

## SEND adaptations within the Science curriculum

### C&L -

Pupils do research using ICT.

Present findings in the style that suits them best eg using ICT (PowerPoint, Clicker etc). Staff to use alternative methods of recording grid for further suggestions.

Use cloze procedure.

Use at least Blooms Remember and Understand tasks.

Small group tasks with adult support.

Photo evidence.

### SEMH -

Ensure tasks are accessible to ensure pupils remain focused.

Use mixed ability pairing/grouping to discuss ideas and share answers with the class.

Be aware of behaviour needs when considering which equipment/resources to use.

## C&I -

Science specific *vocabulary* will need to be explained through pre-teaching.

Use visuals during lessons to support understanding of vocabulary. ie word and picture (use twinkl create)

Additional adult support to explain vocabulary grid.

Ensure vocabulary and associated pictures on display.

## Sensory & Physical -

### Colour blind -

Teachers to learn what colours the pupil can see correctly and how they see the ones they are blind to.

### VI -

Ensure diagrams and anything they need to observe/draw is enlarged and in bold.

Have resources on pupils table rather than on the board.

If pupil has iPad to see teachers screen ensure this is utilised. If iPad is unavailable pupil to sit at teachers computer to see any presentations.

Pupil to use darkest possible pencil (8B) when drawing diagrams.

Otherwise use black pen.

If pupil has no useable vision, teachers to plan science using the following resources - German film, smelly pens and pencils, embossed sheets, brailled sheets, tactile resources appropriate to the lesson. Seek advice from STLS when needed.

*Fine motor difficulties -*

Pencil grips, Stabilo pens/pencils

Pupil to use easy grip/loop scissors.

*Gross motor difficulties -*

Individualised risk assessments to be completed

*Sensory needs -*

Pupil may need ear defenders if watching loud recordings/ during sound topic.

*Science long term overview*

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 1	Seasonal change	Exploring everyday materials	Everyday materials	Animals including humans – all about animals	Animals including humans – all about me	Plants
Year 2	Use of everyday materials	Animals including humans – life cycles	Animals including humans - growth	Living things and their habitats	Living things and their habitats – around the world	Plants
Year 3	Forces and magnets	Light	Rocks	Animals including humans	Plants	Scientific enquiry
Year 4	Animals including humans	Living things and their habitats	Electricity	Sound	States of matter	Living things and their habitats - conservation
Year 5	Properties of materials	Changes of materials	Forces	Earth and Space	Animals including humans	Living things and their habitats
Year 6	Evolution and inheritance	Light	Electricity	Animals including humans	Living things and their habitats	Looking after our environment

# The Craylands School KS1 Long term subject: Science

## Aims

develop **scientific knowledge and conceptual understanding** through the specific disciplines of biology, chemistry and physics

- develop understanding of the **nature, processes and methods of science** through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the **uses and implications** of science, today and for the future.

## Skills

asking simple questions and recognising that they can be answered in different ways

- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions.

## Knowledge

### Plants

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.

### Animals including humans

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

describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)

- identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.

### Everyday materials

distinguish between an object and the material from which it is made

	<ul style="list-style-type: none"> <li>▪ identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</li> <li>▪ describe the simple physical properties of a variety of everyday materials</li> <li>▪ compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> </ul> <p>Seasonal changes</p> <p>observe changes across the four seasons</p> <ul style="list-style-type: none"> <li>▪ observe and describe weather associated with the seasons and how day length varies.</li> </ul>			
<i>Study famous linked Scientists who persevered and overcame challenges and embodied what it means to be a Craylearner.</i>				
Early Years	<p>Visits to the meadow and drawing what they can see; taking photos of what they see</p> <p>Growing herbs/plants</p> <p>Class pet</p> <p>Use of books such as 'We're going a bear hunt' to identify the different environments Taking photos at each season to look at the changes</p> <p>Baking/cooking</p> <p>Ice melting</p> <p>Sensory play</p>			
<b>Year 1 Term 1 and ongoing</b>	<b>Seasonal change</b>			
<b>Link to STAR</b>	<b>What is it like where we live? Has where we live always been like this?</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Understand there are four seasons	What are the seasons?	Using their observations and ideas to suggest answers to question	Observe changes across the 4 seasons	season spring summer autumn winter
Understand the changes that take	What happens in Autumn?	Using their observations and ideas	Observe and describe weather associated with the seasons and how day length varies	autumn hibernate

place in autumn		to suggest answers to question		weather protect harvest
Understand the changes that take place in winter	What happens in Winter?	Using their observations and ideas to suggest answers to questions		winter weather frost sleet temperature
Understand the changes that take place in spring	What happens in Spring?	Identifying and classifying		spring compare changes grow chick
Understand the changes that take place in summer	What happens in Summer?	Using their observations and ideas to suggest answers to questions		summer warm sun protection temperature heatwave
Investigate how you can measure rainfall	How can we measure rainfall?	Performing simple tests Gathering and recording data to		rainfall measuring record results graph
<b>Year 1 Term 2</b>	<b>Exploring everyday materials</b>			
<b>Link to STAR</b>	<b>What is it like where we live? Has where we live always been like this?</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Identify and name a variety of everyday materials	Can you name any materials?	Identify and classify	Distinguish between an object and the material from which it is made Identify and name a variety of everyday materials,	material fabric wood plastic metal

Distinguish between an object and the material it is made from	What is it made of?	Use observations and ideas to suggest answers to questions	including wood, plastic, glass, metal, water, and rock	object glass property brick elastic
Describe the properties of everyday materials	How can you describe the material?	Perform simple tests Gather and record data to help in answering questions	Describe the simple physical properties of a variety of everyday materials	property opaque transparent dull stiff
Identify objects that are natural and those that are manmade	What objects are natural? What objects are manmade?	Identify and classify	Compare and group together a variety of everyday materials on the basis of their simple physical properties	natural man made factory rubber polyester
Predict and identify if an object will float or sink	What objects float in water?	Perform simple tests		predict float sink submerge buoyant
Explore which materials are best for different objects	What material would you use for different objects?	Perform simple tests Identify and classify Use observations and ideas to suggest answers to questions Gather and record data to help in answering questions		absorbent sponge waterproof umbrella soak
<b>Year 1 Term 3</b>	<b>Everyday materials 2</b>			
<b>Link to STAR</b>	<b>What is it like where we live? Has where we live always been like this?</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	

Build a structure strong enough to withstand wind	What happens to a structure in the wind?	Perform simple tests	Distinguish between an object and the material from which it is made	solid strong brick clay wind
Build a waterproof structure	What does waterproof mean?	Perform simple tests	Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock	waterproof absorbent non-absorbent roof slate
Understand the properties of glass and its uses	What do we use glass for?	Use observations and ideas to suggest answers to questions	Describe the simple physical properties of a variety of everyday materials	transparent opaque suitable window pane window frame
Understand that materials are used to create a variety of furniture	What material is furniture made from?	Use observations and ideas to suggest answers to questions	Compare and group together a variety of everyday materials on the basis of their simple physical properties	fabric furniture cotton mattress soft
Explore a variety of fabrics and understand their different properties	What is made from fabric?	Identify and classify		wool weather jumper suitable waterproof
Explain the uses of materials and why they are suitable	What should we make .....from?	Use observations and ideas to suggest answers to questions		evaluate material properties tile garden
<b>Year 1 Term 4</b>	<b>Animals including humans – all about animals</b>			
<b>Link to STAR</b>	<b>What is it like where we live? Has where we live always been like this?</b>			

Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Discover animal families	Can you name different types of animals?	Group and sort	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	fish amphibian reptile mammal bird
Learn about the differences between mammals and birds	What is a mammal?	Use observations and ideas to suggest answers to questions Group and sort		feather warm-blooded characteristic backbone hatchling
Learn about the differences between amphibians, reptiles and fish	What is an amphibian?	Use observations and ideas to suggest answers to questions Group and sort	Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)  Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	amphibian reptile gills scale cold-blooded
Discover the types of food living things eat	What do different animals eat?	Use observations and ideas to suggest answers to questions Group and sort		herbivore carnivore omnivore predator canines
Explore the difference between wild animals and pets	What are wild animals and what are pets?	Use observations and ideas to suggest answers to questions Group and sort		pet wild shelter veterinary natural
Explain the characteristics of an animal	How can you describe an animal?	Use observations and ideas to suggest answers to questions Group and sort		similarities differences compare unsuitable climate

<b>Year 1 Term 5</b>	<b>Animals including humans – All about me</b>			
<b>Link to STAR</b>	<b>What is it like where we live? Has where we live always been like this?</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Discover the basic parts of the human body	Can you name human body parts?	Identify and classify	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  Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)  Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense	head body skeleton limb joint
Learn about eyes and sight	What do the eyes do?	Perform simple tests Gather and record data to help in answering questions		brain eyelash eye sight pupil
Learn about ears and hearing	What do the ears do?	Perform simple tests Gather and record data to help in answering questions		sound ear sign language vibration deafness
Explore the tongue and taste	What does the tongue do?	Use observations and ideas to suggest answers to questions		tongue mouth taste flavour sweet
Explore the sense of touch	How we do touch?	Gather and record data to help in answering questions		touch fingertips skin organ brain
Discover how your nose smells	How does the nose smell?	Identify and classify		touch fingertips skin

				organ brain
<b>Year 1 Term 6</b>	<b>Plants</b>			
<b>Link to STAR</b>	<b>What is it like where we live? Has where we live always been like this?</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Understand that seeds grow into plants	What do seeds grow into?	Ask simple questions Observe closely and use simple equipment Use their observations and ideas to suggest answers to questions	Identify and name a variety of common and wild and garden plants, including deciduous and evergreen trees Identify and describe the basic structure of a variety of common flowering plants, including trees	seed plant tree soil predict
Identify the basic parts of a plant and tree	What are the parts of a plant?	Identify and classify Compare and contrast familiar plants Draw diagrams showing the parts of different plants, including trees		stem petal leaf root flower
Understand that different plants can grow in the same environment	Where do plants grow?	Identify and classify Gather and record data Describe how they are able to identify and group different plants Compare and contrast what they have found out about different plants		environment weed daisy dandelion wild
Know the difference between deciduous and evergreen trees	What is a deciduous tree?	Observe closely, using simple equipment		deciduous evergreen seasons branch bush
Know that fruit trees and vegetables are varieties of plants	Where do fruits and vegetables come from?	Observe closely Identify and classify Use their observations and ideas to suggest answers to questions Gather and record data to help in answering questions		supermarket fruit vegetable farm tractor

Record the growth of a plant	How can we measure how a plant grows?	Observe closely Gather and record data		growth seedling young plant adult plant observe
<b>Year 2 Term 1</b>	<b>Uses of everyday materials</b>			
<b>Link to STAR</b>				
Link to prior learning				
<b>Learning objectives</b>	<b>Context</b>	<b>Skills</b>	<b>Knowledge</b>	<b>Vocabulary</b>
Identify different materials and their uses	What is it made out of? What do we use it for?	Using their observations and ideas to suggest answers to questions	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	material property suitable object brick
Understand how to select the right materials to build a bridge	What material would be best to build a bridge?	Performing simple tests		bridge triangle obstacle structure construction
Explore and test the stretchiness of materials	Which materials are the stretchiest?	Gathering and recording data to help in answering questions		stretchy elastic floppy hinder limit
Understand that materials can change their shape by twisting, bending, squashing or stretching	How can we change the material?	Using their observations and ideas to suggest answers to questions		bend twist squash stretch force
Find out about Charles Macintosh and explore how materials are suitable for different purposes	Who is Charles Macintosh?	Performing simple tests		mackintosh protective fluorescent safety waterproof

Discover which materials change shape when making a road with John McAdam	Who is John McAdam?			John McAdam merchant bound highway road
<b>Year 2 Term 2</b>	<b>Animals including humans - Life Cycles</b>			
<b>Link to STAR</b>				
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	Vocabulary
Order the stages of the human life cycle	What are the stages of the human life cycle?	Identifying and classifying	Notice that animals, including humans, have offspring which grow into adults	life cycle grow survive independent adult
Describe the stages of a human life cycle	What happens at each stage in the life of a human?	Identifying and classifying	Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)	foetus womb helpless toddler develop
Identify the offspring and parent of an animal	What do we call the babies of different animals?	Using their observations and ideas to suggest answers to questions		offspring inherit gene resemble differences
Explore the life cycle of a chicken	What happens in the life of a chicken?	Gathering and recording data to help in answering questions		reproduction hatchling chick bar chart predict
Describe the life cycle of a butterfly	What happens in the life of a butterfly?	Asking simple questions and recognise that they can be answered in different ways		caterpillar transformation larva chrysalis metamorphosis

Explore the life cycle of a frog	What happens in the life of a frog?	Using their observations and ideas to suggest answers to questions		frog amphibian frogspawn tadpole froglet
<b>Year 2 Term 3</b>	<b>Animals including humans - Growth</b>			
<b>Link to STAR</b>	<b>What is it like where we live? Has where we live always been like this?</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Describe the needs of animals for survival	What do animals need in order to survive?	Using their observations and ideas to suggest answers to questions	Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)	survival shelter nutrition oxygen essentia
Describe the needs of humans, for survival	What do humans need in order to survive?	Using their observations and ideas to suggest answers to questions	Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	vital non-essential survive grow healthy
Explore the importance of eating the right food	Can we eat whatever food we want to?	Identifying and classifying		protein carbohydrate dairy vitamins calcium fat
Describe what a healthy, balanced diet looks like	What does a healthy, balanced diet look like?	Using their observations and ideas to suggest answers to questions		balanced diet nutrients fresh food pre-cooked processed food
Investigate the impact of exercise on our bodies	Why is exercise important to us and what happens to us when we exercise?	Performing simple tests Using their observations and ideas to suggest answers to questions		exercise strength flexibility balance coordination

Investigate the importance of hygiene	Why is it important to stay clean?	Performing simple tests		hygiene prevent germs bacteria virus
<b>Year 2 Term 4</b>	<b>Living things and their habitats</b>			
<b>Link to STAR</b>	<b>What is it like where we live? Has where we live always been like this?</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Explore and compare the differences between things that are living, dead, and things that have never been alive	What is the difference between living things and non living things?	Identifying and classifying	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,	senses nutrition reproduce excrete respire
Identify and name a variety of plants and animals in a microhabitat	What are the names of some different animals and plants?	Observing closely, using simple equipment		habitat microhabitat fungi survive shelter
Design a suitable microhabitat where living things could survive	What is a microhabitat?	Using their observations and ideas to suggest answers to questions		antennae suitable condition colony insect
Find out what animals eat to survive in their habitats	What do different animals eat?	Asking simple questions and recognising that they can be answered in different ways Gathering and recording data to help in answering questions		producer consumer herbivore carnivore omnivore
Understand a food chain	What is a food chain?	Using their observations and ideas to suggest answers to questions		food chain life cycle nutrients rot caterpillar

Understand the journey food makes from the farm to the supermarket	How do we get food from the farms to the supermarket?	Using their observations and ideas to suggest answers to questions	using the idea of a simple food chain, and identify and name different sources of food	automated frozen food forklift truck refrigerated lorry canne
<b>Year 2 Term 5</b>	<b>Living things and their habitats – Habitats around the world</b>			
<b>Link to STAR</b>	<b>What is it like where we live? Has where we live always been like this?</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Learn about habitats	What is a habitat?	Identifying and classifying Using their observations and ideas to suggest answers to questions	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	habitat microhabitat organism environment mate
Appreciate that environments are constantly changing	How do environments change?	Gathering and recording data to help in answering questions		rainforest moisture extinct climate endangered
Explore the rainforest and its problems	What is the rainforest?	Using their observations and ideas to suggest answers to questions		biodiversity deforestation poaching pollution rainforest
Describe life in the ocean	What animals live in the ocean?	Asking simple questions and recognising that they can be answered in different ways		plankton ocean ecosystem coral reef trench
Discover the Arctic and Antarctic habitat	What lives in the Arctic and Antarctic?	Identifying and classifying		Antarctic Arctic caribou narwhal tundra
Create a model of a habitat	What could be in a habitat?	Using their observations and ideas to suggest answers to questions		earthworm desert lizard cactus pond

<b>Year 2 Term 6</b>	<b>Plants</b>			
<b>Link to STAR</b>	<b>What is it like where we live? Has where we live always been like this?</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Know the difference between seeds and bulbs	What is a seed? What is a bulb?	Identifying and classifying Observing closely, using simple equipment	Observe and describe how seeds and bulbs into mature plants	seeds bulbs growth plant compare
Design an experiment to find out what plants need to grow	What do plants need to grow?	Asking simple questions and recognising that they can be answered in different ways Performing simple tests	Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	predict investigate control experiment method
Describe what plants need to grow and stay healthy	What does a plant need to grow well?	Performing simple tests Using their observations and ideas to suggest answers to questions		photosynthesis carbon dioxide oxygen glucose energy
Describe the life cycle of a plant	What happens in the life of a plant?	Using their observations and ideas to suggest answers to questions		pollination life cycle germination reproduction seedling
Observe and record the growth of plants over time	How can we observe how plants grow?	Performing simple tests Using their observations and ideas to suggest answers to questions Gathering and recording data to help in answering questions		manure crop insulate thrive healthy
Understand that plants adapt to suit their environment	Do all plants live in the same places? How they survive where they live?	Identifying and classifying		forest desert adapt condition survive

## The Craylands School KS2 Long term subject: Science

Aims				
develop <b>scientific knowledge and conceptual understanding</b> through the specific disciplines of biology, chemistry and physics				
<ul style="list-style-type: none"> <li>develop understanding of the <b>nature, processes and methods of science</b> through different types of science enquiries that help them to answer scientific questions about the world around them</li> <li>are equipped with the scientific knowledge required to understand the <b>uses and implications</b> of science, today and for the future.</li> </ul>				
<b>Year 3 Term 1</b>	<b>Forces and magnets</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Explore contact and noncontact forces	What is a force?	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Compare how things move on different surfaces Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance	force contact force non-contact forces air resistance friction
Compare how things move on different surfaces	How can we change how things move along a surface?	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard	Observe how magnets attract or repel each other	motion surface resistance texture

		units, using a range of equipment, including thermometers and data loggers	and attract some materials and not others	tilt
Explore different types of magnets	What is a magnet?	Setting up simple practical enquiries, comparative and fair tests	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	magnet attract repel bar magnet horseshoe magnet
Explore the properties of magnets and everyday objects that are magnetic	Which materials are magnetic?	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	Describe magnets as having 2 poles  Predict whether 2 magnets will attract or repel each other, depending on which poles are facing	magnetism magnetic magnetic field iron steel
Understand that magnetic forces can act at a distance	Does an object need to be next to a magnet to be attracted to it?	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment		non-contact forces magnetism attract non-magnetic materials recycle
Explore the everyday uses of magnets	What can you use magnets for?	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers		compass magnetic needle magnetic north direction orienteeing
<b>Year 3 Term 2</b>	<b>Light</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	

Identify the difference between light sources and non light sources	What is a light source?	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Recognise that they need light in order to see things and that dark is the absence of light	light source natural artificial reflect
Explore the light that comes from the sun and how to stay safe	Is the sun a light source?	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	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	vitamin D ultraviolet rays sunburn exposure protection
Explore materials which are reflective	What does it mean if a material is reflective?	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Find patterns in the way that the size of shadows change	fluorescent high visibility reflective surface materials
Discover how shadows are formed	How are shadows made?	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables		shadow opaque sundial rays blocks
Investigate how shadows change throughout the day	How do shadows change throughout the day?	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables		position cast opposite direction length

		Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions		
Investigate how you can change the size of a shadow	How can you change the size of a shadow?	Identifying differences, similarities or changes related to simple scientific ideas and processes		size shape closer further puppet

Year 3 Term 3		Rocks		
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Explore the formation and properties of igneous rocks	What is an igneous rock?	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties	igneous rocks intrusive igneous rock extrusive igneous rock crystals magma
Explore the formation and properties of sedimentary and metamorphic rocks	What are sedimentary and metamorphic rocks?	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	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	sedimentary rock metamorphic rock limestone marble sandstone
Weathering and the suitability of rocks for different purposes	What do we use different rock types for?	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further		weathering chemical weathering

		questions		physical weathering biological weathering acid rain
Explore how water contributes to the weathering of rocks	How does water affect rocks?	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers		appearance texture submerged erosion receding
Understand how fossils are formed	How is a fossil made?	Identifying differences, similarities or changes related to simple scientific ideas and processes		fossil extinct sediment embedded amber
Explore different types of soil	Are all types of soil the same?	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data		decompose fragments clay soil chalky soil sandy soil

<b>Year 3 Term 4</b>	<b>Animals including humans</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Explore the 5 key food groups	What are the different food groups?	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food;	nutrition carbohydrate protein vitamin mineral

Learn about the nutrition in the food we eat	What do we get from the food we eat?	Using straightforward scientific evidence to answer questions or to support their findings	they get nutrition from what they eat  Identify that humans and some other animals have skeletons and muscles for support, protection and movement	nutrition label portion energy balanced diet
Learn about the different types of skeletons	What are the different types of skeletons?	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions		vertebrate invertebrate endoskeleton exoskeleton hydrostatic skeleton
Learn about the human skeleton	What do we know about the human skeleton?	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables		humerus ulna radius tibia fibular
Learn about animals and their skeletons	Do all animals have the same type of skeleton?	Identifying differences, similarities or changes related to simple scientific ideas and processes		endoskeleton vertebrate skull rib cage spine
Explore the role of muscles	What are muscles?	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables		muscle contract hamstrings biceps diaphragm

<b>Year 3 Term 5</b>	<b>Plants</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Compare the effect of different	What makes a plant grow?	Asking relevant questions and using different	Identify and describe the functions of different parts	nutrients fertiliser

factors on plant growth		types of scientific enquiries to answer them Setting up simple practical enquiries, comparative and fair tests	of flowering plants: roots, stem/trunk, leaves and flowers	nursery potassium stunted
Identify and describe the functions of different parts of a flowering plant and how they are used in photosynthesis	What do the different parts of a plant do?	Making systematic and careful observations Reporting on findings from enquiries, including oral and written explanations	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	chlorophyll stomata xylem photosynthesis UV light
Investigate the way in which water is transported within plants	How is water transported in a plant?	Making systematic and careful observations	Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	xylem phloem absorb stomata transpiration
Explore the part that flowers play in the life cycle of flowering plants	What do flowers do?	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions		anther stigma style filament reproduction
Understand the pollination process and the ways in which seeds are dispersed	What is pollination?	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions		pollination pollen nectar seed dispersal pollinator
Compare the effect of different factors on plant growth	What makes a plant grow?	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions		germination vulnerable anchor sapling formation

		Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions		
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<b>Year 3 Term 6</b>	<b>Scientific Enquiry</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
How can a solar oven be made more effective: posing questions and writing predictions	What is solar power?	Asking relevant questions and using different types of scientific enquiries to answer them		solar renewable energy scientific investigation prediction plausible
How can a solar oven be made more effective: recording and presenting results		Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables		record results data table graph

<p>Cleaning coins: writing a method and carrying out a practical test</p>	<p>How can we clean coins?</p>	<p>Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p>		<p>acid alkali PH method practical</p>
<p>Cleaning coins: writing a conclusion</p>		<p>Identifying differences, similarities or changes related to simple scientific ideas and processes Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p>		<p>conclusion evidence explanation compare enquiry</p>
<p>Making a cake: fair testing, controls and variables</p>	<p>What is the best way to make a cake?</p>	<p>Setting up simple practical enquiries, comparative and fair tests</p>		<p>baking measurements fair test control experiment variable</p>
<p>Making a cake: scientific enquiry</p>		<p>Using straightforward scientific evidence to answer questions or to support their findings Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p>		<p>conclusive scientific knowledge equipment diagram collated</p>

<b>Year 4 Term 1</b>	<b>Animals including humans</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Identify the organs in the digestive system	What is the digestive system?	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	Describe the simple functions of the basic parts of the digestive system in humans	digestive system oesophagus stomach small intestine large intestine
Describe the functions of the main organs in the digestive system	What does the digestive system do?	Making systematic and careful observations Reporting on findings from enquiries, including oral and written explanations		Identify the different types of teeth in humans and their simple functions
Identify the types of human teeth and their functions	What do teeth do?	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	Construct and interpret a variety of food chains, identifying producers, predators and prey	incisors canines molars jaw gum
Investigate the effects of different liquids on the teeth	What impact does liquid have on teeth?	Setting up simple practical enquiries, comparative and fair tests Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions		enamel plaque tooth decay cavity fluoride
Understand food chains	What is a food chain?	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables		ecosystem producer consumer prey predator
Explore food webs	What is a food web?	Recording findings using simple scientific language, drawings, labelled diagrams,		food web tundra

		keys, bar charts, and tables		hide interdependence threatened
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<b>Year 4 Term 2</b>	<b>Living things and their habitats</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Explore different habitats	Where do animals live?	Identifying differences, similarities or changes related to simple scientific ideas and processes	Recognise that living things can be grouped in a variety of ways	habitat microhabitat conditions adapted camouflage
Research a habitat	What is it like in different habitats?	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment	coastal grassland environment climate exposure
Explore how animals can be classified	Are all animals the same?	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Recognise that environments can change and that this can sometimes pose dangers to living things	classify characteristics vertebrate invertebrate species
Create a classification key	What is a classification key?	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions		sub-groups identify criteria classification keys organism
Adaptations and classification within species	How do animals adapt to where they live?	Identifying differences, similarities or changes related to simple scientific ideas and processes		adapted region features colouring

				blubber
Explore and classify pond plants	What are pond plants?	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables		ecosystem oxygenised flowering plant non-flowering plant pond dipping

<b>Year 4 Term 3</b>	<b>Electricity</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Explore electrical appliances and electrical safety	What is an electrical appliance?	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	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	electricity batteries mains electricity appliance socket
Learn about electrical components in a series circuit	What is an electrical circuit?	Using straightforward scientific evidence to answer questions or to support their findings	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	circuit series circuit component cell voltage
Investigate electrical circuits	How can we create electrical circuit?	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions		current power battery wire bulb
Explore conductors and insulators	What is a conductor? What is an insulator?	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit	conductor insulator metal copper rubber

Learn about electrical switches	What is a switch?	Setting up simple practical enquiries, comparative and fair tests Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	Recognise some common conductors and insulators, and associate metals with being good conductor	switch current control complete circuit incomplete circuit
Investigate how electrical components can change within a circuit	How can we change an electrical circuit?	Investigate, record data, analysing data, presenting findings		non-renewable energy renewable energy wind turbines solar panels hydropower

<b>Year 4 Term 4</b>	<b>Sound</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Identify how sounds are made	How is sound made?	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusion	Identify how sounds are made, associating some of them with something vibrating	vibration medium waves eardrum signals
Explore how vibrations from sounds travel through a medium to the ear	How does sound travel?	Identifying differences, similarities or changes related to simple scientific ideas and processes	Recognise that vibrations from sounds travel through a medium to the ear	source energy particles echo vacuum

Explore sound insulation	What is sound insulation?	Setting up simple practical enquiries, comparative and fair tests	Find patterns between the pitch of a sound and features of the object that produced it	materials reflect absorb insulate defenders
Explore volume	What is volume?	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	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 increase	volume decibels decibel metre amplitude power
Explore pitch	What is pitch?	Identifying differences, similarities or changes related to simple scientific ideas and processes		pitch high pitch low pitch instruments orchestra
Explore sounds from near and from far	How far away can you hear sound from?	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions		energy particles travel sound source fade

Year 4 Term 5	States of matter			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Compare and group the 3 states of matter	What are the states of matter?	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Compare and group materials together, according to whether they are solids, liquids or gases	matter solid liquid gas volume
Explore how particles behave in solids, liquids and gases	What are solids, liquids and gases like?	Using straightforward scientific evidence to answer questions or to support their findings	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	particle bond arranged cooled heated
Investigate melting points	When do things melt?	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers		particle melting melting point temperature thermometer
Explore freezing and boiling points	What is freezing and boiling?	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables		freezing reverse boiling sublimation deposition
Explore evaporation and condensation	What is evaporation and condensation?	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions		evaporation condensation absorb water vapour process
Understand the water cycle	What is the water cycle?	Recording findings using simple scientific language, drawings,		water cycle precipitation

		labelled diagrams, keys, bar charts, and tables		surface runoff transpiration groundwater
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<b>Year 4 Term 6</b>	<b>Living things and their habitats - conservation</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Describe ecosystems and how they are affected by changes in the seasons	What is an ecosystem?	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	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	ecosystem Northern Hemisphere Southern Hemisphere migrate monsoon
Understand human impact on the environment through deforestation	What is deforestation?	Using straightforward scientific evidence to answer questions or to support their findings	Recognise that environments can change and that this can sometimes pose dangers to living things	rainforest deforestation drought biodiversity recycling
Explore air pollution	What is air pollution?	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables		fossil fuels pollution greenhouse gases emissions climate change
Understand water pollution	What is water pollution?	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions		chemicals sewage contaminate pesticides water treatment plant

Explore methods that can be used to conserve water	How can we save water?	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers		conserve drought freshwater pure water butt
Understand that humans can have a positive impact on nature	How do humans impact on nature?	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions		endangered marine sanctuaries protect conservation areas recycling

<b>Year 5 Term 1</b>	<b>Properties of materials</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Exploring properties of materials	How can you describe different materials?	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	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	conductive magnetic durable transparent versatile
Explore thermal conductors and thermal insulators	What is a thermal conductor?	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate Recording data and results of increasing complexity using scientific diagrams and labels,	Know that some materials will dissolve in liquid to form a solution, and describe how	thermal conduction molecules degrees Celsius (°C) insulator

		classification keys, tables, scatter graphs, bar and line graphs	to recover a substance from a solution	
Explore the hardness of materials	How hard are different materials?	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations	Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating	hardness force iron steel stone
Discover materials that become soluble in water	What happens when materials are put in water?	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	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	dissolve solute insoluble soluble solvent
Investigate the solubility of materials	What happens when materials are put in water?	Using test results to make predictions to set up further comparative and fair tests		solute solvent solution substance saturation
Explore how mixtures could be separated by filtering, sieving, evaporating or magnets	How can we separate different materials?	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	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	pure substance mixture filtering sieving evaporation

<b>Year 5 Term 2</b>	<b>Changes of materials</b>
Link to prior learning	

Learning objectives	Context	Skills	Knowledge	
Use evaporation to recover the solute from a solution	What is evaporation?	Reporting and presenting findings from enquiries, including conclusions	Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution	pure substance solute solvent solution evaporate
Recognise and describe reversible changes	What is a reversible change?	Reporting and presenting findings from enquiries, including conclusions, in oral and written forms	Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating	reversible mixture physical change melting evaporate
Observe chemical reactions and describe how we know new materials are made	How do we make new materials?	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations	Demonstrate that dissolving, mixing and changes of state are reversible changes	irreversible chemical change compare effervescence product
Investigate rusting reactions	Why do things rust?	Planning different types of scientific enquiry to answer questions, including recognising and controlling variables where necessary	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	fair test variable control variable corrosion rusting
Investigate burning reactions	What happens when things burn?	Identifying scientific evidence that has been used to support or refute ideas or arguments		combustion fuel oxygen extinguish smother
Investigate chemical reactions - acids and bicarbonate of soda	What is a chemical reaction?	Using test results to make predictions to set up further comparative and fair tests		reaction predict acid bicarbonate of soda

				carbon dioxide
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<b>Year 5 Term 3</b>	<b>Forces</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Explore gravity and the life and work of Isaac Newton	What is gravity and who was Isaac Newton?	Identifying scientific evidence that has been used to support or refute ideas or arguments	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	Sir Isaac Newton gravity astronomy weight mass
Examine the connection between air resistance and parachutes	What is air resistance?	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	Identify the effects of air resistance, water resistance and friction, that act between moving surfaces	Galileo Galilei air resistance opposing streamlined parachute
Explore factors which affect an object's ability to resist water	What is water resistance?	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations	Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect	water resistance streamlined upthrust buoyant sink
Investigate the effects of friction on different surfaces	What is friction?	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary		friction resistance lubricant Newton meter Newton
Investigate mechanisms - levers and pulleys	What are levers and pulleys?	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a		lever load pivot fulcrum

		degree of trust in results, in oral and written forms such as displays and other presentations		pulley
Investigate mechanisms - gears	What are gears?	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary		mechanism gear mesh rack and pinion bevel gear

Year 5 Term 4	Earth and Space			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Describe Nicolaus Copernicus' ideas about planetary motion	Who was Nicolaus Copernicus?	Identifying scientific evidence that has been used to support or refute ideas or arguments	Describe the movement of the Earth and other planets relative to the sun in the solar system	heliocentric geocentric Nicolaus Copernicus orbit Ptolemy
Describe the movement of the Earth in space	How does the Earth move in space?	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	Describe the movement of the moon relative to the Earth	axis season poles eclipse hemisphere
Learn about gravitational force	What is gravitational force?	Using test results to make predictions to set up further comparative and fair tests	Describe the sun, Earth and moon as approximately spherical bodies	ocean tides gravitational force black hole Mass celestial
Describe the characteristics of	What are the planets of our solar system?	Reporting and presenting findings from enquiries, including conclusions, causal	Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	rocky planets gas planets

the planets in our solar system		relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations		dwarf planet Moon solar system
Describe the Big Bang Theory	What is the Big Bang Theory?	Identifying scientific evidence that has been used to support or refute ideas or arguments		astronomy universe Milky Way expand Big Bang theory
Explore what causes the different phases of the Moon	Does the moon always look the same?	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations		phase orbit illuminate waxing waning

<b>Year 5 Term 5</b>	<b>Animals including humans</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Identify the key stages of a mammal's life cycle	What happens in a mammal's life?	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	Describe the changes as humans develop to old age	foetus dependent adolescent puberty reproduce

Explore the gestation periods of mammals	How long does it take for a mammal to have a baby?	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations		gestation pregnant duration extreme breeding
Learn about foetal development	How do baby animals develop?	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs		womb umbilical chord embryo trimester midwife
Investigate the hand span of different aged children	Are hand sizes the same for children and adults?	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate		growth spurt childhood motor skills milk teeth constant
Learn about the changes experienced during puberty  DO NOT REFER TO SEXUAL REPRODUCTION/MENSTRUAL CYCLE – THESE WILL BE COVERED IN RSHE LESSONS	What happens during puberty?	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations		adolescence puberty hormones mood swing develop
Describe the changes humans may experience during adulthood and	What happens as we get older?	Identifying scientific evidence that has been used to support or refute ideas or arguments		lifestyle keratin elasticity

old age  DO NOT REFER TO SEXUAL REPRODUCTION/MENSTRUAL CYCLE – THESE WILL BE COVERED IN RSHE LESSONS				cataracts neurodegenerative
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Year 5 Term 6	Living things and their habitats			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Learn about reproduction	What is reproduction?	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations	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	fertilisation, genes, sexual reproduction, pollination, pollen
Learn about asexual reproduction	What is asexual reproduction?	Plan different types of scientific enquiries to answer questions, including controlling variables where necessary		asexual, plantlet, bulb, tuber, bacteria
Describe the life cycles of a mammal, bird and reptile	What happens during the life different animals?	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations		unborn, egg, hatch, fledgling, mammary gland
Describe the life cycles of	What happens during the life different animals?	Recording data and results of increasing complexity using scientific diagrams and		unborn, egg,

an insect and amphibian		labels, classification keys, tables, scatter graphs, bar and line graphs		hatch, fledgling, mammary gland
Know about the life and work of Sir David Attenborough	Who is Sir David Attenborough?	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations		David Attenborough, natural sciences, documentary, naturalist, lecture
Know about the life and work of Dame Jane Goodall	Who is Dame Jane Goodall?	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations		Jane Goodall, chimpanzee, primatologist, primate, endangered

<b>Year 6 Term 1</b>	<b>Evolution and Inheritance</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Explain how adaptations help animals and plants survive	How do animals and plants survive where they live?	Identify scientific evidence that has been used to support or refute ideas or argument	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago	adaptation desert cactus insulating environment
Describe the process of natural selection	What is natural selection?	Identify scientific evidence that has been used to support or refute ideas or arguments	Recognise that living things produce offspring of the same kind, but normally	fossil fossilisation evidence dinosaur petrified

Explain why animals can look different to their parents	Do animals look like their parents?	Identifying scientific evidence that has been used to support or refute ideas and arguments	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	genetically modified crop toxin resilience breeding yield
Describe the process of genetic modification	What is genetic modification?	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.		generation species evolution offspring DNA
Explain what fossils can tell us	What do fossils tell us?	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.		Charles Darwin habitat ancestor Natural Selection extinct
Explore the work of palaeontologist Mary Anning	Who was Mary Anning?	Identify scientific evidence that has been used to support or refute ideas or arguments		Mary Anning specimen prehistoric Jurassic Coast palaeontologist

<b>Year 6 Term 2</b>	<b>Light</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Explore how light travels	How does light travel?	Record data and results of increasing complexity using scientific diagrams and labels Identifying scientific evidence that has been used to support or refute ideas or arguments	Recognise that light appears to travel in straight lines  Use the idea that light travels in straight lines to explain	light eye light source symbol scientific diagram

Explore reflection	What is reflection?	Record data and results of increasing complexity using scientific diagrams and labels Identifying scientific evidence that has been used to support or refute ideas or arguments	that objects are seen because they give out or reflect light into the eye	light eye light source symbol scientific diagram
Explore reflection and explain how it can be used to help us see	How does reflection help us to see?	Identifying scientific evidence that has been used to support or refute ideas or arguments	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	periscope angle mirror line of sight utilise
Investigate how shadows can change	How do shadows change?	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them	shadow block opaque transparent translucent
Investigate how we can show why shadows have the same shape as the object that casts them	How are shadows formed?	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations		plan sun shade real life problem rotate direction
Investigate how we see objects	How do see objects?	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary		optical phenomena disperse spectrum refraction

<b>Year 6 Term 3</b>	<b>Electricity</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	
Describe the parts of an electric circuit	What are the parts of an electrical circuit?	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	Associate the brightness of a lamp or the volume of a buzzer with the number and	symbol circuit circuit diagram battery wires

Explore voltage and its effect on an electrical circuit	What does voltage mean?	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	voltage of cells used in the circuit	electricity current voltage voltmeter brightness
Apply knowledge to identify and correct problems in a circuit	What is wrong with this circuit?	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations	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	blown resistor variable resistor LED dimmer switch
Investigate what affects the output of a circuit	What affects how well a circuit works?	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Using test results to make predictions to set up further comparative and fair tests	Use recognised symbols when representing a simple circuit in a diagram	output variable fair test control test systematically
Build a set of traffic lights	How can we build traffic lights?	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate		synchronised traffic light signal sensor timer-based
Apply knowledge of conductors and insulators	What are conductors and insulators?	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate		closed electric circuit indicating conductor insulator resistor

<b>Year 6 Term 4</b>	<b>Living things and their habitats</b>
Link to prior learning	

Learning objectives	Context	Skills	Knowledge	
Classify living things	How can we classify living things?	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys , tables, scatter graphs, and bar and line graphs.	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	classify spore micro-organism seed similarities
Explore the kingdoms of life	What are the kingdoms of life?	Planning different types of enquiries to answer questions including recognising and controlling variables where necessary		multicellular unicellular kingdom cell MRS GREN
Describe the work of Carl Linnaeus	Who is Carl Linnaeus?	Identifying scientific evidence that has been used to support or refute ideas or arguments		multicellular unicellular kingdom cell MRS GREN
Identify different classes of vertebrates	What is a vertebrate?	Reporting and presenting findings from enquiries, including conclusions, casual relationships and explanations of and degree of trust in results, in oral and written forms such as displays or other presentations, identifying scientific evidence that has been used to support or refute ideas		vertebrate cold-blooded amphibian reptile mammal
Explore soil habitats	What lives in soil?	Grouping and classifying		carbon dioxide microorganism plant oxygen microscopic
Describe different types of fungi	What is fungi?	Record scientific data using diagrams		mycelium fungi mushrooms yeasts hyphae

Year 6 Term 5	Animals including humans			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	

Understand the function of the heart and its role in the circulatory system	What does the heart do?	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	circulatory system atrium ventricle vessel valves
Identify and compare blood vessels	What are blood vessels?	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate		vessel artery vein capillary microscope
Explore blood	What is blood?	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function	blood plasma platelet white blood cell red blood cell
Learn how the body transports water and nutrients	How does the body transport water?	Identifying scientific evidence that has been used to support or refute ideas or arguments		Describe the ways in which nutrients and water are transported within animals, including humans
Investigate what affects your heart rate	What affects our heart rate?	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary		diet exercise heart rate BPM pulse
Learn about the impact of drugs and alcohol on the body	What impact does drugs and alcohol have on the body?	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations		drug painkiller stimulant depressant hallucinogens

<b>Year 6 Term 6</b>	<b>Looking after our environment</b>			
Link to prior learning				
Learning objectives	Context	Skills	Knowledge	

Learn about climate change	What is climate change?	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs		weather climate prevent global warming climate change
Explore ways to reduce how much rubbish is sent to landfill	How can we reduce amount of rubbish sent to a landfill?	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations		recycle landfill rubbish biodegrade council
Explore ways to reduce energy consumption	How can we save energy?	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs		net zero renewable non- renewable greenhouse gases emissions
Explore what happens when fuels are burnt	What happens when we burn fuel?	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations		industrial revolution fossil fuel coal combustion fuel
Explore the outcomes of COP26	What is COP26?	Identifying scientific evidence that has been used to support or refute ideas or arguments		COP sustainability conference pledge subsidy
Compare data associated with the weather	How can we measure weather types?	Using test results to make predictions to set up further comparative and fair tests		species sensitive natural disaster habitat vulnerable