

# Curriculum Planning

## Subject: Biology

1 year Plan

# Year 1

Time	Key Subject Content	Sequencing	Rationale	Careers, Industry Links and Cultural Capital	Reading	SEMH
Half Term 1: Sep – Oct	Biology 1: Cells and Organisation	Animal and plant cells, looking at onion and cheek cells, prokaryotes, specialised cells, light and electron microscopes, magnification, cell division, stem cells, diffusion, exchanging materials, osmosis, osmosis required practical, active transport, organisation in the human body, food tests, enzymes, digestive enzymes, enzymes required practical, the circulatory system, the heart, the breathing system, the blood, heart valves and coronary heart disease.	<p>Cells are the building blocks of all living organisms. Knowledge of cell structure is needed to understand life processes. Basic knowledge of cell structure and function is needed to access the rest of the content. The topics are taught in this sequence as it builds on knowledge and leads to the higher level content.</p> <p>Once cell structure, function and transport processes are understood, we start to look at how the different systems work. We look at the functions of the systems and how cell function complements each one</p>	<p>Science careers displayed around the science laboratory and throughout school. Pupils are introduced to the idea of scientific research and how this impacts our knowledge of the world around us.</p> <p>Visit by Medical Mavericks</p> <p>Pupils are introduced to healthcare careers through introduction of activities in which they are asked to take the role of .... Diversity of science careers is introduced with the inclusion of plant science.</p>	<p>Pupils are provided with opportunities to learn through comprehension and DARTS exercises. Pupils are encouraged to participate in active reading throughout the course. Keywords and Root words displayed prominently in the classroom . Pupils are given regular opportunities to practice exam style questions with a focus on understanding command words and using science specific language in their answers</p>	<p>Lesson plans take into account individual and group needs as determined by BOXALL profiles. Activities to support this include: Encouraging pupils to be respectful while others are giving an opinion in the form of debates. Encouraging interest in the natural world through engaging and relevant activities.</p>

				<p>Again, pupils are asked to complete work in a given role – Journalist , gardener, farmer etc</p>	<p>Pupils are encouraged to take part in shared reading of texts with consideration given to pupil reading age and ability.</p>	
<p>Half Term 2: Oct – Dec</p>	<p>Biology 1: Infection and Response,</p>	<p>Health, non communicable diseases, cancer, plant tissues, plant organs, transpiration, communicable diseases, human defence systems, vaccination, painkillers, antibiotics, drug development, plant defences, photosynthesis, controlling photosynthesis, respiration and responding to exercise</p>	<p>Basic knowledge of bacteria and viruses and how they cause illness (again links back to cells). This then leads on to different diseases and what causes them. We then look at how the body fights against diseases and how we vaccinate against diseases and treat diseases. We also look at plant diseases and defences which links back to plant cells. Again, we build on basic knowledge and understanding to working on applying the knowledge to different contexts.</p> <p>Knowledge of cells and enzymes needed for photosynthesis. Knowledge needed of the circulatory system, enzymes cells and the digestive system to access this topic.</p>	<p>Pupils take on the role of various health professionals whilst completing tasks to demonstrate understanding</p>	<p>Pupils are provided with opportunities to learn through comprehension and DARTS exercises. Pupils are encouraged to participate in active reading throughout the course. Keywords and Root words displayed prominently in the classroom . Pupils are given regular opportunities to practice exam style questions with a focus on understanding command words and using science specific language in their answers Pupils are encouraged to</p>	<p>Lesson plans take into account individual and group needs as determined by BOXALL profiles. Activities are planned to address strands A - E</p>



					take part in shared reading of texts with consideration given to pupil reading age and ability.	
Half Term 3: Jan – Feb	Biology 2: Homeostasis and Inheritance	Homeostasis, senses and stimuli, the nervous system, the reflex arc, reflex actions required practical, the endocrine system, diabetes, menstrual cycle, contraception, sexual and asexual reproduction, meiosis, DNA and the genome, inheritance, punnet squares, inherited diseases, selective breeding, genetic engineering, evolution, natural selection, fossils, extinction, antibiotic resistant bacteria and classification.	Builds on knowledge of cells, and organisation. A basic understanding of reproduction and meiosis is needed to understand how characteristics are inherited and how genetic diseases are passed on. We then look at how we can use that knowledge for selective breeding and genetic engineering. Students will need to know the structure of DNA to understand evolutionary theory. They also need basic knowledge of how humans impact the Earth to understand the reasons for extinction.	Science careers displayed around the science laboratory and throughout school. Pupils are introduced to the idea of scientific research and how this impacts our knowledge of the world around us. Pupils are introduced to healthcare careers through introduction of activities in which they are asked to take the role of ....	Pupils are provided with opportunities to learn through comprehension and DARTS exercises. Pupils are encouraged to participate in active reading throughout the course. Keywords and Root words displayed prominently in the classroom . Pupils are given regular opportunities to practice exam style questions with a focus on understanding command words and using science specific language in their answers Pupils are encouraged to take part in shared reading of	Lesson plans take into account individual and group needs as determined by BOXALL profiles. Activities are planned to address strands A - E

					texts with consideration given to pupil reading age and ability.	
Half Term 4: Feb – April	Biology 2: Ecology	Communities and competition, abiotic and biotic factors, adaptations, sampling techniques, producers, consumers, feeding relationships, carbon cycle, water cycle and biodiversity.	Knowledge of classification and the factors affecting where organisms are found is needed to understand adaptations, decay, sampling techniques, the cycles and biodiversity. This topic brings all knowledge of reactions learnt so far so that we can look at how to make reactions more efficient, maximising product and profit.	Science careers displayed around the science laboratory and throughout school. Pupils are introduced to the idea of scientific research and how this impacts our knowledge of the world around us. Pupils are introduced to healthcare careers through introduction of activities in which they are asked to take the role of ....	Pupils are provided with opportunities to learn through comprehension and DARTS exercises. Pupils are encouraged to participate in active reading throughout the course. Keywords and Root words displayed prominently in the classroom . Pupils are given regular opportunities to practice exam style questions with a focus on understanding command words and using science specific language in their answers Pupils are encouraged to take part in shared reading of texts with consideration	Lesson plans take into account individual and group needs as determined by BOXALL profiles. Activities are planned to address strands A - E

					given to pupil reading age and ability.	
Half Term 5: April – May	Revision	Revision of key topics and external exams			Pupils are given regular opportunities to practice exam style questions with a focus on understanding command words and using science specific language in their answers	Lesson plans take into account individual and group needs as determined by BOXALL profiles. Activities are planned to address strands A - E
Half Term 6: June – July	Revision	Revision of key topics and external exams				Lesson plans take into account individual and group needs as determined by BOXALL profiles. Activities are planned to address strands A - E