

## KS3 Curriculum overview: Science

	Year 7	Year 8	Year 9
Autumn 1	<ul style="list-style-type: none"> <li>• <b>Forces</b> <ul style="list-style-type: none"> <li>- What is a force?</li> <li>- Direction of force</li> <li>- Magnetic forces</li> <li>- Atmospheric forces</li> <li>- Friction</li> <li>- Measuring forces</li> <li>- 3 Laws of motion</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Healthy Living</b> <ul style="list-style-type: none"> <li>- Food groups</li> <li>- Balanced Lifestyle</li> <li>- Metabolism</li> <li>- Energy Levels</li> </ul> </li> <li>• <b>Illness and Disease</b> <ul style="list-style-type: none"> <li>- Microbes</li> <li>- White Blood Cells</li> <li>- Antibiotics</li> <li>- Common illnesses and diseases</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Cell Biology</b> <ul style="list-style-type: none"> <li>- Parts of a cell</li> <li>- Specialized cells</li> <li>- Cell division</li> <li>- Stem Cells</li> </ul> </li> <li>• <b>Cell Organisation</b> <ul style="list-style-type: none"> <li>- Digestive system</li> <li>- Respiratory system</li> <li>- Cardiovascular system</li> <li>- Health Issues</li> <li>- Plant organs</li> </ul> </li> </ul>
Autumn 2	<ul style="list-style-type: none"> <li>• <b>Earth &amp; Beyond</b> <ul style="list-style-type: none"> <li>- Shapes in space</li> <li>- Planets</li> <li>- How the earth moves around the sun</li> <li>- Phases of the moon</li> <li>- Seasons</li> </ul> </li> <li>• <b>Electricity</b> <ul style="list-style-type: none"> <li>- What is electricity?</li> <li>- Circuit symbols</li> <li>- Building a circuit</li> <li>- Static electricity</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Life Cycles</b> <ul style="list-style-type: none"> <li>- Stages of Development</li> <li>- Puberty</li> <li>- Hormones</li> </ul> </li> <li>• <b>Cells</b> <ul style="list-style-type: none"> <li>- Parts of a cell</li> <li>- Function of cell organelles</li> <li>- Specialized cells</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Cell Organisation</b> <ul style="list-style-type: none"> <li>- Digestive system</li> <li>- Respiratory system</li> <li>- Cardiovascular system</li> <li>- Health Issues</li> <li>- Plant organs</li> </ul> </li> </ul>

Spring 1	<ul style="list-style-type: none"> <li>• <b>Grouping and Classifying Materials</b> <ul style="list-style-type: none"> <li>- Changing materials</li> <li>- Water cycle</li> <li>- States of matter</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Grouping and Classifying Materials</b> <ul style="list-style-type: none"> <li>- Sorting materials</li> <li>- Electricity</li> <li>- Conduction and insulation</li> <li>- Temperature</li> </ul> </li> <li>• <b>Separating Materials#</b> <ul style="list-style-type: none"> <li>- Rocks and soil</li> <li>- Dissolving solutions</li> <li>- Saturated vs. unsaturated solutions</li> <li>- Soluble vs. insoluble solutions</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Atomic Structure and the Periodic Table</b> <ul style="list-style-type: none"> <li>- Atoms and elements</li> <li>- Chemical reactions</li> <li>- Electrical charge of atoms</li> <li>- Periodic table</li> </ul> </li> <li>• <b>Bonding, Structure and the Properties of Matter</b> <ul style="list-style-type: none"> <li>- Ionic, covalent and metallic bonds</li> <li>- Polymers</li> <li>- States of matter</li> <li>- Structure and bonding of carbon</li> </ul> </li> </ul>
Spring 2	<ul style="list-style-type: none"> <li>• <b>Separating Materials</b> <ul style="list-style-type: none"> <li>- Condensation</li> <li>- Evaporation</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Drugs and Medicines</b> <ul style="list-style-type: none"> <li>- The difference between a drug and medicine</li> <li>- Drug testing</li> <li>- Antibiotics</li> <li>- Recreational drugs</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Quantitative Chemistry</b> <ul style="list-style-type: none"> <li>- Conservation of mass</li> <li>- Quantitative interpretation of chemical equations</li> <li>- Use of amount of substance in relation to masses of pure substances</li> </ul> </li> </ul>
Summer 1	<ul style="list-style-type: none"> <li>• <b>Food, Exercise and Staying Healthy</b> <ul style="list-style-type: none"> <li>- Food groups</li> <li>- Balanced Lifestyle</li> <li>- Metabolism</li> <li>- Energy Levels</li> </ul> </li> <li>• <b>Stages of Development</b> <ul style="list-style-type: none"> <li>- Life cycles</li> <li>- Puberty</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Light</b> <ul style="list-style-type: none"> <li>- Sources of light</li> <li>- Shadows</li> <li>- Travelling of light</li> <li>- Reflection vs. refraction</li> <li>- Parts of the eye</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Forces</b> <ul style="list-style-type: none"> <li>- Forces and their interactions</li> <li>- Work done and energy transfer</li> <li>- Forces and elasticity</li> <li>- Forces and motion</li> </ul> </li> <li>• <b>Energy</b> <ul style="list-style-type: none"> <li>- Energy changes in a system</li> <li>- Storing of energy</li> <li>- Conservation and dissipation of energy</li> <li>- National and global energy resources</li> </ul> </li> </ul>

<b>Summer 2</b>	<ul style="list-style-type: none"> <li>• <b>The Heart and Circulation</b> <ul style="list-style-type: none"> <li>- Functioning of heart and lungs</li> <li>- Function of blood</li> <li>- Calculating pulse</li> </ul> </li> <li>• <b>Variation and Food Chains</b> <ul style="list-style-type: none"> <li>- Identifying difference of animal and plants</li> <li>- Food chains and food webs</li> <li>- Habitat</li> <li>- Adaptation</li> <li>- Living things in their environment</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Acids and Alkali</b> <ul style="list-style-type: none"> <li>- Identifying acids and alkalis</li> <li>- Neutralism</li> <li>- Universal Indicator</li> <li>- Acids in digestion</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Waves</b> <ul style="list-style-type: none"> <li>- Waves in air fluids and solids</li> <li>- Electromagnetic waves</li> </ul> </li> </ul>
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### KS4 Curriculum overview: Science (GCSE)

	Year 10	Year 11
<b>Autumn 1</b>	<ul style="list-style-type: none"> <li>• <b>Infection and Response</b> <ul style="list-style-type: none"> <li>- Infectious disease</li> <li>- Human defense-systems</li> <li>- Vaccinations</li> <li>- Medical testing</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Homeostasis &amp; Response</b> <ul style="list-style-type: none"> <li>- Homeostasis</li> <li>- The nervous system</li> <li>- Hormonal co-ordination in humans</li> </ul> </li> <li>• <b>Inheritance, Variation &amp; Evolution</b> <ul style="list-style-type: none"> <li>- Reproduction</li> <li>- Variation and evolution</li> <li>- The development of understanding of genetics and evolution</li> <li>- Classification of living organisms</li> </ul> </li> </ul>
<b>Autumn 2</b>	<ul style="list-style-type: none"> <li>• <b>Bioenergetics</b> <ul style="list-style-type: none"> <li>- Photosynthesis</li> <li>- Aerobic respiration</li> <li>- Anaerobic respiration</li> <li>- Metabolism</li> <li>- Fermentation</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ecology</b> <ul style="list-style-type: none"> <li>- Adaptation, interdependence and competition</li> <li>- Organisation of an ecosystem</li> <li>- Biodiversity and the effect of human interaction on an ecosystem</li> </ul> </li> <li>• <b>Revision for Biology module</b> <ul style="list-style-type: none"> <li>- Revise topics covered</li> </ul> </li> </ul>

Spring 1	<ul style="list-style-type: none"> <li>• <b>Chemical Changes</b> <ul style="list-style-type: none"> <li>- Reactivity of metals</li> <li>- Reactions of acids</li> <li>- Electrolysis</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Rocks and Building Materials</b> <ul style="list-style-type: none"> <li>- Limestone cycle</li> </ul> </li> <li>• <b>Crude Oil and Fuels</b> <ul style="list-style-type: none"> <li>- Fractional distillation</li> <li>- Hydrocarbons</li> <li>- Alkanes vs. Alkenes</li> </ul> </li> </ul>
Spring 2	<ul style="list-style-type: none"> <li>• <b>Energy Changes</b> <ul style="list-style-type: none"> <li>- Exothermic and endothermic reactions</li> </ul> </li> <li>• <b>The Rate and Extent of Chemical Reactions</b> <ul style="list-style-type: none"> <li>- Reversible reactions and dynamic equilibriums</li> </ul> </li> <li>• <b>Organic Chemistry</b> <ul style="list-style-type: none"> <li>- Carbon compounds and fuel and feedstock</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>The Rate and Extent of Chemical Reactions</b> <ul style="list-style-type: none"> <li>- Reversible reactions and dynamic equilibriums</li> </ul> </li> <li>• <b>Organic Chemistry</b> <ul style="list-style-type: none"> <li>- Carbon compounds and fuel and feedstock</li> </ul> </li> <li>• <b>Chemical Analysis</b> <ul style="list-style-type: none"> <li>- Purity, formulations and chromatography</li> <li>- Identification of common gases</li> </ul> </li> <li>• <b>Chemistry in the Atmosphere</b> <ul style="list-style-type: none"> <li>- The composition and evolution of the earth's atmosphere</li> <li>- Carbon dioxide and methane as greenhouse gases</li> <li>- Common atmospheric pollutants and their sources</li> </ul> </li> <li>• <b>Using Resources</b> <ul style="list-style-type: none"> <li>- Using the earth's resources and obtaining portable water</li> <li>- Life cycle assessment and recycling</li> </ul> </li> <li>• <b>Revision for Chemistry module</b> <ul style="list-style-type: none"> <li>- Revise topics covered</li> </ul> </li> </ul>

<b>Summer 1</b>	<ul style="list-style-type: none"> <li>• <b>Electricity</b> <ul style="list-style-type: none"> <li>- Current, potential difference and resistance</li> <li>- Series and parallel circuits</li> <li>- Domestic uses and safety</li> <li>- Energy transfers</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Magnetism &amp; Electromagnetism</b> <ul style="list-style-type: none"> <li>- Permanent and induced magnetism, magnetic, forces and fields</li> <li>- The motor effect</li> </ul> </li> <li>• <b>Particle Model of Matter</b> <ul style="list-style-type: none"> <li>- Changes of state and the particle model</li> <li>- Internal energy and energy transfers</li> <li>- Particle model and pressure</li> </ul> </li> <li>• <b>Atomic Structure</b> <ul style="list-style-type: none"> <li>- Atoms and Isotopes</li> <li>- Atoms and nuclear radiation</li> </ul> </li> </ul>
<b>Summer 2</b>	<ul style="list-style-type: none"> <li>• <b>Magnetism &amp; Electromagnetism</b> <ul style="list-style-type: none"> <li>- Permanent and induced magnetism, magnetic, forces and fields</li> <li>- The motor effect</li> </ul> </li> <li>• <b>Particle Model of Matter</b> <ul style="list-style-type: none"> <li>- Changes of state and the particle model</li> <li>- Internal energy and energy transfers</li> <li>- Particle model and pressure</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Exam Revision</b></li> </ul>

### KS4 Curriculum overview: *Science (Entry Level)*

	Year 10	Year 11
<b>Autumn 1</b>	<ul style="list-style-type: none"> <li>• <b>The Human Body</b> <ul style="list-style-type: none"> <li>- Animal and plant cells</li> <li>- Cell organisation</li> <li>- The digestive system</li> <li>- Respiration</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Environment, evolution and inheritance</b> <ul style="list-style-type: none"> <li>- Photosynthesis</li> <li>- Food chains and food webs</li> <li>- Decomposition and recycling</li> <li>- Competition</li> <li>- Environmental changes</li> <li>- Pollution</li> </ul> </li> </ul>
<b>Autumn 2</b>	<ul style="list-style-type: none"> <li>• <b>The Human Body</b> <ul style="list-style-type: none"> <li>- Lifestyle and health</li> <li>- Infectious disease</li> <li>- The nervous system</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Environment, evolution and inheritance</b> <ul style="list-style-type: none"> <li>- Evolution</li> <li>- Natural and artificial selection</li> <li>- Sexual and asexual reproduction</li> <li>- Human genetics</li> </ul> </li> </ul>

<b>Spring 1</b>	<ul style="list-style-type: none"> <li>• <b>Elements, Mixtures and Compounds</b> <ul style="list-style-type: none"> <li>- Atoms and elements</li> <li>- States of matter</li> <li>- Mixtures</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Chemistry in our World</b> <ul style="list-style-type: none"> <li>- Acid and metal reactions</li> <li>- Neutralisation</li> <li>- Chemical reactions</li> <li>- The current atmosphere</li> </ul> </li> </ul>
<b>Spring 2</b>	<ul style="list-style-type: none"> <li>• <b>Elements, Mixtures and Compounds</b> <ul style="list-style-type: none"> <li>- Chromatography</li> <li>- Metals and ores</li> <li>- Properties of metals</li> <li>- Alloys</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Chemistry in our World</b> <ul style="list-style-type: none"> <li>- Crude oils</li> <li>- Burning fuels</li> <li>- Human influences on the atmosphere</li> <li>- Water for drinking</li> </ul> </li> </ul>
<b>Summer 1</b>	<ul style="list-style-type: none"> <li>• <b>Energy, Forces and Structures of Matter</b> <ul style="list-style-type: none"> <li>- Changes in energy storage</li> <li>- Energy transfer</li> <li>- Energy resources</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Electricity, magnetism and waves</b> <ul style="list-style-type: none"> <li>- Currents in a circuit</li> <li>- Energy transfer in electrical appliances</li> </ul> </li> </ul>
<b>Summer 2</b>	<ul style="list-style-type: none"> <li>• <b>Energy, Forces and Structures of Matter</b> <ul style="list-style-type: none"> <li>- Types of forces</li> <li>- Speed</li> <li>- Reaction time</li> <li>- Radioactivity</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Electricity, magnetism and waves</b> <ul style="list-style-type: none"> <li>- Magnets and electromagnetics</li> <li>- Wave properties</li> </ul> </li> </ul>