



Curriculum Map



Subject: Science -

Year group: Year 7

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Content</p> <p><i>Declarative Knowledge – ‘Know What’</i></p>	<p>Energy: The different energy stores and how energy is transferred between them. How the development of technology will allow us to live a ‘greener’ life.</p> <p>Particles: The arrangement of particles in different states of matter. How energy affects the states of matter.</p> <p>Cells: How the development of the microscope has allowed us to develop our understanding of biological structures. Explaining why the structure of cells changes depending on the role of the tissue or organ.</p>	<p>Forces Describe how forces can affect different objects. Explain why we need to understand the effect of forces for many aspects of life.</p> <p>Atoms, elements and compounds Describing the structure of an atom. becoming familiar with the periodic table. Explaining how atoms and elements combine to form compounds.</p>	<p>Acids & Alkalis</p> <p>Chemical reactions: The difference between a physical and chemical change. Chemical equations. The reactions of oxidation, combustion and thermal decomposition. Comparison of fuels.</p>	<p>Waves: The difference between a transverse and longitudinal wave. How we hear. How we see different objects. What happens when a wave hits an object?</p> <p>Body Systems: The level of organisation in different organisms. The role of the respiratory and muscular system. How the shape and structure of a cell or organisms impacts the role.</p>	<p>Space: The content and size of the Solar System. Movement of the Earth and Moon. An introduction to how stars form. The future of Space exploration.</p>	<p>Reproduction: TBC.</p>
<p>Skills</p> <p><i>Procedural Knowledge – ‘Know How’</i></p>	<p>To be able to use laboratory equipment safely and appropriately. Identifying changes to a system and the impact of these changes Analysis of information to write a conclusion. Use of models to represent key scientific concepts. Use of diagrams to represent scientific concepts Using the periodic table to identify elements and the properties of elements</p>					



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Spotting patterns in data.
 Recording observations in a given table.
 Present data with support.
 With support use graphs to make predictions about materials.
 With support to produce biological drawings from specimens.

<p>Key Questions</p>	<p>Energy - Can an object have more than one energy store? Which energy store is filling up or decreasing in different situations such as a kettle boiling? Why are non-renewable energy resources so difficult to replace? What impact do non-renewable energy resources have on the environment?</p> <p>Particles - At what temperature will a substance change state? What happens to the particles when they change state? Can substances change from a solid to a gas? How do particles travel from one area to another? What effect does temperature have on the arrangement of particles?</p>	<p>Atoms - How are the particles arranged in different substances? Why is an atom neutral? How has the periodic table changed over time? Why is carbon a solid and carbon dioxide a gas at room temperature?</p>	<p>Chemical reactions - Why isn't glucose a hydrocarbon? What makes a good fuel? What is the difference between a chemical and physical reaction? What is the difference between an oxidation reaction and a combustion reaction? How can we use exothermic and endothermic reactions in real life?</p> <p>Forces - What is the difference between a contact and non-contact force? How do forces affect the movement of an object? Are there any forces acting on a stationary object?</p>	<p>Waves - Which wave transfers the most energy? What is the difference between longitudinal and transverse waves? Why can't sound waves travel through a vacuum? How is the ear adapted to its function? What is the difference between a luminous and non-luminous object? How are light and sound waves similar or different? How can you see a book? How do I see a blue lego brick?</p> <p>Body Systems - Why is structural organisation important to an organism? How do cells, tissues and organs work together to form a system? How does the shape and size of a cell or organ impact the role of the organ?</p>	<p>Space - Why was Pluto reclassified as a Dwarf Planet. What are the trends that are seen as you move through the Solar system? Why is it rare for an asteroid to hit the Earth? How are stars formed? What factors affect Space exploration?</p>	<p>What are the different objects found in the universe? What is the size order of the different objects in our universe? Describe features for each of the following; star, planet, satellite (natural and artificial), comet, meteor, meteorite, galaxy What is in orbit around what? What is the structure of our solar system? How and why are the conditions on each of the planets different? How does the Earth move? Why do we experience day and night and different seasons? Describe the lunar phases of the moon. What are the different types of eclipse and how does each happen?</p>
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	Cells - How has the microscope changed over time? What information can the microscope give us? How are plant cells different to animal cells? Why is the structure of the cell important to its function?					
Assessment	Diagnostic Assessment	Diagnostic Assessment Summative assessment - exam question based assessment	Diagnostic Assessment	Diagnostic Assessment Summative assessment - exam question based assessment	Diagnostic Assessment	Diagnostic Assessment Summative assessment - exam question based assessment
Literacy / Numeracy / SMSC / Character	Literacy - Comparison of renewable and non-renewable energy resources. Numeracy - calculating power. Changing between units. Calculating efficiency. Identifying boiling and melting points of different substances. SMSC - use of energy resources and the impact on the environment. How advancements in technology have led to improved understanding of the	Literacy - Describing how the atom has changed over time. Numeracy - calculating the number of different subatomic particles in an atom. SMSC - Explain why peer review is important to ensure accurate information is disseminated to the public.	Literacy - Comparing fuels. Numeracy - calculating the energy changes in a reaction. Calculating resultant force. SMSC - using different types of reactions to treat injuries such as ice packs. How an understanding of forces can reduce energy wastage and improve efficiency of technology.	Literacy - explaining how we see different objects/colours. Comparing transverse and longitudinal waves. Numeracy - calculating angles and spotting patterns. starting to use standard form to represent very large and very small numbers. SMSC - correcting sight & hearing defects and identifying causes of sight and ear defects. Understanding the impact of chemicals and lifestyle choices on the respiratory system.	Adolescence and puberty Menstruation Lifestyle choice that affect fetal development Contraception	Graphing



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	relationships in organisms.					
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