

Science Overview - Biology

Year 8

	Term 1	Term 2	Term 3
Topic	<ul style="list-style-type: none"> · Respiration · Unicellular Organisms and diffusion · Photosynthesis 	<ul style="list-style-type: none"> · Food groups and deficiency diseases · Ventilation · Drugs 	<ul style="list-style-type: none"> · Plant reproduction · Human Impact
Key Concept	Cells and Cellular Processes	Biological systems for life	Organisms and their interactions with the environment
Learning Objectives	<ul style="list-style-type: none"> · State the equation for aerobic respiration, anaerobic respiration, and fermentation. · State the features of protoctists. · Describe the process of diffusion. · Describe and explain the main adaptations of plants. · Describe the process of photosynthesis. 	<ul style="list-style-type: none"> · Describe the sources and functions of the main food groups. · Describe how to measure energy content in foods. · Explain how to test foods for different food groups. · State the main deficiency diseases. · Describe the structure of the gas exchange system in humans. · Explain the process of inhalation and exhalation. · State how the blood transports oxygen and dietary components. · Describe the effect of exercise, asthma and smoking on the gas exchange system. · State the different categories of drug. · Describe the effects of common stimulants and depressants on the body. 	<ul style="list-style-type: none"> · State the difference between sexual and asexual reproduction. · Describe the processes of fertilisation, seed dispersal and germination. · Describe the consequences of farming on the environment.
Scaffolding SEND	glossaries, targeted questions, knowledge organisers, recall quizzes	glossaries, targeted questions, knowledge organisers, recall quizzes	glossaries, targeted questions, knowledge organisers, recall quizzes
Key Vocabulary	bacteria, algae, concentration, pasteurisation, diffusion.	carbohydrates, starch, sugar, fats, oils, obesity, starvation, lipids, proteins,	inherited, ovary, fertilisation, pollination, embryo, germinate, stigma, style, ovule,

	binary fission, chromosome, flagella, slime capsule, lactic acid, protocists, unicellular, amoeba, chlorophyll, mitochondria, vacuoles, cilia, xylem, phloem, root hair cells, stomata, cuticle, palisade layer, epidermis, chlorophyll, chloroplasts, phloem, vessels, stomata, guard cells, biosphere	iodine, Benedict's reagent, biuret, joules, kilojoules, repair, deficiency disease, rickets, scurvy, night-blindness, kwashiorkor, ventilation, inhalation, exhalation, diffusion, surface area, heart disease, tar, nicotine, mucus, cilia, gas exchange, trachea, bronchus, bronchioles, alveoli, capillaries, haemoglobin, arteries, carbon monoxide, addictive, recreational, stimulants, depressants, reaction time, solvents	carpel, anther, filament, stamen, pollen tube, zygote, food security, biodiversity, nitrates, interdependence, herbicides, crossbreeding, selective breeding
Formative Assessment	Rewind grids	Rewind grids	Rewind grids
Summative Assessment	End of unit test	End of unit test	End of unit test
Careers	paramedic, marine biologist, zoologist,	dietician, equine dentist, marine biologist, zoologist, paramedic, immunologist, urologist	botanist, conservationist, volcanologist, geoscientist, marine biologist, zoologist
Links	To build on basic cell structure. To prepare for learning that chloroplasts as the site of photosynthesis.	To build on organisms and their interactions with the environment. In addition, the importance of organ systems and factors which affect the functioning of the body including diet, exercise, drugs, and lifestyle. To prepare for digestion, exchange and transport in animals.	To build on the importance of plants to our ecosystems and the reproduction of some plants. To prepare for genetics and selective breeding. In addition, human influences on ecosystems.