

Subject Name: Science Cycle B 2023-2024

**Aims**

Our Science curriculum is planned on a two-yearly programme to ensure coverage and progression within our mixed age classes. Key Stage Two are split into Years 3/4 and 5/6 for Science lessons. As each year will experience the two-year cycle in a different order, we are planned our curriculum so that the units build upon each other within the same cycle if needed. In EYFS, we have planned for child led learning with an umbrella theme that is linked to the KS1 NC to help with provision. The ethos behind this is that as some of the children in nursery are 2-year olds, we need to ensure that the experiences that the children have are expanded upon developing their skills ready for KS1 but with the flexibility that is required of EYFS.

In addition to giving the pupils the opportunity to learn about and experience working scientifically, scientists, science festivals and celebrations of science such as British Science Week and the Great Science Share. The Dales Partnership believes that the teaching of science develops in children an interest and curiosity about the world in which they live, and fosters in them a respect for the environment.

	<b>Nursery</b>					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Theme	I'm Part of a Team	Our Environment	We are Explorers!	Buildings	Transport	Minibeasts
Unit Key Question	Humans		Materials	Forces	Living things and their habitats	
Area of Learning	Understanding the World		Understanding the World	Understanding the World	Understanding the World	
Core Knowledge and understanding	Use all their senses in hands-on exploration of natural materials. Begin to make sense of their own life-story and family's history. Understand the key features of the life cycle of a plant and an animal.	Make healthy choices about food, drink, activity and toothbrushing. Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.	Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about the differences between materials	Explore how things work. Explore and talk about different forces they can feel. Talk about the differences between materials and changes they notice	Explore the surrounding natural environment Explore natural objects from the surrounding environment	

			and changes they notice.		
Learning Opportunities	<p>Opportunities to learn about the life cycles of humans</p> <ul style="list-style-type: none"> <li>• Looking at photographs of the children as babies</li> <li>• Sharing books about how to look after a baby</li> <li>• Talking to an expectant mother, parent with a baby and elderly person</li> <li>• Talking to adults about photographs of the adults at different ages</li> <li>• Identifying pictures of babies, toddlers, children, adults and old people in magazines or other media</li> <li>• Drawing humans at different ages</li> </ul> <p>Opportunities to learn about how to take care of themselves</p> <ul style="list-style-type: none"> <li>• Talking about how they look after their own health and hygiene</li> <li>• Noticing when they feel hot and cold and how to respond to this</li> <li>• Choosing appropriate materials to protect themselves from the Sun</li> </ul> <p>Opportunities to learn about their senses</p> <ul style="list-style-type: none"> <li>• Exploring the natural environment with their senses</li> <li>• Exploring objects using their senses e.g. smelling pots, feely bags, listening pots etc.</li> <li>• Sorting collections of natural objects using their senses e.g. bark, pebbles, feathers, seeds, cones, leaves, sticks</li> </ul>	<p>Opportunities to explore a range of materials in a sensory way especially through touch, including more unusual materials</p> <ul style="list-style-type: none"> <li>• Exploring oobleck (cornflour and water), gellibaff, shaving foam, foam burst shower gel etc.</li> </ul> <p>Opportunities to shape and join materials</p> <ul style="list-style-type: none"> <li>• Building junk models using a range of materials</li> <li>• Shaping and joining materials using equipment e.g. scissors, hole punch, including when using wood e.g. a hammer and nail</li> </ul> <p>Opportunities to change materials</p>	<p>Exploring springs of different sizes, both compression and extension springs</p> <ul style="list-style-type: none"> <li>• Using bikes and scooters on different surfaces and ramps</li> </ul> <p>Opportunities to explore how things work</p> <ul style="list-style-type: none"> <li>• Testing a range of objects to find out if they float or sink</li> <li>• Playing games that contain springs e.g. bagatelle</li> <li>• Playing with wind-up toys</li> <li>• Racing wind-up toys</li> <li>• Playing with gears and pulleys e.g. sets of gears, large playground pulleys etc.</li> <li>• Playing with magnetic toys e.g. train carriages</li> </ul>	<p>Opportunities to explore the surrounding natural environment</p> <ul style="list-style-type: none"> <li>• Going on local nature walks</li> <li>• Identifying natural objects and things left by humans</li> <li>• Gathering natural objects from nature walks to include in a collection for the nature table e.g. stones, leaves, seeds, conkers, pinecones, acorns, twigs, bark, shells, feathers</li> </ul> <p>Opportunities to explore natural objects from the surrounding environment</p> <ul style="list-style-type: none"> <li>• Using a magnifying glass or a tablet with an app to observe the natural objects in a collection closely</li> <li>• Drawing natural objects in the collection</li> <li>• Grouping together natural objects that are similar in the collection</li> <li>• Using natural objects to make pictures and patterns</li> </ul>	

	<ul style="list-style-type: none"> <li>• Looking closely at natural objects using a magnifying glass or app on a tablet</li> <li>• Going on a sound walk</li> <li>• Playing guessing games where children pick an object and either describe it or are asked questions in order to identify it</li> <li>• Playing listening games</li> <li>• Sharing books about senses and sensory impairments</li> <li>• Tasting food</li> </ul>	<ul style="list-style-type: none"> <li>• Making smoothies</li> <li>• Mixing ingredients to make playdough, cakes, biscuits, bread, jelly etc.</li> <li>• Melting chocolate for decorating bakes/biscuits or to combine with other ingredients e.g. refrigerator cake, chocolate crispy cakes</li> <li>• Comparing cooked and uncooked pasta, noodles, rice or potatoes</li> <li>• Cooking popcorn in a microwave</li> <li>• Cooking cakes, biscuits, bread etc.</li> <li>• Making ice lollies and ice-cream</li> <li>• Using medical ice packs including self-activated cool pads</li> <li>• Removing toys from ice</li> </ul>	<p>joined by magnets, magnetic construction kits etc.</p> <p>Opportunities to explore how objects/materials are affected by forces</p> <ul style="list-style-type: none"> <li>• Pushing, pulling, twisting and bending malleable (e.g. modelling clay, playdough, springs, pipe cleaners, elastics, sponges etc.) and non-malleable objects/materials</li> <li>• Cutting and joining objects/materials e.g. wood, building kits with nuts and bolts etc</li> </ul>	
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Suggested Texts	<p>Traditional stories and nursery rhymes</p> <ul style="list-style-type: none"> <li>• Goldilocks and the Three Bears</li> </ul> <p>Other texts</p> <ul style="list-style-type: none"> <li>• Handa's Surprise by Eileen Brown</li> <li>• Za-za's Baby Brother by Lucy Cousins</li> <li>• My Mum and Dad Make Me Laugh by Nick Sharratt</li> <li>• My Grandpa by Marta Altés</li> <li>• I Want My Potty! by Tony Ross</li> <li>• How Do Your Senses Work? by Judy Tatchell</li> <li>• That's Not My Collection by Usborne</li> <li>• Once There Were Giants by Martin Waddell</li> </ul>	<p>Traditional stories and nursery rhymes</p> <ul style="list-style-type: none"> <li>• Gingerbread Man</li> <li>• Pat a Cake</li> <li>• Little Red Hen</li> </ul>	<p>Traditional stories and nursery rhymes</p> <ul style="list-style-type: none"> <li>• Wind the Bobbin Up</li> </ul> <p>Other texts</p> <ul style="list-style-type: none"> <li>• And Everyone Shouted "Pull" by Claire Llewellyn</li> <li>• Oscar and the Cricket by Geoff Waring</li> <li>• Newton and Me by Lynne Mayer</li> <li>• Astrokittens: Cosmic Machines by Dominic Walliman &amp; Ben Newman</li> </ul>	Percy the Park Keeper by Nick Butterworth

			<ul style="list-style-type: none"> <li>• The Little Red Train: The Runaway Train by Benedict Blathway</li> <li>• Dig Dig Digging by Margaret Mayo</li> <li>• It's Only Stanley by Jon Agee</li> </ul>			
Vocabulary	<p>Treasured life cycle, senses, elderly, die</p> <p>Key grow, change, baby, toddler, child, adult, old person, smell, taste, touch, feel, hear, see, blind, deaf</p>	<p>Treasured solid, liquid, rigid, stronger, weaker</p> <p>Key mix, stir, cook, hot, oven, microwave, change, burn, melt, hard, runny, set, freeze, freezer, cold, blended, hard, soft, bendy, stiff, wobbly, wood, plastic, paper, card, fabric</p>	<p>Treasured rising, falling, attract, repel, faster, slower, pulley, gear, elastic</p> <p>Key object, float, sink, water, up, down, top, bottom, push, pull, magnet, spring, squash, bend, twist, stretch, turn, spin, smooth, rough, fast, slow</p>	<p>Treasured living, dead, similar</p> <p>Key natural, plant, animal, leaves, seeds, conkers, acorns, twigs, bark, shells, feathers, pebbles, stones, same, different, pattern</p>		
	<b>Reception</b>					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Theme	I'm Part of a Team	Our Environment	We are Explorers!	Buildings	Transport	Minibeasts
Unit Key Question	Humans		Materials	Forces	Living things and their habitats	
Area of Learning	Understanding the World		Understanding the World	Understanding the World	Understanding the World	

<p>Core Knowledge and understanding</p>	<p>Talk about members of their immediate family and community. Name and describe people who are familiar to them.</p>	<p>Know and talk about the different factors that support their overall health and wellbeing: regular physical activity, healthy eating, tooth brushing, sensible amounts of 'screen time', having a good sleep routine, being a safe pedestrian</p>	<p>Explore the natural world around them. Describe what they see, hear and feel whilst outside.</p>	<p>Explore the natural world around them. Describe what they see, hear and feel whilst outside.</p>	<p>Explore the plants in the surrounding natural environment Explore the animals in the surrounding natural environment Explore plants and animals in a contrasting natural environment</p>
<p>Learning Opportunities</p>	<p>Opportunities to describe people who are familiar to them</p> <ul style="list-style-type: none"> <li>• Talking about themselves, friends, family and community using photographs</li> <li>• Using mirrors to look at their faces</li> <li>• Creating pictures or collages of themselves, friends, family and community</li> <li>• Making hand and footprints using paint</li> <li>• Making fingerprints using ink pads</li> </ul> <p>Using a 'magic' mirror which shows everything about them and getting children to describe themselves and how they are special</p> <ul style="list-style-type: none"> <li>• Sharing books about different types of families</li> </ul> <p>Opportunities to learn about how to take care of themselves</p>	<p>Opportunities to explore a range of materials in a sensory way, including natural materials</p> <ul style="list-style-type: none"> <li>• Looking for dew, ice, icicles and frost in the playground</li> <li>• Using their senses to explore natural materials in the environment, such as stones, twigs, leaves, feathers, seeds, flowers etc.</li> <li>• Gathering natural materials to make collections</li> </ul>	<p>Opportunities to explore how to change how things work</p> <ul style="list-style-type: none"> <li>• Adapting objects to see if they can be made to float or sink e.g. cutting and peeling fruit and vegetables, reshaping plasticine etc.</li> <li>• Testing how many small objects different foil containers can hold before sinking</li> </ul>	<p>Opportunities to explore the plants in the surrounding natural environment</p> <ul style="list-style-type: none"> <li>• Taking photographs of the plants they find in the school grounds</li> <li>• Observing closely and drawing the plants in the school grounds</li> <li>• Finding plants in the school grounds to match with photographs of them</li> <li>• Looking at aerial views to count the number of trees in the school grounds</li> <li>• Using a map of the school grounds, with pictures of where specific plants can be found, to find those plants</li> <li>• Creating a map to show how to find their favourite plants in the school grounds</li> </ul> <p>Opportunities to explore the animals in the surrounding natural environment</p>	

	<ul style="list-style-type: none"> <li>• Demonstrating and talking about how they look after themselves</li> <li>• Talking about other people that look after them</li> <li>• Talking to a dentist, nurse, meal supervisor/school cook, road crossing supervisor etc.</li> <li>• Sharing videos of people who care for us and how we look after ourselves</li> </ul>	<p>Opportunities to make objects from different materials, including natural materials</p> <ul style="list-style-type: none"> <li>• Making pictures using natural materials they have gathered from the environment</li> <li>• Making dens, nests, bug hotels etc. using natural materials</li> <li>• Making ice pictures by putting water in a shallow tray and adding natural objects gathered from the environment and then leaving them outside to freeze or putting them in the freezer</li> </ul> <p>Making junk models with a range of materials, including natural materials they have gathered from the environment</p>	<ul style="list-style-type: none"> <li>• Testing how toy cars move down ramps and gutters</li> <li>• Testing how wheels turn when sand or water is poured through them</li> <li>• Testing how objects fall with and without a parachute attached</li> </ul> <p>Testing how different balls bounce</p> <ul style="list-style-type: none"> <li>• Making and testing paper aeroplanes</li> <li>• Designing different marble runs or routes for water/sand to travel down gutters or pipes</li> </ul> <p>Opportunities to explore how objects move in air</p> <ul style="list-style-type: none"> <li>• Identifying objects being blown around outdoors</li> <li>• Observing how different objects</li> </ul>	<ul style="list-style-type: none"> <li>• Finding minibeasts in the school grounds</li> <li>• Taking photographs of the minibeasts they find in the school grounds</li> </ul> <p>Matching the minibeasts they find to pictures that identify them</p> <ul style="list-style-type: none"> <li>• Observing the minibeasts closely, using a magnifying glass or app on a tablet</li> <li>• Drawing pictures of the minibeasts</li> <li>• Creating a map to show where they found each type of minibeast</li> <li>• Sharing books about minibeasts</li> <li>• Playing with small world minibeasts</li> <li>• Building minibeast homes</li> </ul> <p>Opportunities to explore plants and animals in a contrasting natural environment</p> <ul style="list-style-type: none"> <li>• Visiting a contrasting natural environment e.g. forest, beach, etc.</li> <li>• Finding and taking photographs of plants and animals in the contrasting natural environment</li> <li>• Sharing non-fiction and fiction books about the contrasting natural environment visited</li> </ul>
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		<p>Opportunities to compare how materials change</p> <ul style="list-style-type: none"> <li>• Making popcorn in a microwave and on a fire</li> <li>• Making pizza dough with different flours</li> <li>• Baking bread in different tins or for different times to compare the outcome</li> <li>• Baking cupcakes and removing one after every five minutes</li> <li>• Choosing where to put ice cubes in the playground and observing how quickly they melt</li> <li>• Observing how a large block of ice changes over time, using string to measure around it</li> <li>• Putting wax crayons in different areas of the playground and</li> </ul>	<p>fall e.g. scarves, feathers</p> <ul style="list-style-type: none"> <li>• Observing how toys/objects move in the wind e.g. streamers, balloons, pinwheels, bubbles etc.</li> <li>• Comparing the movements of a ball and a balloon when bouncing or throwing and catching</li> </ul> <p>Opportunities to explore how objects move in water</p> <ul style="list-style-type: none"> <li>• Exploring how a marble moves through different liquids in sealed bottles</li> <li>• Observing how sailing boats move through water</li> </ul>	
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		<p>observing how they change</p> <ul style="list-style-type: none"> <li>• Making a snowman and observing how it changes over time</li> <li>• Making snowballs and putting them in different</li> </ul>		
Vocabulary	<p>Treasured bald, elderly, wrinkles, male, female, freckles</p> <p>Key hair (black, brown, dark, light, blonde, ginger, grey, white, long, short, straight, curly), eyes (blue, brown, green, grey), skin (black, brown, white), big/tall, small/short, bigger/smaller, baby, toddler, child, adult, old person, old, young, brother, sister, mother, father, aunt, uncle, grandmother, grandfather, cousin, friend, family, boy, girl, man, woman</p>	<p>Treasured solid, liquid, gas, most suited</p> <p>Key ice, water, frozen, icicle, snow, melt, wet, cold, slippery, smooth, big, bigger, biggest, smaller, smaller, smallest, hard, soft, bendy, rigid, wood, plastic, paper, card, metal, strong, weak, hot, apply heat, waterproof, soggy, not waterproof, best, change, change back</p>	<p>Treasured force, rotate, solid, liquid, gravity</p> <p>Key float, sink, up, down, top, bottom, surface, move, roll, drop, fly, turn, spin, fall, fast, slow, faster, slower, fastest, slowest, further, furthest, wind, air, water, blow, bounce</p>	<p>Treasured environment</p> <p>Key plant, tree, bush, flower, vegetable, herb, weed, animal, names of plants and animals they see, name of a contrasting environment e.g. beach, forest</p>
Suggested Texts	<p>I Love My Hair by Natasha Anastasia Tarpley What I Like About Me by Alia Zobel-Nolan</p>	<p>Princess and the Pea (which material would make the best</p>	<p>Traditional stories and nursery rhymes • Billy Goats Gruff</p>	<p>Traditional stories and nursery rhymes • Incey, Wincey Spider • Ladybird, Ladybird Fly Away Home Other texts</p>

			mattress?), Goldilocks and the Three Bears (which material would make the strongest chair/comfiest bed/keep the porridge warm?)	<ul style="list-style-type: none"> <li>• Gingerbread Man (making boats to cross the river)</li> <li>Other texts • Mr Gumpy’s Outing by John Burningham</li> <li>• Mr Archimedes’ Bath by Pamela Allen</li> <li>• Who sank the boat? by Pamela Allen</li> <li>• Stickman by Julia Donaldson</li> <li>• Flotsam by David Wiesner</li> <li>• Blown Away by Rob Biddulph</li> </ul>	<ul style="list-style-type: none"> <li>• Bad-Tempered Ladybird by Eric Carle</li> <li>• Mad About Minibeasts by David Wojtowycz &amp; Giles Andreae</li> <li>• Ben Plants a Butterfly Garden by Kate Petty</li> <li>• Norman the Slug with the Silly Shell by Sue Hendra</li> <li>• Aargh a Spider by Lydia Monks</li> <li>• Insects: A Close-up Look by Peter Seymour</li> <li>Down at the Cool of the Pool by Tony Mitton</li> <li>• Over and Under the Pond by Kate Messner</li> <li>• Red Knit Cap Girl by Naoko Stoop</li> </ul>	
	<b>Y1 and Y2</b>					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit Key Question	The Human Body	Animal needs for survival	Materials	Materials	Animals	Living things and their habitats
N.C Reference	Animals, including humans Y1	Animals, including humans Y2	Everyday Materials Y1	Uses of Everyday Materials Y2	Living things and their habitats Y1	Living things and their habitats Y2
Core Knowledge and understanding	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated	Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).	Distinguish between an object and the material from which it is made Identify and name a variety of	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick,	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals	Explore and compare the differences between things that are living, dead, and things

	with each sense.	How can we group these animals based on their needs for survival?	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	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.	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)	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 micro-habitats 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.
Sequence of Lessons	<ul style="list-style-type: none"> <li>Name and identify parts of the human body.</li> </ul>	<ul style="list-style-type: none"> <li>What is a mammal?</li> </ul>	<ul style="list-style-type: none"> <li>What are materials?</li> </ul>	<ul style="list-style-type: none"> <li>What are materials?</li> </ul>	<ul style="list-style-type: none"> <li>To identify and name animals</li> </ul>	<ul style="list-style-type: none"> <li>Is it living, dead or</li> </ul>

	<ul style="list-style-type: none"> <li>• Draw and label parts of the human body.</li> <li>• Humans use their eyes to see.</li> <li>• Humans use their ears to hear sounds.</li> <li>• Humans use their tongue to help them taste.</li> <li>• Human touch is sensed by the skin.</li> <li>• Humans use their nose to sense smells.</li> </ul>	<ul style="list-style-type: none"> <li>• What is a bird?</li> <li>• What is a fish?</li> <li>• What is an amphibian?</li> <li>• What is a reptile?</li> <li>• Is a human a mammal?</li> </ul>	<ul style="list-style-type: none"> <li>• How are materials different?</li> <li>• What are objects made from?</li> <li>• How can we sort materials?</li> <li>• Which material would be best for an umbrella?</li> <li>• Which material would be best for curtains</li> </ul>	<ul style="list-style-type: none"> <li>• What are things made from?</li> <li>• Which material should the pigs make their house from?</li> <li>• Which material will protect Humpty Dumpty?</li> <li>• How can we change materials?</li> </ul>	<p>found around the home.</p> <ul style="list-style-type: none"> <li>• To observe and identify animals that are found in grass.</li> <li>• To observe and identify animals that are found in shaded areas.</li> <li>• To observe and identify animals that are found in and around ponds.</li> </ul>	<p>never been alive?</p> <ul style="list-style-type: none"> <li>• What is a microhabitat?</li> <li>• How are habitats different around the world?</li> <li>• What conditions do woodlice prefer?</li> <li>• How are living things adapted to their habitat?</li> <li>• What is a food chain?</li> </ul>
Vocabulary	<p>Treasured body tongue part taste eye touch see skin ear nose hear smell</p> <p>Key same, compare,</p>	<p>Treasured mammal fur carnivore herbivore omnivore bird feathers beak insect</p>	<p>Treasured Types of material such as: wood, metal, plastic, glass, rubber, rock, fabric, paper and brick</p> <p>Words to describe materials such as: hard, soft, rough, bumpy, smooth, fragile, strong, heavy, light</p> <p>Key</p>	<p>Treasured alive dead living habitat microhabitat conditions adapted food chain omnivore</p>		

	different, prediction, explore, equipment, investigate, fair test, test, method, question, conclusion	insectivore fish scales gills fin Amphibian webbed feet frog toad newt reptile adult baby shelter  Key same, compare, different, prediction, explore, equipment, investigate, fair test, test, method, question, conclusion	same, compare, different, prediction, explore, equipment, investigate, fair test, test, method, question, conclusion	herbivore carnivore predator prey  Key same, compare, different, prediction, explore, equipment, investigate, fair test, test, method, question, conclusion	
Writing Opportunities	Reports about senses	Reports about different animal groups and needs	Write up results		Research plants, animals and different habitats.
Suggested Texts	Hair-Raising Human Body Facts Paul Mason & Dave Smith	My Encyclopaedia of Very Important Animals Lifesize Baby Animals	Princess and the Pea (which material would make the best mattress?),	Let's Build A House Mick Manning Three Little Pigs Humpty Dumpty	The Most Important Animal of All Penny Worms & Hannah Bailey One Day on our Blue Planet series Ella Bailey

	<p>Marvellous Body: A Magic Lens Book Jane Wilsher &amp; Andres Lozano The Body Book Hannah Alice How Your Body Works Rosie Dickins &amp; Oceane Mecklenburg Get Into Science: The Five Senses Jane Lacey &amp; Sernur Isik</p>	<p>Sophy Henn Growing and Changing: All About Life Cycles Ruth Owen Animal Babies Martin Jenkins &amp; Jane McGuinness</p>	<p>Goldilocks and the Three Bears (which material would make the strongest chair/comfiest bed/keep the porridge warm?)</p>		<p>Find Out About... Animal Homes Martin Jenkins &amp; Jane McGuinness</p>	
Trip/Enrichment			<p>Create houses from different materials to identify the best material STEM activities such as build the longest bridges or the tallest tower from a selection of given materials Investigate different spoons (plastic, metal and wooden) to decide which is best (are they better suited for different activities?) Explore different metals or different fabrics to show that they are not all the same</p>		<p>Pond dipping – Harehope Quarry/ Low Barns</p>	
	<b>Y3 and Y4</b>					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2

Unit Key Question	Skeletons	Group and classify living things	Rocks, Soil and Fossils	Forces	Magnets	Plants
N.C Reference	Animals, including humans Y3	Living things and their habitats Y4	Rocks Y3	Forces and magnets Y3	Forces and magnets Y3	Plants Y3
Core Knowledge and understanding	<p>Why do humans and some other animals have skeletons? For support, protection and movement. An adult human typically has 206 bones that make up the skeleton. Location and function of the skull, spine, ribcage, pelvis and femur.</p>	<p>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.</p>	<p>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.</p>	<p>Compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p>	<p>Observe how magnets attract or repel each other and attract some materials and not others. Compare and group a variety of everyday materials together based on 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.</p>	<p>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.</p>

Sequence of Lessons	<ul style="list-style-type: none"> <li>Name and identify bones in the human body</li> <li>Functions of the skeleton</li> <li>Name and identify bones in a range of animals</li> <li>Animals with and without a spine</li> <li>Are all skeletons the same?</li> </ul>	<ul style="list-style-type: none"> <li>How can we group and classify living things?</li> <li>What is a vertebrate?</li> <li>What is an invertebrate?</li> <li>How can we sort and group these plants?</li> </ul>	<ul style="list-style-type: none"> <li>What are rocks?</li> <li>Are all rocks the same?</li> <li>How are rocks formed?</li> <li>Which rocks make up the Earth?</li> <li>What are soils?</li> <li>How are fossils formed?</li> </ul>	<ul style="list-style-type: none"> <li>What is a force?</li> <li>Do objects move the same on different surfaces?</li> </ul>	<ul style="list-style-type: none"> <li>How do magnetic forces work?</li> <li>Which materials are magnetic?</li> <li>Do magnets attract each other?</li> <li>Are all magnets the same?</li> </ul>	<ul style="list-style-type: none"> <li>What do plants need?</li> <li>Do the different parts of the plant have a function?</li> <li>What are roots? How do plants transport water? How do plants reproduce?</li> <li>How are seeds dispersed?</li> </ul>
Vocabulary	<p>Treasured vertebrate, skull invertebrate, ribcage, spine, pelvis, spineless, femur, exoskeleton, support, bones, movement</p> <p>Key develop, hypothesis, enquiry, prediction</p>	<p>Treasured vertebrate mammal bird fish amphibian reptile invertebrate exoskeleton insect spider soft-bodied invertebrate flowering plant</p>	<p>Treasured Types of rock: sedimentary rock, igneous rock, metamorphic rock. Properties of rocks: permeable, semi-permeable, impermeable, durable, natural, human-made, magma, lava, molten rock,</p>	<p>Treasured move, movement, surface, distance, strength, push, pull, contact force, non-contact force, friction.</p> <p>Key develop, hypothesis, enquiry, prediction fair test, equipment,</p>	<p>Treasured magnetic, magnetic field, magnetic force, bar magnet, horseshoe magnet, ring magnet, magnetic poles (north pole, south pole), attract, repel, compass.</p> <p>Key</p>	<p>Treasured plant tree flower roots stem leaf bulb pollination fertilisation</p> <p>Key develop, hypothesis,</p>



	fair test, equipment, relationship, method, conclusion, findings accurate, evaluate	non-flowering plant stamen carpel pollination fern moss  Key develop, hypothesis, enquiry, prediction fair test, equipment, relationship, method, conclusion, findings accurate, evaluate	sediment, erosion, fossil.  Key develop, hypothesis, enquiry, prediction fair test, equipment, relationship, method, conclusion, findings accurate, evaluate	relationship, method, conclusion, findings accurate, evaluate	develop, hypothesis, enquiry, prediction fair test, equipment, relationship, method, conclusion, findings accurate, evaluate	enquiry, prediction fair test, equipment, relationship, method, conclusion, findings accurate, evaluate
Writing Opportunities	Write about criteria for grouping, sorting and classifying different skeletons in animal groups Report on findings from enquiries	Write about criteria for grouping, sorting and classifying. Reporting on findings from enquiries	Reporting on findings from enquiries	Reporting on findings from enquiries	Research how magnets are used in everyday life and write an explanation text to explain why magnets are important.	Reporting on findings from enquiries
Suggested Texts	Illumanatomy Kate Davies & Carnovsky See Inside Your Body Katie Daynes & Colin King	Animalium Jenny Broom & Katie Scott Botanicum (Welcome To The Museum) Kathy Willis & Katie Scott	Lightning Mary Anthea Simmons Stone Girl Bone Girl Laurence Anholt & Sheila Moxley The Pebble in my Pocket: A History of Our Earth	Investigating Forces Jacqui Bailey	Magnets Push, Magnets Pull David A. Adler	The Great Kapok Tree Lynne Cherry A Seed is Sleepy Dianna Aston & Sylvia Long

	The Bright and Bold Human Body: The Skeleton and Muscles Sonya Newland		Meredith Hooper & Chris Coady The Street Beneath My Feet Charlotte Guillian & Yuval Zommer			
Trip/Enrichment						
	<b>Y5 and Y6</b>					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit Key Question	Forces	Living things and Habitats	Living things and Habitats	Evolution and Inheritance	Animal including humans	Diet, drugs and lifestyle
N.C Reference	Forces Y5	Living things and their habitats Y5	Living things and their habitats Y6	Evolution and inheritance Y6	Animals including humans Y6	Lifestyle impact Y6
Core Knowledge and understanding	Friction – The contact force between two surfaces that are touching each other. Air resistance – A type of friction between air and another object. Water resistance – A type of force caused by friction slowing things down that are moving through a liquid. Water resistance occurs in all liquids, not just water. Gravity – An invisible force that pulls things	Describe the differences in the life cycles of a mammal, an amphibian, a reptile, an insect and a bird describe the life process of reproduction in some plants and animals.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.	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	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Describe the ways in which nutrients and water are transported within animals, including humans.	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function

	to the centre of the Earth (or other planets).			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		
Sequence of Lessons	<ul style="list-style-type: none"> <li>• What is friction?</li> <li>• What is air resistance?</li> <li>• What is water resistance?</li> <li>• What is gravity?</li> </ul>	<ul style="list-style-type: none"> <li>• What are the seven life processes?</li> <li>• How do mammals reproduce?</li> <li>• Do animals reproduce in the same way?</li> <li>• How do plants reproduce?</li> <li>• What is a life cycle?</li> <li>• What are the stages in a life cycle of a plant?</li> </ul>	<ul style="list-style-type: none"> <li>• How are the conditions for life similar or different in plants and animals?</li> <li>• How can you group these organisms?</li> <li>• How can we identify, group and classify animals, plants and microorganisms?</li> <li>• Who was Carl Linnaeus?</li> </ul>	<ul style="list-style-type: none"> <li>• How are plants adapted to their environment?</li> <li>• How are animals adapted to their environment?</li> <li>• What is natural selection and how does this lead to evolution?</li> <li>• How do adaptations lead to evolution?</li> </ul>	<ul style="list-style-type: none"> <li>• What is the circulatory system?</li> <li>• How does our heart work?</li> <li>• How does exercise affect my heart rate?</li> <li>• What does the blood transport around the body?</li> </ul>	<ul style="list-style-type: none"> <li>• How can I live a healthy lifestyle?</li> <li>• What can damage our health?</li> </ul>

				<ul style="list-style-type: none"> <li>• What characteristics can you inherit from your parents?</li> <li>• How can fossils help us explain evolution?</li> </ul>		
Vocabulary	<p>Treasured gravity, air resistance, water resistance, friction, levers, pulleys, gears, springs, surfaces, streamline, weight, object</p> <p>Key variable, hypothesis, independent, prediction, dependent, equipment, control, method conclusion, findings anomalous, evaluate</p>	<p>Treasured fertilisation pollen pistil seed dispersal reproduction Movement Respiration Sensitivity Growth Reproduction Excretion Nutrition mammals, reptiles amphibians, birds fish</p> <p>Key variable, hypothesis, independent, prediction,</p>	<p>Treasured organism excretion reproduction living non-living vertebrate invertebrate flowering plant non-flowering plant classification classification key molluscs arachnids deciduous trees evergreen trees coniferous trees microorganisms bacteria viruses fungi Carl Linnaeus</p>	<p>Treasured adaptation environment evolution gene natural selection inheritance organism species adaptive traits, inherited traits, mutations, theory of evolution, ancestors, biological parent, chromosomes, Charles Darwin</p> <p>Key variable, hypothesis,</p>	<p>Treasured Circulatory system: circulation, heart, pulse, heartbeat, heart rate, lungs, breathing, blood vessels, blood, pump, transported, oxygenated blood, deoxygenated blood, oxygen, arteries, veins, capillaries, chambers, plasma, platelets, white blood cells, red blood cells.</p> <p>Key variable, hypothesis,</p>	<p>Treasured drug, alcohol, smoking, disease, calorie, energy input, energy output. water transportation, nutrient transportation, waste products.</p> <p>Key variable, hypothesis, independent, prediction, dependent, equipment, control, method conclusion, findings</p>

		dependent, equipment, control, method conclusion, findings anomalous, evaluate	characteristics Key variable, hypothesis, independent, prediction, dependent, equipment, control, method conclusion, findings anomalous, evaluate	independent, prediction, dependent, equipment, control, method conclusion, findings anomalous, evaluate	independent, prediction, dependent, equipment, control, method conclusion, findings anomalous, evaluate	anomalous, evaluate
Suggested Texts	Gut-Wrenching Gravity Anna Claybourne	Lots: The Diversity of Life on Earth Nicola Davies & Emily Sutton The Big Picture: Living Habitats Jon Richards & Josy Bloggs	Gut Garden Katie Brosnan Meet the Microbes Dr Emily Grossman	Charles Darwin's On The Origin Of Species Sabena Radeva What Mr Darwin Saw Mick Manning & Brita Granstrom The DNA Book	The Bright and Bold Human Body: The Heart, Lungs, and Blood Izzi Howell	Dr Ranj Brain Power Dr. Ranj Singh & David O'Connell The Brain Book Dr Liam Drew Kay's Marvellous Medicine Adam Kay on-fiction
Writing Opportunities	Emphasis on write up of experiments	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results.	Give reasons for classifying plants and animals based on specific characteristics. Identifying scientific evidence that has been used to support or	Write about the life of Charles Darwin, having previously read information about him Draw conclusions from their investigation	Research to see if all animals have the same circulatory system as humans Make a non-fiction text to answer the key questions	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results.

			refute ideas or arguments. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results.	Consider how fossils help us to understand evolution. Write an explanation		
Trip/Enrichment						