Year 10 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:** B1 – Cell Biology	**Topic:** B2 – Organisation.	**Topic:** B3 – Infection and Response .	**Topic:** B4 – Bioenergetics
Key Learning Outcomes	1) Cell structure 2) Required practical: Microscopy 3) Microscopes 4) Magnification 5) Stem cells 6) Specialised cells 7) Mitosis 8) Progress assessment 9) Progress assessment DIRT 10) Culturing microorganisms (TRIPLE) 11) Required practical: Culturing microorganisms 12) Diffusion 13) Surface area and Volume Calculations 14) Required Practical: Osmosis 15) End of Unit 16) End of Unit DIRT	1) Organisation principles 2) Digestive system 3) Enzymes 4) Required practical: Food tests 5) Required practical: Enzyme and pH 6) The heart 7) Blood and vessels 8) Progress assessment 9) Progress assessment DIRT 10) CHD 11) The respiratory system 12) Exchange surfaces 13) Plant organisation 14) End of Unit 15) End of Unit DIRT	1) Microorganisms and pathogens 2) Protecting the body 3) White blood cells 4) Monoclonal antibodies 5) Cancer 6) Development of drugs 7) New drugs 8) Progress assessment 9) Progress assessment DIRT 10) Required Practical: Antibiotics 11) Vaccination 12) Maria 13) Plant disease 14) End of Unit 15) End of Unit DIRT	1) Respiration and metabolism 2) Photosynthesis 3) Starch testing 4) Progress assessment 5) Progress assessment DIRT 6) Limiting factors 7) Required practical: Limiting factors 8) End of Unit 9) End of Unit DIRT
Prior knowledge	<u>Year 6</u> Transport of nutrients in blood Single celled organisms in living things Year 7: • 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	<u>Year 6</u> Single celled organisms in living things Year 7: • Unicellular organisms • The effect of lifestyle on the developing foetus • Barrier methods of contraception Year 8: • 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	<u>Year 2:</u> • Find out about and describe the basic needs of animals, including humans, for • Survival (water, food and air) • describe the importance for humans of exercise, eating the right amounts of different • Types of food, and hygiene. <u>Year 4</u> : • Describe the positive and negative impact of humans on the environment <u>Year 9:</u> • What is meant by the term ‘good health’ (physical and mental health)? • Communicable diseases. What pathogens are and how they can be spread between organisms. • Culturing bacteria • Describe examples of communicable diseases in plants and animals • Describe defences against communicable diseases • Non-communicable diseases including, CHD, COPD, cancer	<u>Year 7</u> • 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 <u>Year 8</u> • Cell structure • Bioenergetics <u>Year 9</u> • What is the structure and functions of prokaryotic and eukaryotic cells?

	tissues to organs to systems to organisms • Reproduction in humans and puberty Year 8: • 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	levels of oxygen and carbon dioxide in the atmosphere • Year 9: • What is the structure and functions of prokaryotic and eukaryotic cells? • What are adaptations of key specialised cells? • How are substances transported in and out of cells? • How is the digestive system adapted for the absorption of food? • How do enzymes support in the breakdown of food? • How is the circulatory system adapted for transporting substances around the body?		• What are adaptations of key specialised cells? • How are substances transported in and out of cells? • How is the digestive system adapted for the absorption of food? • How do enzymes support in the breakdown of food? • How is the circulatory system adapted for transporting substances around the body? •
CEIAG **Specific careers links**	Scientific research Medicine Engineering	Scientific research Medicine Dermatologist	Scientific research Immunologist	Scientific research Metabolic researcher
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	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	Chemistry, Mathematics, Careers
Useful websites/videos	https://www.savemyexams.co.uk/gcse/biology/aqa/18/revision-notes/1-cell-biology/1-1-cell-structure/1-1-1-eukaryotes--prokaryotes/	https://www.savemyexams.co.uk/gcse/biology/aqa/18/revision-notes/2-organisation/2-1-organisation-digestion/2-1-1-principles-of-organisation/	https://www.savemyexams.co.uk/gcse/biology/aqa/18/revision-notes/4-bioenergetics/4-1-photosynthesis/4-1-1-photosynthetic-reaction/	https://www.savemyexams.co.uk/gcse/biology/aqa/18/revision-notes/3-infection--response/3-1-communicable-diseases/3-1-1-communicable-infectious-diseases/
Wider Reading	https://www.theverge.com/2022/5/26/23142769/tissue-engineering-growing-cells-mobile-robot-skeleton	https://www.bbc.co.uk/news/science-environment-61501577	https://www.bbc.co.uk/news/uk-northern-ireland-61593051	https://www.bbc.com/news/uk-england-cambridgeshire-61443073
Literacy Programme	• Decode it NOW • Guided practice/model answers • Sentence Starters • Writing strategies	• Decode it NOW • Guided practice/model answers • Sentence Starters • Writing strategies	• Decode it NOW • Guided practice/model answers • Sentence Starters • Writing strategies	• 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.	Mind-map revision homework Retrieval practice homework Knowledge Organiser practice Questions. Selective reading activity. Points grid ILT.