

Term	Autumn 1
Topics Covered	Cell Biology: Overview; (revisit) structure and function of cells. Introduce prokaryotes, eukaryotes specialisation, microscopy, magnification, cell cycle and stem cells.
Expectations Challenge and Support	<p><u>Expectations</u>- Retrieval of key words; prior knowledge and application of key concepts. To understand the differences between the structure and function of prokaryotic and eukaryotic cells. Can calculate magnification and explain how to use a microscope. Can explain cell division and link it to the cell cycle.</p> <p><u>Challenge</u>- Can re arrange formulae to calculate magnification and change units of measurement, including order of scale. Can analyse the different stages of the cell cycle. Can evaluate the advantages/disadvantages of stem cell technology. Plan and carry out independent practical work.</p> <p><u>Support</u>- Considerations made to link literacy and numeracy in science. Follow instructions to complete practical work safely.</p>
Assessment opportunities	Introduction to GCSE cell biology questions.
Homework	Glossary of key words, revision aids, Educake (on line review platform) to reactivate prior learning.
Vocabulary	Challenge vocabulary and bell tasks. Key vocabulary: Nucleus cytoplasm cell membrane mitochondria ribosomes chloroplasts vacuole eukaryotic prokaryotic nucleus genetic material plasmid Magnification Resolution Objective Lens Electron Microscope Organelles Chromosomes gametes mitosis gene cell cycle

Term	Autumn 2
Topics Covered	Cell Biology continued: (revisit) Diffusion. Introduce osmosis and active transport.
Expectations Challenge and Support	<p><u>Expectations</u>- Retrieval of key words; prior knowledge and application of key concepts. To understand the 3 processes that move particles around living things.</p> <p><u>Challenge</u>- Can compare the similarities and differences between diffusion, osmosis and active transport. Can work out percentage change. Can apply knowledge of osmosis to explain how to work out the osmotic potential of cells.</p> <p><u>Support</u>- Considerations made to link literacy and numeracy in science. Help provided to draw and interpret graphs and data.</p>
Assessment opportunities	Osmosis required practical follow up GCSE questions. Kerboodle end of module tests.
Homework	Glossary of key words, revision aids, Educake (on line review platform) to reactivate prior learning.
Vocabulary	Challenge vocabulary and bell tasks. Key vocabulary: Diffusion, concentration, gradient, passive, gas exchange Osmosis; selectively permeable; Concentration; water Concentration gradient, high, low, energy, Active transport, protein

Term	Spring 1
Topics Covered	Cell Organisation: Overview; (revisit) digestion, introduce enzymes and food tests.
<u>Expectations</u> <u>Challenge</u> <u>and</u> <u>Support</u>	<p><u>Expectations</u>- Retrieval of key words; prior knowledge and application of key concepts. Can understand the structure and function of the digestive system. Can describe all food tests. Can explain the properties and action of enzymes and to investigate the effects of pH and temperature.</p> <p><u>Challenge</u>- Can plan and carry out practical work safely and to be able to interpret results. Can interpret graphs of enzyme activity.</p> <p><u>Support</u>- Considerations made to link literacy and numeracy in science. Follow instructions to complete practical work safely.</p>
Assessment opportunities	Enzyme required practical follow GCSE questions.
Homework	Glossary of key words, revision aids, Educake (on line review platform) to reactivate prior learning.
Vocabulary	Challenge vocabulary and bell tasks. Key vocabulary: STOMACH, INTESTINES, SYSTEM, CELL, NUTRIENTS, ORGAN enzymes, active site, denature, catalyst, lock and key Lipase; protease; amylase; glycerol; fatty acids; starch variables, independent, control, dependent, hazard, risk, apparatus, method, variable, optimum

Term	Spring 2
Topics Covered	Cell Organisation continued: Heart and lungs, blood and blood vessels, (revisit) ventilation and introduce gas exchange.
<u>Expectations</u> <u>Challenge</u> <u>and</u> <u>Support</u>	<p><u>Expectations</u>- Retrieval of key words; prior knowledge and application of key concepts. Can understand the structure and function of the heart, blood and blood vessels. Can explain the importance of ventilation and be able to describe how the lungs, chest and thorax are designed to bring about gas exchange.</p> <p><u>Challenge</u>- Can analyse the volume and pressure changes that enable ventilation. Can evaluate a model chest.</p> <p><u>Support</u>- Considerations made to link literacy and numeracy in science</p>
Assessment opportunities	GCSE style questions on heart, blood and vessels.
Homework	Glossary of key words, revision aids, Educake (on line review platform) to reactivate prior learning.
Vocabulary	Challenge vocabulary and bell tasks. Key vocabulary: atrium, ventricles, bronchus, bronchioles, trachea, alveoli, vein, capillary, artery, plasma, platelets, lumen, alveolus, capillary, diffusion, concentration, gradient

Term	Summer 1
Topics Covered	Cell Organisation continued: To introduce Heart disease and treatments, Obesity and cancer, (revisit) plant structure and organs, introduce transpiration and translocation.
Expectations Challenge and Support	<p><u>Expectations</u>- Retrieval of key words; prior knowledge and application of key concepts. Can explain what can go wrong with the heart and circulation and can compare the pros and cons of different treatments.</p> <p><u>Challenge</u>- Can evaluate the impact of obesity now and in the future on the medical services. Can analyse data from the potometer investigation.</p> <p><u>Support</u>- Considerations made to link literacy and numeracy in science. Help provided to draw and interpret graphs and data.</p>
Assessment opportunities	Kerboodle end of module tests. GCSE style questions.
Homework	Glossary of key words, revision aids, Educake (on line review platform) to reactivate prior learning.
Vocabulary	Challenge vocabulary and bell tasks. Key vocabulary: cardiovascular disease, stent, plaque, communicable, non-communicable, Health, disease, risks, Diabetes, malignant, benign, obesity, BMI

Term	Summer 2
Topics Covered	Cell Biology and Cell Organisation: Everything taught so far this year.
Expectations Challenge and Support	<p><u>Expectations</u>- Retrieval of key words; prior knowledge and application of key concepts. Can establish good revision skills to be able to recall all key concepts. Can understand the exam command words and write exam answers accordingly. Can use literacy well make answers clear. Can apply the correct number skills to answer numeracy questions.</p> <p><u>Challenge</u>- Can produce exam answers that show good understanding of all key concepts that are written in a logical way, that can show two sides of an argument and that can draw valid conclusions. Can apply numeracy skills correctly and can show all logical steps in workings, can rearrange formula, change units and use standard form.</p> <p><u>Support</u>- Can show some understanding of key concepts. Can gain marks on the shorter questions. Can show resilience to have a go at answering all the questions. Can show a basic level of numeracy and some ability to draw graphs and interpret data.</p>
Assessment opportunities	End of year exam of GCSE style questions.
Homework	Glossary of key words, revision aids, Educake (on line review platform) to reactivate prior learning.
Vocabulary	Challenge vocabulary and bell tasks. Literacy focus in every lesson.