Our vision is for:

- A high quality Science education that inspires pupils to, and prepares them for, work in scientific industries.
- Synthesised knowledge that enables children to think critically about the world around them and solve problems that are yet to be discovered.

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cycle A		All living things and their habitats How did that get there? Rural community- bee population	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function RHE:to know the characteristics & mental & physical benefits of an active lifestyle Importance of building regular exercise into daily & weekly routines and how to achieve this The risks associated with an inactive lifestyle(including obesity) How and when to seek support including which adults to speak to in school if they are worried about their health The facts about legal and illegal harmful substances & associated risks, including smoking, alcohol use and drug taking How to recognise early signs of physical illness, such as weight loss or unexplained changes to the body. The benefits of exercise, time outdoors, community participation, voluntary and service-based activity on mental well being & happiness Are top athletes born or made? STEM lecture – the best of what is thought and said	Earth and Space (links to study of British Space History) Significant Individual: Stephen Hawking		Microorganisms Are microorganisms bad for us? RHE: to know the facts and science relating to allergies, immunisations and vaccination	Forces Which would hit the water first – the beach ball or the cannon ball? How can you exert superhuman strength? Case study of the Hartlepool Marina lock gates Significant Individual: Galileo Galilei
		Frozen Kingdom	(Fallen Fields)	Stargazers Wynyard Woodland Planetarium and Sundial Sculpture	Time Traveller	Peasants, Princes and Pestilence	Hola Mexico!
	Working Scientifically	• To be able to plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • To be able to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • To be able to use test results to make predictions to set up further comparative and fair tests • To be able to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • To be able to identify scientific evidence that has been used to support or refute ideas or arguments.					

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	Year 5	Describe the differences in the life cycle of a mammal, an amphibian, an insect and a bird Describe the process of reproduction in some plants and animals (including self-pollination and selective pollination for more able learners) give reasons for classifying plants and animals based on specific characteristics describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including plants and animals. To be able to identify the impact the declining bee population has on the environment and agriculture.	Describe the changes as humans develop to old age. recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. To know the impact of exercise on heart rate. To begin to identify biological and behavioural differences.	describe the movement of the Earth, and other planets, relative to the Sun in the solar system describe the movement of the Moon relative to the Earth describe the Sun, Earth and Moon as approximately spherical bodies use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. To find out about the way that ideas about the solar system have developed, understanding how the geocentric model of the solar system gave way to the heliocentric model by considering the work of scientists such as Ptolemy, Alhazen and Copernicus.	To know how microorganisms are classified and be able to give examples. To know how microorganisms can benefit and harm us and ways that these are controlled. To identify how microorganisms can cause disease and spread but can also be used to treat illness.	explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object identify the effects of air resistance, water resistance and friction, that act between moving surfaces To be able to identify the differences between behaviour of objects on Earth and in a vacuum recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. To be able to construct an accurate force diagram with correctly labelled load and effort.

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	Year 6	Describe the differences in the life cycle of a mammal, an amphibian, an insect and a bird Describe the process of reproduction in some plants and animals give reasons for classifying plants and animals based on specific characteristics describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including plants and animals To be able to identify the impact the declining bee population has on the environment and agriculture.	Describe the changes as humans develop to old age recognise the impact of diet, exercise, drugs and lifestyle on the way their body's function	describe the movement of the Earth, and other planets, relative to the Sun in the solar system describe the movement of the Moon relative to the Earth describe the Sun, Earth and Moon as approximately spherical bodies use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. To find out about the way that ideas about the solar system have developed, understanding how the geocentric model of the solar system gave way to the heliocentric model by considering the work of scientists such as Ptolemy, Alhazen and Copernicus.		To know how microorganisms are classified and be able to give examples. To know how microorganisms can benefit and harm us and ways that these are controlled. To identify how microorganisms can cause disease and spread but can also be used to treat illness.	explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object identify the effects of air resistance, water resistance and friction, that act between moving surfaces To be able to identify the differences between behaviour of objects on Earth and in a vacuum recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.
		Animals and including humans	Local industry project	Light	Electricity	Children Challenging Industry Project Properties and changes in materials	Evolution and Inheritance
Cycle B		Pharaohs What affects endurance? RHE The benefits of exercise, time outdoors, community participation, voluntary and service-based activity on mental well being & happiness	Local Industry Unit PD Docks TTI RRS James Cook Oceanographers STEM lecture – the best of what is thought and said	Revolution	Tomorrow's World	Alchemy Island TTE – work on the oil rigs (Heat exchange Filtration – oil and gas extraction	Darwin's Delights Significant Individual: Charles Darwin
	Working Scientifically	• To be able to plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • To be able to record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs • To be able to use test results to make predictions to set up further comparative and fair tests • To be able to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations To be able to identify scientific evidence that has been used to support or refute ideas or arguments.					

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	Year 5	identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood describe the ways in which nutrients and water are transported within animals, including humans.	Compare and group everyday materials based on their properties, including their hardness, solubility, transparency, conductivity (to electricity and thermal) and response to magnets give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic	recognise that light appears to travel in straight lines use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches use recognised symbols when representing a simple circuit in a diagram.	Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. demonstrate that dissolving, mixing and changes of state are reversible changes use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
	Year 6	identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood describe the ways in which nutrients and water are transported within animals, including humans.	Compare and group everyday materials based on their properties, including their hardness, solubility, transparency, conductivity (to electricity and thermal) and response to magnets give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic	recognise that light appears to travel in straight lines use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches use recognised symbols when representing a simple circuit in a diagram.	Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. demonstrate that dissolving, mixing and changes of state are reversible changes use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

Programme of study is not differentiated where year groups will only meet a subject matter once.