



The Neroche Science Curriculum at Medium Term Planning Level

Science fosters a healthy curiosity about our universe and promotes the need for respecting both the living and non-living and builds an understanding of the importance of sustainability. A good understanding of science affords young people the opportunities not just to have a stimulating science career but also to be a responsible citizen who is able to understand and engage with their world in a healthy and sustainable way. At Neroche, our aim is to build upon our pupil's natural curiosity to explore and discover the world around them. We want our pupils to feel enthused and have their love of science instilled through exciting learning opportunities that develop their scientific minds.

We encourage a knowledge rich curriculum where pupils will progressively acquire and develop both substantive and disciplinary skills throughout their primary years. We intend for children to have the opportunity to learn through varied systematic investigations and meaningful experiences, leading to them being equipped for life and to be able to ask and answer scientific questions about the world and all of its phenomena. We ensure that the scientific skills are built-on and developed throughout their school life so that they can use equipment, conduct experiments, prove and disprove hypothesis and explain concepts confidently.

Lessons foster a development of vocabulary, communication, teamwork and a passion to discover more. All science topics have their learning reinforced through the use of knowledge organisers to strengthen children's knowledge recall and vocabulary awareness. Furthermore, we endeavor to continually reflect on and improve our approach to science through viewing our children as scientists who reflect on their own learning, detailing the successes, their enjoyment and their ability to approach science safely.

We endeavour to ensure that our Science Curriculum empowers our students with the resilience, confidence and motivation to continue to further develop their skills into the next stage of their education and life experiences.



EYFS

At this stage, learning is not necessarily a linear process. Children's interests are at the heart of learning in the EYFS, so these are the possible themes through which learning will take place.

Possible key learning emphasis to facilitate progression (alongside children's interests)	All about me/starting school New beginnings Harvest Autumnal changes People who help us	Festivals and Celebrations Diwali Bonfire night Remembrance Winter Christmas	Toys New Year Valentine's Day Pancake Day Superheroes Teddies Vehicles	Fantasy and Adventure (Storytelling) Signs of Spring Mothering Sunday Easter Superheroes Traditional tales	Science and investigation Growing plants Animals Insects Dinosaurs Changes	Places Seaside Summer Transition to Yr1 Food around the world Our environment
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Understanding the World – The Natural World

2-year-old curriculum	<ul style="list-style-type: none"> Notices detailed features of objects in their environment Can talk about some of the things they have observed such as plants, animals, natural and found objects Enjoys playing with small world reconstructions, building on first-hand experiences, e.g. visiting farms, garages, train tracks, walking by river or lake 		
3- and 4-year-old curriculum	-Identify the changes that take place in the natural world in the autumn and winter. -Know how the changing seasons affects their own behaviour, experiences and needs e.g. longer nights, needing to wear warmer clothing, turning on the heating. -Explore collections of natural materials, e.g. shells, pebbles, bark, pinecones -Use all senses to explore the natural world around them -Use descriptive vocabulary to talk about what they observe -Investigate and make arrangements with natural materials -Explore different technology that supports children to investigate the world around them, e.g. magnifying glass, binoculars, wind up torch shadows, cogs, tablets to take photos. Remembers where objects belong outside	-Identify the features in the natural world of winter and spring. -Notices detailed features of objects in their environment -Can talk about some of the things they have observed and experienced such as plants, animals, natural and found objects -Enjoys playing with small world reconstructions, building on first-hand experiences, e.g. visiting farms, garages, train tracks, walking by river or lake -Explore making and feeling different forces, e.g. pushing water with plastic boat, stretch elastic band, snap twig, magnets -Use vocabulary related to the exploration of forces -Describe and explore man made materials -Talk about the use of forces on everyday objects, machinery. E.g. retracting door, boats, trains, gravity, aeroplanes.	-Identify the features in the natural world of spring and summer. -Explore plants in their immediate environment. Plant seeds to watch how they grow and make observations over time, e.g. verbalising what they can see, taking photos etc. -Watch how things change over time, e.g. an apple core going brown, ice cubes melting, eggs cooking. -Begin to understand the need to respect and care for the natural environment and all living things, e.g. share stories about the environment, climate change, habitat erosion etc.
Reception curriculum	<ul style="list-style-type: none"> Identify the changes that take place in the natural world in the autumn. Know that the seasons change and that this affects the natural world. 	<ul style="list-style-type: none"> Identify the features in the natural world of winter and spring. 	<ul style="list-style-type: none"> Make close observations. Know the names of different common plants and animals.

	<ul style="list-style-type: none"> • Observe and interact with natural processes. • Know how the changing seasons affects their own behaviour, experiences and needs e.g. longer nights, needing to wear warmer clothing, turning on the heating. • Know the names of common natural and man-made materials. 	<ul style="list-style-type: none"> • Know the importance of caring for the world around them and practical ways that they can do this. • Observe, describe and notice changes over time. • Contribute to the planning of scientific investigations and experiments, including exploring states of matter. • Say what they see, hear and feel whilst outside. • Recognise that some environments are very different to the one in which they live. • Identify some of the characteristics and uses of common natural and man-made materials. • Understand the meaning of natural and man-made. Begin to identify if a material is natural or man-made. 	<ul style="list-style-type: none"> • Know the main parts of a plant, drawing the roots, stem, petals, leaves. • Know the growing conditions needed for effective plant growth. • Know what some animals eat. • Know the lifecycle of some animals. • Make some suggestions about how a scientific investigation or experiment could be conducted. • Make simple predictions and say whether the results are what they expected. • Know the name and sequence of the 4 seasons. • Understand the effect of the changing seasons on the natural world around them.
Reception ELG	<p><u>ELG: The Natural World</u> Children at the expected level of development will: Explore the natural world around them, making observations and drawing pictures of animals and plants; Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p>		

Year 1

	Year 1			
	Learning Opportunity 1	Learning Opportunity 2	Learning Opportunity 3	Learning Opportunity 4
Unit of Learning	Seasonal changes	Materials	Animals including humans	Plants
Overall purpose/ intent(s) of the unit	To know there are four seasons in a year and to name these. To be able to make links between weather and daylight observations they make and the changing seasons.	To know about everyday materials such as wood, plastic, glass, metal, water, rock and rubber, naming these materials and some of their properties. To carry out investigations to determine the uses and suitability of different materials.	To learn about human and animal bodies and consider similarities and differences between them, describing animal bodies and sorting animals into groups. To engage in and conduct an investigation using their senses.	To learn about the structure of plants and the conditions they need in order to grow (by carrying out investigations). To identify common plants and trees that you see both in the garden and in the wild, knowing the difference between deciduous and evergreen trees.
National Curriculum coverage	- observe changes across the four seasons - observe and describe weather associated with the seasons and how day length varies	- distinguish between an object and the material from which it is made - identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock - describe the simple physical properties of a variety of everyday materials - compare and group together a variety of everyday materials on the basis of their simple physical properties.	- identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals - identify and name a variety of common animals that are carnivores, herbivores and omnivores	- identify and name a variety of common wild and garden plants, including deciduous and evergreen trees - identify and describe the basic structure of a variety of common flowering plants, including trees.
Step/s towards achieving the unit Intent.	To explore and identify the seasonal changes in Autumn.	To identify and name a variety of everyday materials and distinguish between an object and the material from which it is made.	To identify and name parts of the human body and make connections between the five senses and the associated body parts.	To identify and describe the basic structure of a variety of common flowering.
Step/s towards achieving the unit Intent.	To explore and identify the seasonal changes in Winter.	To describe the simple physical properties of a variety of everyday materials by looking at and touching different materials.	To perform a simple test, investigating each of the five senses.	To identify and name a variety of common wild plants.

Step/s towards achieving the unit Intent.	To explore and identify the seasonal changes in Spring.	To describe the simple physical properties of a variety of everyday materials by testing different objects.	To identify and name common animals, grouping and sorting them by their similarities and differences.	To identify and name a variety of common garden plants.
Step/s towards achieving the unit Intent.	To explore and identify the seasonal changes in Summer.	To perform simple tests to find out which material would be most waterproof.	To identify and sort animals according to their body type.	To recognise deciduous and evergreen trees by identifying trees by their leaves.
Step/s towards achieving the unit Intent.	To know how day length changes in line with the seasons.	To use observations and ideas to suggest answers to questions by deciding which materials would be most waterproof.	To know that animals can be classified by their diets (herbivores, carnivores and omnivores) and use this knowledge to group animals.	To closely observe the growth of plants and use these observations to explain what plants need to grow.
Outcome of the learning opportunity	I can explore and recognise the seasonal changes in my surroundings, including exploring the school grounds and local area. I can use my knowledge of the weather to create and present weather reports.	I can use the information and skills I have gained through investigating materials to solve problems in a real world context, for example, choosing an appropriate material for an umbrella or towels, etc.	I can use sight, sound, touch, taste and smell to solve a detective investigation, identifying a correct item from a lost property scenario.	I can explore and identify the plants amongst the school grounds and local area. I can grow and care for plants including beans, keeping a diary to record the progress of growth.
Suggestions for extracurricular opportunities in or out.	<ul style="list-style-type: none"> - Visit from/virtual meeting with a local farmer to talk about seasonal changes and their impact on farming - Visit from/virtual meeting with a landscape photographer to show seasonal photos 	<ul style="list-style-type: none"> - Visit from/virtual meeting with a local seamstress/designer - We The Curious trip including workshop: https://www.wethecurious.org/education/activity/build-it 	<ul style="list-style-type: none"> - Visit from police to show how police dogs are trained to use senses - Opportunity for animals to visit the school (Fern animal sanctuary, RSCPA, local farmer) 	<ul style="list-style-type: none"> - Trip to a local Christmas Tree Farm - Visit from/virtual meeting with a local gardener/landscaper - Visit from/virtual meeting with an employee of a garden centre

Year 2

	Year 2			
	Learning Opportunity 1	Learning Opportunity 2	Learning Opportunity 3	Learning Opportunity 4
Unit of Learning	Living things and their habitats	Animals including humans	Use of everyday materials	Plants
Overall purpose/intent(s) of the unit	To name and know the difference between things that are living, dead, and things that have never been alive, being able to identify specific factors for each group, e.g. that most living things live in habitats that provide for the basic needs of different kinds of animals and plants. To understand the idea of a simple food chain and name sources of food.	To compare young and adult animals and humans - and how animals change as they grow up (including lifecycles). To know the three basic needs of animals for survival (water, food and air) and the importance of exercise, healthy eating and hygiene.	To know the uses of everyday materials, comparing the suitability of different everyday materials for different purposes. To know how objects made of some everyday materials can change shape, and how the recycling process is able to reuse some everyday materials numerous times.	To study plants in their natural environment, making observations and taking measurements. To plant seeds as part of an investigation to compare conditions for growing plants. To make links between the farming process and plants we eat as well as the weather.
National Curriculum coverage	- explore and compare the differences between things that are living, dead, and things that have never been alive - identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other - identify and name a variety of plants and animals in their habitats, including microhabitats - describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.	- notice that animals, including humans, have offspring which grow into adults - find out about and describe the basic needs of animals, including humans, for survival (water, food and air) - describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	- identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses - find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	- observe and describe how seeds and bulbs grow into mature plants - find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.
Step/s towards achieving the unit Intent.	To explore and compare the differences between things that are living, dead, and things that have never been alive	To compare young and adult humans.	To know the uses of everyday materials.	To study plants in their natural environment.
Step/s towards achieving the unit Intent.	To be able to identify the things that a living thing needs to be alive.	To know the life cycle of a human.	To compare the suitability of different everyday materials for different purposes.	To use knowledge of growing conditions to plan a comparative investigation.

Step/s towards achieving the unit Intent.	To identify and name a variety of plants in their habitats, including microhabitats.	To compare young and adult animals.	To know how objects made of some everyday materials can change shape.	To set up a comparative investigation of plant growing conditions.
Step/s towards achieving the unit Intent.	To identify and name a variety of animals in their habitats, including microhabitats.	To know the life cycle of a variety of animals.	To know how the recycling process is able to reuse some everyday materials numerous times.	To observe a comparative investigation of plant growing conditions.
Step/s towards achieving the unit Intent.	To identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants.	To know the three basic needs of animals for survival (water, food and air)	To perform simple tests to find out which material would be most suitable to fit a given purpose.	To draw simple conclusions based on a comparative investigation of plant growing conditions.
Step/s towards achieving the unit Intent.	To describe how animals obtain their food from plants and other animals, using the idea of a simple food chain and to identify and name different sources of food.	To know the importance of exercise, healthy eating and hygiene.	To use observations and ideas to suggest answers to questions by deciding which materials would be suitable to fit a given purpose.	To make links between the farming process and plants we eat as well as the weather.
Outcome of the learning opportunity	I can use my knowledge and understanding of living things to design a habitat for a selection of animals that will fulfil a food chain.	I can create an information leaflet, showing the aging process of a chosen animal/human, including information about what is needed for a healthy life.	I can use the information and skills I have gained through investigating materials to solve problems in a real world context, for example, choosing an appropriate recyclable material to design a classroom item: a pen pot holder, a sports equipment box, etc.	I can plan and conduct an investigation where I plant seeds and alter the growing conditions to see what impact it holds on growth.
Suggestions for extracurricular opportunities in or out.	<ul style="list-style-type: none"> - <i>Pond dipping</i> - <i>A workshop to build a habitat (hedgehog house, mini beast hotel, etc.)</i> 	<ul style="list-style-type: none"> - <i>Opportunity for animals to visit the school (Fern animal sanctuary, RSCPA, local farmer)</i> - <i>Opportunity to care for animals in school – tadpoles, caterpillars, chicks</i> - <i>We The Curious trip including workshop:</i> https://www.wethecurious.org/education/activity/bodyworks 	<ul style="list-style-type: none"> - <i>Visit from/virtual meeting with a designer (approach local businesses, for example: Ablebox)</i> - <i>Visit/virtual meeting to look at recycling process, for example Carymoor or Somerset Waste Partnership</i> 	<ul style="list-style-type: none"> - <i>Visit from/virtual meeting with a farmer who specialises in seasonal produce, for example Riverford Organic Farmers.</i>

	Year 3				
	Learning Opportunity 1	Learning Opportunity 2	Learning Opportunity 3	Learning Opportunity 4	Learning Opportunity 5
Unit of Learning	Rocks	Animals including humans	Plants	Forces and Magnets	Light
Overall purpose/intent(s) of the unit	To compare rocks based on their appearance, physical properties and the way they were formed (igneous, sedimentary and metamorphic). To know how fossils and soil are formed.	To know that animals including humans need appropriate nutrition. To know the different types of skeletons and their purposes.	To identify the functions of different parts of flowers, including the parts which transport water within the plant and the parts which play their role in the life cycle of a plant.	To explore forces and magnets, gaining an understanding of how things move on different surfaces, as well as identifying materials attracted by magnets.	To recognise that light is needed to see and that it can be blocked by opaque objects which create shadows which can change in size.
National Curriculum coverage	- compare and group together different kinds of rocks on the basis of their appearance and simple physical properties - describe in simple terms how fossils are formed when things that have lived are trapped within rock - recognise that soils are made from rocks and organic matter.	- identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat - identify that humans and some other animals have skeletons and muscles for support, protection and movement.	- identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers - explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant - investigate the way in which water is transported within plants - explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	- compare how things move on different surfaces - notice that some forces need contact between two objects, but magnetic forces can act at a distance - observe how magnets attract or repel each other and attract some materials and not others - compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials - describe magnets as having two poles - predict whether two magnets will attract or repel each other, depending on which poles are facing.	- recognise that they need light in order to see things and that dark is the absence of light - notice that light is reflected from surfaces - recognise that light from the sun can be dangerous and that there are ways to protect their eyes - recognise that shadows are formed when the light from a light source is blocked by an opaque object - find patterns in the way that the size of shadows change.
Step/s towards achieving the unit Intent.	To learn the three types of rock formation.	To understand the different nutrients provided by different foods.	To know what conditions plants need to grow.	To compare how things move on different surfaces.	To recognise that light is needed in order to see and that dark is the absence of light.

Step/s towards achieving the unit Intent.	To investigate the different properties of rocks.	To know that animals and humans need a balanced diet.	To plan an investigation into how plant growth can be impacted by its growing conditions.	To notice that some forces need contact between two objects.	To notice that light is reflected from surfaces.
Step/s towards achieving the unit Intent.	To compare and group rocks based on their different properties.	To explore the three types of skeletons: endoskeletons, exoskeletons and hydrostatic skeletons.	To identify and describe the functions of the different parts within a flowering plant.	To observe how magnets attract or repel each other and attract some materials and not others.	To recognise that light from the sun can be dangerous and that there are ways to protect our eyes.
Step/s towards achieving the unit Intent.	To compare natural and human-made rocks.	To observe and compare animals including humans based on their movement.	To describe the life cycle of a flowering plant.	To compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet.	To know how shadows are formed.
Step/s towards achieving the unit Intent.	To describe how fossils are formed.	To identify the parts of the skeleton which provide support, protection and movement.	To investigate the way in which water is transported in plants.	To describe magnets as having two poles and predict whether two magnets will attract or repel each other.	To plan an investigation into shadow formation.
Step/s towards achieving the unit Intent.	To recognise that soil is made of rock and organic matter.	To know how muscles and joints work allow the skeleton to move.	To evaluate the way in which water is transported in plants.	To use the relationship between magnets and magnetic materials in real world contexts.	To observe and explore the formation of shadows.
Outcome of the learning opportunity	I can create my own compost using my knowledge of soil formation and rocks.	I can design appropriately balanced meals for humans and animals through careful consideration of their needs.	I can plan and conduct a comparative investigation into water transportation within plants, using observations to watch the impact of my variables and evaluate the results.	I can use my knowledge of magnets and magnetic materials to design a game.	I can explain how shadows are formed and the patterns they create as the result of my investigation.
Suggestions for extracurricular opportunities in or out.	<i>Fossil hunting at Charmouth Lyme Regis Museum – museum visit or fossil walk Visit from/virtual meeting with geologist We The Curious trip including workshop: link</i>	<i>Visit from school lunch providers Visit from doctor/ physio/ chiropractor We The Curious trip including workshop: link</i>	<i>Visit from a florist</i>	<i>Metal detecting workshop Visit from/virtual meeting with Somerset Waste Partnership – how are magnets used to sort waste? We The Curious trip including workshop: link Online workshop: link</i>	<i>Virtual workshop: link</i>

	Year 4				
	Learning Opportunity 1	Learning Opportunity 2	Learning Opportunity 3	Learning Opportunity 4	Learning Opportunity 5
Unit of Learning	States of matter	Animals including humans	Living things and their habitats	Electricity	Sound
Overall purpose/ intent(s) of the unit	To be able to identify materials as solids, liquids or gases and understand how these materials can change state.	To know the role of the digestive system and teeth in humans.	To use classification keys to identify and name a variety of living things and their habitats, acknowledging dangers posed to these living things.	To understand how electricity powers appliances and how electrical circuits are created. To use this understanding to solve problems related to electrical circuits.	To know how sound is made and how it travels, creating different pitches and volumes.
National Curriculum coverage	<ul style="list-style-type: none"> - compare and group materials together, according to whether they are solids, liquids or gases - observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) - identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. 	<ul style="list-style-type: none"> - describe the simple functions of the basic parts of the digestive system in humans - identify the different types of teeth in humans and their simple functions - construct and interpret a variety of food chains, identifying producers, predators and prey. 	<ul style="list-style-type: none"> - recognise that living things can be grouped in a variety of ways - explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment - recognise that environments can change and that this can sometimes pose dangers to living things. 	<ul style="list-style-type: none"> - identify common appliances that run on electricity - construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers - identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery - recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit - recognise some common conductors and insulators, and associate metals with being good conductors. 	<ul style="list-style-type: none"> - identify how sounds are made, associating some of them with something vibrating - recognise that vibrations from sounds travel through a medium to the ear - find patterns between the pitch of a sound and features of the object that produced it - find patterns between the volume of a sound and the strength of the vibrations that produced it - recognise that sounds get fainter as the distance from the sound source increases.
Step/s towards achieving the unit Intent.	To compare materials according to whether they are solids, liquids or gases.	To identify and name parts of the human digestive system.	To identify living things and group them in a variety of ways.	To identify common appliances which are powered by electricity.	To know how sound is made.
Step/s towards achieving the unit Intent.	To group materials according to whether they are solids, liquids or gases.	To explain the functions of the digestive system.	To explore and use classification keys to group living things and their environments.	To construct a simple series electrical circuit.	To recognise that vibrations from sounds travel to the ear to be heard.

Step/s towards achieving the unit Intent.	To observe that some materials change state when they are heated or cooled.	To identify the types of teeth and their functions.	To investigate habitats and compare them.	To identify successful electrical circuits to power a lamp.	To find patterns between the pitch of a sound and features of the object that produced it.
Step/s towards achieving the unit Intent.	To investigate how some materials change state when they are heated or cooled.	To investigate the impact of tooth decay.	To understand how environmental changes can happen.	To recognise that a switch opens and closes a circuit.	To find patterns between the volume of a sound and the strength of the vibrations that produced it.
Step/s towards achieving the unit Intent.	To understand the role of evaporation and condensation in the water cycle.	To understand the impact of tooth decay.	To understand the impact of environmental changes.	To recognise some common conductors and insulators.	To recognise that sounds get fainter as the distance from the sound source increases.
Step/s towards achieving the unit Intent.	To investigate the rate of evaporation with temperature.	To construct and interpret food chains.	To consider how living things and their environments can be protected from changes and danger.	To apply knowledge of electrical circuits to fulfil a design requirement.	To use knowledge of sound to create different pitches and volumes.
Outcome of the learning opportunity	I can explain how states of matter change as a result of my investigations.	I can evaluate how to care for human teeth.	I can produce a campaign poster, demonstrating how we can care for living things and their environments.	I can create my own successful electrical circuit to light up the rooms in a model house.	I can create and play a musical instrument to produce varying pitches and volumes.
Suggestions for extracurricular opportunities in or out.	<i>We The Curious trip including workshop: link Wessex Water education opportunity including site visit, school visit or a virtual session: link</i>	<i>Online workshop: link We The Curious trip including workshop: link Visit from/virtual meeting with a dentist/dental nurse</i>	<i>Visit/virtual meeting focusing on maintaining habitats (ham hill country park, RSPB Ham Wall, RSPB Swell Wood)</i>	<i>Visit from an electrician Trip to Hinkley Point: link</i>	<i>- Visit from/virtual meeting with an audiologist Visit from/virtual meeting with a musician.</i>

Year 5					
	Learning Opportunity 1	Learning Opportunity 1	Learning Opportunity 1	Learning Opportunity 1	Learning Opportunity 1
Unit of Learning	Properties and changes of materials	Animals including humans	Living things and their habitats	Earth and Space	Forces
Overall purpose/ intent(s) of the unit	To compare and group materials based on their properties and understand that these properties can change – sometimes irreversibly or reversibly.	To describe the changes as humans develop to old age.	To describe the differences in life cycles between a variety of living things and understand the life processes of reproduction.	To understand the movement of the earth, sun and moon (within the solar system), and use this to explain day and night.	To explain the impact/effect of forces including gravity, air resistance, water resistance and friction, as well as understand the use of mechanisms linked to forces.
National Curriculum coverage	<ul style="list-style-type: none"> - compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets - know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution - use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating - give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic - demonstrate that dissolving, mixing and changes of state are reversible changes - 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. 	- describe the changes as humans develop to old age.	<ul style="list-style-type: none"> - describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird - describe the life process of reproduction in some plants and animals. 	<ul style="list-style-type: none"> - 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. 	<ul style="list-style-type: none"> - 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 - recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

Step/s towards achieving the unit Intent.	To compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.	To know the life cycle of humans.	To explore reproduction in different plants.	To describe the earth, sun and moon as approximately spherical bodies.	To understand the effects of gravity and how it was discovered.
Step/s towards achieving the unit Intent.	To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.	To understand how babies grow and develop.	To investigate reproduction of different plants.	To know the names and order of the planets within our solar system.	To explore and investigate the force of gravity and understand the relationship between mass and weight.
Step/s towards achieving the unit Intent.	To use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.	To understand the changes experienced in puberty and why they occur.	To know the life cycles of a variety of mammals.	To describe the movement of the earth (and other planets), relative to the sun.	To explore and investigate the effects of air resistance.
Step/s towards achieving the unit Intent.	To give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.	To know what changes happen to humans in old age.	To know the life cycle of a bird.	To understand why we have day and night.	To explore and investigate the effects of water resistance.
Step/s towards achieving the unit Intent.	To demonstrate that dissolving, mixing and changes of state are reversible changes.	To compare the gestation period of humans and other animals.	To explore metamorphosis in insects and amphibians, comparing their life cycles.	To understand why different parts of the earth experience night and day at different times.	To explore and investigate the effects of friction.
Step/s towards achieving the unit Intent.	To 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.	To compare the life expectancy of humans and other animals.	To compare the life cycles of mammals, insects, amphibians and birds.	To describe the movement of the moon, relative to the earth.	To explore and design mechanisms.
Outcome of the learning opportunity	I can complete comparative and fair tests to demonstrate my understanding of the properties of materials and how they can change.	I can represent the data I have gathered for gestation periods and life expectancies in a clear format to demonstrate the comparisons between humans and other animals.	I can use my knowledge of life cycles and the process of reproduction to create a documentary style description of the life cycles of some animals and plants.	I can create a model of the moon phases using biscuits and explain why the moon phases occur.	I can design my own vehicle of transport, using my knowledge of forces and mechanisms.
Suggestions for extracurricular opportunities in or out.	<i>Visit from/virtual meeting with a barista Visit from/virtual meeting with a coal supplier (Darch Coal, Burnham Coal, etc.)</i>	<i>Visit from/virtual meeting with sonographer/ midwife/ carer Visit a local nursing home Visit from/virtual meeting with a zookeeper</i>	<i>Visit from/virtual meeting with a vet/veterinary nurse</i>	<i>We The Curious trip including workshop: link Online workshop: link Mobile planetarium: link</i>	<i>Online workshop: link</i>

	Year 6				
	Learning Opportunity 1	Learning Opportunity 1	Learning Opportunity 1	Learning Opportunity 1	Learning Opportunity 1
Unit of Learning	Evolution and inheritance	Animals including humans	Light	Living things and their habitats	Electricity
Overall purpose/intent(s) of the unit	To recognise that living things adapt and change over time, and how this may lead to evolution.	To understand how the human circulatory system works and recognise the impact of lifestyle on the human body.	To recognise that light appears to travel in straight lines and how this links to how we see and how shadows are formed.	To be able to classify living things into broad groups and give reasons for doing so.	To use recognised symbols to represent simple electrical circuits and explain how variations of circuits can hold impact.
National Curriculum coverage	<ul style="list-style-type: none"> - 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. 	<ul style="list-style-type: none"> - identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood - recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function - describe the ways in which nutrients and water are transported within animals, including humans. 	<ul style="list-style-type: none"> - 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. 	<ul style="list-style-type: none"> - describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals - give reasons for classifying plants and animals based on specific characteristics. 	<ul style="list-style-type: none"> - 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.
Step/s towards achieving the unit Intent.	To understand the key ideas of the theory of evolution.	To identify and name the parts of the human circulatory system.	To recognise that light travels in straight lines from sources into our eyes, sometimes via an object.	To give reasons for classifying animals and plants based on their similarities and differences.	To understand the history of electricity.
Step/s towards achieving the unit Intent.	To recognise that fossils provide information to support evolution.	To describe the functions of the main parts of the circulatory system.	To explore how mirrors reflect light.	To explore how living things are classified into groups.	To use recognised symbols to represent a simple circuit in a diagram.
Step/s towards achieving the unit Intent.	To know how human beings have evolved.	To explain how water and nutrients are transported around the body.	To investigate how the direction in which light travels can be changed.	To identify the characteristics of different types of animals.	To explore the impact of different voltages within simple circuits.
Step/s towards achieving the unit Intent.	To understand the concept of inheritance.	To describe how diet and exercise impact the human body.	To investigate how a prism changes a ray of light.	To understand and describe microorganisms.	To investigate how variations of components can impact the brightness of a bulb.

Step/s towards achieving the unit Intent.	To understand how animals and plants adapt to suit their environment.	To investigate the impact of exercise on the human body.	To investigate how light enables us to see colour.	To identify the characteristics of different types of microorganisms.	To investigate how variations of components can impact the loudness of a buzzer.
Step/s towards achieving the unit Intent.	To identify the advantages and disadvantages of adaptation.	To explain the impact of drugs and alcohol on the human body.	To explain why shadows have the same shape as the object that cast them.	To explore organisms found in my local habitat and classify them appropriately.	To explore variations of positions for on/off switches within simple circuits.
Outcome of the learning opportunity	I can participate in a role play debate about evolution and adaptation.	I can create a leaflet to help encourage people to make healthy choices for their bodies.	I can create a demonstrative show of lights and shadows to showcase my learning.	I can investigate my local habitat and classify the organisms found there appropriately.	I can use a simple circuit to create a torch.
Suggestions for extracurricular opportunities in or out.	<i>We The Curious trip including workshop: link Trip to The Eden Project</i>	<i>Visit from/virtual meeting with a doctor/ nurse / dietician</i>	<i>We The Curious trip including workshop: link Visit from/virtual meeting with an optician</i>	<i>Pond dipping</i>	<i>Visit from an electrician Trip to Hinkley Point: link</i>