

What does my subject look like in each of the pathways?

Engage	Discovery	Develop	Deepen
<p>Students will engage with aspects of learning about the world around them through sensory means. They will begin to identify and classify things in the world around them and respond to different stimuli including different plants and animals, materials and physical changes. Students will be demonstrating their engagement through exploration, realisation, anticipation, persistence and initiation of activities.</p>	<p>Students will be discovering knowledge about the world around them through scientific topics. They will start to use some scientific vocabulary to communicate their knowledge and understanding. Students will take part in focused scientific activities. They will be able to identify and classify living things a range of things including, materials and a physical processes. Students will ask simple scientific questions and be able to perform simple tests to find things out. They will start to gather simple data and answer questions.</p>	<p>Students will develop their knowledge and understanding of the world around them through scientific topics. They will be able to use some scientific vocabulary in context. Students will ask scientific questions linked to the topic being taught. They will be able to observe closely and use some equipment to measure and obtain results. Students will be developing their ability to gather and record simple data. They will use their results and observation to suggest answers to questions. They will start to suggest improvements and be able to make predictions based on what they already know.</p>	<p>Students will deepen their knowledge and understand of key scientific concepts and be able to transfer their knowledge to other areas. They will be able to use specific scientific vocabulary in the correct context. Students will deepen their ability to planning and carry out scientific enquiries. They will be able to use their results and findings to answer questions. Students will be competent using a range of equipment to measure and gather data. They will be able to record and present their data and findings using a variety of different methods. Students will draw from what they already know to make predictions, evaluations and suggestions for improvements</p>

			and be able to explain their rationale.
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What does my subject look like in each of the pathways, for each of our drivers?

	ENGAGE	DISCOVERY	DEVELOP	DEEPEN
COMMUNICATION	Students will communicate using speech, ACC, gestures, signs and symbols to show their involvement in activities and express their level of enjoyment. This may include immersive play, experiences different materials, forces, living things and cause and effect.	Students will expand their ability to use speech, AAC, gestures, signs and symbols to show their enjoyment of science. They start to use some scientific vocabulary to share their ideas and understanding. They will start to communicate their findings using pictures, symbols and sequencing.	Students are developing their scientific knowledge and understanding so they are able to use the correct scientific vocabulary in the right context and be able to apply their knowledge to other contexts. Students are able to make some contribution to planning, evaluating and recording their findings.	Students will be able to communicate their knowledge of science in a variety of circumstances, whether it be in class, during assessment, or in the real world, working independently and through team work. Students will be able to communicate their ideas, predictions, findings and conclusions in a variety of different ways.
INDEPENDENCE	Students will start to express their own interest and likes and dislikes towards sensory aspects of content linked to the world around them. Students will begin to explore and initiate activities related to the world around them.	Students will start to independently engage with various scientific activities. They will start to predict and explore different concepts for themselves. Students will begin to discover things about themselves and their bodies and how to keep healthy.	Students will be able to independently work during lessons to show their developing scientific knowledge. They will be able to demonstrate that they are understanding concepts and scientific ideas. Students will have knowledge of how to look after their bodies and keep themselves safe and healthy.	Students can confidently showcase their scientific knowledge by independently thinking for themselves. Students will be able to apply the skills they have learnt with little or minimal support. Students are aware of some of the ways the world around them works and can use this knowledge and understating to keep themselves safe and

RESILIENCE	Students will build on their persistence with tasks linked to their learning about the world around them. They will be able to recognise and act on their likes and dislikes.	Students will explore and test their ideas. They will start to understand that some tests may not work and that this can be reflected on. Students will start to change their ideas and planning based on feedback.	Students are able to show they are developing knowledge of how the world around them works. They will develop confidence to ask questions about the world around them and confidence to test out their own theories and ideas. Students will develop an acceptance that all enquiries may not be successful or yield the same results.	healthy. Students will deepen their understanding of science and the world around them. They will be aware of a variety of scientific theories and concepts and that these may change over time based on new discoveries. Students will understand that the world around them is changing and will understand their part in this.
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What does my subject look like in each of the Newman sites?

Whiston	Dinnington	NAR
All students are in EYFS, KS1 or KS2 and have weekly science lessons. Children are taught in their class groups, and follow the appropriate outcomes for the curriculum pathway. Children are taught small steps so they are building their scientific knowledge and enquiry skills in order to progress through the curriculum pathway they are on, or progress on to the next pathway. Science in EYFS and KS1 is likely to be taught through continuous provision activities. Science in KS2 will be taught as specific	All students in KS3 and 4 will be accessing weekly science lessons (usually equivalent to 3 hours weekly). Students will generally be taught in their form groups and may move to the 'science room' for their lessons which will enable them to use more specialised equipment, such as Bunsen burners and chemicals etc. Students will be following an adapted form of the national curriculum and may be working towards qualifications in AQA Science Synergy (double award), AQA Entry Level or	The majority of students in KS3 and 4 will be accessing weekly science lessons (usually equivalent to 3 hours weekly). Some students may be accessing a bespoke curriculum and this may affect the subjects that they initially study. Students will be following an adapted form of the national curriculum and may be working towards qualifications in AQA Science Synergy (double award), AQA Entry Level or AQA unit awards. Students in KS5 do not study science

subject lessons.	AQA unit awards. Students in KS5 do not study science specifically unless continuing with a qualification.	specifically unless continuing with a qualification.
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Curriculum Cycles

Early Learning Cycle	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Theme	<u>All About Me!</u>	<u>Festivals & Celebrations</u>	<u>Animals</u>	<u>Important People</u>	<u>Magic Carpet</u>	<u>Beside the Seaside</u>
Cycle A	All about me – who am I?	Autumn Harvest Festival	Pets and Caring	People who help us	Magic Carpet – Britain	Seaside
Cycle B	All about me – my senses/healthy me.	Colour - Christmas and Eid	Down on the Farm	Kings and Queens	Magic Carpet – Europe	Under the Sea
Cycle C	All about me – where can I go?	Light - Diwali and Bonfire Night	Walking in the Jungle	Superheroes	Magic Carpet – 7 Continents	Pirate Adventures

EYFS Area of Learning	Communication & Language	Personal, Social & Emotional Development	Physical Development	Literacy	Mathematics	Understanding the World	Expressive Arts and Design
	Listening, Attention and Understanding	Self Regulation	Gross Motor Skills	Comprehension	Number	Past and Present	Creating with materials
	-Experience discussion and small group work. -Explore what they have heard and ask questions. -Recall what they	-Experience shared feelings and discussion. -Explore their feelings and those of others. -Recall instructions	-Experience movement. -Explore different ways to move energetically. -Recall some movements such as	-Experience stories. -Explore key events in stories. -Recall some key events from stories. ELG: Explain what has been	-Experience number songs and rhymes. -Explore numbers. -Recall number bonds up to 5. ELG: Explain a deep understanding of	-Experience stories and events that talk about the past. -Explore the past through sharing books and events. -Recall some facts	-Experience experimenting with colour. -Explore a variety of materials and tools. -Recall a variety of materials, tools and

	hear during small group work. ELG: Explain what they hear with relevant questions, comments and actions when being read to and during whole class discussions.	involving several actions. ELG: Explain understanding of their own feelings and those of others, and begin to regulate their behaviour accordingly. Set and work towards simple goals, being able to wait for what they want and control their immediate impulses when appropriate.	jumping. ELG: Explain how to negotiate space and obstacles safely, with consideration for themselves and others.	read to them by retelling stories and narratives using their own words and recently introduced vocabulary.	number to 10, including the composition of each number.	about the lives of the people around them and their roles in society. ELG: Explain some similarities and differences between things in the past and now, drawing on their experiences and what has been read in class.	techniques. ELG: Explain the process they have used to create something e.g. a model.
	Speaking	Managing Self	Fine Motor Skills	Word Reading	Numerical Patterns	People, Culture and Communities	Being Imaginative and Expressive
	-Experience shared stories. -Explore stories. -Recall some vocabulary from stories. ELG: Explain why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate.	-Experience rules and routines. -Explore the importance of healthy food. -Recall some rules. ELG: Explain the reasons for rules, know right from wrong and try to behave accordingly.	-Experience mark making/use of small tools. -Explore mark making. -Recall some tools they have used e.g. paintbrush. ELG: Explain how to hold a pencil effectively, using the tripod grip.	-Experience sounds. -Explore sounds. -Recall some words consistent with their phonic knowledge. ELG: Explain/Say a sound for each letter in the alphabet and at least 10 digraphs.	-Experience patterns. -Explore patterns. -Recall some double facts. ELG: Explain the pattern of the counting system and verbally count beyond 20.	-Experience culture. -Explore people, culture and communities. -Recall similarities and differences between different religious and cultural communities in this country, drawing on their experiences and what has been read in class. ELG: Explain some similarities and differences between life in this country and life in other countries, drawing on knowledge from stories, non-fiction	-Experience nursery rhymes and songs. -Explore nursery rhymes and songs. -Recall some nursery rhymes and songs. ELG: Explain and recount narratives and stories with peers and their teacher.

						texts and (when appropriate) maps.	
		Building Relationships		Writing		The Natural World	
		-Experience taking turns. -Explore taking turns. -Recall some turn taking games. ELG: Explain how to work and play cooperatively and take turns with others.		-Experience mark making. -Explore mark making. -Recall some letters. ELG: Explain how to spell words by identifying sounds in them and representing the sounds with a letter or letters.		-Experience the natural world. -Explore the natural world. -Recall some similarities and differences between the natural world around them and contrasting environments. ELG: Explain some important processes and changes in the natural world around them, including the seasons and changing states of matter.	

For children on the Develop pathway in KS1:

KS1 PoS	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Theme	All About Me!	Festivals & Celebrations	Animals	Important People	Magic Carpet	Beside the Seaside
Science	Y1 Animals, including humans – Parts of the	Y1 Everyday materials parts 1-	Y1 Animals, including humans	Y1 Everyday materials part 2 -	Y1 Plants – common garden	Y1 Seasonal Changes –

	body that I can see. Link the senses to the body part.	distinguish between an object and the material it is made from. Name different materials.	- Name a variety of animals. Classify animals by what they eat. Sort and group animals. Living and non –living things.	Group materials. Describe properties of materials.	plants – Name wild and garden plants. Name the parts of a plant and tree.	Observe and comment on changes in seasons. Name the seasons and suggest the weather in each. Describe how the length of day varies.
	Y2 Animals inc humans - Explain the basic stages in the human lifecycle for animals, including humans. Describe why exercise, balanced diet and hygiene are important for humans.	Y2 Every day materials – Explore how materials can be changed by bending, squashing, twisting and stretching.	Y2 Animals, including humans – Identify and name a range of animals in different habitats. Match living things to their habitat. Describe how a habitat provides for the needs of things that live there. Name some different sources of food for animals and how they find their food. Describe a simple food chain. Identify things that are living, dead and never	Y2 Use of everyday materials – Identify a wider range of materials. Suggest why a material might be used for a specific job.	Y2 Plants – Identify and name a range of plants in different habitats. Describe how seeds and bulbs grow into plants. Describe what plants need in order to stay healthy.	Y3 Light – Explain that light is needed to see. Explain, demonstrate and explore how a shadow is formed of different sizes. The dangers of direct sunlight and how to stay protected.

			lived.		
Scientific enquiry skills	<u>Engage</u> Experience sensory aspects of a breadth of content linked to the topic Exploration Realisation Anticipation Persistence Initiation	<u>Discover</u> Take part in activities focused on scientific enquiry Respond to simple scientific questions Make predictions based on familiar experiences Make some contribution to planning, evaluating and recording findings	<u>Develop</u> Ask simple questions Use simple equipment to make observations Carry out simple tests Identify and classify things Suggest what I have found out Use simple data to answer questions		

Science KS2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cycle A	Rocks	Light	Forces and Magnets	Skeletons and Muscles	Healthy Living	Plants
	E: experience sensory aspects of rocks, soil and natural materials	E: experience sensory aspects of light and dark	E: experience sensory aspects of forces, such as magnetism and gravity	E: experience sensory aspects of body movement	E: experience sensory aspects of healthy living, such as healthy food and good personal hygiene	E: experience sensory aspects of plants and trees from the local area and further afield
	Di: explore different rocks and their appearance and identify simple	Di: explore and identify different light sources and how to form	Di: explore some forces such as magnetic and non-magnetic materials	Di: explore movement of the human body with a focus on identifying	Di: identify key features of a healthy diet and good personal	Di: identify parts of plants and trees and be able to recognise similar

	properties	shadows	and how magnets intact with each other, gravity and air resistance	some bones and muscles	hygiene	features
	De: recall the different types of rocks and components of soil	De: describe that light travels in straight lines and that blocking the light causes a shadow	De: recall magnetic and non-magnetic materials, how magnets attract and repel and some contact and non-contact forces	De: recall different parts of the skeleton, it's function and describe how muscles work in pairs	De: recall guidance on healthy diet, personal hygiene and sun safety	De: recall different parts of plants and trees and describe some functions
	D: explain the features of different types of rocks and how they are made, including fossils	D: explain the way that light travels and how shadows are formed and can be changed	D: explain some contact and non-contact forces – such as magnetism and friction	D: explain the role of the skeleton and how muscles enable the skeleton to move	D: explain the importance of healthy, balanced nutrition, good hygiene and sun safety	D: explain the functions of different parts of flowering plants and the requirements of plants for life and growth
Cycle B	States of Matter	Digestion	Sound	Living Things and Their Habitats	Electricity	Diets and Food chains
	E: experience sensory aspects of changes of state, such as melting chocolate and making ice	E: experience sensory aspects of digestion, such as breaking down solids by crushing and grinding	E: experience sensory aspects of sounds, such as volumes and pitches	E: experience sensory aspects of animals and different habitats, such as cold and hot climates	E: experience sensory aspects of electrical appliances and cause and effect using electricity, such as using a switch to turn something on	E: experience sensory aspects of food for different animals, such as grass, hay, meat
	Di: explore and identify different	Di: identify the different organs of	Di: explore how sounds are made	Di: identify groups of animals based	Di: explore creating safe	Di: explore the diets of familiar

	states of matter and the changes between them	the human digestive system and where they are in the body	and how to change aspects of the sound, such as volume and pitch	on their characteristics	simple series circuits and identify basic components	animals and create simple food chains
	De: describe the three states of matter and be able to group objects based on their state	De: describe the different parts of the digestive system, including teeth	De: describe how sounds are made and are heard	De: describe and group a range of living things in different environments	De: describe and correctly use components safely within a simple series circuit	De: recall and identify the diet of some animals and their place in the food chain
	D: explain the changes when heating and cooling materials, including melting, solidifying/freezing, evaporation and condensation	D: explain the functions of the different parts of the digestive system of animals, including the teeth	D: explain how sounds are made and travel and how sounds can be changed, such as pitch and volume	D: explain that habitats can change and the effect this may have on living things	D: explain how to create safe simple series circuits and correctly use components such as switches, and conductors	D: explain the diets and food chains associated with a variety of animals
Cycle C	Earth and Space	Human Lifecycles	Forces	Reproduction	Material Properties	Plants - Reproduction
	E: experience sensory aspects of planets and spherical bodies	E: experience sensory aspects of babies and of different ages groups	E: experience sensory aspects of forces, including levers, pulleys and gears	E: experience sensory aspects of lifecycles, such as eggs, frogspawn, chicks and butterflies	E: experience sensory aspects of different materials and their properties, such as rough and smooth	E: experience sensory aspects of plants and their growth, such as seeds, fruit and vegetables
	Di: explore and identify the relationship between the earth, sun and moon	Di: identify different stages of human lifecycles and what changes as humans grow older	Di: explore the effect of forces on objects and using levers, pulleys and gears to make objects move	Di: identify stages in the lifecycle of familiar animals and insects	Di: explore grouping and identifying materials based on their properties, such as	Di: explore different features of plant reproduction and growth, such as growing new plants

					transparency, magnetism and solubility	from seeds
	De: describe features of the solar system such as the planets and the sun and how these move around each other in orbit	De: describe the different stages of the human lifecycle and some key features and changes	De: recall different types of forces and identify examples of levers, pulleys and gears	De: describe the different stages the life cycle of different classes of animals such as mammal, amphibian, insect and bird	De: describe properties of different materials and their uses	De: recall the stages of plant reproduction
	D: explain the Earth's position within the solar system and how this creates time periods such as years, months and days	D: explain the changes of humans from baby to old age, such as puberty	D: explain the effect of forces on moving and stationary objects, such as air resistance and friction and how gears, levers and pulleys use forces	D: explain the lifecycle and sexual reproduction of different classes of animals such as mammal, amphibian, insect and bird	D: explain the properties of materials and how this makes them good for their everyday uses	D: explain the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal
Cycle D	Classification, Evolution and Inheritance	Light and Sound	Animals inc Humans Circulatory Systems	Electricity	Changes in Materials	Healthy diet and exercise
	E: experience sensory aspects of different groups of animals, such as hearing a lions roar or touching the scales of a reptile	E: experience sensory aspects of changes of light and sound	E: experience sensory aspects of the circulatory system, such as listening to heart beats	E: experience sensory aspects of electrical appliances and cause and effect using electricity, such as using a switch to turn something on	E: experience sensory aspects of different materials and mixing and separating	E: experience sensory aspects of a healthy diet and exercise

				aspect of		
	Di: explore grouping and classifying animals based on their observable characteristics	Di: explore changing and blocking light and sounds	Di: identify the human circulatory system as a pump to move blood all around the body	Di: explore changing aspects of simple circuits to cause change	Di: explore and how materials can be combined and separated	Di: explore features of a healthy diet and exercise programme
	De: describe different classifications of animals and some ideas about evolution	De: recall facts about how to change and block light and sounds	De: describe and locate key features of the circulatory system, such as , heart, blood, veins and arteries	De: describe the effect of increasing or decreasing the voltage on different components in a circuit	De: describe and apply some changes to materials such as dissolving, mixing, cooking and burning	De: recall the main features of a healthy diet and exercise programme and how this impacts the body
	D: explain how microorganisms, plants and animals can be classified into different groups based on their characteristics Explain how evolution has happened over millennia due to natural variation and adaptation	D: explain the key features of how light and sound travel and can be changed and blocked	D: explain the key features and functions of the human circulatory system and how water is transported around the body	D: explain the role of voltage within a circuit and the effect that changing the voltage will have on components	D: explain some reversible and irreversible changes of materials, such as melting and burning	D: explain the impact of diet, exercise and drugs on body function
Scientific enquiry skills	<u>Engage</u> Experience sensory aspects of a breadth of content linked to the topic	<u>Discover</u> Take part in activities focused on scientific enquiry Respond to simple scientific questions	<u>Develop</u> Ask simple question Use simple equipment to make observations Carry out simple tests	<u>Deepen</u> Plan different types of scientific enquiry Control variables Measure accurately using a		

<p>Exploration</p> <p>Realisation</p> <p>Anticipation</p> <p>Persistence</p> <p>Initiation</p>	<p>Make predictions based on familiar experiences</p> <p>Make some contribution to planning, evaluating and recording findings</p>	<p>Identify and classify things</p> <p>Suggest what I have found out</p> <p>Use simple data to answer questions</p>	<p>range of equipment</p> <p>Record and present data using a range of methods</p> <p>Use outcomes of make predictions</p> <p>Explain conclusions and findings in a range of ways</p> <p>Explain whether findings support or refute key scientific concepts or theories</p>
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Science KS3	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cycle A	<p><u>Organisms</u></p> <p>KS3—Movement</p> <p>KS2— Y3 Animals, including humans</p>	<p><u>Matter</u></p> <p>KS3— Separating Mixtures</p> <p>KS2— Y4 States of matter</p>	<p><u>Earth</u></p> <p>KS3—Universe</p> <p>KS2— Y5 Earth and Space</p>	<p><u>Organisms</u></p> <p>KS3— Digestion</p> <p>KS2— Y4 Animals, including humans/Y6 Animals inc humans</p>	<p><u>Electromagnets</u></p> <p>KS3— Voltage and resistance</p> <p>KS2— Y4 Electricity/ Y6 Electricity</p>	<p><u>Matter</u></p> <p>KS3— The Particle Model</p> <p>KS2— Y5 Properties and changes of materials</p>
	<p>E: experience sensory aspects of skeletons and movement</p>	<p>E: experience sensory aspects of different materials and states of water.</p>	<p>E: experience sensory aspects of weather and climate</p>	<p>E: experience sensory aspects digestion and a healthy diet</p>	<p>E: experience sensory aspects appliances that require electricity to run, such as using a switch to turn items on and off</p>	<p>E: experience sensory aspects of changing shapes</p>

	Di: identify different parts of the human body and senses	Di: explore and group materials based on the material they are made from and identify their properties	Di: identify types of weather, changes in the seasons and how the seasons affect the length of day	Di: identify some aspects of digestion, different food sources for humans and what makes a healthy diet	Di: identify appliances that require electricity to run and common components within a series circuit	Di: explore how materials and shapes can be changed by squashing, bending, twisting and stretching
	De: describe the purpose of the skeleton in humans and animals and the skeletal and muscular system in humans	De: describe the three states of matter and give examples	De: describe the planets in the solar system. Recall the movement of the sun, planets and moon in relation to each other	De: describe the different parts of the human digestive system and some of their functions	De: describe appliances that require electricity to run. Describe components of a series circuit	De: recall the properties of different materials, such as solids, liquids and gases
	D: explain how the parts of the human skeleton work as a system for support, protection, movement and the production of new blood cells. Explain how antagonistic pairs of muscles create movement Around a joint	D: explain that a pure substance consists of only one type of element or compound and has a fixed melting and boiling point. Explain that mixtures may be separated due to differences in their physical properties. Explain the method chosen to separate a mixture depends	D: explain planets and moons from diagrams that show their position in relation to the Earth and Sun. Explain why places on the Earth experience different daylight hours and amounts of sunlight during the year. Explain how space exploration and observations of stars are	D: explain the events that take place in order to turn a meal into simple food molecules inside a cell. Explain how organs and tissues involved in digestion are adapted for their role	D: explain a circuit diagram and voltage as an electrical push from the battery, or the amount of energy per unit of charge transferred through the electrical pathway. In a series circuit, voltage is shared between each component. In a parallel circuit, voltage is the same across each	D: explain the properties of solids, liquids and gases based on the arrangement and movement of their particles. Explain changes in states in terms of changes to the energy of particles

		on which physical properties of the individual substances are different	affected by the scale of the universe		loop	
Cycle B	<u>Organisms</u> KS3– Cells KS2—Y3 Animals, including humans	<u>Earth</u> KS3-Structure KS2– Y3 Rocks	<u>Waves</u> KS3– Sound/Light KS2– Y3 Light/Y4 Sound/ Y6 Light	<u>Ecosystems</u> KS3-Plant reproduction KS2– Y3 Plants/ Y6 Living things and their habitats	<u>Matter</u> KS3-Period table/Elements KS2– Y5 Properties and changes of materials	<u>Forces</u> KS3-Speed/Gravity KS2– Y3 Forces and magnets/Y5 Forces
	E: experience sensory aspects of living organisms	E: experience sensory aspects of rocks and soils, as well as other ground coverings	E: experience sensory aspects of sound and light	E: experience sensory aspects of growing plants	E: experience sensory aspects of reversible and irreversible changes	E: experience sensory aspects of movement, including speed and gravity
	Di: identify key features of living organisms	Di: explore the features different rocks and soils	Di: identify different features of sound and light, such as loud/quiet, high/low pitch and light and dark	Di: identify the lifecycles of plants and what they need to grow	Di: explore and identify reversible and irreversible changes, such as making toast and melting chocolate	Di: explore the ways to change speed on different objects
	De: Identify key features of living organisms and describe their functions	De: recall the names of some rocks and describe their properties Recall the names of the Earth's layers.	De: describe how sound and light waves travel and how sound and light can be blocked or altered	De: describe how seeds and bulbs grow into plants as part of the plant lifecycle	De: describe how some changes can be reversible and some irreversible	De: recall the meaning of speed and gravity

	D: explain that multicellular organisms are composed of cells which are organised into tissues, organs and systems to carry out life processes Explain the different structures and features of cells to enable them to carry out a specific function	D: explain the structure of the earth and how it links to the rock cycle. Explain why a rock has a particular property based on how it was formed	D: explain the features of longitudinal and transverse waves including wavelength, amplitude and frequency.	D: explain the main steps of plant reproduction. Explain the different methods of seed dispersal and how plants are adapted to these methods	D: explain atoms, molecules and elements, mixtures and compounds using particle diagrams	D: explain that if the overall, resultant force on an object is non-zero, its motion changes and it slows down, speeds up or changes direction. Explain the force of gravity
Cycle C	<u>Ecosystems</u> KS3-Interdependance KS2– Y4 Living things and their habitats	<u>Reactions</u> KS3-Acids and alkalis KS2– Y5 Properties and changes of materials	<u>Energy</u> KS3-Costs/Transfers KS2– Y3 Light/Y4 Sound/ Y6 Light	<u>Reactions</u> KS3-Metals and non metals KS2– Y5 Properties and changes of materials	<u>Genes</u> KS3-Human reproduction/Variation KS2– Y5 Living things and their habitats/Animals inc Humans/Y6 Evolution and Inheritance	<u>Electromagnets</u> KS3-Current KS2– Y4 Electricity/ Y6 Electricity
	E: experience sensory aspects of different habitats, such as cold and hot	E: experience common (safe) acids and alkalis, such as toothpaste and lemon juice	E: experience sensory aspects of different objects that require electricity or energy to work	E: experience sensory aspects of different materials, including metals	E: experience sensory aspects of babies and their own lifecycle, such as family	E: experience sensory aspects of magnets, including attracting and repelling

	Di: identify different habitats and the animals that live there	Di: explore and identify common (safe) acids and alkalis, such as toothpaste and lemon juice	Di: Identify how to stay safe around different electronic appliances	Di: identify different materials made from metals and non-metals and their properties	Di: identify stages in the human lifecycle and changes	Di: explore different properties of materials, such as magnetism
	De: describe how changes to the environment could endanger living things. Recall food sources for different animals	De: describe some common acids and alkalis and how to stay safe around them	De: describe that some things use electricity to work and that this costs money	De: describe different metals and non-metals and their properties	De: describe different parts of the human body and the human lifecycle, including changes in puberty	De: recall different materials that are magnetic and non-magnetic
	D: explain how organisms in a food web (decomposers, producers and consumers) depend on each other for nutrients. So, a change in one population leads to changes in others. Explain effects of environmental changes and toxic materials on a species' population	D: explain the link between pH and the strength of different acids and alkalis. Explain how neutralisation reactions are used in a range of situations	D: explain how to calculate the cost of home energy usage. Explain the advantages and disadvantages of different ways to generate electricity. Explain how energy is transferred from a store, including dissipation	D: explain the reactivity series Explain the reaction of metals and non-metals with oxygen, including using word equations	D: explain the menstrual cycle and stages of development in a foetus, from the production of sex cells to birth. Explain whether characteristics are inherited, environmental or both	D: explain how current changes in series and parallel circuits when components are changed. Explain the electric field around a charged object and how other objects may be attracted or repelled

<h2>Scientific enquiry Skills</h2>	<p><u>Engage</u> Experience sensory aspects of a breadth of content linked to the topic Exploration</p> <p>Realisation</p> <p>Anticipation</p> <p>Persistence</p> <p>Initiation</p>	<p><u>Discover</u> Take part in activities focused on scientific enquiry Respond to simple scientific questions Make predictions based on familiar experiences Make some contribution to planning, evaluating and recording findings</p>	<p><u>Develop</u> Ask simple question Use simple equipment to make observations Carry out simple tests Identify and classify things Suggest what I have found out Use simple data to answer questions</p>	<p><u>Deepen</u> Analyse patterns Discuss limitations Draw conclusions Present data Communicate ideas Construct explanations Critique claims Justify opinion Enquire and collect data Devise questions Plan variables Test hypotheses Solve and estimate risks Examine consequences Review theories Interrogate sources</p>
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The KS4 curriculum is designed around the accreditation level that students are accessing.

AQA Entry Level <u>Single Award</u>	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cycle A	B– Component 1—The Human Body ESA	B– Component 1—The Human Body ESA	B– Component 1—The Human Body TDA	B– Component 1—The Human Body TDA	C– Component 3—Elements, Mixtures and Compounds ESA	C– Component 3—Elements, Mixtures and Compounds ESA
Cycle B	C– Component 3—Elements, Mixtures and Compounds TDA	C– Component 3—Elements, Mixtures and Compounds TDA	P—Component 6—Electricity, magnetism and Waves ESA	P—Component 6—Electricity, magnetism and Waves ESA	P—Component 6—Electricity, magnetism and Waves TDA	P—Component 6—Electricity, magnetism and Waves TDA

AQA Entry Level <i>Double Award</i>	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cycle A	B— Component 1—The Human Body ESA	B— Component 1—The Human Body TDA	C— Component 3—Elements, Mixtures and Compounds ESA	C— Component 3—Elements, Mixtures and Compounds TDA	P—Component 6— Electricity, magnetism and waves ESA	P—Component 6— Electricity, magnetism and waves TDA
Cycle B	B—Component 2— Environment, evolution and inheritance ESA	B—Component 2— Environment, evolution and inheritance TDA	C—Component 4— Chemistry in our world ESA	C—Component 4— Chemistry in our world TDA	P—Component 5— Energy, forces and the structure of matter ESA	P—Component 5— Energy, forces and the structure of matter TDA

The AQA GCSE Synergy course is usually taught over 3 years rather than 2. This is due to the intense course content from being a double awarded course. Students accessing this accreditation will continue this curriculum into KS5.

AQA Synergy GCSE Double award	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cycle A	Unit 1—Building blocks	Unit 1—Building blocks	Unit 2—Transport over larger distances	Unit 2—Transport over larger distances	Unit 3—Interactions with the environment	Unit 3—Interactions with the environment
Cycle B	Unit 4—Explaining Change	Unit 4—Explaining Change	Unit 5 - Building blocks for understanding	Unit 5 - Building blocks for understanding	Unit 6 - Interactions over small and large distances	Unit 6 - Interactions over small and large distances
Cycle C	Unit 7—Movement and interactions	Unit 7—Movement and interactions	Unit 8—Guiding spaceship Earth towards a sustainable future	Unit 8—Guiding spaceship Earth towards a sustainable future	Revision and exam technique	Revision and exam technique

Flightpath

Engage	Discovery	Develop	Deepen	
AQA Unit Awards	Entry Level 1	Entry Level 2	Entry Level 3	GCSE (AQA) Double Award

(KS5 do not continue specific science study unless they are completing the GCSE course)

How are children achieving in each of the pathways? How do you know, quantitative and qualitative?

Engage	Discovery	Develop	Deepen
<p>Students are monitored throughout the year via a learning journey that is completed by teaching and support staff. Students' progress will be tied to the learning outcomes that have been developed against the 5 areas of the Engagement Model. Progress is currently not quantitative but is qualitative through teacher assessment. Students may achieve some AQA unit awards to</p>	<p>The progress of students on the Discovery pathway is monitored through evidence in workbooks and progress towards the learning objective for each lesson. Students' progress is tracked against the outcomes of the Pre Newman Tracker – Science. Students that are working towards a recognised qualification in KS4 will follow an adapted version of the qualification syllabus. Students will achieve either</p>	<p>The progress of students on the Develop pathway is monitored through evidence in workbooks and progress towards the learning objective for each lesson. Students' progress is tracked against the outcomes of the Newman Tracker – Science. Students that are working towards a recognised qualification in KS4 will follow an adapted version of the qualification syllabus. Students will achieve either an Entry Level qualification by</p>	<p>The progress of students on the Deepen pathway is monitored through evidence in workbooks and progress towards the learning objective for each lesson. Students' progress is tracked against the outcomes of the Newman Tracker – Science or the outcomes from the qualification that a student is working on. Students that are working towards a recognised qualification in KS4 will follow an adapted version of the qualification syllabus.</p>

accredit their learning at KS4.	AQA unit awards or an Entry Level qualification by the end of KS4.	the end of KS4.	Students will achieve an Entry Level or GCSE qualification by the end of KS4.
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