



## Curriculum Overview 2025 2026

### Science Department

Department	Science Department
Head of Department	Mr Rathje-Morris – Head of Science faculty Mrs Easton-White – Head of Chemistry Miss Spinola – Head of Biology Mrs Hewitt – Head of Physics
Department Members	Mr Taylor Mrs Martin Mr Lawore Mrs Thompson Miss Nwama Mr Abbott Mr Mason
Accommodation and Resources	The Science department is situated in G and R block and consists of a combination of 8 practical science labs and 2 classrooms as well as a small intervention room. We also have a dedicated preparation room which is staffed by our committed and experienced Lab Technicians who are responsible for the maintenance and preparation of our practical equipment. As a department we have a mobile IPAD facility allowing the use of ICT in any classroom.

<b><u>Curriculum Intent</u></b>	In Science our aim is to foster an environment of discovery and curiosity. Science is everything from how our own bodies work to the formation of the universe and everything in between. The Science curriculum is not only designed to give students a basic scientific literacy in the three specific disciplines of Biology, Chemistry and Physics but to also give students the tools to be able to answer the questions they have not even thought of yet. While we will of course prepare our students for external examinations, more importantly we want them to be able to understand the changing world around them so they are better prepared to look after themselves and their planet.
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### Curriculum Implementation

#### Key Stage 3:

What my child will learn in Year 7:



	Previous knowledge recalled		New Knowledge	
	<b>Cells</b>	<b>Body Systems</b>	<b>Cells</b>	<b>Body Systems</b>
Term 1	1 Living v Non-Living things 2 The biological needs of plants and their basic parts 3 The basic needs of animals, including humans and their basic parts 4 How nutrients are transported in animals	1 Humans and some animals have skeletons and muscles for support, protection and movement  2 Cells are the fundamental unit of living things  3 The role of diffusion in movement of materials in and between cells	1 Using microscopes 2 Animal and Plant cells 3 Specialised Cells 4 Diffusion of materials in cells 5 Unicellular organisms	1 Levels of organisation 2 Gas exchange 3 Breathing 4 Skeleton 5 Joints 6 Muscles
	Key Knowledge Assessment		Links to literacy and numeracy	
	<b>Cells</b>	<b>Body Systems</b>	<b>Cells</b>	<b>Body Systems</b>
	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Cells	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Body systems	Explaining the links between the structure of a cell and its function, using simple equations to determine magnification of an image	Explaining the process of gas exchange in the lungs, using key terminology such as trachea, diffuse, alveoli and bronchiole
Term 2	Previous knowledge recalled		New Knowledge	
	<b>Particles</b>	<b>Elements, Atoms and Compounds</b>	<b>Particles</b>	<b>Elements, Atoms and Compounds</b>
	1 The three states of matter – solids, liquids and gases 2 Some materials can change states 3 Materials can have properties and can be classified in different ways	1 Objects are made of materials  2 Materials are made of one or more types of particles  3 Particles can be arranged in solids, liquids or gases	1 The particle model 2 States of Matter 3 Density of Materials 4 Melting and Freezing 5 Boiling 6 Diffusion	1 Elements 2 Atoms 3 Compounds 4 Chemical Formulae
	Key Knowledge Assessment		Links to literacy and numeracy	
	<b>Particles</b>	<b>Elements, Atoms and Compounds</b>	<b>Particles</b>	<b>Elements, Atoms and Compounds</b>
Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Particles	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Elements, Atoms and Compounds.	Using models to describe real-world phenomena, using number lines to determine the state of matter at a given temperature	Explaining the difference between key terminology, using chemical symbols and formulae to determine the number of atoms in each chemical	
Term 3	Previous knowledge recalled		New Knowledge	
	<b>Forces</b>	<b>Space</b>	<b>Forces</b>	<b>Space</b>



	<ol style="list-style-type: none"> <li>How things move on different surfaces</li> <li>The names of some forces</li> <li>Unsupported objects fall to the Earth due to gravity</li> <li>The effects of air &amp; water resistance and friction</li> </ol>	<ol style="list-style-type: none"> <li>The changes in weather/climate across the 4 seasons</li> <li>The movement of the Earth and other planets relative to the sun</li> <li>The movement of the moon relative to the Earth</li> <li>The sun, the Earth and the moon are broadly sphere-shaped</li> <li>The Earth's rotation and how this causes day and night</li> </ol>	<ol style="list-style-type: none"> <li>The types of forces</li> <li>Elastic forces: tension and compression</li> <li>Drag forces and friction</li> <li>Non-contact forces</li> <li>Balanced and unbalanced forces</li> </ol>	<ol style="list-style-type: none"> <li>The night sky</li> <li>The solar system</li> <li>The Earth</li> <li>The moon</li> </ol>
	<b>Key Knowledge Assessment</b>		<b>Links to literacy and numeracy</b>	
	<b>Forces</b>	<b>Space</b>	<b>Forces</b>	<b>Space</b>
	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Forces	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Space.	Explaining the effects on motion of balanced and unbalanced forces, calculating resultant forces of simple interaction pairs of forces	To write a story of the motion of the Earth through space, including key terminology such as orbit, solar, axis, interpreting graphs of daylight hours of different regions of the world at different times
<b>Term 4</b>	<b>Previous knowledge recalled</b>		<b>New Knowledge</b>	
	<b>Reactions</b>	<b>Acids and Alkalis</b>	<b>Reactions</b>	<b>Acids and Alkalis</b>
	<ol style="list-style-type: none"> <li>The definitions of atom, substance, material, molecule, compound and element</li> <li>Some changes can not be reversed</li> <li>The names and symbols of some elements and chemicals</li> </ol>	<ol style="list-style-type: none"> <li>Some changes can not be reversed</li> <li>In chemical reactions, new substances are made</li> <li>The names of symbols of some elements and chemicals</li> </ol>	<ol style="list-style-type: none"> <li>Chemical Reactions</li> <li>Word equations</li> <li>Oxidation</li> <li>Decomposition</li> <li>Conservation of Mass</li> <li>Exothermic and endothermic</li> </ol>	<ol style="list-style-type: none"> <li>Acids and Alkalis</li> <li>Indicators and pH</li> <li>Neutralisation</li> <li>Making salts</li> </ol>
	<b>Key Knowledge Assessment</b>		<b>Links to literacy and numeracy</b>	
	<b>Reactions</b>	<b>Acids and Alkalis</b>	<b>Reactions</b>	<b>Acids and Alkalis</b>
	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Reactions.	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Acids and Alkalis.	Using the key terms reactant and product to describe different chemicals within reactions, to use addition and subtraction to determine changes in mass of reactants or products	Using the key terms reactant and product to describe different chemicals, understanding the pH scale as a number line from 0 to 14
<b>Term 5</b>	<b>Previous knowledge recalled</b>		<b>New Knowledge</b>	



	<p><b>Sound</b></p> <p>1 Sounds are made by objects vibrating</p> <p>2 Sounds travel through mediums to the ear</p> <p>3 The pattern between pitch and loudness of a sound and the features of the object that produced it</p> <p>4 Sounds are fainter if they are further away</p>	<p><b>Light</b></p> <p>1 Light is needed to see objects</p> <p>2 Light is reflected from objects</p> <p>3 Light from the sun can be dangerous and you can protect your eyes in a variety of ways</p> <p>4 Light travels in straight lines</p> <p>5 We see objects because light reflects off of objects into our eyes</p> <p>6 Shadows can be different sizes and shapes depending on factors of the light and object</p>	<p><b>Sound</b></p> <p>1 Waves</p> <p>2 What is sound?</p> <p>3 Loudness and Pitch</p> <p>4 Detecting Sound</p> <p>4 Echoes and ultrasound</p>	<p><b>Light</b></p> <p>1 Light</p> <p>2 Reflection</p> <p>3 Refraction</p> <p>4 The eye and the camera</p> <p>5 Colour</p>
	<b>Key Knowledge Assessment</b>		<b>Links to literacy and numeracy</b>	
	<p><b>Sound</b></p> <p>Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Sound</p>	<p><b>Light</b></p> <p>Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Light.</p>	<p><b>Sound</b></p> <p>Explaining the relationships between sound loudness and pitch to frequency and amplitude of the waves, determining the speed of sound using a simple equation</p>	<p><b>Light</b></p> <p>Interpreting scientific diagrams and describing the similarities between the eye and the camera, using a protractor to determine the angles of reflection and refraction</p>
Term 6	<b>Previous knowledge recalled</b>		<b>New Knowledge</b>	
	<b>Reproduction</b>		<b>Reproduction</b>	
	<p>1 The life cycle of plants including pollination, seed formation and seed dispersal</p> <p>2 The process of reproduction in some animals</p> <p>3 Levels of Organisation</p>		<p>1 Adolescence</p> <p>2 The Reproductive System</p> <p>3 Fertilisation and Implantation</p> <p>4 The developing foetus</p> <p>5 The menstrual cycle</p> <p>6 Flowers and pollination</p> <p>7 Seed dispersal</p>	
	<b>Key Knowledge Assessment</b>		<b>Links to literacy and numeracy</b>	
	<b>Reproduction</b>		<b>Reproduction</b>	
<p>Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Reproduction.</p>		<p>The describe the process of reproduction in flowering plants and humans using the key terminology</p>		





## What my child will learn in Year 8:

	Previous knowledge recalled		New Knowledge	
	<b>Health and Lifestyle</b>	<b>Biological Processes</b>	<b>Health and Lifestyle</b>	<b>Biological Processes</b>
Term 1	1. The impact of diet, exercise, drugs and lifestyle on health 2. The Levels of Organisation 3. The role of diffusion to move particles in the body	1. The difference between producers and consumers 2. The functions of the cell wall, membrane, mitochondria and chloroplast	1. Nutrients 2. Food tests 3. Unhealthy diet 4. The Digestive System 5. Bacteria & Enzymes 6. Drugs 7. Smoking 8. Alcohol	1. Photosynthesis 2. Leaves 3. Plant minerals 4. Aerobic Respiration 5. Anaerobic Respiration
	Key Knowledge Assessment		Links to literacy and numeracy	
	<b>Health and Lifestyle</b>	<b>Biological Processes</b>	<b>Health and Lifestyle</b>	<b>Biological Processes</b>
	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Health and lifestyle.	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Biological processes.	To compare the similarities of word pairs such as mineral vs vitamin, or malnutrition vs starvation, interpreting graphs and calculating a percentage change.	Planning an investigation into the rate of photosynthesis, estimating values and using word equations to represent photosynthesis and respiration
Term 2	Previous knowledge recalled		New Knowledge	
	<b>The Periodic Table</b>	<b>Metals and materials</b>	<b>The Periodic Table</b>	<b>Metals and materials</b>
	1. Key definitions of chemistry terms: atom, element, molecule and compound 2. Naming simple compounds 3. Definitions of melting and boiling points	1. The metals on the periodic table 2. Definitions of atom, material, substance, element, compound, product and reactant 3. Chemical changes can not be easily reversed	1. Properties of Elements 2. Metals and non-metals 3. Groups and Periods 4. Group 1 elements 5. Group 7 elements 6. Group 0 elements	1. Metals and acid reactions 2. Metals and oxygen reactions 3. The reactivity series 4. Metal displacement reactions 5. Extracting metals 6. Ceramics 7. Polymers 8. Composites
	Key Knowledge Assessment		Links to literacy and numeracy	
	<b>The Periodic Table</b>	<b>Metals and materials</b>	<b>The Periodic Table</b>	<b>Metals and materials</b>
Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most	Understanding the etymology of the key terms element, compound and period, constructing bar charts for comparing	Understanding the etymology of words such as composite and polymer, exploring the advantages and disadvantages of	



	lessons. Formative and End of Topic test on The periodic table.	lessons. Formative and End of Topic test on Metals and materials.	melting points of elements	different materials for different purposes, using percentages to calculate ore yields
Term 3 & 4	Previous knowledge recalled		New Knowledge	
	<b>Energy</b>	<b>Electricity and Magnetism</b>	<b>Energy</b>	<b>Electricity and Magnetism</b>
	1. That some materials change state when they are heated or cooled 2. Temperature is measured in degrees Celsius	1. Magnetic forces act at a distance and can repel or attract, depending on the position of the two poles 2. Identify common electrical appliances 3. Constructing simple series circuits and determining whether a light bulb will turn on 4. The names of basic circuit parts such as cells, wires, switches and buzzers 5. Some materials are conductors of electricity and some are insulators	1. Food and fuels 2. Energy resources 3. Conservation of Energy 4. Energy and temperature 5. Energy transfer in particles 6. Energy transfer in radiation 7. Energy transfer in forces	1. Static charge 2. Circuits and current 3. Potential difference 4. Resistance 5. Series and parallel 6. Magnets and magnetic fields 7. Electromagnets 8. The uses of electromagnets
	Key Knowledge Assessment		Links to literacy and numeracy	
	<b>Energy</b>	<b>Electricity and Magnetism</b>	<b>Energy</b>	<b>Electricity and Magnetism</b>
	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Energy.	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Electricity and magnetism.	Explaining why we cannot observe energy directly, using equations and substituting values from a text-based question into a formula	Understanding and using the key terms and knowing the definitions of words such as potential difference, electric field, rearranging a given equation to change the subject of the equation
Term 5	Previous knowledge recalled		New Knowledge	
	<b>Ecosystems and Adaptation</b>	<b>Inheritance</b>	<b>Ecosystems and Adaptation</b>	<b>Inheritance</b>
	1. Understand food chains 2. Know that environments can change 3. Living things are adapted to their environment 4. Life on earth depends on photosynthesis and the organisms that perform photosynthesis	1. Living things have changed over time 2. Living things sexually reproduce offspring of the same species but are not identical to their parents	1. Food webs 2. Disruptions to food webs 3. Ecosystems 4. Competition 5. Adapting to change	1. Variation 2. Continuous and Discontinuous variation 3. Inheritance 4. Natural Selection 5. Extinction
	Key Knowledge Assessment		Links to literacy and numeracy	
	<b>Ecosystems and Adaptation</b>	<b>Inheritance</b>	<b>Ecosystems and Adaptation</b>	<b>Inheritance</b>



	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Ecosystems and Adaptation.	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Inheritance.	Reading comprehension tasks about climate change and its effects on a keystone species, the polar bear, calculating energy transfers and percentage changes in population	Reading comprehension about the history of genetic study, plotting histogram graphs of a continuous variable
Term 6	Previous knowledge recalled		New Knowledge	
	<b>Motion and Pressure</b>		<b>Motion and Pressure</b>	
	1. Some mechanisms such as levers, pulleys and gears are force multipliers – in other words allow a smaller force to have a greater effect		1. Speed 2. Motion graphs 3. Pressure in gases 4. Pressure in liquids 5. Pressures on solids 6. Turning forces	
	Key Knowledge Assessment		Links to literacy and numeracy	
	<b>Motion and Pressure</b>		<b>Motion and Pressure</b>	
Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Motion and Pressure.		Understanding key terminology such as moments and pressure, substituting values in a formula and rearranging equations to change the subject of the equation		



## What my child will learn in Year 9

	Previous knowledge recalled		New Knowledge	
Term 1	<b>Separation Techniques</b>	<b>The Earth</b>	<b>Separation Techniques</b>	<b>The Earth</b>
	1. Definitions of atom, element, molecule, compound, melting and boiling points  2. Understanding the three states of matter and the arrangement of their particles	1. States of matter and changes of state  2. Rocks are made of grains or crystals	1. Pure substances  2. Mixtures  3. Solutions  4. Solubility  5. Filtration  6. Evaporation and Distillation  7. Chromatography	1. The Earth and the atmosphere  2. Sedimentary Rocks  3. Igneous and Metamorphic rocks  4. The rock cycle  5. The carbon cycle  6. Global heating
	Key Knowledge Assessment		Links to literacy and numeracy	
	<b>Separation Techniques</b>	<b>The Earth</b>	<b>Separation Techniques</b>	<b>The Earth</b>
	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on separation techniques.	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on The Earth.	Understanding the key terminology of terms such as substance, sample and mixture, working with compound units such as $g/cm^3$ as a concentration	Understanding the etymology of words such as igneous, metamorphic and sedimentary, analysing data on climate
Term 2	Previous knowledge recalled		New Knowledge	
	<b>Cell Structure</b>		<b>Cell Structure</b>	
	Understanding of fundamental cell components like the nucleus, mitochondria, and cell membranes.  Familiarity with using light microscopes and basic concepts of magnification and resolution.  Knowledge of the differences between plant and animal cells, and between eukaryotic and prokaryotic cells.  Awareness of how substances like water and nutrients move across cell membranes through processes like diffusion and osmosis.		Students will deepen their understanding of cellular biology. They'll explore advanced microscopy techniques, notably electron microscopy, to study sub-cellular structures in greater detail. Students will differentiate between eukaryotic and prokaryotic cells, learning about specific adaptations of specialized cells. The unit also covers transport mechanisms like diffusion, osmosis, and active transport, emphasizing how cells manage material exchange. Additionally, students will calculate magnification and understand the adaptations of exchange surfaces related to these transport processes.	
	Key Knowledge Assessment		Links to literacy and numeracy	
	<b>Cell Structure</b>		<b>Cell Structure</b>	
Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Cell structure.  Students will conduct a required practical in Microscopy and Osmosis.		Literacy skills are developed through detailed descriptions of cellular components, interpreting scientific texts, and articulating explanations of complex biological processes. Numeracy is integral for calculating magnifications, understanding scale, and analysing rates of material transport such as diffusion and osmosis. Students also engage with graphical data to interpret the effects of variables like temperature and concentration gradients on cellular transport mechanisms, enhancing their ability to		



		quantitatively assess and predict biological phenomena.
Term 3&4	Previous knowledge recalled	New Knowledge
	<b>The fundamentals of Matter</b>	<b>The fundamentals of Matter</b>
	Students need to recall foundational knowledge from KS3 science. This includes understanding that matter exists in three primary states: solid, liquid, and gas, and the basic particle arrangements and movement within each state. They should remember common changes of state like melting, boiling, freezing, and condensation. Students should also be familiar with the concept that all substances are made of atoms, how to differentiate between elements and compounds, and simple methods for separating mixtures. Additionally, a basic grasp of chemical reactions and the idea that mass is conserved is beneficial. This prior learning provides a crucial springboard for deeper exploration of atomic structure, periodicity, thermodynamics, and nuclear science.	Historical development of atomic models, from plum pudding to Bohr, and understanding how new evidence drove these changes. They'll learn the detailed structure of the atom, including subatomic particles, and how isotopes and ions differ. The unit will explain the periodic table's organization based on electron configuration, detailing trends in Group 1, 7, and transition metals reactivity. Furthermore, they'll explore radioactive decay (alpha, beta, gamma), half-life, nuclear applications in medicine, and the principles of fission and fusion, including associated hazards and waste management.
	Key Knowledge Assessment	Links to literacy and numeracy
	<b>The fundamentals of Matter</b>	<b>The fundamentals of Matter</b>
Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on the fundamentals of matter  Students will conduct a required practical in Density and Specific heat capacity.	Learning key terminology such as 'isotope', 'half-life', and 'fission'. Students will interpret historical timelines, descriptive text, and experimental procedures, articulate scientific reasoning, and formulate clear, concise explanations for phenomena like reactivity trends and particle behaviour.  Numeracy skills are essential for this unit. Students will use mathematical relationships to calculate density, determine the number of subatomic particles using atomic and mass numbers, and solve problems involving energy changes with specific heat capacity and latent heat. They'll interpret various graphs like heating and cooling curves and radioactive decay curves and apply concepts of proportionality and inversely proportional relationships for gases. Additionally, students will apply standard form for expressing atomic and nuclear sizes and utilise significant figures in calculations.	
Term 5	Previous knowledge recalled	New Knowledge
	<b>Cell Division</b>	<b>Cell Division</b>
	1 Using microscopes 2 Animal and Plant cells 3 Specialised Cells 4 Diffusion of materials in cells 5 Unicellular organisms	1. Cell division 2. Growth and division 3. Stem cells 4. Stem cell dilemmas



	<b>Key Knowledge Assessment</b>	<b>Links to literacy and numeracy</b>
	<b>Cell Division</b>	<b>Cell Division</b>
	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on cell structure and cell division.	To describe the process of cell division and to explain why the stages are occurring, to estimate the length of each stage
Term 6	<b>Previous knowledge recalled</b>	<b>New Knowledge</b>
	<b>Organisation and the Digestive System</b>	<b>Organisation and the Digestive System</b>
	1. Nutrients 2. Food tests 3. Unhealthy diet 4. The Digestive System 5. Bacteria & Enzymes 6. Levels of organisation	1. Tissues and organs 2. The human digestive system 3. The chemistry of food 4. Catalysts and enzymes 5. Factors affecting enzyme action 6. How the digestive system works 7. Making digestion efficient
	<b>Key Knowledge Assessment</b>	<b>Links to literacy and numeracy</b>
	<b>Organisation and the Digestive System</b>	<b>Organisation and the Digestive System</b>
	Knowledge retrieval questions at the start of each lesson and short answer application questions as part of most lessons. Formative and End of Topic test on Cell structure, cell division and organisation and the digestive system.  Students will conduct required practicals in Food tests and Enzymes.	Learning key terminology such as tissue, organ, organism and to explain the process of digestion, including the action of enzymes, to gather data that shows the difference between digestive with and without enzymes



Extra-Curricular opportunities	Science club, Netflix documentaries listed on wall in G8, the "Take it Further" document found on the website
Links to careers/ aspirations	Each topic begins with a BIG IDEAS lesson. In these topics, we explore the prior learning and the future career ambitions that follow on from the topic. Students learn a range of interesting and lesser-known careers such as a Sports Scientist, Space Visual Engineer, Sound Engineer for Concerts, Anaesthetist and many others.
Links to our Fulston FAMILY values	<p>Fortitude: Showing strength in your convictions and trying hard even when the learning is challenging</p> <p>Ambition: Asking for more challenging tasks and tackling 6-mark questions with enthusiasm</p> <p>Mindful: Choosing not to give up and help others when they don't understand</p> <p>Integrity: Carrying out fair and equitable scientific investigations</p> <p>Leadership: Being a positive role model to others and following your passions in science</p> <p>Young Citizens: Understanding others different needs and working to make the classroom environment a supportive one</p>

Extended Learning Opportunities for Key Stage 3	<p><b>Biology:</b> Find out what creatures have been spotted in your local area using the NBN Atlas  <a href="https://records.nbnatlas.org/explore/your-area">https://records.nbnatlas.org/explore/your-area</a></p> <p>Use a dichotomous key to find out what type of insects you have seen/caught  <a href="https://www.amentsoc.org/insects/what-bug-is-this/adult-key.html">https://www.amentsoc.org/insects/what-bug-is-this/adult-key.html</a></p> <p>The Sea Life Centre – Various</p> <p>Take a visit to The Body Worlds in London  <a href="https://bodyworlds.com/">https://bodyworlds.com/</a></p> <p><b>Chemistry:</b> Listen to Melvyn Bragg and guests discuss the science of matter and the states in which it can exist on BBC4.  <a href="https://www.bbc.co.uk/programmes/b03zdbr4">https://www.bbc.co.uk/programmes/b03zdbr4</a></p> <p>Read this journal about how we can make water safe to drink.  <a href="https://www.sciencejournalforkids.org/articles/heavy-metal-pollution-how-can-we-make-water-safe-to-drink/">https://www.sciencejournalforkids.org/articles/heavy-metal-pollution-how-can-we-make-water-safe-to-drink/</a></p> <p><b>Physics:</b> (Completing an Egg Drop from Space – Mark Rober)  <a href="https://www.youtube.com/watch?v=BYVZh5kqaFg">https://www.youtube.com/watch?v=BYVZh5kqaFg</a></p> <p>Listen to this podcast on the mystery of gravity.  <a href="https://www.brainson.org/episode/2015/01/09/the-mystery-of-gravity">https://www.brainson.org/episode/2015/01/09/the-mystery-of-gravity</a></p> <p>Listen to the following podcast about heat transfer: Energy: Stop Faking It! Energy, Heat, and Heat Transfer: Thermal  <a href="https://my.nsta.org/resource/11525/podcast-energy-stop-faking-it-energy-heat-and-heat-transfer-thermal-energy">https://my.nsta.org/resource/11525/podcast-energy-stop-faking-it-energy-heat-and-heat-transfer-thermal-energy</a></p> <p>Watch The Fascinating Truth About Energy With Professor Jim Al-Khalili</p>
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<https://www.youtube.com/watch?v=aeaQpuYPsy8>

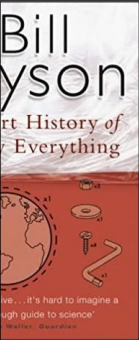
Investigate the kinetic and gravitational energy transferring in a skateboarder

[https://phet.colorado.edu/sims/html/energy-skate-park/latest/energy-skate-park\\_en.html](https://phet.colorado.edu/sims/html/energy-skate-park/latest/energy-skate-park_en.html)

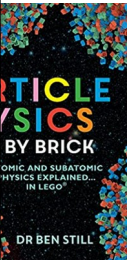


## Opportunities for Key Stage 4/5

	Listen	Watch	Explore and visit
<p>panse (Novel Series). Science</p> 	<p>The Infinite Monkey Cage episode “Exoplanets”  <a href="https://www.bbc.co.uk/programmes/p0dcn51y">https://www.bbc.co.uk/programmes/p0dcn51y</a></p>	<p>(Completing an Egg Drop from Space – Mark Rober)  <a href="https://www.youtube.com/watch?v=BYVZh5kqaFg">https://www.youtube.com/watch?v=BYVZh5kqaFg</a></p> <p>Listen to this podcast on the mystery of gravity.  <a href="https://www.brainson.org/episode/2015/01/09/the-mystery-of-gravity">https://www.brainson.org/episode/2015/01/09/the-mystery-of-gravity</a></p>	<p>Visit the mattress factory i            apply your understanding</p>
<p>his journal about getting energy            ur waste – can we create a greener            nment to live in?</p> <p><a href="http://www.sciencejournalforkids.org/waste-to-energy-how-can-we-get-most-from-our-waste/">www.sciencejournalforkids.org/waste-to-energy-how-can-we-get-most-from-our-waste/</a></p>	<p>Listen to the following podcast about heat transfer: Energy: Stop Faking It! Energy, Heat, and Heat Transfer: Thermal  <a href="https://my.nsta.org/resource/11525/podcast-energy-stop-faking-it-energy-heat-and-heat-transfer-thermal-energy">https://my.nsta.org/resource/11525/podcast-energy-stop-faking-it-energy-heat-and-heat-transfer-thermal-energy</a></p> <p>Watch The Fascinating Truth About Energy With Professor Jim Al-Khalili  <a href="https://www.youtube.com/watch?v=aeaQpuYPsy8">https://www.youtube.com/watch?v=aeaQpuYPsy8</a></p>	<p>(How Cell Service Actually Works – Wendover Productions)  <a href="https://www.youtube.com/watch?v=0faCad2kKeg">https://www.youtube.com/watch?v=0faCad2kKeg</a></p> <p>(British Plugs are Better than All Other Plugs, and Here’s Why – Tom Scott) <a href="https://www.youtube.com/watch?v=UEfP1OKKz_Q">https://www.youtube.com/watch?v=UEfP1OKKz_Q</a></p> <p>(How Australia’s Most Remote Phone Booths Work – Julian O’Shea)  <a href="https://www.youtube.com/watch?v=dU7PBXYmyXg">https://www.youtube.com/watch?v=dU7PBXYmyXg</a></p> <p>Shock and Awe – BBC Horizons  <a href="https://www.youtube.com/watch?v=Gtp51eZkwol">https://www.youtube.com/watch?v=Gtp51eZkwol</a></p>	<p>Investigate the kinetic and energy transferring in a sk  <a href="https://phet.colorado.edu/skate-park/latest/energy-park_en.html">https://phet.colorado.edu/skate-park/latest/energy-park_en.html</a></p>
<p>history of nearly everything</p>	<p>Listen to Melvyn Bragg and guests discuss the science of matter and the states in which it can exist on BBC4.</p>	<p>(World’s Lightest Solid! – Veritasium)  <a href="https://www.youtube.com/watch?v=AeJ9q45Pfd0">https://www.youtube.com/watch?v=AeJ9q45Pfd0</a></p>	<p>The Science Museum – Lo            Visit a Chemistry exhibitio</p>



Physics – Brick by brick



<https://www.bbc.co.uk/programmes/b03zdb4>

Read this journal about how we can make water safe to drink.

<https://www.sciencejournalforkids.org/articles/heavy-metal-pollution-how-can-we-make-water-safe-to-drink/>

(Let's Travel to the Most Extreme Place in the Universe – Kurzgesagt – In A Nutshell) <https://www.youtube.com/watch?v=FfWtIaDtfYk>

(All About Mercury, the Liquid Metal – NileRed)

<https://www.youtube.com/watch?v=ZiWlthrtneU>



<https://ed.ted.com/lessons/solid-liquid-gas-and-plasma-michael-murillo>



<https://www.youtube.com/watch?v=q8Ent5CXhfY>

Watch this video that investigates the periodic table to life.

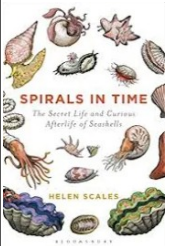
<https://www.youtube.com/watch?v=kqe9tEcZkno>

Museum

<https://www.sciencemuseum.org.uk/objects-and-stories/chemistry>



in Time by Helen Scales (Speak to her to borrow)



Small Screen Science

<https://podcasts.apple.com/gb/podcast/small-screen-science/id1511181067>

Listen to 'The Science of Your Favourite Foods' with Rob Dunn

<https://radiopublic.com/tumble-science-podcast-for-kids-G4wko8/s1!ef666>

The Poop Collector with Lawrence David

<https://radiopublic.com/tumble-science-podcast-for-kids-G4wko8/s1!02d02>

Watch 'The Hidden Kingdom' The Story of the biological cell, where Adam Rutherford explores how centuries of scientific and religious dogma were overturned by the discovery of the cell.

<https://www.bbc.co.uk/programmes/b00m425d>

Watch a TedEd Talk about the brain

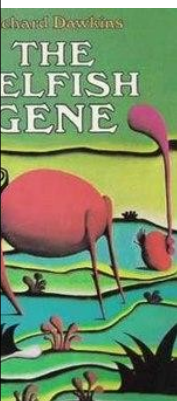
[https://www.ted.com/playlists/576/fascinating\\_ted\\_ed\\_lessons\\_about\\_the\\_brain](https://www.ted.com/playlists/576/fascinating_ted_ed_lessons_about_the_brain)

Find out what creatures have in your local area using the <https://records.nbnatlas.org/area>

Use a dichotomous key to identify insects you have seen/collected. <https://www.amentsoc.org/bug-is-this/adult-key.html>

The Sea Life Centre – Visit <https://bodyworlds.com/>

Elfish Gene



Unnatural selection - Netflix series about genetic engineering.

<https://www.netflix.com/title/80208910>

(Why 90% of Asians are Lactose Intolerant – Half As Interesting) <https://www.youtube.com/watch?v=jrhVfwPIB0A>

Unnatural selection - Netflix series about genetic engineering.

<https://www.netflix.com/title/80208910>

Join DNA Dan on his Genetics and Genomics podcast

<https://www.scuhs.edu/announcements/introducing-dna-dan-a-genetics-and-genomics-podcast/>

The Natural History Museum Visit the Science Museum <https://www.sciencemuseum.org.uk/objects-and-stories/epidemics>