

<b>Science Year 7:</b>					
<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
<p><b>Transition Term for Year 7 from LS</b> <b>GL Baseline Assessment</b></p> <p><b>Topic:</b> <b>Transition - Lab Skills</b></p> <p><b>Aims and Objectives:</b> <b>Working Scientifically &amp; Safely</b> <b>Maths in Science</b> - Variables, Graphs and Density practical <b>Equipment</b> -Using lab equipment to heat water. -Hazard labels <b>Risk assessment</b> -Investigate how to burn magnesium ribbon and write a risk assessment. -Follow and write up instructions: Dissolving and re-crystallising sodium chloride -Record results. -Complete the practical experiment.</p> <p><b>Topic:</b> <b>Plant and animal cells</b></p> <p><b>Aims and Objectives:</b> -Investigate cells and use microscopy -Discuss stem cells -Culture microorganisms Investigate diffusion and osmosis. -Discuss active transport.</p>	<p><b>Topic:</b> <b>The Skeletal and Muscular System</b></p> <p><b>Aims and Objectives:</b> - Recall the structure and function of a skeleton -Discuss passive and active muscle systems -Describe antagonistic paired muscles -Recall the structure of muscle/tendon/ligament -Investigate pulse rate and reaction times -Discuss stimulants and depressants</p> <p><b>Topic:</b> <b>Acids and Alkalis</b></p> <p><b>Aims and Objectives</b> -Discuss acids and Alkalis -Test pH of substances -Complete neutralisation reactions -Explain the reaction of metals and acids -Explain the reaction of oxides with acids</p>	<p><b>Topic:</b> <b>Energy Changes and Transfers</b></p> <p><b>Aims and Objectives:</b> -Recall types of energy -Recall types of energy storage -Recall types of energy transfer -Discuss and calculate the unit for measuring energy -Evaluate how a house can lose and save energy -Describe and investigate thermal insulation/ experiment -Complete efficiency calculations and Sankey diagrams</p> <p><b>Topic:</b> <b>The Particle Model</b></p> <p><b>Aims and Objectives:</b> -Discuss the particle model theory -Recall some ideas scientists have had in the past -Describe how ideas have changed over time and why -Explain why the particle model is so important to modern day life</p>	<p><b>Topic:</b> <b>Mixtures and Separation</b></p> <p><b>Aims and Objectives:</b> - State the concept of a pure substance - Discuss examples of mixtures, including dissolving - Describe diffusion in terms of the particle model - Use simple techniques for separating mixtures such as filtration, evaporation, distillation and chromatography -Explain how to identify pure substances</p>	<p><b>Topic:</b> <b>Forces and Motion 1</b></p> <p><b>Aims and Objectives:</b> -Investigate friction -Design an experiment to investigate friction with different surfaces -Study air resistance/Motion through water -Investigate features of a spring -Explaining contact and non-contact forces Measuring forces Balancing forces Looking at pressure.</p>	<p><b>Topic:</b> <b>Ecosystems 1</b></p> <p><b>Aims and Objectives:</b> -Describe examples of adaptations to a habitat -Identify and explain adaptations to a hot/dry – cold/ dry climates -Discuss interactions within defined habitats -Evaluate the impact of seasonal changes -Discuss examples of nocturnal Adaptation -Explain the idea of hibernation as an adaptation</p> <p><b>Topic:</b> <b>Sound Waves 1</b></p> <p><b>Aims and Objectives:</b> -Explain how sound waves operate -Discuss speed of sound -Investigate reflection/refraction/transparency -Explain the features of a sound wave -Investigate pitch/frequency Harmonics -Discuss the speed of sound and calculate -Describe the speed of sound through different materials</p>



<p><b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: GL Assessments PEE Paragraph.</p>	<p><b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: GL Assessments PEE Paragraph.</p>	<p><b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: GL Assessments PEE Paragraph.</p>	<p><b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: GL Assessments PEE Paragraph.</p>	<p><b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: GL Assessments PEE Paragraph.</p>	<p><b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: GL Assessments PEE Paragraph.</p>
<p><b>Real World Links / Careers:</b> British Values (Responsibility – to take accountability for own actions and accept consequences)  SMSC (Moral –Recognise right and wrong)  <b>Careers:</b> Medical profession Scientists Pharmacist Farmer Engineer Construction Manufacturing Pest control Retail</p>	<p><b>Real World Links / Careers:</b>  British Values (Mutual Respect – Listening and accepting other people’s views).  SMSC (Moral – Investigate moral and ethical issues).  <b>Careers:</b> Nutritionist Dietician Health worker School/ outreach nurse Pharmacist Scientist Biologist Medical profession H&amp;S Officer Food Hygiene Inspector</p>	<p><b>Real World Links / Careers:</b>  British Values (Mutual Respect – Listening and accepting other people’s views).  SMSC (Moral – Investigate moral and ethical issues).  <b>Careers:</b> Activist Renewable/ Green energy sector Scientist Physicist Manufacturing Architecture Constructure</p>	<p><b>Real World Links / Careers:</b>  British Values (Responsibility – to take accountability for own actions and accept consequences)  SMSC (Moral –Recognise right and wrong)  <b>Careers:</b> Firefighter Police H&amp;S officer Chemist Scientist Research fellow TV/ Movie special affects Farmer Gardner Pest control</p>	<p><b>Real World / Careers:</b>  British Values (Responsibility – to take accountability for own actions and accept consequences)  SMSC (Moral –Recognise right and wrong)  <b>Careers:</b> Engineer Scientist Farmer Gardener Architecture Construction City planning Manufacturing Designer</p>	<p><b>Real World Links / Careers:</b>  British Values (Mutual Respect, Tolerance, Individual Liberty, Responsibility).  SMSC (Social – appreciating and accepting diverse view points)  <b>Careers:</b> Activist Renewable/ Green energy sector Scientist Physicist Manufacturing Architecture Constructure</p>



<b>Year 8: Science</b>					
<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
<p><b>GL assessment – catch up</b>  <b>Topic:</b>  <b>Transition - Lab Skills</b></p> <p><b>Aims and Objectives:</b>  <b>Working Scientifically &amp; Safely</b>  <b>Maths in Science</b>  - Variables, Graphs and Density practical  <b>Equipment</b>  -Using lab equipment to heat water.  -Hazard labels  <b>Risk assessment</b>  - Investigate how to burn magnesium ribbon and write a risk assessment.  -Follow and write up instructions: Separating a mixture  -Record results.  -Complete the practical experiment.</p> <p><b>Topic:</b>  <b>Reactions, burning and combustion</b></p> <p><b>Aims and Objectives:</b>  - Describe reactions as the rearrangement of atoms  - Represent chemical reactions using formulae and using equations  - Investigate combustion, thermal decomposition,</p>	<p><b>GL Assessment</b>  <b>Topic:</b>  <b>Nutrition and Diet</b></p> <p><b>Aims and Objectives:</b>  - Describe the human digestive system  - Identify different stages of digestion  - Discuss structure and function of digestive organs  - Explain the important of enzymes and absorption  - Recall the content of a healthy human diet: carbohydrates, lipids (fats and oils), proteins, vitamins, minerals, dietary fibre and water, and why each is needed  - Complete calculations of energy requirements in a healthy daily diet</p> <p><b>Topics:</b>  <b>Atoms, Elements and Mixtures</b></p> <p><b>Aims and Objectives</b>  - Discuss the simple (Dalton) atomic model  - Recall the differences between atoms, elements and compounds  - Use chemical symbols and formulae for elements and compounds</p>	<p><b>Topic:</b>  <b>Current and Energy</b></p> <p><b>Aims and Objectives:</b>  -Discuss how we use electricity  -Describe series and parallel circuits  -Build and investigate how circuits work  -Discuss the idea of magnetism and its role in electrical devices  -State how it can transfer energy  -Calculate energy costs</p> <p><b>Topic:</b>  <b>Breathing and respiration</b></p> <p><b>Aims and Objectives:</b>  - Recall the structure and functions of the gas exchange system in humans  -Discuss adaptations to function  - Describe the mechanism of breathing to move air in and out of the lungs  - Use a pressure model to explain the movement of gases,  - Investigate breathing and take simple measurements of lung volume  - Explain the impact of exercise, asthma and</p>	<p><b>Topic:</b>  <b>Chemical Reactions</b></p> <p><b>Aims and Objectives:</b>  - Investigate the fire triangle  - Follow instructions to heat metals to note any physical/chemical change  - Complete flame testing/Burning Candle  - Identify the symbols for selected elements and compounds  - Investigate and recall the reactivity series of metals  - Define the atom, a compound and a molecule  - Write simple word and symbol equations.</p>	<p><b>Topic:</b>  <b>Light 1</b></p> <p><b>Aims and Objectives:</b>  -Explain how light waves operate  -Investigate electro-magnetic spectrum/visible light spectrum  -Discuss speed of light  -Investigate reflection/refraction/transparency/translucence  -Use ray box Experiment</p> <p><b>Topic</b>  <b>Plant reproduction</b></p> <p><b>Aims and Objectives:</b>  - Discuss reproduction in plants  -Investigate reproduction in flowering plants  -Describe reproduction in terms of wind and insect pollination, fertilisation, seed and fruit formation and dispersal,  -Complete quantitative investigations of some dispersal mechanisms.</p>	<p><b>Topic:</b>  <b>Earth and Space 1</b></p> <p><b>Aims and Objectives:</b>  -Reasons for the Earth's day length in -Summer and Winter/ seasons  -Investigate the Earth's magnetic field  -Compare and explain the gravitational difference between the Earth and the moon  -State how the solar system investigated  -Study manned space flight  -Comparing Orbiters with Landers</p> <p><b>Topic:</b>  <b>Periodic Table</b></p> <p><b>Aims and Objectives:</b>  - Recall the varying physical and chemical properties of different elements  - Discuss the principles underpinning the Mendeleev Periodic Table  -Explain the importance of the Periodic Table: periods and groups; metals and non-metals  - Discuss and investigate how patterns in reactions can be predicted with</p>

<p>oxidation and displacement reactions</p> <ul style="list-style-type: none"> <li>- Defining acids and alkalis in terms of neutralisation reactions</li> <li>- Discuss and investigate reactions of acids with metals to produce a salt plus hydrogen</li> </ul> <p>Discuss and investigate reactions of acids with alkalis to produce a salt plus water</p> <ul style="list-style-type: none"> <li>-Recall what catalysts do</li> </ul>	<ul style="list-style-type: none"> <li>- Discuss what is meant by conservation of mass, changes of state and chemical reactions.</li> </ul> <p><b>End of Term 1 Assessment – GL and internal</b></p>	<p>smoking on the human gas exchange system</p>	<p><b>End of Term 2 Assessment – GL and internal</b></p>	<p>reference to the Periodic Table</p> <ul style="list-style-type: none"> <li>-Discuss the properties of metals and non-metals</li> <li>- Discuss the chemical properties of metal and non-metal oxides with respect to acidity.</li> </ul> <p><b>End of Term 2 Assessment – GL and internal</b></p>	
<p><b>Text:</b></p> <ul style="list-style-type: none"> <li>-KS3 BBC Bitesize</li> <li>-Revision guides</li> <li>-Exploring Science textbooks</li> </ul>	<p><b>Text:</b></p> <ul style="list-style-type: none"> <li>-KS3 BBC Bitesize</li> <li>-Revision guides</li> <li>-Exploring Science textbooks</li> </ul>	<p><b>Text:</b></p> <ul style="list-style-type: none"> <li>-KS3 BBC Bitesize</li> <li>-Revision guides</li> <li>-Exploring Science textbooks</li> </ul>	<p><b>Text:</b></p> <ul style="list-style-type: none"> <li>-KS3 BBC Bitesize</li> <li>-Revision guides</li> <li>-Exploring Science textbooks</li> </ul>	<p><b>Text:</b></p> <ul style="list-style-type: none"> <li>-KS3 BBC Bitesize</li> <li>-Revision guides</li> <li>-Exploring Science textbooks</li> </ul>	<p><b>Text:</b></p> <ul style="list-style-type: none"> <li>-KS3 BBC Bitesize</li> <li>-Revision guides</li> <li>-Exploring Science textbooks</li> </ul>
<p><b>Reading:</b></p> <ul style="list-style-type: none"> <li>-Researching and reading: historical discoveries, scientific concepts</li> <li>-Following and writing instructions: Dissolving and producing salts</li> </ul>	<p><b>Reading:</b>-Researching and reading: historical discoveries and key scientists</p> <ul style="list-style-type: none"> <li>-Following and writing instructions: Investigating how diet affects health</li> </ul>	<p><b>Reading:</b></p> <ul style="list-style-type: none"> <li>-Researching and reading: historical discoveries, scientific concepts and important scientists</li> <li>-Following and writing instructions: Investigating the effects of exercise on respiration and breathing</li> </ul>	<p><b>Reading:</b></p> <ul style="list-style-type: none"> <li>-Researching and reading: scientific breakthroughs and changes across time</li> <li>-Following and writing instructions: heating materials</li> </ul>	<p><b>Reading:</b></p> <ul style="list-style-type: none"> <li>-Researching and reading: how we study the world around us</li> <li>-Following and writing instructions: Making seed models</li> </ul>	<p><b>Reading:</b></p> <ul style="list-style-type: none"> <li>-Researching and reading: how scientists investigate and use data to identify changes</li> <li>-Following and writing instructions: Making models</li> </ul>
<p><b>Writing:</b></p> <p>Complete a practical write up from an investigation – identified focus e.g. planning</p> <ul style="list-style-type: none"> <li>-Use equipment and write risk assessments.</li> <li>-Follow scientific writing procedures e.g. properties</li> <li>-Planning practicals</li> <li>-Presenting results</li> </ul>	<p><b>Writing:</b></p> <ul style="list-style-type: none"> <li>-Complete a practical write up from an investigation – identified focus e.g. making predictions</li> <li>-Follow scientific writing procedures e.g. investigating changes of state</li> <li>-Making predictions</li> <li>-Presenting results</li> </ul>	<p><b>Writing:</b></p> <ul style="list-style-type: none"> <li>-Complete a practical write up from an investigation – identified focus e.g. recording results</li> <li>-Follow scientific writing procedures e.g. exercise and respiration</li> <li>-Recording results</li> <li>-Presenting results</li> </ul>	<p><b>Writing:</b></p> <ul style="list-style-type: none"> <li>-Complete a practical write up from an investigation – identified focus e.g. Making conclusions using data</li> <li>-Follow scientific writing procedures e.g. heating materials</li> <li>-Using results</li> <li>-Presenting results</li> </ul>	<p><b>Writing:</b></p> <ul style="list-style-type: none"> <li>-Complete a practical write up from an investigation – identified focus e.g. evaluating procedures</li> <li>-Follow scientific writing procedures e.g. Using ray boxes</li> <li>-Recording results</li> <li>-Presenting results</li> </ul>	<p><b>Writing:</b></p> <ul style="list-style-type: none"> <li>-Complete a practical write up from an investigation – identified focus e.g. Presenting results in different ways</li> <li>-Follow scientific writing procedures e.g. investigating reactivity</li> <li>-Making conclusions</li> <li>-Presenting results</li> </ul>

<b>Literacy:</b> Bunsen burner Tripod Gauze Thermometer Hazard Safety Investigation Experiment Procedure Risk Practical Data Results Record present Property Physical Chemical Combustion Alkali Acid	<b>Literacy:</b> Digestion Intestines Nutrition Diet Carbohydrate Protein Fats Vitamins Minderals Stomach Symbol Fomulae Reaction Atoms Elements Mixtures	<b>Literacy:</b> Ohm Voltage Current Resistance Amperes Volts Magnetism Cost Kilowatt-hour	<b>Literacy:</b> Combustion Reaction Oxidation Reduction Physical Chemical Bunsen Burner Equation Molecule	<b>Literacy:</b> Reflection Refraction Ray Symmetry Transparent Translucent Spectrum Pollination Reproduction Quantitative Qualitative Flowering	<b>Literacy:</b> System Gravity Satellite Star Magnetic Light-year Lunar Orbit Eclipse Equinox Solstice
<b>SLC / Oracy:</b> Think, Pair, Share. Reading aloud extracts / questions/ instructions. Discuss science concepts and findings	<b>SLC / Oracy:</b> Think, Pair, Share. Reading aloud extracts / questions/ instructions. Discuss science concepts and findings	<b>SLC / Oracy:</b> Think, Pair, Share. Reading aloud extracts / questions/ instructions. Discuss science concepts and findings	<b>SLC / Oracy:</b> Think, Pair, Share. Reading aloud extracts / questions/ instructions. Discuss science concepts and findings	<b>SLC / Oracy:</b> Think, Pair, Share. Reading aloud extracts / questions/ instructions. Discuss science concepts and findings	<b>SLC / Oracy:</b> Think, Pair, Share. Reading aloud extracts / questions/ instructions. Discuss science concepts and findings
<b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: GL Assessments	<b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: GL Assessments	<b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: GL Assessments	<b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: GL Assessments	<b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: GL Assessments	<b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: GL Assessments
<b>Real World Links / Careers:</b>  British Values (Responsibility – to take accountability for	<b>Real World Links / Careers:</b>  British Values (Mutual Respect – Listening and	<b>Real World Links / Careers:</b>  British Values (Mutual Respect – Listening and	<b>Real World Links / Careers:</b>  British Values (Responsibility – to take accountability for	<b>Real World / Careers:</b>  British Values (Responsibility – to take accountability for	<b>Real World Links / Careers:</b>  British Values (Mutual Respect, Tolerance,

<p>own actions and accept consequences)</p> <p>SMSC (Moral –Recognise right and wrong)</p> <p><b>Careers:</b>  Medical profession  Scientists  Pharmacist  Farmer  Internet/ IT engineer  Construction  Manufacturing  Pest control  Retail</p>	<p>accepting other people’s views).</p> <p>SMSC (Moral – Investigate moral and ethical issues).</p> <p><b>Careers:</b>  Nutritionist  Dietician  Health worker  School/ outreach nurse  Pharmacist  Scientist  Biologist  Medical profession  H&amp;S Officer  Food Hygiene Inspector</p>	<p>accepting other people’s views).</p> <p>SMSC (Moral – Investigate moral and ethical issues).</p> <p><b>Careers:</b>  Library Assistant  Video Game Developer  Film/ TV Director  Web Content Manager  Scientist  Physicist  Astronomer  Optics manufacturing  Telecommunications/  Communications</p>	<p>own actions and accept consequences)</p> <p>SMSC (Moral –Recognise right and wrong)</p> <p><b>Careers:</b>  Firefighter  Police  H&amp;S officer  Chemist  Scientist  Research fellow  TV/ Movie special affects  Farmer  Gardner  Pest control</p>	<p>own actions and accept consequences)</p> <p>SMSC (Moral –Recognise right and wrong)</p> <p><b>Careers:</b>  Police  Ecologist/ Biologist  Environmental activist  Green energy sector  Farmer  Gardener  Architecture  Construction  City planning  Medical research  Manufacturing</p>	<p>Individual Liberty, Responsibility).</p> <p>SMSC (Social – appreciating and accepting diverse view points)</p> <p><b>Careers:</b>  Activist  Renewable/ Green energy sector  Scientist  Physicist  Manufacturing  Architecture  Constructure</p>
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Year 9: Science					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p><b>GL assessment – catch up</b></p> <p><b>Topic:</b> <b>Materials and Metals</b></p> <p><b>Aims and Objectives:</b> -Know examples of some metals with their chemical symbol -Properties of metals -Give the uses of these metals in everyday life -What are the physical/chemical properties that make them suitable for their uses -Understand the reactivity series of metals -Corrosion and protection of metals</p> <p><b>Topic:</b> <b>Plants and photosynthesis</b></p> <p><b>Aims and Objectives:</b> -Recall what photosynthesis is and why it is important -Discuss the factors that affect it -State the word equation -Describe the role leaves play in photosynthesis -Discuss what the glucose produced can be used for -Investigate how to test for starch</p>	<p><b>Topic:</b> <b>The Earth in Space 2</b></p> <p><b>Aims and Objectives:</b> - Recall who Ptolemy and Kepler were and their models of the solar system - State how space is observed - Discuss how the solar system is investigated - Explain day and night and the seasons - Describe the effects of gravity - Describe the Earth's magnetic field and its effects - Define planets, stars and galaxies with examples</p> <p><b>Topic:</b> <b>Using Chemistry</b></p> <p><b>Aims and Objectives:</b> -Recall some examples of chemical reactions -Group reactions -Discuss how chemistry can be used to make materials such as plastics -Describe how different reactions can be useful e.g. exo and endothermic -Explain how we know the make up of the atmosphere through chemistry</p>	<p><b>Topic:</b> <b>Rocks and Cycles</b></p> <p><b>Aims and Objectives:</b> -Recall the types of rock that we find in the Earth's crust -Explain how we know the structure of the Earth -Discuss how the rock cycle leads to change -Investigate the rock cycle using models -Discuss the carbon cycle</p> <p><b>Topic:</b> <b>Plants for food</b></p> <p><b>Aims and Objectives:</b> -Identify the role plants play in human food chains -Recall the importance of photosynthesis in food chains -Discuss the different parts of a plant that can be used to supply energy up a food chain -Describe what plants need for healthy growth -Explain how humans use fertiliser to maximise growth</p>	<p><b>Topic:</b> <b>Metals and Uses</b></p> <p><b>Aims and Objectives:</b> -Use the structure of the Periodic Table to identify metals -Discuss how metals react to form compounds e.g. with acids -State and investigate the properties of metals and how we use these in everyday life</p> <p><b>Topic:</b> <b>Light 2</b></p> <p><b>Aims and Objectives:</b> -Discuss the similarities and differences between light waves and waves of matter -Describe how light behaves when travelling through a vacuum -Use models to investigate how light rays behave -Explain how light can transfer energy from source to absorber leading to chemical and electrical effects; photo-sensitive</p>	<p><b>Topic:</b> <b>Sound 2</b></p> <p><b>Aims and Objectives:</b> - Discuss frequencies of sound waves -State how they are measured in hertz (Hz); echoes, reflection and absorption of sound -Describe how sound needs a medium to travel -State how the speed of sound in air, in water, in solids differs and why - Explain how sound can be produced by vibrations of objects, in loud speakers, -Discuss how sound can be detected by its effects on a microphone diaphragm and the ear drum -State that sound waves are longitudinal -Describe the auditory range of humans and animals</p> <p><b>Topic:</b> <b>Extremes</b></p> <p><b>Aims and Objectives:</b> - Recall how atmospheric pressure decreases with increase of height as weight of air above decreases with height - Describe how pressure in liquids, increases with depth</p>	<p><b>Topic:</b> <b>Ecology 2</b></p> <p><b>Aims and Objectives:</b> -Define key terms like ecosystem, habitat and niche -Discuss and describe abiotic and biotic factors with examples -Adaptation to different habitats - Discuss examples of populations -Describe the role of competition in ecology -Apply field study using quadrats and other sampling techniques</p> <p><b>Topic:</b> GCSE preparation units <b>4.1 Cell Biology</b> <b>WS 1.1, 1.2, 1.3, 1.5, 4.4, 4.6</b> <b>AT 1,3,5,7,</b> <b>RP B1 B3</b></p> <p><b>Aims and Objectives:</b> - Discuss cells as the basic structural unit of all organisms - Recall adaptations of cells related to their functions - Discuss the main sub-cellular structures of eukaryotic and prokaryotic cells</p>

		<ul style="list-style-type: none"> <li>- Discuss the role competition plays in plant growth</li> <li>- Describe the problems pests can cause for plant growth and how we overcome them</li> </ul>	material in the retina and in cameras	<ul style="list-style-type: none"> <li>- Investigate upthrust effects, floating and sinking</li> <li>- Explain what is meant by pressure (measured by ratio of force over area – acting normal to any surface.)</li> <li>- Investigate balanced forces</li> <li>- Discuss the ideas of opposing forces and equilibrium: weight held by stretched spring or supported on a compressed surface.</li> </ul>	<ul style="list-style-type: none"> <li>- Evaluate use of stem cells in animals and meristems in plants</li> <li>- Study cells using microscopes</li> <li>- Discuss diffusion and osmosis and investigate</li> <li>-Describe osmosis</li> </ul> <p><b>Aims and Objectives:</b> <b>Working Scientifically</b></p> <ul style="list-style-type: none"> <li>-Complete a range of GCSE practical experiments to prepare for Y10</li> </ul>
<p><b>Texts:</b></p> <ul style="list-style-type: none"> <li>-KS3 BBC Bitesize</li> <li>-Revision guides</li> <li>-Exploring Science textbooks</li> </ul>	<p><b>Texts:</b></p> <ul style="list-style-type: none"> <li>-KS3 BBC Bitesize</li> <li>-Revision guides</li> <li>-Exploring Science textbooks</li> </ul>	<p><b>Texts:</b></p> <ul style="list-style-type: none"> <li>-KS3 BBC Bitesize</li> <li>-Revision guides</li> <li>-Exploring Science textbooks</li> </ul>	<p><b>Texts:</b></p> <ul style="list-style-type: none"> <li>-KS3 BBC Bitesize</li> <li>-Revision guides</li> <li>-Exploring Science textbooks</li> </ul>	<p><b>Texts:</b></p> <ul style="list-style-type: none"> <li>-KS3 BBC Bitesize</li> <li>-Revision guides</li> <li>-Exploring Science textbooks</li> </ul>	<p><b>Texts:</b></p> <ul style="list-style-type: none"> <li>-KS3 BBC Bitesize</li> <li>-Revision guides</li> <li>-Exploring Science textbooks</li> </ul>
<p><b>Reading:</b></p> <ul style="list-style-type: none"> <li>-Researching and reading: historical discoveries, scientific concepts</li> <li>-Following and writing instructions: reactivity</li> </ul>	<p><b>Reading:</b></p> <ul style="list-style-type: none"> <li>-Researching and reading: historical discoveries and key scientists</li> <li>-Following and writing instructions: Investigating reactions</li> </ul>	<p><b>Reading:</b></p> <ul style="list-style-type: none"> <li>-Researching and reading: historical discoveries, scientific concepts and important scientists</li> <li>-Following and writing instructions: identifying parts of a plant</li> </ul>	<p><b>Reading:</b></p> <ul style="list-style-type: none"> <li>-Researching and reading: scientific breakthroughs and changes across time</li> <li>-Following and writing instructions: Stating how we investigate the reactivity of metals</li> </ul>	<p><b>Reading:</b></p> <ul style="list-style-type: none"> <li>-Researching and reading: how the cell was discovered, and scientists built on others' work</li> <li>-Following and writing instructions: Using microscopes</li> </ul>	<p><b>Reading:</b></p> <ul style="list-style-type: none"> <li>-Researching and reading: how scientists investigate and use data to identify changes</li> <li>-Following and writing instructions: Using sampling techniques</li> </ul>
<p><b>Writing:</b></p> <ul style="list-style-type: none"> <li>-Complete a practical write up from an investigation – identified focus e.g. planning</li> <li>-Use equipment and write risk assessments.</li> <li>-Follow scientific writing procedures e.g. properties</li> <li>-Planning practicals</li> <li>-Presenting results</li> </ul>	<p><b>Writing:</b></p> <ul style="list-style-type: none"> <li>-Complete a practical write up from an investigation – identified focus e.g. making predictions</li> <li>-Follow scientific writing procedures e.g. the effects of forces on objects in space</li> <li>-Making predictions</li> <li>-Presenting results</li> </ul>	<p><b>Writing:</b></p> <ul style="list-style-type: none"> <li>-Complete a practical write up from an investigation – identified focus e.g. recording results</li> <li>-Follow scientific writing procedures e.g. modelling rock formation</li> <li>-Recording results</li> <li>-Presenting results</li> </ul>	<p><b>Writing:</b></p> <ul style="list-style-type: none"> <li>PEE Paragraphs.</li> <li>-Complete a practical write up from an investigation – identified focus e.g. Making conclusions using data</li> <li>-Follow scientific writing procedures e.g. explaining seasons</li> <li>-Using results</li> <li>-Presenting results</li> </ul>	<p><b>Writing:</b></p> <ul style="list-style-type: none"> <li>-Complete a practical write up from an investigation – identified focus e.g. evaluating procedures</li> <li>-Follow scientific writing procedures e.g. balanced and unbalanced forces</li> <li>-Recording results</li> <li>-Presenting results</li> </ul>	<p><b>Writing:</b></p> <ul style="list-style-type: none"> <li>-Complete a practical write up from an investigation – identified focus e.g. Presenting results in different ways</li> <li>-Follow scientific writing procedures e.g. using sampling techniques</li> <li>-Making conclusions</li> <li>-Presenting results</li> </ul>



<p>British Values Responsibility – to take accountability for own actions - safety</p> <p>SMSC (Moral –Recognise right and wrong – use of science for destructive purposes)</p> <p><b>Careers:</b> Medical profession Scientists Pharmacist Farmer Internet/ IT engineer Construction Manufacturing Metallurgy Pest control Retail</p>	<p>British Values – Respect and Tolerance</p> <p>SMSC (Moral –Recognise right and wrong, understand consequences, discuss feelings of empathy, investigate moral and ethical issues – use of science to make transport safer).</p> <p><b>Careers:</b> Engineer Construction Science Astronomer Physicist Chemist Engineering Satellite engineer Space science Mapping software engineer Route planner Philosopher Weather forecast</p>	<p>British Values - Rule of Law – Respect societal laws and expectations</p> <p>SMSC (Moral –Recognise right and wrong, understand consequences, discuss feelings of empathy, investigate moral and ethical issues – speeding and its effects). Ambition – you can be whatever you want to be.</p> <p><b>Careers:</b> Geologist Construction City planner Engineer Manufacturing Gardening Farmer Astronaut</p>	<p>British Values - Democracy – Participation to lessons and group discussions, Social – Develop social skills through class and pair discussions.</p> <p>SMSC (Moral – Investigate moral and ethical issues around space exploration). Podcast Producer, Weather forecaster, Journalist).</p> <p><b>Careers:</b> Optician Light engineer Telecommunications Satellite design Space industry Manufacturing Mobile technology IT Electrician Construction Scientist</p>	<p>British Values - Mutual Respect – Listening and accepting other people’s views.</p> <p>SMSC (Moral – Investigate moral and ethical issues). Use of information in a responsible way.</p> <p><b>Careers:</b> Scientist Doctor Nurse Medical research Ecologist PR and marketing</p>	<p>British Values – Respect and Tolerance - to be mutually respectful, be kind, and promote equality, promoting individual liberty for all.</p> <p>SMSC (Moral – Investigate moral and ethical issues). Use data to act responsibly to look after surrounding environments.</p> <p><b>Careers:</b> Scientist Doctor Nurse Medical research Ecologist PR and marketing Agriculture Inspector Animal Care Worker Countryside Ranger Journalist Activist</p>
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**Year 10: GCSE Biology AQA**

<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
<p><b>Topic:</b> 4.7 Ecology 1 WS 1.2, 1.3, 1.4, 1.5, 1.6,2.6 AT 4, 6 RP B8 B9</p> <p><b>Aims and Objectives:</b> -Investigate competition and its impact -Recall a range of biotic and abiotic factors and state the impact they can have on an ecosystem -Identify a range or adaptations and explain their purpose -Food chains -Use quadrats and transects to sample an area -Investigate the water cycle -Investigate the carbon cycle</p> <p><b>Topic:</b> 4.2 Principles of Organisation 1 WS 1.2, 1.5, 3.5, AT 1,2,3,4,5,7 RP B4 B5</p> <p><b>Aims and Objectives:</b> -Discuss cell specialisation with examples -Describe the need for and use of enzymes in living organisms -Explain the role of enzymes in the process of digestion</p>	<p><b>Topic:</b> 4.2 Principles of Organisation 2 WS 1.2, 1.5, 3.5, AT 1,3,4,5,7 RP B4</p> <p><b>Aims and Objectives:</b> -Identify the structures and function of the parts of the lungs -Discuss the structure of the circulatory system -Identify the components of the blood - Describe the different vessels and relate their structure to their function - Discuss the structure and function of the various heart tissues and its operation - Explain what is meant by CVD -Investigate the various aspects of health and disease -Identify and discuss risk factors of non-communicable disease -Evaluate risk factors involved in different cancers and discuss what cancers are</p>	<p><b>Topic:</b> 4.3 Infection and Response WS 1.4, 1.5, 1.6 AT 1,3,4 RP B2</p> <p><b>Aims and Objectives:</b> -Explain what is meant by communicable disease and explain -Discuss bacterial diseases and effects on plants and animals -Discuss viral diseases -Discuss fungal and protist disease -Evaluate a variety of methods of fighting disease -Investigate the history of vaccination and drug use in medicine</p>	<p><b>Topic:</b> 4.4 Bioenergetics WS AT 1,2,3,4,5, 8 RP B6</p> <p><b>Aims and Objectives:</b> -Recall what photosynthesis and why it is important -Describe how the rate of photosynthesis can be impacted by different factors -Discuss what is meant by transpiration -Discuss what is meant by translocation -Explain the importance of stomata in plants in terms of water movement -Recall what respiration and metabolism are and how/why they are important to life -Discuss the processes of aerobic and anaerobic respiration</p>	<p><b>Topic:</b> 4.5 Homeostasis and Response 1 WS 1 AT 1,3,4 RP B7</p> <p><b>Aims and Objectives:</b> -Describe the process and importance of homeostasis -Investigate the nervous system and how it enables signals to be passed around the body -Explain what synapses are and how they operate -Investigate reflexes -Recall a variety of the brain parts and their roles -Recall the key parts of the eye and its operation -State the different types of eye issue and how lenses can correct vision i.e. myopia and hyperopia</p>	<p><b>Topic:</b> 4.5 Homeostasis and Response 2 WS 1 AT 1,3,4 RP B7</p> <p><b>Aims and Objectives:</b> -Discuss the need and operation of temperature control in the body. Describe negative feedback loops with examples -Discuss the endocrine system and how it operates using different hormones -Explain how blood glucose is correctly maintained and some issues if the body can not do so</p> <p><b>Topic:</b> <b>Required Practical Catch up and Review</b> <b>RP B – a range</b> <b>Aims and Objectives:</b> -Review previously completed required practicals -Plan required practicals -Undertake planned practicals -Review data -Complete exam style questions</p>

-Complete a range of food tests and evaluate results	End term synoptic assessment		End term synoptic assessment		End term synoptic assessment
<b>Texts:</b> -KS4 BBC Bitesize -Revision guides -GCSE Biology textbooks	<b>Texts:</b> -KS4 BBC Bitesize -Revision guides -GCSE Biology textbooks	<b>Texts:</b> -KS4 BBC Bitesize -Revision guides -GCSE Biology textbooks	<b>Texts:</b> -KS4 BBC Bitesize -Revision guides -GCSE Biology textbooks	<b>Texts:</b> -KS4 BBC Bitesize -Revision guides -GCSE Biology textbooks	<b>Texts:</b> -KS4 BBC Bitesize -Revision guides -GCSE Biology textbooks
<b>Reading:</b> -Researching and reading: historical discoveries, scientific concepts -Following and writing instructions: e.g. using quadrats safely	<b>Reading:</b> -Researching and reading: historical discoveries and key scientists -Following and writing instructions: Completing fitness tests	<b>Reading:</b> -Researching and reading: historical discoveries, scientific concepts and important scientists -Following and writing instructions: How vaccinations were created	<b>Reading:</b> -Researching and reading: scientific breakthroughs and changes across time -Following and writing instructions: Investigating photosynthesis	<b>Reading:</b> -Researching and reading: how the cell was discovered, and scientists built on others' work -Following and writing instructions: Investigating reaction times	<b>Reading:</b> -Researching and reading: how scientists investigate and use data to identify changes -Following and writing instructions: Investigating temperature change
<b>Writing:</b> -Complete a practical write up from an investigation – identified focus e.g. planning -Use equipment and write risk assessments. -Follow scientific writing procedures e.g. using transects -Planning practicals -Presenting results	<b>Writing:</b> -Complete a practical write up from an investigation – identified focus e.g. making predictions -Follow scientific writing procedures e.g. -Making predictions -Presenting results	<b>Writing:</b> -Complete a practical write up from an investigation – identified focus e.g. recording results -Follow scientific writing procedures e.g. microbial growth -Recording results -Presenting results	<b>Writing:</b> PEE Paragraphs. -Complete a practical write up from an investigation – identified focus e.g. Making conclusions using data -Follow scientific writing procedures e.g. investigating factors affecting rate -Using results -Presenting results	<b>Writing:</b> -Complete a practical write up from an investigation – identified focus e.g. evaluating procedures -Follow scientific writing procedures e.g. reaction times -Recording results -Presenting results	<b>Writing:</b> -Complete a practical write up from an investigation – identified focus e.g. Presenting results in different ways -Follow scientific writing procedures -Making conclusions -Presenting results
<b>Literacy:</b> Biotic Abiotic Adaptation Chain Cycle Impact Speciation Enzyme Digestion Biuret	<b>Literacy:</b> Cardiovascular Heart Lungs Vessel Artery Vein Oxygenated Deoxygenated Plasma Tissue fluid	<b>Literacy:</b> Disease Communicable Bacteria Virus Protist Fungi Infectious Transmission Vector Host	<b>Literacy:</b> Photosynthesis Rate Factor Transpiration Translocation Stomata Respiration Aerobic Anaerobic Lactic Acid	<b>Literacy:</b> Nervous Synapse Axon Dendrite Brain Medulla Cortex Stem Eye Lens	<b>Literacy:</b> Erythrocyte Leukocyte Neutrophil Basophil Plasma Platelets Negative feedback Endocrine Hormone Insulin

Iodine	Diffusion		Oxygen debt	Pupil	Glucagon Glucose
<b>SLC / Oracy:</b> Think, Pair, Share. Reading aloud extracts / questions/ instructions. Discuss science concepts and findings BUG the question	<b>SLC / Oracy:</b> Think, Pair, Share. Reading aloud extracts / questions/ instructions. Discuss science concepts and findings BUG the question	<b>SLC / Oracy:</b> Think, Pair, Share. Reading aloud extracts / questions/ instructions. Discuss science concepts and findings BUG the question	<b>SLC / Oracy:</b> Think, Pair, Share. Reading aloud extracts / questions/ instructions. Discuss science concepts and findings BUG the question	<b>SLC / Oracy:</b> Think, Pair, Share. Reading aloud extracts / questions/ instructions. Discuss science concepts and findings BUG the question	<b>SLC / Oracy:</b> Think, Pair, Share. Reading aloud extracts / questions/ instructions. Discuss science concepts and findings BUG the question
<b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: End unit Assessments GCSE style questions using BUG the question	<b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: End unit Assessments GCSE style questions using BUG the question	<b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: End unit Assessments GCSE style questions using BUG the question	<b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: End unit Assessments GCSE style questions using BUG the question	<b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: End unit Assessments GCSE style questions using BUG the question	<b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST feedback. Summative: End unit Assessments GCSE style questions using BUG the question
<b>Real World Links / Careers:</b> British Values Responsibility – to take accountability for own actions - safety  SMSC (Moral –Recognise right and wrong – use of science for destructive purposes)  <b>Careers:</b> Medical profession Scientists Pharmacist Farmer Dietician Veterinarian District nurse Ecologist Nature reserve staff Agriculture Inspector Animal Care Worker Countryside Ranger	<b>Real World Links / Careers:</b> British Values – Respect and Tolerance  SMSC (Moral –Recognise right and wrong, understand consequences, discuss feelings of empathy, investigate moral and ethical issues – use of science to make transport safer).  <b>Careers:</b> Science Chemist Bio-engineer Pharmacist Nurse Medical profession Farmer	<b>Real World Links / Careers:</b> British Values - Rule of Law – Respect societal laws and expectations  SMSC (Moral –Recognise right and wrong, understand consequences, discuss feelings of empathy, investigate moral and ethical issues – speeding and its effects). Ambition – you can be whatever you want to be.  <b>Careers:</b> Research scientist Medical profession Chemist Bio-engineer Gardener Farmer Nurse PR and marketing	<b>Real World Links / Careers:</b> British Values - Democracy – Participation to lessons and group discussions, Social – Develop social skills through class and pair discussions.  SMSC (Moral – Investigate moral and ethical issues around space exploration). Podcast Producer, Weather forecaster, Journalist).  <b>Careers:</b> Scientist Respiratory physiologist Medical professional Chemist Pharmacist	<b>Real World Links / Careers:</b> British Values - Mutual Respect – Listening and accepting other people’s views.  SMSC (Moral – Investigate moral and ethical issues). Use of information in a responsible way.  <b>Careers:</b> Scientist Doctor Nurse Medical research Optometrist Manufacturing Lens/ material science Sports science	<b>Real World Links / Careers:</b> British Values – Respect and Tolerance - to be mutually respectful, be kind, and promote equality, promoting individual liberty for all.  SMSC (Moral – Investigate moral and ethical issues). Use data to act responsibly to look after surrounding environments.  <b>Careers:</b> Scientist Doctor Nurse Medical research Phlebotomist

Journalist Activist					
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BUG the question	BUG the question	BUG the question	BUG the question	BUG the question	
<b>Assessment:</b> Formative: Questioning, Retrieval Practise, SST Feedback, Summative: GCSE Style Exam Response,	<b>Assessment:</b> Formative: Questioning, Retrieval Practise, Feedback, Summative: GCSE Style Exam Response	<b>Assessment:</b> Formative: Questioning, Retrieval Practise, Feedback, Summative: GCSE Style Exam Response	<b>Assessment:</b> Formative: Questioning, Retrieval Practise, Feedback. Summative: GCSE Style Exam Response	<b>Assessment:</b> Formative: Questioning, Retrieval Practise, Feedback. Summative: GCSE Style Exam Response	////////////////////
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