type: none"> • Unicellular organisms • The effect of lifestyle on the developing foetus • Barrier methods of contraception <p>Year 8:</p> <ul style="list-style-type: none"> • The structure and functions of the gas exchange system in humans, including adaptations to function • The mechanism of breathing to move air in and out of the lungs, using a pressure model to explain the movement of gases, including simple measurements of lung volume • The dependence of almost all life on Earth on the ability of photosynthetic organisms, such as plants and algae, to use sunlight in photosynthesis to build organic molecules that are an essential energy store and to maintain levels of oxygen and carbon dioxide in the atmosphere • <p>Year 9 unit 1:</p> <ul style="list-style-type: none"> • Prokaryotic cells and the structure of bacteria 	<p><u>Year 4</u> Describe the positive and negative impact of humans on the environment</p> <p><u>Year 7</u> What an ecosystem is and a basic understanding of interdependence Knowledge of how to use a quadrat and basic sampling techniques</p>
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CEIAG Specific careers links	Scientific research Medicine Engineering	Scientific research Medicine Epidemiologist Bioinformatics	Scientific research Ecologist
RRSA	Article 14: Freedom of thought, belief and religion Article 24: Health and the Health services Article 28: Right to education Article 29: Goals of education Article 27: Adequate standard of living	Article 14: Freedom of thought, belief and religion Article 24: Health and the Health services Article 28: Right to education Article 29: Goals of education Article 27: Adequate standard of living	Article 14: Freedom of thought, belief and religion Article 28: Right to education Article 29: Goals of education Article 27: Adequate standard of living
Cross curricular links	Geography, Mathematics, Chemistry, Careers	Geography, Mathematics, Chemistry, Careers	Geography, Mathematics, Chemistry, Careers
Useful websites/ videos	https://www.cnet.com/news/what-happens-to-the-unprotected-human-body-in-space/ - Pressure in space. https://www.telegraph.co.uk/travel/cruises/news/inside-symphony-of-the-seas-worlds-largest-cruise-ship/ - Cruise ship https://sciencing.com/can-oceans-pressure-crush-you-12458.html - Pressure in the ocean	https://www.scientificamerican.com/article/north-poles-largest-ever-ozone-hole-finally-closes/ - Largest ever ozone hole closes (UV radiation link)	https://www.bbc.co.uk/bitesize/guides/zc9q7ty/revision/1 Particles BBC bitesize

Wider Reading	Reading: https://spaceplace.nasa.gov/jupiter/en/ Pressure on Jupiter https://news.softpedia.com/news/Why-Cheetah-is-the-Fastest-Land-Animal-69322.shtml Spine of a Cheetah https://www.nasaspaceflight.com/2020/05/virgin-orbit-first-orbital-launch-launcherone/ - Rocket launch https://www.edgarsnyder.com/car-accident/cause-of-accident/cell-phone/cell-phone-statistics.html - Car accident	'The Martian by Andy Wier. Astrophysics for people in a hurry. Neil Degrasse Tyson	https://www.livescience.com/58839-archimedes-principle.html - The story of Archimedes and his irregular density theories
Literacy Programme	<ul style="list-style-type: none"> • Decode it NOW • Guided practice/model answers • Sentence Starters • Writing strategies 	<ul style="list-style-type: none"> • Decode it NOW • Guided practice/model answers • Sentence Starters • Writing strategies 	<ul style="list-style-type: none"> • Decode it NOW • Guided practice/model answers • Sentence Starters • Writing strategies
Independent Learning Tasks	Mind-map revision homework Retrieval practice homework Knowledge Organiser practice Questions. Selective reading activity. Points grid ILT.	Mind-map revision homework Retrieval practice homework Knowledge Organiser practice Questions. Selective reading activity. Points grid ILT.	Mind-map revision homework Retrieval practice homework Knowledge Organiser practice Questions. Selective reading activity. Points grid ILT.