

Croprey CE Primary School
Science Curriculum Map and Statutory Requirements

	Science Units					
	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Year 1	Animals including Humans	Animals including Humans	Everyday Materials	Wonderful Weather	Everyday Materials	What's growing in our garden?
Year 2	Everyday Materials	Animals including Humans	Everyday Materials	Plants	Living Things and their Habitats	Living Things and their Habitats
Year 3	Rocks and Fossils	Plants	Forces and Magnets	Light	Animals including Humans	Plants
Year 4	Electricity	Sound	Animals Including Humans	States of Matter	Living Things and their Habitats	Living Things and their Habitats
Year 5	Changes of Materials	Earth and Space	Forces	Living Things and their Habitats	Animals including Humans	Evolution and Inheritance Living Things and their Habitats
Year 6	Light	Properties and Changing of Materials	Electricity	Animals including Humans		Second Look Science

Early Years

Aspects of Science are found within Understanding the World predominantly within The Natural World ELG. In addition, aspects of the Maths Education programme relation to measures also link to Science too. The Characteristics of Effective Learning are threaded through all aspects of learning and are the essential ways in which children learn within Cygnets Class.

The World

- Explore the natural world around them, making observations and drawing pictures of animals and plants;
- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;
- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Maths Education Programme states:

- In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It

Listening and Attention

- Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions;
- Make comments about what they have heard and ask questions to clarify their understanding;

Speaking

- Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary;
 - Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate;
- Express their ideas and feelings about their experiences using full sentences, including use of past, present and future tenses and making use of conjunctions, with modelling and support from their teacher.

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Year 1					
Early Years Prior Knowledge and Skills					
The World <ul style="list-style-type: none"> Explore the natural world around them, making observations and drawing pictures of animals and plants; Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. 					
Year 1 Science Knowledge and Skills					
Animals including Humans – Ourselves	Animals including Humans – Our Pets	Everyday Materials – Let’s Build	Seasonal Changes – Wonderful Weather	Everyday Materials – Marvellous Materials	Plants – What’s growing in our garden?
<ul style="list-style-type: none"> Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense 	<ul style="list-style-type: none"> 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) 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies. 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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.
Challenges - Animals including Humans		Challenges – Everyday Materials	Challenges – Seasonal Changes	Challenges – Everyday Materials	Challenges - Plants
<ul style="list-style-type: none"> Begin to classify animals according to a number of given criteria Point out differences between living things and non-living things Name some parts of the human body that cannot be seen Say why certain animals have certain characteristics Name a range of wild animals 		<ul style="list-style-type: none"> Describe things that are similar or different between materials Explain what happens to certain materials when they are heated e.g. bread, ice, chocolate Explain what happens to certain materials when they are cooled eg. jelly, heated chocolate 	<ul style="list-style-type: none"> Observe features in the environment and explain that these are related to a specific season Observe and talk about changes in the weather Talk about weather variation in different parts of the world 	<ul style="list-style-type: none"> Describe things that are similar or different between materials Explain what happens to certain materials when they are heated e.g. bread, ice, chocolate Explain what happens to certain materials when they are cooled eg. jelly, heated chocolate 	<ul style="list-style-type: none"> Name the main parts of a flowering plant
Challenges – Observing Closely		Challenges – Performing Tests		Challenges – Identifying and Classifying	Challenges – Recording Findings
<ul style="list-style-type: none"> Find out by watching, listening, tasting, smelling and touching 		<ul style="list-style-type: none"> Give a simple reason for their answers 		<ul style="list-style-type: none"> Talk about similarities and differences Explain what they have found out using scientific vocabulary 	<ul style="list-style-type: none"> Use ICT to show their working
Working Scientifically (Years 1 and 2)					
<ul style="list-style-type: none"> Ask simple questions and recognising that they can be answered in different ways Observe closely, using simple equipment Perform simple tests Identify and classify Use their observations and ideas to suggest answers to questions Gather and record data to help in answering questions 					

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Year 2					
Year 1 Prior Knowledge and Skills					
Animals including Humans	Everyday Materials	Seasonal Changes	Plants		
<ul style="list-style-type: none"> Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. 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) 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies. 	<ul style="list-style-type: none"> 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. 		
Working Scientifically - Observing Closely	Working Scientifically - Performing Tests	Working Scientifically - Identifying and Classifying	Working Scientifically - Recording Findings		
<ul style="list-style-type: none"> Talk about what they see, touch, smell, hear or taste Use simple equipment to help them make observations 	<ul style="list-style-type: none"> Perform a simple test Tell other people about what they have done 	<ul style="list-style-type: none"> Identify and classify things they observe Think of some questions to ask Answer some scientific questions Give a simple reasons for their answers Explain what they have found out 	<ul style="list-style-type: none"> Show their work using pictures, labels and captions Record their findings using standard units Put some information in a chart or table 		
Year 2 Science Knowledge and Skills					
Everyday Materials – Materials Matter	Living Things and their Habitats - Life cycles	Animals including Humans - Healthy Animals	Plants – Ready, Steady, Grow	Living Things and their Habitats – Gardens and Allotments	Everyday Materials – Squash, Bend, Twist and Stretch
<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. <p>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.</p>	<ul style="list-style-type: none"> 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
Challenges – Classifying and Grouping Materials	Challenges – Living things and their Habitats	Challenges – Animals including Humans	Challenges - Plants	Challenges – Living things and their Habitats	Challenges – Changing Materials
<ul style="list-style-type: none"> Describe the properties of different materials using words like, transparent or opaque, flexible etc... Sort materials into groups and say why they have sorted them in that way <p>Say which materials are natural and which are man-made</p>	<ul style="list-style-type: none"> Name some characteristics of an animal that help it to live in a particular habitat Describe what animals need to survive and link this to their habitats 	<p>Explain that animals reproduce in different ways</p>	<ul style="list-style-type: none"> Describe what plants need to survive and link it to where they are found <p>Explain that plants grow and reproduce in different ways</p>	<ul style="list-style-type: none"> Name some characteristics of an animal that help it to live in a particular habitat <p>Describe what animals need to survive and link this to their habitats</p>	<ul style="list-style-type: none"> Explain how materials are changed by heating and cooling Explain how materials are changed by bending, twisting and stretching <p>Tell which materials cannot be changed back after being heated, cooled, bent, stretched or twisted</p>
Working Scientifically Challenges – Observing Closely	Working Scientifically Challenges – Performing Tests	Working Scientifically Challenges – Identifying and Classifying		Working Scientifically Challenges – Recording Findings	
<ul style="list-style-type: none"> Suggest ways of finding things out through listening, hearing, smelling, touching and tasting 	<ul style="list-style-type: none"> Say whether things happened as they expected and if not why not 	<ul style="list-style-type: none"> Suggest more than one way of grouping animals and plants and explain their reasons 		<ul style="list-style-type: none"> Use information from books and online information to find things out 	
Working Scientifically (Years 1 and 2)					
<ul style="list-style-type: none"> Ask simple questions and recognise that they can be answered in different ways Observe closely, using simple equipment Perform simple tests Identify and classifying Use their observations and ideas to suggest answers to questions Gather and recording data to help in answering questions 					

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Year 3					
Year 2 Prior Knowledge and Skills					
Rocks and Fossils	Plants	Animals including Humans	Living Things and their Habitats		
<ul style="list-style-type: none"> Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses Describe the simple physical properties of a variety of everyday materials Distinguish between an object and the material from which it is made Compare and group together a variety of everyday materials on the basis of their simple physical properties 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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 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 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. 	<ul style="list-style-type: none"> 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 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. 		
Working Scientifically - Observing Closely	Working Scientifically - Performing Tests	Working Scientifically - Identifying and Classifying	Working Scientifically - Recording Findings		
<ul style="list-style-type: none"> Use all senses to help them answer questions Use some scientific words to describe what they have seen and measured Compare several things 	<ul style="list-style-type: none"> Carry out a simple fair test Explain why it might not be fair to compare two things Say whether things happened as they expected Suggest how to find things out Use prompts to find things out 	<ul style="list-style-type: none"> Organise things into groups Find simple patterns (or associations) Identify animals and plants by specific criteria 	<ul style="list-style-type: none"> Use text, diagrams, pictures, charts and tables to record their observations Measure using simple equipment 		
Year 3 Science Knowledge and Skills					
Rocks and Fossils	Plants – Artful flowers, roots and shoots	Forces and Magnets – Amazing Magnets	Light – Light and Shadow	Animals including Humans – Keeping Healthy	Plants – Roots and Shoots
<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal 	<ul style="list-style-type: none"> Compare how things move on different surfaces Notice that some forces need contact between two objects, but magnetic forces can act at a distance Observe how magnets attract or repel each other and attract some materials and not others Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials Describe magnets as having two poles Predict whether two magnets will attract or repel each other, depending on which poles are facing 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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
Challenges - Rocks and Fossils	Challenges - Plants	Challenges - Forces and Magnets	Challenges - Light	Challenges - Animals including Humans	Challenges - Plants

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<ul style="list-style-type: none"> Classify igneous and sedimentary rocks Begin to relate the properties of rocks with their uses 	<ul style="list-style-type: none"> Classify a range of common plants according to many criteria (environment, size, climate required etc...) 	<ul style="list-style-type: none"> Investigate the strengths of different magnets and find fair ways to compare them 	<ul style="list-style-type: none"> Explain why lights need to be bright or dimmer according to their need Explain the difference between transparent, translucent and opaque Make a bulb go on and off Say what happens to the electricity when more batteries are added Explain why their shadow changes when the light source is moved closet or further way from the object 	<ul style="list-style-type: none"> Explain how the muscular and skeletal systems work together to create movement Classify living things and non-living things by a number of characteristics that they have thought of Explain how people, weather and the environment can affect living things Explain how certain living things depend on one another to survive 	<ul style="list-style-type: none"> Classify a range of common plants according to many criteria (environment, size, climate required etc...)
Working Scientifically Challenges - Planning		Working Scientifically Challenges - Obtaining and Presenting Evidence		Working Scientifically Challenges - Considering Evidence and Evaluating	
<ul style="list-style-type: none"> Record and present what they have found using scientific language, drawings, labelled diagrams, bar charts and tables 		<ul style="list-style-type: none"> Explain their findings in different ways Use their findings to draw a simple conclusion Suggest improvements and predictions for further tests 		<ul style="list-style-type: none"> Suggest how to improve their work if they did it again 	
Working Scientifically (Years 3 and 4)					
<ul style="list-style-type: none"> Ask relevant questions and using different types of scientific enquiries to answer them Set up simple practical enquiries, comparative and fair tests Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units Gather, record, classify and present data in a variety of ways to help in answering questions Record findings using simple scientific language, drawings, labelled diagrams, and tables Report on findings from enquiries, including oral and written explanations, Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Identify differences, similarities or changes related to simple scientific ideas and processes Use straightforward scientific evidence to answer questions or to support their findings 					

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Year 4					
Year 3 Prior Knowledge and Skills					
States of Matter	Animals including Humans			Living Things and their Habitats	
<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 and name a variety of plants and animals in their habitats, including microhabitats 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 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 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. 			<ul style="list-style-type: none"> 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. 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 	
Working Scientifically - Planning		Working Scientifically - Obtaining and Presenting Evidence		Working Scientifically - Considering Evidence and Evaluating	
<ul style="list-style-type: none"> Use different ideas and suggest how to find something out Make and record a prediction before testing Plan a fair test and explain why it was fair Set up a simple fair test to make comparisons Explain why they need to collect information to answer a question 		<ul style="list-style-type: none"> Measure using different equipment and units of measure Record their observations in different ways Describe what they have found using scientific language Make accurate measurements using standard units 		<ul style="list-style-type: none"> Explain what they have found out and use their measurements to say whether it helps to answer their questions Use a range of equipment (including a data logger) in a simple test 	
Year 4 Science Knowledge and Skills					
Electricity – it’s Electric	Sound – Listen Up	Animals Including Humans – Your teeth	Living Things and their Habitats – Name the Living Thing!	States of Matter – States of Matter Scientists	Living Things and their Habitats - Help our Habitats!
<ul style="list-style-type: none"> Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a Complete loop with a battery recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit Recognise some common conductors and insulators, and associate metals with being good conductors 	<ul style="list-style-type: none"> Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sounds travel through a medium to the ear Find patterns between the pitch of a sound and features of the object that produced it Find patterns between the volume of a sound and the strength of the vibrations that produced it Recognise that sounds get fainter as the distance from the sound source increases 	<ul style="list-style-type: none"> Describe the simple functions of the basic parts of the digestive system in humans Identify the different types of teeth in humans and their simple functions Construct and interpret a variety of food chains, identifying producers, predators and prey 	<ul style="list-style-type: none"> Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment 	<ul style="list-style-type: none"> Compare and group materials together, according to whether they are solids, liquids or gases Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature 	<ul style="list-style-type: none"> Recognise that environments can change and that this can sometimes pose dangers to living things
Challenges - Electricity	Challenges - Sound	Challenges – Animals including Humans	Challenges – Living Things and their Habitats	Challenges – States of Matter	Challenges – Living Things and their Habitats
<ul style="list-style-type: none"> Explain how a bulb might get lighter Recognise if all metals are conductors of electricity Work out which metals can be used to connect across a gap in a circuit Explain why cautions are necessary for working safely with electricity 	<ul style="list-style-type: none"> Explain why sound gets fainter or louder according to the distance Explain how pitch and volume can be changed in a variety of ways Work out which materials give the best insulation for sound 	<ul style="list-style-type: none"> Classify living things and non-living things by a number of characteristics that they have thought of Explain how people, weather and the environment can affect living things Explain how certain living things depend on one another to survive 	<ul style="list-style-type: none"> Give reasons for how they have classified animals and plants, using their characteristics and how they are suited to the environment Explore the work of pioneers in classification Name and group a variety of living things bases on feeding patterns 	<ul style="list-style-type: none"> Group and classify a variety of materials according to the impact of temperature on them Explain what happens over time to materials such as puddles on the playground or washing hanging on a line Relate temperature to change of state of materials 	<ul style="list-style-type: none"> Give reasons for how they have classified animals and plants, using their characteristics and how they are suited to the environment Explore the work of pioneers in classification Name and group a variety of living things bases on feeding patterns

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		(producer, consumer, predator, prey, herbivore, carnivore, omnivore)	(producer, consumer, predator, prey, herbivore, carnivore, omnivore)
Working Scientifically Challenges - Planning		Working Scientifically Challenges - Obtaining and Presenting Evidence	Working Scientifically Challenges - Considering Evidence and Evaluating
<ul style="list-style-type: none"> Plan and carry out an investigation by controlling variables fairly and accurately Use test results to make further predictions and set up further comparative tests 		<ul style="list-style-type: none"> Record more complex data and results using scientific diagrams, classification keys, tables, bar charts, line graphs and models 	<ul style="list-style-type: none"> Report findings from investigations through written explanations and conclusions Use a graph or diagram to answer scientific questions
Working Scientifically (Years 3 and 4)			
<ul style="list-style-type: none"> Ask relevant questions and using different types of scientific enquiries to answer them Set up simple practical enquiries, comparative and fair tests Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units Gather, record, classify and present data in a variety of ways to help in answering questions Record findings using simple scientific language, drawings, labelled diagrams, and tables Report on findings from enquiries, including oral and written explanations, Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Identify differences, similarities or changes related to simple scientific ideas and processes <p>Use straightforward scientific evidence to answer questions or to support their findings</p>			

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Year 5					
Year 4 Prior Knowledge and Skills					
Materials	Forces	Living Things and their Habitats	Plants	Animals and Humans	
<ul style="list-style-type: none"> Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, rock, brick, paper and cardboard for particular uses; 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. Compare and group materials together, according to whether they are solids, liquids or gases Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. 	<ul style="list-style-type: none"> Compare how things move on different surfaces Notice that some forces need contact between two objects, but magnetic forces can act at a distance Observe how magnets attract or repel each other and attract some materials and not others Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials Describe magnets as having two poles Predict whether two magnets will attract or repel each other, depending on which poles are facing. 	<ul style="list-style-type: none"> 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 human body is associated with each sense. Explore and compare 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 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. 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 amount of different types of food, and hygiene. 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 	<ul style="list-style-type: none"> Identify and name a variety of common, wild and green 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 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 <ul style="list-style-type: none"> explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. 	<ul style="list-style-type: none"> 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 amount of different types of food, and hygiene. 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 changes as humans develop to old age. 	
Working Scientifically - Planning		Working Scientifically - Obtaining and Presenting Evidence		Working Scientifically - Considering Evidence and Evaluating	
<ul style="list-style-type: none"> Set up a simple fair test to make comparisons Plan a fair test and isolate variables, explaining why it was fair and which variables have been isolated Suggest improvements and predictions Decide which information needs to be collected and decide which is the best way for collecting it Use their findings to draw a simple conclusion 		<ul style="list-style-type: none"> Take measurements using different equipment and units of measure and record what they have found in a range of ways Make accurate measurements using standard units Explain their findings in different ways (display, presentation, writing) 		<ul style="list-style-type: none"> Find any patterns in their evidence or measurements Make a prediction based on something they have found out Evaluate what they have found using scientific language, drawings, labelled diagrams, bar charts and tables Use straightforward scientific evidence to answer questions or to support their findings Identify differences, similarities or changes related to simple scientific ideas or processes 	
Year 5 Science Knowledge and Skills					
Changes of Materials – Changing Materials	Earth and Space – Space presenters	Forces – May the Forces be With You	Living Things and their Habitats – The Art of Living	Animals including Humans – Life Explorers– included as part of RSE	Evolution and Inheritance – the Game of Survival Living Things and their Habitats – Classification connoisseurs
<ul style="list-style-type: none"> Compare and group together everyday materials on the basis of their properties, including their solubility 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 	<ul style="list-style-type: none"> Describe the movement of the Earth, and other planets, relative to the Sun in the solar system Describe the movement of the Moon relative to the Earth Describe the Sun, Earth and Moon as approximately spherical bodies Use the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky 	<ul style="list-style-type: none"> Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Identify the effects of air resistance, water resistance and friction, that act between moving surfaces Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect 	<ul style="list-style-type: none"> Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird Describe the life process of reproduction in some plants and animals 	<ul style="list-style-type: none"> Describe the changes as humans develop to old age 	<p>Evolution and Inheritance</p> <ul style="list-style-type: none"> Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents

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<ul style="list-style-type: none"> separated, including through filtering, sieving and evaporating 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 					<ul style="list-style-type: none"> Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution <p>Living Things and their Habitats</p> <ul style="list-style-type: none"> Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals Give reasons for classifying plants and animals based on specific characteristics
Challenges – Changes of Materials	Challenges Earth and Space	Challenges - Forces	Challenges – Living Things and their Habitats	Challenges – Animals including Humans	Challenges – Evolution and Inheritance
<ul style="list-style-type: none"> Describe methods for separating mixtures (filtration, distillation) Use their knowledge of materials to suggest ways to classify (solids, liquids, gases) Explore changes that are difficult to reverse e.g. burning, rusting and reactions such as vinegar/bicarbonate of soda 	<ul style="list-style-type: none"> Compare the time of day at different places on the earth Create shadow clocks Being to understand how older civilisations used the sun to create astronomical clicks e.g. Stonehenge Explore the work of some scientists e.g. Ptolemy, Alhazen, Copernicus 	<ul style="list-style-type: none"> Describe and explain how motion is affected by forces (including, gravitational force attractions, magnetic attraction and friction) Design very effective parachutes Work out how water can cause resistance to floating objects Explore how scientists, such as Galileo Galilei and Isaac Newton helped to develop the theory of gravitation 	<ul style="list-style-type: none"> Observe the local environment and draw conclusions about life-cycles e.g. plants in the vegetable garden or flower bed Compare the life-cycles of plants and animals in their local environment with the life-cycles of those around the world e.g. rainforests Explain why classification is important Readily group animals into reptiles, fish, amphibians, birds and mammals Sub-divide their original groupings and explain their divisions Group animals into vertebrates and invertebrates Find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification 	<ul style="list-style-type: none"> Create a timeline to indicate stages or growth in certain animals, such as frogs and butterflies Describe the changes experienced in puberty Draw a timeline to indicate stages in growth and development of humans 	<ul style="list-style-type: none"> Talk about the work of Charles Darwin, May Anning and Alfred Wallace Explain how some living things adapt to survive in extreme conditions Analyse the advantages and disadvantages of specific adaptations, such as being on two rather than four feet Being to understand what is meant by DNA
Challenges - Planning		Challenges - Obtaining and Presenting Evidence		Challenges - Considering Evidence and Evaluating	
<ul style="list-style-type: none"> Explore different ways to test an idea, choose the best way and give reasons Vary one factor whilst keeping the others the same in an experiment Use information to help make a prediction Explain, in simple terms, a scientific idea and what evidence supports it 		<ul style="list-style-type: none"> Decide which units of measurement they need to use Explain why a measurements needs to be repeated 		<ul style="list-style-type: none"> Find a pattern from their data and explain what it shows Link what they have found out to other science Suggest how to improve their work and say why they think this 	
Working Scientifically (Years 5 and 6)					
<ul style="list-style-type: none"> 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 results using scientific diagrams and labels 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 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 					

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Year 6				
Year 5 Prior Knowledge and Skills				
Light	Properties and Changing of Materials	Electricity	Animals including Humans	Science of Sport
<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, rock, brick, paper and cardboard for particular uses; 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. 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. 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 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 	<ul style="list-style-type: none"> Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit Recognise some common conductors and insulators, and associate metals with being good conductors. 	<ul style="list-style-type: none"> 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 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 importance for humans of exercise, eating the right amount of different types of food, and hygiene. 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 Describe the changes as humans develop to old age. Construct and interpret a variety of food chains, identifying producers, predators and prey 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. 	<p>Living Things and their Habitats</p> <ul style="list-style-type: none"> Recognise that living things can be grouped in a variety of ways Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Recognise that environments can change and that this can sometimes pose dangers to living things 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 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 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 <p>Forces</p> <ul style="list-style-type: none"> Compare how things move on different surfaces Notice that some forces need contact between two objects, but magnetic forces can act at a distance Observe how magnets attract or repel each other and attract some materials and not others Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials Describe magnets as having two poles Predict whether two magnets will attract or repel each other, depending on which poles are facing 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
Working Scientifically - Planning		Working Scientifically - Obtaining and Presenting Evidence		Working Scientifically - Considering Evidence and Evaluating
<ul style="list-style-type: none"> Plan and carry out a scientific enquiry to answer questions, including recognising and controlling variables where necessary Make a prediction with reasons Use test results to make predictions to set up comparative and fair tests Present a report of their findings through writing, display and presentation 		<ul style="list-style-type: none"> Take measurements using a range of scientific equipment with increasing accuracy and precision Take repeated readings when appropriate Record more complex data and results using scientific diagrams, labels, classification keys, tables, scatter graphs, bar and line graphs 		<ul style="list-style-type: none"> Report and present findings from enquiries through written explanations and conclusions Use a graph to answer scientific questions
Year 6 Science Knowledge and Skills				
Light	Properties and Changing of Materials	Electricity	Animals including Humans	Science of Sport
<ul style="list-style-type: none"> Recognise that light appears to travel in straight lines Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes Use the idea that light travels in straight lines to explain why shadows 	<ul style="list-style-type: none"> Compare and group together everyday materials on the basis of their properties, including their hardness, transparency, and conductivity (electrical and thermal) Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic 	<ul style="list-style-type: none"> Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches Use recognised symbols when representing a simple circuit in a diagram 	<ul style="list-style-type: none"> Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within animals, including humans 	<p>Living Things and their Habitats</p> <ul style="list-style-type: none"> Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals <p>Properties of Materials</p> <ul style="list-style-type: none"> Compare and group together everyday materials on the basis of their properties Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic <p>Forces</p> <ul style="list-style-type: none"> Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Identify the effects of air resistance, water resistance and friction, that act between moving surfaces

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have the same shape as the objects that cast them				<ul style="list-style-type: none"> Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect <p>Animals including Humans</p> <ul style="list-style-type: none"> Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents <p>Electricity</p> <ul style="list-style-type: none"> Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches Use recognised symbols when representing a simple circuit in a diagram
Challenges – Light	Challenges – Properties of Materials	Challenges - Electricity	Challenges – Animals including Humans	
<ul style="list-style-type: none"> Explain how different colours of light can be created Use and explain how simple optical instruments work Explore a range of phenomena, including rainbows, colours of soap bubbles, objects looking bent in water and coloured filters 	<ul style="list-style-type: none"> Work out which materials are most effective for keeping us warm or for keeping something cold Explore the work of chemists who created new materials e.g. Spencer Silver (glue on sticky notes) or Ruth Benerito (wrinkle free cotton) 	<ul style="list-style-type: none"> Make their own traffic light system or something similar Explain the danger of short circuits Explain what a fuse is Explain how to make changes in a circuit Explain the impact of changes in a circuit Explain the effect of changing the voltage of a battery 	<ul style="list-style-type: none"> Explore the work of medical pioneers, e.g. William Harvey and Galen and recognise how much we have learnt about our bodies Compare the organ systems of humans to other animals Make a diagram of the human body and explain how different parts work and depend on one another Name the major organs in the human body Locate the major human organs Make a diagram that outlines the main parts of a body 	
Challenges - Planning		Challenges - Obtaining and Presenting Evidence		Challenges - Considering Evidence and Evaluating
<ul style="list-style-type: none"> Choose the best way to answer a question Use information from different sources to answer a question and plan an investigation Make a prediction that links with other scientific knowledge Identify the key factors when planning a fair test Explain how a scientist has used their scientific understanding plus good ideas to have a breakthrough 		<ul style="list-style-type: none"> Plan in advance which equipment they will need and use it well Make precise measurements Collect information in different ways Record their measurements and observations systematically Explain qualitative and quantitative data 		<ul style="list-style-type: none"> Draw conclusions from their work Link their conclusions to other scientific knowledge Explain how they could improve their way of working
Working Scientifically (Years 5 and 6)				
<ul style="list-style-type: none"> 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 results using scientific diagrams and labels 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 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 				