Deddington Church of England Primary School Science Curriculum overview

Contents.

Intent

Our vision.

At Deddington CE Primary School we create an inclusive, nurturing, caring community empowering each other to let their light shine through INSPIRING and supporting each other, BELIEVING in ourselves and others and ACHIEVING together. We want our pupils to achieve the highest standards possible through a coordinated and sequenced scheme of high-quality learning experiences. We aim to foster life-long learning behaviours through independence, resilience, choice, collaboration, and personal discovery. We want our pupils to be fully prepared and equipped for the next stages of their education and for life in modern Britain.

Implementation

We follow the National Curriculum for Science, ensuring full coverage from Years 1 to 6. To support progression and sequence lessons effectively, we use **White Rose Science as a framework**. This provides a clear structure for building knowledge and scientific skills, but teachers **adapt and enhance it rather than following it as a prescriptive scheme**. This ensures learning is responsive to our pupils and school ethos. Lessons are planned to develop knowledge and skills progressively from EYFS through Key Stage 2, with increasing challenge and complexity.

We implement our vision and curriculum intent in the following ways:

Our curriculum is designed so that:

- knowledge builds progressively through a clear learning sequence
- children revisit and build upon prior learning
- scientific enquiry skills are embedded throughout teaching
- lessons are practical, purposeful and engaging
- vocabulary is taught explicitly and applied meaningfully
- Where possible, practical investigations take place outdoors, using our Forest School and great outdoors spaces, to deepen pupils' engagement with the natural world and provide hands-on, experiential learning

Teachers plan practical investigations where children predict, test, measure, observe and record findings. Learning is connected to real-world contexts, current scientific developments and, where appropriate, the school's Christian values of respect, compassion, community and perseverance.

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Impact

By the end of KS2, pupils will:

- have secure scientific knowledge across biology, chemistry and physics
- be confident and independent in carrying out scientific enquiries
- use accurate scientific vocabulary to explain their thinking
- interpret, analyse and present data effectively
- understand the relevance of science in everyday life and future learning

Ongoing assessment, pupil voice, work scrutiny and lesson observations show that children enjoy science, are motivated to investigate and take pride in their discoveries. They demonstrate curiosity, resilience and collaboration, reflecting the positive learning attitudes we promote throughout the school.

The National Curriculum for Science across Key Stages

Key stage 1

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos. 'Working scientifically' is described separately in the programme of study but must always be taught through and clearly related to the teaching of substantive science content in the programme of study. Children should read and spell scientific vocabulary at a level consistent with their increasing word-reading and spelling knowledge at key stage 1.

Pupils should be taught to:

use the following practical scientific methods, processes, and skills through the teaching of the programme of study content:

- 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.

Lower Key stage 2 (Years 3 and 4)

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing, and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships, and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping, and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out. 'Working scientifically' must always be taught through and clearly related to substantive science content in the programme of study. Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word-reading and spelling knowledge.

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes, and skills through the teaching of the programme of study content:

- asking relevant questions and using different types of scientific enquiries to answer them.
- 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
- gathering, recording, classifying, and presenting data in a variety of ways to help in answering questions.
- 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.
- using results to draw simple conclusions, make predictions for new values, suggest improvements, and raise further questions.
- identifying differences, similarities or changes related to simple scientific ideas and processes.
- using straightforward scientific evidence to answer questions or to support their findings.

Upper Key stage 2 (Years 5 and 6)

The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

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'Working and thinking scientifically' must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read, spell and pronounce scientific vocabulary correctly.

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes, and skills through the teaching of the programme of study content:

- 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
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests.
- 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.
- identifying scientific evidence that has been used to support or refute ideas or arguments.

Subject strands - Biology, Chemistry, Physics and Sustainability

*= Biology * = Chemistry * = Physics * = Sustainability

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Curriculum topics by term.

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
EYFS	Me and my small world* What's in my basket? * Senses*	Let's go outside* What's changed? * Night and Day*	Changes in Winer* Let if Flow * From Desert to Jungle	Watch it grow * Animal detectives* Pushes and Pulls*	From City to Sea Look all around* Test it out! *	Happy and Healthy* Our wonderful world* We're Going on an animal hunt*
Year 1	The Human Body * Seasonal Changes *	Materials* Seasonal Changes *	Planting * Animals *	Caring for the Planet* Seasonal Changes * Planting *	Plants * Planting *	Growing and Cooking* Seasonal Changes *
Year 2	Animals' needs for survival. * Humans *	Materials* Plastic*	Plants (Light and dark) * Living things and their habitats *	Living things and their habitats * Plants (light and dark) *	Plants (Bulbs and seeds)* Growing up *	Plants (Bulbs and seeds) * Growing up * Wildlife*
Year 3	Skeletons* Movement* Nutrition and Diet*	Nutrition and Diet* Food Waste* Rocks*	Fossils* Soils*	Light*	Plants*	Forces* Magnets* Plants* Biodiversity*
Year 4	Group & classify living things. * Data Collection*	States of Matter*	Sound* Data Collection*	Electricity* Energy*	Data Collection* Habitats* Deforestations*	The Digestive System* Food Chains*
Year 5	Forces*	Space* Global Warming*	Properties of materials* Animals including humans*	Animals including humans* Lifecycles*	Reproduction* Reversible and irreversible changes*	Plastic pollution* Reproduction *
Year 6	Living things and their habitats*	Electricity* Renewable energy*	Light* Light pollution*	The circulatory system* Diet, drugs and lifestyle*	Variation* Adaptations*	Fossils* Themed projects – 'Melting Point; 'Thermal Conductivity'**

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		TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
F1	Topic	Me and my small world* What's in my basket? * Senses*	Let's go outside* What's changed? * Night and Day*	Changes in Winer* Let if Flow * From Desert to Jungle	Watch it grow * Animal detectives* Pushes and Pulls*	From City to Sea Look all around* Test it out! *	Happy and Healthy* Our wonderful world* We're Going on an animal hunt*
	'I Know' The knowledge to be learnt	Explore the natural world around them. To know the names of different body parts To know that some foods are unhealthy. Sorting healthy and unhealthy foods. To know that humans and other animals can grow. Observe features of humans To identify similarities and differences between humans. Talk about the differences between materials and changes they notice. ELG: Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.	To begin to understand that things change over time. Explore the seasons. To talk about the similarities and differences between seasons. Explore the weather during different seasons. To explain why some changes happen (e.g. why leaves fall from trees) To understand some important process and changes in the seasons. Describe what they see, hear and feel whilst outside. ELG: Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter	Understand the effect of changing seasons on the natural world around them Talk about the differences between materials and changes they notice. Recognise some environments that are different from the one in which they live.	To talk about some of the things they have observed such as animals and natural objects. To ask questions about the natural world. To show care and concern for living things and their environments. Begin to understand the effect their behaviours can have on the environment. Looks closely at similarities and differences in changes to living things. To make observations of animals and explain why something occur and talk about changes. Recognise some environments that are different from the one in which they live. ELG: Explore the natural world around them, making observations and drawing pictures of animals and plants	To ask questions about the natural world. Recognise some environments that are different from the one in which they live. Describe what they see, hear and feel whilst outside. Understand the effect of changing seasons on the natural world around them. ELG: Explore the natural world around them, making observations and drawing pictures of animals and plants	Know and talk about the different factors that support their overall health and wellbeing… Begin to understand the need to respect and care for the natural environment and all living things. Explore the natural world around them. Describe what they see, hear and feel whilst outside. ELG: Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter

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	Key Vocabulary	animal farm horse pig cow sheep body head arms hands mouth teeth legs feet field sty barn stable coop fruit vegetable size big little large small rough spiky smooth colour seed heavy light smell touch see hear taste nose skin eyes ears mouth tongue hands face head feel sound sight sense	Autumn, Winter, Spring, Summer, environment, weather, ice, snow, rain, sleet, sun, temperature.	winter cold warm freeze frozen melt ice rainy sunny frosty snowy water leaves tree change hibernate hedgehog polar polar bear penguin fur water wet dry flow float sink sand mud container pour fill full empty mix large small tall wide shallow deep heavy warm hot sandy sunny dry wet rainy jungle desert tiger zebra giraffe monkey ostrich elephant lion snake camel frog lizard scorpion	plant grow root stem beanstalk compost worm soil seed leaf caterpillar chrysalis butterfly petal flower bean shoot wormery pot trowel water animal scales feathers fur feet legs tail wings head beak snake bird pigeon magpie sort mouse frog toad cat dog fox push pull surface rough smooth bumpy ramp roll slide high low down up move start stop magnet attract repel stretch spin	sea ocean city same different road building car pollution animal seaweed sand water rock shell village coast plastic litter helpful harmful test material object best worst fabric cardboard water plastic metal hard soft wet heavy build sort thick thin light dry waterproof summer change same different tree plant leaf flower grass building school road house weather sunny rainy cloudy windy animal warm cold	fruit vegetables food choice picnic doctor nurse exercise sometimes tired sport help well unwell feeling every day active body hot warm cool litter tidy mess recycle rubbish bin dirty clean sort plastic paper cardboard metal glass plant flower garden bee minibeast butterfly wildlife crawl slither fly minibeast ant ladybird spider slug snail bee butterfly wasp woodlouse beetle
	'I can' The skills to be developed	I can talk about how I have have changed since I was a baby. I can identify and sort healthy/unhealthy foods. I can identify and group a range of fruits and vegetables. To make links between ideas To identify, sort and group Explore and test own ideas Children investigate and experience things Shows curiosity using their senses	I can talk about the changes they observe in their environment – Seasons link. I can explain changes through autumn, winter, spring and summer I can describe the weather in autumn, winter, spring and summer and that the days get longer and shorter.	I can talk about the features of their own immediate environment and how environments might vary from one another I can make observations of animals and plants and explains why some things occur, and talks about changes I know about similarities and differences in relation to places, objects, materials and living things I can talk about the features of their own immediate environment and how environments might vary from one another	I can talk about the changes they observe in their environment – Seasons link. (Au1) I can talk about the life cycle of plants and animals and what they need to survive. I can explore a range of habitats, looking at why the animal lives like that. I can talk about what a **seed**, **bean** or **plant** needs to **grow**? I can observe growth and decay and talk about what I notice and describe simple changes?	I can talk about the changes they observe in their environment I can use my own descriptions and key vocabulary when talking about the key features of the environment? I can talk about what is the **same** and **different** when comparing where they live and a contrasting environment? I am aware of what can be done to look after the environment? I can talk about the features of their own immediate environment and	I can suggest ways to stay happy and healthy? I can talk about which foods should be eaten **every day** and ones that should only be eaten **sometimes**. I can talk about why **exercise** is important? I can talk about what they think **recycling** is. I can talk about how human behaviour impacts our world in helpful or harmful ways. I can begin to talk about how **wildlife**, such as **bees**, help our world through pollination?

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				I can make observations of animals and plants and explains why some things occur, and talks about changes	I can talk about what is happening and how something is changing?	how environments might vary from one another I can suggest which objects may be useful to help solve a problem? I can think of ways to solve problems?	

		TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
Year 1	Topic	The Human Body *	Materials*	Animals *	Caring for the Planet*- (outdoor learning) Seasonal Changes *- (outdoor learning)	Plants * (outdoor learning)	Growing and Cooking* Seasonal Changes *(outdoor learning)
		Seasonal Changes *(outdoor learning)		Planting *(outdoor learning)			
	'I Know' The knowledge to be learnt	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense Observe changes across the 4 seasons Observe and describe weather associated with the seasons and how day length varies	Distinguish between an object and the material from which it is made Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock Describe the simple physical properties of a variety of everyday materials Compare and group together a variety of everyday materials on the basis of their simple physical properties	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Identify and name a variety of common animals that are carnivores, herbivores and omnivores Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)	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 Observe changes across the 4 seasons Observe and describe weather associated with the seasons and how day length varies		Observe changes across the 4 seasons Observe and describe weather associated with the seasons and how day length varies

			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 Observe changes across the 4 seasons Observe and describe weather associated with the seasons and how day length varies				
	Key Vocabulary	Head, hair eye, face, ear, teeth, nose, mouth, neck, elbow, hand, arm, knee, leg, foot, skin. Hear, loud, quiet, noisy, sweet, salty, sour, bitter, savoury, rough, smooth, hard, soft, smell, scent, sniff, stench. Autumn, winter, daylight, night, weather, season, cloud, frost, wind, snow Rainfall, rain gauge	Material, soft, hard, shiny, dull, rock Heavy, light, rough, smooth Object, metal, wood, plastic, glass, rock, wool Solid, liquid, melt, freeze, ice Float, sink, absorb Transparent, opaque Winter, daylight, night, weather, season, cloud, frost, wind, snow	Plant, flower, leaf, stem, roots, seed, soil. Animal, mammal, fur, wild mammal, pet. Bird, wings, beak, feathers, webbed feet, flipper. Fish, fin, tail, scales, gills. Amphibian, frog, toad, newt Reptile, lizard, crocodile, turtle. Carnivore, sharp teeth, wild animal. Herbivore, plants, vegetable, fruit Omnivore.	Earth, plant, animal, helpful, harmful. Material, recycle, reuse. Spring, daylight, night, weather, season, cloud, frost, wind, snow, sleet Plant, flower, leaf, stem, roots, seed, soil.	Flower, petals, leaf, stem roots Trunk, branch, fruit Wildflower, daisy garden plant, sunflower Nettle, buttercup, dandelion Deciduous tree, horse chestnut, oak, sycamore Evergreen tree, pine, holly, needles. Plant, flower, leaf, stem, roots, seed, soil, growth, measure, trowel	Crops, fruit, vegetable, seed, farmer Plant, seed, cook Summer, daylight, night, weather, season, rainy, windy, sunny, record Autumn, Winter, Spring, Summer
	‘I can’ The skills to be developed	I can ask simple questions I can verbally state what they are going to investigate I can carry out simple tests using nonstandard	I can ask simple questions I can verbally state what they are going to investigate I can observe closely	I can ask simple questions Gather and record simple data. I can sort objects and living things into groups based on simple properties.	I can ask simple questions I can observe closely I can carry out simple tests using nonstandard measurements when appropriate	I can ask simple questions I can verbally state what they are going to investigate I can observe closely I can carry out simple tests using nonstandard	I can ask simple questions I can verbally state what they are going to investigate I can observe closely

		measurements when appropriate I can gather and record simple data. I can explain what I have found out to an adult or a partner I can answer simple questions.	I can carry out simple tests using nonstandard measurements when appropriate I can gather and record simple data. I can sort objects and living things into groups based on simple properties. I can explain what I have found out to an adult or a partner I can answer simple questions.	Explain what they found out to an adult or a partner I can answer simple questions	I can gather and record simple data. Explain what they found out to an adult or a partner I can answer simple questions.	measurements when appropriate I can gather and record simple data. I can sort objects and living things into groups based on simple properties. I can explain what I have found out to an adult or a partner I can answer simple questions.	I can carry out simple tests using nonstandard measurements when appropriate I can gather and record simple data. I can explain what I have found out to an adult or a partner I can answer simple questions.

		TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
Year 2	Topic	Animals' needs for survival. * Humans *	Materials* Plastic*	Plants (Light and dark) * (outdoor learning) Living things and their habitats * (outdoor learning)	Living things and their habitats *(outdoor learning) Plants (light and dark) * (outdoor learning)	Plants (Bulbs and seeds)* (outdoor learning) Growing up *	Plants (Bulbs and seeds) * (outdoor learning) Growing up * Wildlife* (outdoor learning)
	'I Know' The knowledge to be learnt	Notice that animals, including humans, have offspring which grow into adults Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)	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,	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 habitat to which they are suited and describe how different habitats provide for the basic needs of different	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	Explore and compare the differences between things that are living, dead, and things that have never been alive Identify and name a variety of plants and animals in their habitats, including microhabitats	Explore and compare the differences between things that are living, dead, and things that have never been alive Identify and name a variety of plants and animals in their habitats, including microhabitats

		Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	bending, twisting and stretching	kinds of animals and plants, and how they depend on each other Identify and name a variety of plants and animals in their habitats, including microhabitats Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including microhabitats Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy Notice that animals, including humans, have offspring which grow into adults Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)	Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy Notice that animals, including humans, have offspring which grow into adults Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)

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	Key Vocabulary	Mammal, fur, carnivore, herbivore, omnivore Bird, feather, beak, insect, wing, fish, scales, gills, fin, amphibian, webbed feet, frog, toad, newt, reptile. Heart, exercise, physical health, mental health Healthy diet, unhealthy diet Meat, vegetables, fruit, sugar Germs, hygiene, doctor, disease Teeth, plaque, filling	Material, natural material, human-made material Plastic, single-use plastic, recycle Smooth, rough, flexible, rigid, brittle, hard, transparent, translucent, opaque, shiny, dull, soft, breakable, tough, lightweight, waterproof, fabric Rock, stone, pebble, brick Bend, squash, twist, stretch Independent variable, dependant variable, controlled variable.	Plant, flower, fruit, vegetable, herb Blossom, stem, leaf, trunk, branch, seed Sunlight, compost Habitat, microhabitat. Mammal, bird, animal, plant Carnivore, herbivore, omnivore, diet, food chain Deciduous tree, evergreen tree, woodland, fern, moss Arctic plants, desert, cactus, ocean, seagrass Rainfall. Insect, spider, snail Living, dead, never alive. Independent variable, dependant variable, controlled variable.	Plant, flower, fruit, vegetable, herb Blossom, stem, leaf, trunk, branch, seed Sunlight, compost Habitat, microhabitat. Mammal, bird, animal, plant Carnivore, herbivore, omnivore, diet, food chain Deciduous tree, evergreen tree, woodland, fern, moss Arctic plants, desert, cactus, ocean, seagrass Rainfall. Insect, spider, snail Living, dead, never alive. Independent variable, dependant variable, controlled variable.	Plant, bulb, seed, shoot, roots, compost, sunlight, temperature, growth, measurement, observe Offspring, growth, egg, adult, parent, baby, child, teenager, adolescent, mammal Lifecycle, amphibian, frogspawn, tadpole, froglet. Caterpillar, pupa, butterfly compare	Plant, bulb, seed, shoot, roots, compost, sunlight, temperature, growth, measurement, observe. Offspring, growth, egg, adult, parent, baby, child, teenager, adolescent, mammal Lifecycle, amphibian, frogspawn, tadpole, froglet. Caterpillar, pupa, butterfly compare food chain, wildlife, habitat, crops, insect, nature, local
	‘I can’ The skills to be developed	I can ask simple questions and recognising that they can be answered in different ways. I can gather and record data to help in answering questions I can identify and classify I can observe closely, using simple equipment I can use my observations and ideas to suggest answers to questions.	I can identify and classify I can perform simple tests. I can use simple features to compare objects, materials and living things and, with help, decide how to sort and group them. I can ask simple questions and recognise that they can be answered in different ways. I can observe closely, using simple equipment	I can observe closely, using simple equipment I can ask simple questions and recognising that they can be answered in different ways. I can perform simple tests. I can gather and record data to help in answering questions I can identify and classify	I can observe closely, using simple equipment I can ask simple questions and recognising that they can be answered in different ways. I can perform simple tests. . I can gather and record data to help in answering questions I can identify and classify	I can observe closely, using simple equipment I can record and communicate my findings in a range of ways and begin to use simple scientific language I can ask simple questions and recognising that they can be answered in different ways. I can perform simple tests. I can identify and classify	I can observe closely, using simple equipment I can identify and classify I can ask simple questions and recognising that they can be answered in different ways. I can record and communicate my findings in a range of ways and begin to use simple scientific language I can use my observations and ideas to suggest answers to questions.

			I can use my observations and ideas to suggest answers to questions. I can explore the world around me and raise my own questions			I can use my observations and ideas to suggest answers to questions.	

		TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
Year 3	Topic	Skeletons* Movement* Nutrition and Diet*	Nutrition and Diet* Food Waste*(outdoor learning) Rocks*(outdoor learning)	Fossils* Soils*(outdoor learning)	Light*	Plants*(outdoor learning)	Forces*(outdoor learning) Magnets* Plants*(outdoor learning) Biodiversity*(outdoor learning)
	'I Know' The knowledge to be learnt	Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. Identify that humans and some other animals have skeletons and muscles for support, protection and movement	Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. Identify that humans and some other animals have skeletons and muscles for support, protection and movement Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.	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	Recognise that they need light in order to see things and that dark is the absence of light. Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by an opaque object. Find patterns in the way that the size of shadows change.	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,	Compare how things move on different surfaces. Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others. Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.

			Describe 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			seed formation and seed dispersal	Describe magnets as having 2 poles. Predict whether 2 magnets will attract or repel each other, depending on which poles are facing. 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
	Key Vocabulary	Skeleton, skull, ribcage, spine, pelvis, femur. Mammal, bird, fish, amphibian, reptile. Antennae, insect, exoskeleton. Joint, hinge-joint, ball-and-socket join, muscle, bicep, tricep, contract, relax.	Carbohydrates, proteins, dairy products, fats, sugars. Fruit, vegetables, balanced diet, balanced meal, nutrition, Eatwell guide. Vegan, vegetarian, pescatarian, omnivorous. Diet, herbivore, carnivore, omnivore.	Fossil, rock, skeleton, shell Fossilisation, sediment Soil, sandy soil, clay soil, peat soil, chalky soil, organic matter, absorb. Nutrients, habitat, habitat loss, deforestation.	Light, eyes, light sources, natural light sources, artificial light sources, sun, sunglasses, protect. Reflection, dull, shiny Opaque, translucent, transparent, shadows. Distance.	Leaf, stem, roots, flower, soil, seed, dissection, seedling, seed coating, germination, water transportation. Petals, stamen, pistil, reproductive organs. Pollination, pollen, pollinators, wind dispersal,	Push, pull, force, contact force, friction, smooth, rough Independent variable, dependent variable, controlled variable. Data, prediction

		Carbohydrates, proteins, dairy products, fats, sugars. Fruit, vegetables, balanced diet, balanced meal, nutrition, Eatwell guide. Vegan, vegetarian, pescatarian, omnivorous. Diet, herbivore, carnivore, omnivore.	Food waste, landfill, recycling, edible, inedible. Granite, pumice, sandstone, chalk, marble, gneiss. Crystals, grains, layers, texture. Hardness, float, sink, brittle, reaction, weathering.	Independent variable, dependent variable, controlled variable. Filter paper, filter funnel, measuring cylinder. Conclusion, evaluation, data.	Independent variable, dependent variable, controlled variable. Conclusion, evaluation, data.	animal dispersal, water dispersal, explosion dispersal, seed dispersal. Lifecycle. Independent variable, dependent variable, controlled variable. Scale, measuring cylinder.	Magnet, magnetic, poles, iron, magnetic force. Metal, non-metal, attract, repel, aluminium, steel Soil, seed, measure, data Biodiversity, endangered, extinct, rewilding, habitat
	'I can' The skills to be developed	I can ask relevant questions and use different types of scientific enquiries to answer them. I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. I can talk about criteria for grouping, sorting and classifying. I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. I can recognise when and how secondary sources might help me to answer questions that cannot be answered through practical investigations. I can communicate my findings in ways that are	I can talk about criteria for grouping, sorting and classifying. I can use straightforward scientific evidence to answer questions or to support my findings. I can identify differences, similarities or changes related to simple scientific ideas and processes. I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. I can ask relevant questions and use different types of scientific enquiries to answer them. I can make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment,	I can ask relevant questions and use different types of scientific enquiries to answer them. I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. I can use straightforward scientific evidence to answer questions or to support my findings. I can set up simple practical enquiries, comparative and fair tests. I can make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using	I can identify differences, similarities or changes related to simple scientific ideas and processes. I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. I can gather, record, classify and present data in a variety of ways to help in answering questions. I can ask relevant questions and use different types of scientific enquiries to answer them. I can set up simple practical enquiries, comparative and fair tests. I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	I can use straightforward scientific evidence to answer questions or to support my findings. I can talk about criteria for grouping, sorting and classifying. I can ask relevant questions and use different types of scientific enquiries to answer them. I can set up simple practical enquiries, comparative and fair tests. I can identify differences, similarities or changes related to simple scientific ideas and processes. I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. I can use relevant scientific language to discuss my ideas and communicate my findings in ways that are	I can identify differences, similarities or changes related to simple scientific ideas and processes. I can use straightforward scientific evidence to answer questions or to support my findings. I can set up simple practical enquiries, comparative and fair tests. I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. I can gather, record, classify and present data in a variety of ways to help in answering questions. I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.

		appropriate for different audiences. I can use straightforward scientific evidence to answer questions or to support my findings. I can identify differences, similarities or changes related to simple scientific ideas and processes.	including thermometers and data loggers. I can gather, record, classify and present data in a variety of ways to help in answering questions.	a range of equipment, including thermometers and data loggers. I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.		appropriate for different audiences. I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	I can ask relevant questions and use different types of scientific enquiries to answer them.

		TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
Year 4	Topic	Group & classify living things. *(outdoor learning) Data Collection*(outdoor learning)	States of Matter*(outdoor learning)	Sound*(outdoor learning) Data Collection*(outdoor learning)	Electricity* Energy*(outdoor learning)	Data Collection*(outdoor learning) Habitats*(outdoor learning) Deforestations*(outdoor learning)	The Digestive System* Food Chains*(outdoor learning)
	'I Know' The knowledge to be learnt	Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider Environment. Recognise that environments	Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C). Identify the part played by evaporation and	Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between the pitch of a sound and features of the object that produced it.	Identify common appliances that run on electricity. Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is	Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider Environment. Recognise that environments	Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions. Construct and interpret a variety of food chains, Identifying producers, predators and prey

		can change and that this can sometimes pose dangers to living things	condensation in the water cycle and associate the rate of evaporation with temperature	Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increases. Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider Environment. Recognise that environments can change and that this can sometimes pose dangers to living things	part of a complete loop with a battery. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors	can change and that this can sometimes pose dangers to living things	
	Key Vocabulary	Mammal, bird, fish, amphibian, reptile, vertebrate, invertebrate, exoskeleton, insect, spider, soft-bodied invertebrate Flowering plant, non-flowering plant, stamen, pistil, pollination, fern, moss Bar chart, pictogram, data, prediction.	Solid, liquid, gas, volume, states of matter, pouring solid, oobleck, flow Freezing, melting, melting point, boiling, condensation, evaporation Thermometer, stopwatch, beaker, temperature The water cycle, precipitation, atmosphere Independent variable, dependent variable, controlled variable. Observe, data, conclusion	Vibration, ear, sound, volume, pitch, high-pitched, low-pitched, decibel, decibel meter, insulate, background noise Outer ear, ear bones, cochlea, ear canal, ear drum Independent variable, dependent variable, controlled variable. Observe, data, conclusion, evaluate	Appliances, plug, socket, cell, circuit, switch, battery, buzzer Conductor, insulator, metal, material Electricity, mains electricity, battery-powered, renewable energy, non-renewable energy, Earth, energy usage	Vertebrate, invertebrate, flowering plant, non-flowering plant bar chart, pictogram, data • seasonal changes, increase, decrease, conclusion, compare. Habitat, rural habitat, urban habitat, biodiversity classification key, vertebrate, invertebrate, habitat, biodiversity, natural resources, deforestation, rewilding, nature reserve	Teeth, carnivore, herbivore, omnivore Incisors, canines, premolars, molars Germs, enamel, root, plaque, decay. digestive system, oesophagus, intestines (small and large), mouth, stomach, rectum, saliva food chain, producer, predator, prey, consumer habitat, farming, overfishing, hunting

				Vertebrate, invertebrate, flowering plant, non-flowering plant bar chart, pictogram, data, vertebrate, invertebrate		natural resource, habitat destruction, extinct, endangered, sustainable	
	'I can' The skills to be developed	I can talk about criteria for grouping, sorting and classifying. I can ask relevant questions and use different types of scientific enquiries to answer them. I can gather, record, classify and present data in a variety of ways to help in answering questions. I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.	I can talk about criteria for grouping, sorting and classifying. . I can identify differences, similarities or changes related to simple scientific ideas. I can ask relevant questions and use different types of scientific enquiries to answer them. I can make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. I can set up simple practical enquiries, comparative and fair tests. I can gather, record, classify and present data in a variety of ways to help in answering questions. I can use results to draw simple conclusions, make predictions for new values,	I can ask relevant questions and use different types of scientific enquiries to answer them. I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. I can make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. I can set up simple practical enquiries, comparative and fair tests. I can identify differences, similarities or changes related to simple scientific ideas. I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	I can talk about criteria for grouping, sorting and classifying. I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. I can ask relevant questions and use different types of scientific enquiries to answer them. I can use straightforward scientific evidence to answer questions or to support my findings. I can gather, record, classify and present data in a variety of ways to help in answering questions.	I can gather, record, classify and present data in a variety of ways to help in answering questions. I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. I can ask relevant questions and use different types of scientific enquiries to answer them.	I can identify differences, similarities or changes related to simple scientific ideas. I can ask relevant questions and use different types of scientific enquiries to answer them. I can recognise when and how secondary sources might help me to answer questions that cannot be answered through practical investigations. I can set up simple practical enquiries, comparative and fair tests. I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. I can use straightforward scientific evidence to answer

			suggest improvements and raise further questions.	I can gather, record, classify and present data in a variety of ways to help in answering questions.			questions or to support my findings. I can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.

		TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
Year 5	Topic	Forces*(outdoor learning)	Space* Global Warming*(outdoor learning)	Properties of materials*(outdoor learning) Animals including humans*(outdoor learning)	Animals including humans*(outdoor learning) Lifecycles*(outdoor learning)	Reproduction* Reversible and irreversible changes*(outdoor learning)	Plastic pollution*(outdoor learning) Reproduction *
	'I Know' The knowledge to be learnt	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.	Describe the movement of the Earth and other planets relative to the sun in the solar system. Describe the movement of the moon relative to the Earth. Describe the sun, Earth and moon as approximately spherical bodies. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.	Describe the changes as humans develop to old age 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	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 Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Know that some materials will dissolve in liquid to form a solution, and describe how to	Describe the life process of reproduction in some plants and animals. Identifying scientific evidence that has been used to support or refute ideas or arguments. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.

				Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Demonstrate that dissolving, mixing and changes of state are reversible changes. Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. Describe the changes as humans develop to old age 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		recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Demonstrate that dissolving, mixing and changes of state are reversible changes. Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda	
	Key Vocabulary	Force, contact force, friction. Motion Ari resistance, drag, parachute	Solar System, planets, orbit, Sun, Pluto, celestial body Gravity, heliocentric model, geocentric model, rotate, Earth, north pole, south	Transparent, translucent, opaque, magnetism, hardness	adolescent, baby, foetus, elderly adult, adult, life cycle, milestone, toddler, child, womb, period, puberty, hormone, elderly adult, life expectancy,	Fertilisation, embryo, sperm cells, egg cells, sexual reproduction anther, stigma, style, filament, ovule, ovary	Plastic, habitat, plastic pollution, landfill, pollution Microplastics

		Air resistance, water resistance, streamline, repeatability, precision. Surface area, Anomalous result Gravity, Weight, Contact force, Non-contact force heavy load, Gear, Pulley, Machine Independent variable, dependent variable, controlled variable. Observe, data, conclusion	pole, axis, night, day, moon, gravitational force, satellite global warming, greenhouse gases, fossil fuels, climate change, glacier, habitat, carbon footprint	Electrical conductor, electrical insulator, circuit, cell, bulb thermal insulator, thermometer, control beaker, temperature properties, wood, metal, plastic, lifespan Independent variable, dependent variable, controlled variable. Observe, data, conclusion, anomalous result adolescent, baby, foetus, elderly adult, adult, life cycle, milestone, toddler, child, womb, period, puberty, hormone, elderly adult, life expectancy, gestation, mammal, offspring correlation, anomaly	gestation, mammal, offspring correlation, anomaly monotreme, offspring, mammary gland, mammal, life cycle amphibian, frogspawn, tadpole, froglet, metamorphosis larva, pupa, chrysalis, insect bird's egg, hatchling, nestling, fledgling, adult bird	pollination, pollen, fertilisation clone, runner, tuber, bulb, asexual reproduction cutting, parent plant, compost dissolve, soluble, insoluble, solution substance sieve, filter paper, mixture, insoluble, filtering, funnel solution, dissolve, soluble, insoluble, evaporation states of matter, reversible change, irreversible change, reverse, burning, heating, chemical reaction, vinegar, bicarbonate of soda. Independent variable, dependent variable, controlled variable. Observe, data, conclusion	asexual reproduction, cutting, parent plant, data, prediction, line graph
	'I can' The skills to be developed	I can use relevant scientific language and illustrations to discuss, communicate and justify my scientific ideas. I can recognise which secondary sources will be most useful to research my ideas. I can plan different types of scientific enquiries to	I can identify scientific evidence that has been used to support or refute ideas or arguments. I can use relevant scientific language and illustrations to discuss, communicate and justify my scientific ideas. I can report on findings from enquiries, including	Use and develop keys and other information records to identify, classify and describe living things and materials. I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.	I can use relevant scientific language and illustrations to discuss, communicate and justify my scientific ideas. I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results.	I can use relevant scientific language and illustrations to discuss, communicate and justify my scientific ideas. I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.	I can identify scientific evidence that has been used to support or refute ideas or arguments. I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results.

		answer questions, including recognising and controlling variables where necessary. I can use a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. I can identify scientific evidence that has been used to support or refute ideas or arguments.	oral and written explanations, displays or presentations of results and conclusions. I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results. I can recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.	I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. I can use test results to make predictions to set up further comparative and fair tests I can use relevant scientific language and illustrations to discuss, communicate and justify my scientific ideas. I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results. I can identify scientific evidence that has been used to support or refute ideas or arguments.	I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. I can identify scientific evidence that has been used to support or refute ideas or arguments.	I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results. I can identify scientific evidence that has been used to support or refute ideas or arguments. I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. I can use test results to make predictions to set up further comparative and fair tests	I can use test results to make predictions to set up further comparative and fair tests

		TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6

Deddington Church of England Primary School Science Curriculum overview

Year 6	Topic	Living things and their habitats*(outdoor learning)	Electricity* Renewable energy*(outdoor learning)	Light* Light pollution*(outdoor learning)	The circulatory system* Diet, drugs and lifestyle*	Variation*(outdoor learning) Adaptations*(outdoor learning)	Fossils*(outdoor learning) Themed projects – 'Melting Point; 'Thermal Conductivity***(outdoor learning)
	'I Know' The knowledge to be learnt	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. Give reasons for classifying plants and animals based on specific characteristics	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. Use recognised symbols when representing a simple circuit in a diagram	Recognise that light travels in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported within animals, including humans	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.
	Key Vocabulary	Organism, excretion, reproduction, living, non-living Organism, vertebrate, invertebrate, flowering plant, non-flowering plant classification key, characteristics, mollusc, arachnid flowering plant, non-flowering plant, deciduous	series circuit, cell, battery, bulb, current, voltage complete circuit, incomplete circuit, switch, buzzer, series circuit Independent variable, dependent variable, controlled variable. Observe, data, conclusion, repeatability, accuracy, evaluate solar power, wind power, renewable, non-renewable	light source, retina, iris, pupil light source, , reflection, ray diagram, angle, periscope shadow, opaque, translucent, transparent, solar eclipse refraction, medium, transparent, lens, rainbow, prism, coloured filter, spectrum of light	circulatory system, heart, blood vessels, veins, arteries, capillaries red blood cells, white blood cells, lungs, nutrients, plasma, oxygen atria, ventricles, right atrium, right ventricle, left atrium, left ventricle, oxygenated blood, deoxygenated blood, dissection.	Organism, variation, species, offspring characteristic, inheritance, desirable characteristics adaptations, polar habitat, desert habitat, habitat Evolution Charles Darwin, common ancestor, species, theory, natural selection, Galapagos Islands, finch	Fossil, rock, decompose, skeleton Charles Darwin, evolution, palaeontologist Mary Anning, plesiosaur skeleton Independent variable, dependent variable, controlled variable. Observe, data, Evaluate, Conclusion

		tree, evergreen tree, coniferous tree microorganism, bacteria, virus, fungi, microscope	solar panels, wind turbine, global warming, greenhouse gases	Independent variable, dependent variable, controlled variable. Observe, data, Evaluate Migration, glare, light trespass, skyglow, light pollution Urban, rural, light emission, appliance	balanced diet, calories, unsaturated fats, saturated fats, trans fats drug, painkiller, stimulants, depressants cigarette, vape, tar, nicotine, carbon monoxide, addiction circulatory system, heart, heart rate, duration, exercise Independent variable, dependent variable, controlled variable. Observe, data, Evaluate, Conclusion		
	'I can' The skills to be developed	I can identify scientific evidence that has been used to support or refute ideas or arguments. I can use and develop keys and other information records to identify, classify and describe living things and identify patterns that might be found in the natural environment. I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results.	I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results. I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	I can use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	I can explore ideas and raise different kinds of questions I can use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results. I can identify scientific evidence that has been used to support or refute ideas or arguments.	I can use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. I can recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.	I can identify scientific evidence that has been used to support or refute ideas or arguments. I can use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas. I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results.

			I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. I can use test results to make predictions to set up further comparative and fair tests I can identify scientific evidence that has been used to support or refute ideas or arguments.	I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. I can identify scientific evidence that has been used to support or refute ideas or arguments. I can talk about how scientific ideas have changed over time I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results.	I can recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact. I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. I can use test results to make predictions to set up further comparative and fair tests	I can identify scientific evidence that has been used to support or refute ideas or arguments. I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results.	I can explore ideas and raise different kinds of questions I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. I can make my own decisions about what observations to make, what measurements to use and how long to make them for. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. I can use test results to make predictions to set up further comparative and fair tests

Deddington Church of England Primary School Science Curriculum overview

Progressive knowledge overview by strand.

Strand	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals including Humans	Children know about similarities and differences in relation to …. living things. • Make observations of animals and explain why some things occur and talk about changes.	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	Notice that animals, including humans, have offspring which grow into adults • Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) • Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat • Identify that humans and some other animals have skeletons and muscles for support, protection and movement	Describe the simple functions of the basic parts of the digestive system in humans • Identify the different types of teeth in humans and their simple functions • Construct and interpret a variety of food chains, identifying producers, predators and prey	Describe the changes as humans develop to old age	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. • Describe the ways in which nutrients and water are transported within animals, including humans

Living things and their habitats	Children know about similarities and differences in relation to …. living things. • Make observations of animals and explain why some things occur and talk about changes.	X	Explore and compare the differences between things that are living, dead, and things that have never been alive • Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other • Identify and name a variety of plants and animals in their habitats, including microhabitats • Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food	X	Recognise that living things can be grouped in a variety of ways • explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • Recognise that environments can change and that this can sometimes pose dangers to living things	• 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	• 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 • Give reasons for classifying plants and animals based on specific characteristics

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Plants	• Children know about similarities and differences in relation to …. living things. • Make observations of ….. plants and explain why some things occur, and talk about changes.	• 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	• Observe and describe how seeds and bulbs grow into mature plants • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	• 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	X	X	X

Materials	X	• Distinguish between an object and the material from which it is made • Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • Describe the simple physical properties of a variety of everyday materials • Compare and group together a variety of everyday materials on the basis of their simple physical properties	• Identify and 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	X	X	• Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets • know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution • use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating • Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic • Demonstrate that dissolving, mixing and changes of state are reversible changes • Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda	X

Rocks	X	X	X	• 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	X	X	X
States of matter	X	X	X	X	• Compare and group materials together, according to whether they are solids, liquids, or gases • Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	X	X

Electricity	X	X	X	X	• Identify common appliances that run on electricity • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers • Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery • Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit • Recognise some common conductors and insulators, and associate metals with being good conductors	X	• Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches • Use recognised symbols when representing a simple circuit in a diagram
Earth and Space	X	X	X	X	X	• Describe the movement of the Earth and other planets relative to the sun in the solar system • Describe the movement of the moon relative to the Earth • Describe the sun, Earth and moon as approximately spherical bodies • Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	X

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Seasonal changes	Observe changes across the 4 seasons. • Observe and describe weather associated with the seasons and how day length varies	Observe changes across the 4 seasons. • Observe and describe weather associated with the seasons and how day length varies					
Sound	X	X	X	X	• Identify how sounds are made, associating some of them with something vibrating • Recognise that vibrations from sounds travel through a medium to the ear • Find patterns between the pitch of a sound and features of the object that produced it • Find patterns between the volume of a sound and the strength of the vibrations that produced it • Recognise that sounds get fainter as the distance from the sound source increases	X	X
Light	Make sense of their physical world …. through opportunities to explore, observe and find out about people …. and the environment	X	X	• Recognise that they need light in order to see things and that dark is the absence of light • Notice that light is reflected from surfaces • Recognise that light from the sun can be dangerous and that there are ways to protect their eyes • Recognise that shadows are formed when the light from a light source is blocked by an opaque object • Find patterns in the way that the size of shadows change	X	X	• Recognise that light travels in straight lines • Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them

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Forces and magnets	Make sense of their physical world …. through opportunities to explore, observe and find out about people …. and the environment	X	X	• Compare how things move on different surfaces • Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance • Observe how magnets attract or repel each other and attract some materials and not others • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • Describe magnets as having 2 poles • predict whether 2 magnets will attract or repel each other, depending on which poles are facing	X	• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • Identify the effects of air resistance, water resistance and friction, that act between moving surfaces • Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect	X
Evolution and inheritance	X	X	X	X	X	X	• Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution