



EYFS Science Long Term Plan



EYFS Aims

In the Early Year Foundation Stage, children begin to learn that as they grow up they are increasingly able to do more things for themselves independent, through planned and independently explored opportunities in their environment. This emerging knowledge and understanding can be used to explore crucial early scientific skills. The aims and content address a number of key scientific concepts. These are presented through a cross-curricular approach that aims to develop children's learning across a range of the key learning areas. The early learning goals at EYFS aim to guide children to make sense of their physical world and their community by exploring, observing and finding out about the environment.

The aims of our EYFS curriculum is to develop children's early scientific skills by providing rich experiences to promote the following:

Three and Four-Year-Olds

Communication and Language

Pupils should be given the opportunity to:

- Understand 'why' questions, like: "Why do you think the caterpillar got so fat?"

Personal, Social and Emotional Development

Pupils should be given the opportunity to:

- Make healthy choices about food, drink, activity and tooth brushing

Understanding the World

Pupils should be given the opportunity to:

- Use their senses in hands-on exploration of natural materials
- Explore collections of materials with similar and/or different properties
- Talk about what they see, using a wide vocabulary
- Begin to make sense of their own life-story and family's history
- Explore how things work.
- Plant seeds and care for growing plants
- understand the key features of the life cycle of a plant and an animal
- Begin to understand the need to respect and care for the natural environment and all living things
- Explore and talk about different forces they can feel
- Talk about the differences between materials and changes they notice

Reception

Communication and Language

Pupils should be given the opportunity to:

- Learn new vocabulary
- Ask questions to find out more and to check what has been said to them
- Articulate their ideas and thoughts in well-formed sentences
- Describe events in some detail
- Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen
- Use new vocabulary in different contexts

Personal, Social and Emotional Development

Pupils should be given the opportunity to:

- Know and talk about the different factors that support their overall health and wellbeing
 - regular physical activity
 - healthy eating
 - tooth brushing
 - sensible amounts of screen time
 - having a good sleep routine
 - being a safe pedestrian

Understanding the World

Pupils should be given the opportunity to:

- Explore the natural world around them
- Describe what they see, hear and feel while they are outside
- Recognise some environments that are different to the one in which they live
- Understand the effect of changing seasons on the natural world around them

ELG

ELG: Communication and Language - Listening, Attention and Understanding

Pupils should be given the opportunity to:

- Make connections about what they have heard and ask questions to clarify their understanding

ELG: Personal, Social and Emotional Development - Managing Self

Pupils should be given the opportunity to:

- Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choice.

ELG: Understanding the World - The Natural World

Pupils should be given the opportunity to:

- 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

Season		
This topic will be ongoing throughout the year and will be included throughout your other topics. <ul style="list-style-type: none">- Seasonal walks (welly walks)- Discuss appropriate clothing (the clothes on a doll/teddy)- Using photos, what is the weather like? Why is she wearing sunglasses?)		<ul style="list-style-type: none">- Matching pictures to clothes. Matching trees to the weather.- Leaf matching- Taking photos and talking about them.
Key Vocabulary		
Autumn Winter Spring Summer	Hot Cold Sun Wind	Ice Snow Rain Fog
Suggested Texts		
Froggy Day by Heather Pindar and Barbara Bakos (F) The Rhythm of the Rain by Grahame Baker-Smith (F) <i>Why do leaves fall from trees?</i> By Ruth Owen (NF) <i>First Facts: Seasons</i> by DK (NF)		<i>Maisy's Wonderful Weather</i> book by Lucy Cousins (F) Poems about Seasons by Brian Moses (F) <i>See Inside Weather and Climate</i> by Katie Daynes (NF) <i>Wild Weather</i> by Katherine Kenah (NF)

Humans <ul style="list-style-type: none"> Different parts of the human body. Make robot hands. Look at how they have changed and how we are different from each other. Drawing pictures of their face. Talk about different food and limits of those. Life cycles <ul style="list-style-type: none"> Baby - toddler - child - adult 			Materials <ul style="list-style-type: none"> Talk about why things happen and how things work. Natural and found objects. Floating and sinking. Freezing and melting. Magnets. Testing materials. 			Habitats <ul style="list-style-type: none"> Talk about where you live and what nature is. Talk about how we care for animals. Talk about things observed such as plants and animals. Notice features of objects in their environment. Light and dark - linked to habitats. 			
Key Vocabulary			Key Vocabulary			Key Vocabulary			
Baby Adult Child Boy Girl	Mouth Ears Body Toddler Grow	Arms Legs Food Head Eyes Nose	Glass Plastic Ice Water	Wood Floating Sinking Freezing	Metal Melting Magnets Shiny	Habitat Cold Warm	Care Food Liquid	Dark Environment Light	
Suggested Texts			Suggested Texts			Suggested Texts			
Handa's Surprise (F) Once There were Giants by Martin Waddell and Penny Dale (F) Tadpole's Promise by Jeanne Willis and Tony Ross (F) Head, Shoulders, Knees and Toes			The Three Little Pigs (F) Everyday Materials (Ways into Science) by Peter Riley (NF) Incy Wincy Spider			Little Red Riding Hood (F) All Kinds of Nests! By Eun-Gyu Choi (NF)			
Autumn 2			Spring 2			Summer 2			
Forces <ul style="list-style-type: none"> Similarities and differences in relation to places, objects, materials and living things. Car ramps - different ramps or cars. Ball rolling. Push and pull toys. Electricity <ul style="list-style-type: none"> Understand that some object need electricity to work. Understand a switch will turn something on and off. Build circuits. *To have a range of battery operate items on the investigation table.			Plants <ul style="list-style-type: none"> Observations of plants, trees and flowers. Planting and growing. Planting cress on the investigation table. Draw plants and trees and talk about them. Seasonal walks. Animals <ul style="list-style-type: none"> Understanding of growth and change (including lifecycles). Talk about observations. Farm animals, zoo animals and sea animals - similarities and differences. How we care about animals (visits from Hearing Dogs) 			Habitats <ul style="list-style-type: none"> Continuation from Summer 1 Mini beasts <ul style="list-style-type: none"> Make a bug den. Watching the life cycle of a butterfly. Small world play. Bug hunt in different habitats. Spider web hunt. Bug boxes and magnifying glasses. Be a minibeast detective. 			
Key Vocabulary			Key Vocabulary			Key Vocabulary			
Force Push	Battery Plugs	Pull Electricity	Tree Trunk Flower	Summer Leaves Winter	Spring Change Care	Autumn Growth	Bugs Den Habitat	Dark Dry Damp	Food Drink Light
Suggested Texts			Suggested Texts			Suggested Texts			
Oscar and the Bird: A book about Electricity by Geoff Waring (NF) Electricity for Kids: Facts, Photos and Fun by Baby Professor (NF)			Jack and the Beanstalk (F) The Enormous Potatoe by Aubrey Davis (F) RSPB: My first Book of Garden Birds (NF)			Snail Train by Ruth Brown (F) The Big Book of Bugs by Yuval Zommer (NF)			



Year One and Two Science Long Term Plan



Cycle A

Autumn	Spring	Summer
<u>Autumn 1</u> Year 1 - Animals, including humans	<u>Spring 1</u> Year 1 - Everyday Materials	<u>Summer 1</u> Working Scientifically
<u>Autumn 2</u>	<u>Spring 2</u> Year 2 - Plants	<u>Summer 2</u> Year 2 - Animals, including humans

Cycle B

Autumn	Spring	Summer
<u>Autumn 1</u> Year 1 - Seasonal Changes	<u>Spring 1</u> Working Scientifically	<u>Summer 1</u> Year 2 - Living things and their habitats
<u>Autumn 2</u> Year 2 - Use of everyday materials	<u>Spring 2</u> Year 1 - Plants	<u>Summer 2</u> Working Scientifically

Working Scientifically Year 1 and 2 (To be complete during every topic)

- 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.

Topic	Websites
Plants	https://www.bbc.co.uk/bitesize/topics/zpxnyrd https://www.educationquizzes.com/ks1/science/plants-flowering-plants/ https://www.stem.org.uk/resources/community/collection/12534/year-1-plants
Seasonal Change	https://www.stem.org.uk/resources/community/collection/13195/year-1-seasonal-changes https://www.bbc.co.uk/teach/class-clips-video/science-ks1-ks2-wonders-of-nature-the-changing-seasons/zh4rkmn https://www.ase.org.uk/resources/y1-seasonal-changes-ryan
Animals, including humans	https://www.stem.org.uk/resources/community/collection/12726/year-1-animals-including-humans https://www.bbc.co.uk/bitesize/topics/z6882hv
Everyday materials	https://www.stem.org.uk/resources/community/collection/12725/year-1-everyday-materials

Living things and their habitats	https://www.stem.org.uk/resources/community/collection/12723/year-2-living-things-and-their-habitats
Space	https://www.bbc.co.uk/bitesize/topics/zkvv4wx https://www.stem.org.uk/resources/elibrary/resource/32596/primary-space-activities https://www.ogdentrust.com/



Year One and Two Science Long Term Plan Cycle A



Autumn					Spring			Summer		
Year 1 – Animals, including humans					Year 1 – Everyday Materials			Working scientifically		
<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). ● Identify, name, draw and label the basic parts of the human body and say which part is associated with each sense. <p><i>**Evidence scientific enquiry within this topic</i></p>					<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. <p><i>**Evidence scientific enquiry within this topic</i></p>			<p><i>With the aim to cover all working scientific objectives in the progression of skills document but with recorded evidence of:</i></p> <ul style="list-style-type: none"> - <i>Identifying and classifying</i> - <i>Using their observations and ideas to suggest answers to questions</i> - <i>Gathering and recording data to support answering questions (include: Y1 tally chart, Y2 tally chart and pictograph)</i> 		
Key Vocabulary					Key Vocabulary			Key Vocabulary		
Omnivore	Vertebrae	Torso	Smell	Gills	Material	Plastic	hard/soft	Answer	Identify	Record
Herbivore	Invertebrate	Sight	Taste	Scales	Object	Metal	transparent/opaque	Question	Classify	Compare
Carnivore	Reptile	Backbone	Touch	Fins	Property	Waster	solid/liquid/gas	Observe	Sort	Describe
Fish	Limbs	Mammal	Bird	Hearing	Wood	Rock	shiny/dull	Equipment	Group	Contrast
Amphibian					Glass	Physical properties	smooth/rough			
Suggested Texts					Suggested Texts			Suggested Texts		
Evie in the Jungle: World Book Day 2020 by Matt Haig (F) Professor Astro Cat's Human Body Odyssey by Dominic Walliman and Ben Newman (NF) The Big Book of the Blue by Yuval Zommer (NF)					Who sank the boat by Pamela Allen (F) Three Little Pigs by Helen Ward (F) Materials (Amazing Science) by Sally Hewitt (NF) Everyday Materials (Ways into Science) by Peter Riley (NF)					
Autumn					Spring			Summer		
Working scientifically					Year 2 – Plants			Year 2 – Animals, including humans		
<p><i>With the aim to cover all working scientific objectives in the progression of skills document but with recorded evidence of:</i></p> <ul style="list-style-type: none"> - <i>Asking simple questions and recognising they can be answered in different ways.</i> - <i>Observing closely using simple equipment.</i> - <i>Performing simple tests.</i> 					<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. <p><i>Evidence scientific enquiry within this topic</i></p>			<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. <p><i>Evidence scientific enquiry within this topic</i></p>		
Key Vocabulary					Key Vocabulary			Key Vocabulary		
Answer	Identify	Record	Year 1 Vocabulary and:		Conditions	Same as Year 1 and:		Tadpole	Survival	
Question	Classify	Compare	Seeds	Bulbs	Nutrients	Kitten	Offspring	Puppy	Adult	Water
Observe	Sort	Describe	Growth	Germinate	Hygiene	Puppy	Air	Hygiene	Air	Exercise
Equipment	Group	Contrast	Mature	Dispersal	Energy	Energy	Species	Equipment	Species	Germs
Suggested Texts					Suggested Texts			Suggested Texts		

Autumn	Spring	Summer
	<p>The Little Gardener by Emily Hughes (F)</p> <p>A Seed is Sleepy by Dianna Aston & Sylvia Long (NF)</p>	<p>https://learnenglishkids.britishcouncil.org/poems/being-healthy - Poem</p> <p>One Year with Kipper by Mick Inkpen</p> <p>The Good Green Lunch box: Tasty healthy lunches and picnics by Jocelyn Miller (NF).</p>



Year One and Two Science Long Term Plan Cycle B



Autumn			Spring			Summer			
Year 1 - Seasonal Changes <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. 			Working scientifically <i>With the aim to cover all working scientific objectives in the progression of skills document but with recorded evidence of:</i> <ul style="list-style-type: none"> Asking simple questions and recognising they can be answered in different ways. Observing closely using simple equipment. Performing simple tests. 			Year 2 - Living things and their habitats <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 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. 			
Key Vocabulary			Key Vocabulary			Key Vocabulary			
Day length	Spring	Temperature	Answer	Identify	Record	Living	Growth	Habitat	Movement
Seasons	Autumn	Dark	Question	Classify	Compare	Dead	Sensitivity	Food web	Reproduction
Summer	Light	Classification	Observe	Sort	Describe	Never alive	Variations	Microhabitat	Characteristics
Winter	Wind vane	Flood	Equipment	Group	Contrast	Survival	Food chain	Organism	Respiration
Rain gauge	Clouds (Cirrus, Cumulus, Stratus)	Forecast				Variety	Nutrition	Microhabitat	
	Axis								
Suggested Texts			Suggested Texts			Suggested Texts			
Tree: Seasons Come, Seasons Go by Patricia Hegarty and Britta Teckentrup (F) The Wind Blew by Pat Hutchins (F) How the Weather Works by Christine Dorion (NF)						Superworm by Julia Donaldson & Axel Scheffler (F) The Little Gardener by Emily Hughes (F) Habitats and Biomes by Nancy Dickmann (NF)			
Autumn			Spring			Summer			
Year 2 - Use of everyday materials <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. 			Year 1 - Plants <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 <i>With the aim to cover all working scientific objectives in the progression of skills document but with recorded evidence of:</i> <ul style="list-style-type: none"> Identifying and classifying Using their observations and ideas to suggest answers to questions Gathering and recording data to support answering questions (include: Y1 tally chart, Y2 tally chart and pictograph) 			
Key Vocabulary			Key Vocabulary			Key Vocabulary			
Recap Year 1 and:	Twist	Wild	Flowering	Leaves	Answer	Identify	Record		
Squash	Stretch	Cultivated	Evergreen	Trunk	Question	Classify	Compare		
Bend	Waterproof/not waterproof	Deciduous	Structure	Flowers	Observe	Sort	Describe		
		Roots	Twig	Branch	Equipment	Group	Contrst		
Suggested Texts			Suggested Texts			Suggested Texts			

Autumn	Spring	Summer
The Great Paper Caper by Oliver Jefferies (F) Traction Man by Mini Grey (F) Materials by Mignonne Gunarekara (NF)	Jim and the Beanstalk by Raymond Briggs (F) RHS Ready, Steady, Grow! Royal Horticultural Society (NF)	



Year Three and Four Science Long Term Plan



Cycle A

Autumn	Spring	Summer
Year 3 - Forces and magnets	Year 4 - Sound	Year 4 - Living things and their habitats
Year 3 - Light	Working scientifically	Year 3 - Plants

Cycle B

Autumn	Spring	Summer
Year 4 - States of matter	Working scientifically	Year 3 - Rocks
Year 3 - Animals, including humans	Year 4 - Animals, including humans	Year 4 - Electricity

Working Scientifically Year 3 and 4 (to be completed throughout all topics within the year)

- 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.

Topic	Websites
States of Matter	https://www.bbc.co.uk/bitesize/topics/zkqg87h https://www.stem.org.uk/resources/community/collection/12345/year-4-states-matter https://www.educationquizzes.com/ks2/science/solids-liquids-and-gases-01/
Animals, including humans	https://www.stem.org.uk/resources/community/collection/12365/year-4-animals-including-humans (Year 4) https://www.bbc.co.uk/bitesize/topics/zn22pv4 https://www.bbc.co.uk/bitesize/topics/z6wwxnb https://www.bbc.co.uk/bitesize/topics/zcyycdm
Rocks	https://www.bbc.co.uk/bitesize/topics/z9bbkqt https://www.educationquizzes.com/ks2/science/rocks/ https://www.stem.org.uk/resources/community/collection/12367/year-3-rocks
Electricity	https://www.ogdentrust.com/ https://www.bbc.co.uk/bitesize/topics/zj44jxs https://www.bbc.co.uk/bitesize/topics/z2882hv https://www.stem.org.uk/resources/community/collection/12388/year-4-electricity
Space	https://www.ogdentrust.com/ https://www.bbc.co.uk/bitesize/topics/zkbbkqt https://www.stem.org.uk/
Light	https://www.ogdentrust.com/ https://www.bbc.co.uk/bitesize/topics/zbssqk7 https://www.bbc.co.uk/bitesize/clips/zq6r82p

	https://www.stem.org.uk/resources/community/collection/12719/year-3-light
Sound	https://www.ogdentrust.com/ https://www.bbc.co.uk/bitesize/topics/zqffr82 https://www.stem.org.uk/resources/community/collection/12746/year-4-sound
Living things and their habitats	https://www.bbc.co.uk/bitesize/topics/z6wvxnb https://www.stem.org.uk/resources/community/resource/5630/animals-plants-and-their-habitats-ks2
Forces and magnets	https://www.bbc.co.uk/bitesize/topics/zyttyrd https://www.bbc.co.uk/bitesize/clips/zk9rkqt
Plants	https://www.bbc.co.uk/bitesize/topics/zy66fq8 https://www.stem.org.uk/resources/community/collection/12535/year-3-plants



Year Three and Four Science Long Term Plan Cycle A



Autumn			Spring			Summer		
Year 3 - Forces and magnets			Year 4 - Sound			Year 4 - Living things and their habitats		
<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 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"> 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. 		
Key Vocabulary			Key Vocabulary			Key Vocabulary		
Magnetic Force Magnets Repel Attract	Compare Poles North Materials South	Push Pull Resistance	Vibrations Sound wave Travel Ear Distance Sound source Pitch	Volume Loudness Amplitude Frequency Wave Amplitude Decibel	Frequency Medium Soundproof Vacuum	Year 2 Vocabulary and: Classification Mini beasts Vertebrate	Microorganisms Characteristics Group Keys Plants	Environment Changes Endangered species Dangers
Suggested Texts			Suggested Texts			Suggested Texts		
The Iron Man (F) Mrs Armitage: Queen of the Road by Quentin Blake (F) <i>Moving up with Science - Forces and Magnets (NF)</i>			Horrid Henry Rocks by Francesca Simon (F) Moonbird by Joyce Dunbar (F) <i>Spectacular Light and Sound (Extreme Science) (NF)</i>			The Morning I met a Whale by Michael Morpurgo (F) Journey to the River Sea by Eva Ibbotson (F) <i>The Vanishing Rainforest by Richard Platt (NF)</i>		
Autumn			Spring			Summer		
Year 3 - Light			Working scientifically			Year 3 - Plants		
<ul style="list-style-type: none"> recognize that they need light in order to see things and that dark is the absence of light notice that light is reflected from surfaces recognize that light from the sun can be dangerous and that there are ways to protect their eyes recognize that shadows are formed when the light from a light source is blocked by an opaque object <p>Find patterns in the way that the size of shadows change.</p>			<p><i>With the aim to cover all working scientific objectives in the progression of skills document but with recorded evidence.</i></p> <p><i>To record data using:</i></p> <ul style="list-style-type: none"> - Tally charts - Tables - Pictographs - Bar graphs 			<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 explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal <p>Year 4 - Animals, including humans</p> <ul style="list-style-type: none"> Construct and interpret a variety of food chains, identifying producers, predators and prey. 		
Key Vocabulary			Key Vocabulary			Key Vocabulary		
Light Dark Reflected/reflection Surface	Sun Shadows Opaque Transparent	Translucent Patterns Emit Pupil Retina	Year 1/2 Vocabulary and: Observation Classify Identify Pattern seeking	Measure Investigate Compare Fair test Conclusions Predictions	Evidence Improve Construct Interpret	Key Stage 1 Vocabulary and: Transportation Pollination Seed dispersal Seed formation Stigma	Life cycle Stem Roots Function Nutrients Anther	
Suggested Texts			Suggested Texts			Suggested Texts		

Autumn	Spring	Summer
The Firework-Makers Daughter by Philip Pullman (F) The Dark by Lemmonny Snicket (F) The Owl Who was Afraid of the Dark by Jill Tomlinson (F) Spectacular Light and Sound (Extreme Science) (NF)		The Story of Frog Belly (F) I Love This Tree: Discover the life, beauty and importance of trees by Anna Claybourne (NF)



Year Three and Four Science Long Term Plan Cycle B



Autumn			Spring			Summer			
Year 4 - States of matter <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. 			Working scientifically <i>With the aim to cover all working scientific objectives in the progression of skills document but with recorded evidence.</i> <i>To record data using:</i> <ul style="list-style-type: none"> - Tally charts - Tables - Pictographs - Bar graphs 			Year 3 - Rocks <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. 			
Key Vocabulary			Key Vocabulary			Key Vocabulary			
Recap appropriate KS1 Vocabulary and	Heat Cool Melt Freeze Particles Celsius	Solid Liquid Gas Temperature Properties	Research Comparative Fair test Systematic Thermometer Predictions	Gather Record Classify Record Differences Similarities	Evidence Improve Construct Interpret Conclusions	Appropriate Key Stage 1 vocabulary and:	Crumbly Crystals Sedimentary Fossils Lava Impermeable	Soils Organic Matter Igneous Metamorphic Sediment Density	
Suggested Texts			Suggested Texts			Suggested Texts			
What's the Matter in Mr. Whiskers' Room? By Michaels Elsohn Ross (F) <i>States of Matter by Georgia Amson-Bradshaw (NF)</i> <i>The Rhythm of the Rain by Grahame Baker-Smith (Water Cycle) (NF)</i>						Stone Girl Bone Girl by Laurence Anholt and Sheila Moxley <i>The Pebble in my Pocket: A History of Our Earth (NF)</i> <i>A Rock is Lively by Dianna Hutts Aston and Sylvia Long (NF)</i>			
Autumn			Spring			Summer			
Year 3 - Animals, including humans <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. 			Year 4 - Animals, including humans <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 			Year 4 - Electricity <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 recognize that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit Recognize some common conductors and insulators, and associate metals with being good conductors. 			
Key Vocabulary			Key Vocabulary			Key Vocabulary			
Key Stage 1 Vocabulary and:	c Protection Esophagus Teeth	Support Stomach Mouth Intestine Hydro skeleton Dairy	Year 3 vocabulary and:	Producer Predator Prey Consumer Oesophagus	Stomach Intestine (Sm + LG) Rectum Scavenger Consumer	Electricity Circuits Series Voltage Cells Wires	Bulbs Switches Buzzers Lamp Conductor Mains	Insulator Attract Repel Forces Materials Battery	Magnetic Non-magnetic Poles North South Generator
Suggested Texts			Suggested Texts			Suggested Texts			
Funny Bones (F) Wolver by Emily Gravett (F) <i>The Variety of Life by Nicola Davies & Lorna Scobie (NF)</i>			The Little Mole who knew it was none of his business by Werner Holzwarth (F) Crocodiles Don't Brush Their Teeth by Colin Fancy (F) <i>A Journey Through the Digestive System by Emily Sohn (NF)</i>			<i>Oscar and the Bird: A Book about Electricity (Start with Science Books by Geoff Waring (NF)</i> <i>The Shocking Story of Electricity by Anna Claybourne (NF)</i> Electrical Wizard: How Nikola Tesla lit up the world by Elizabeth Rusch			



Year Five and Six Science Long Term Plan



Cycle A

Autumn	Spring	Summer
Year 5 - Properties and changes of materials	Year 6 - Electricity	Year 5 - Living Things and their habitats
Year 5- Forces	Working scientifically	Year 6 - Animals including humans

Cycle B

Autumn	Spring	Summer
Working scientifically	Year 6 - Living Things and their habitats	Year 6 - Evolution and inheritance
Year 5 - Earth and Space	Year 6 - Light	Year 5 - Animals including humans

Topic	Websites
Properties and changes of materials	https://www.bbc.co.uk/bitesize/topics/zcvv4wx https://www.stem.org.uk/resources/elibrary/resource/35390/properties-and-changes-materials https://www.stem.org.uk/resources/community/collection/12742/year-5-properties-materials
Animals including humans	https://www.stem.org.uk/resources/community/collection/13293/year-5-animals-including-humans https://www.bbc.co.uk/bitesize/topics/zn22pv4 https://www.bbc.co.uk/bitesize/topics/zcyycdm
Living Things and their habitats	https://www.bbc.co.uk/bitesize/topics/z6wxxnb https://www.stem.org.uk/resources/community/resource/5630/animals-plants-and-their-habitats-ks2
Earth and Space	https://www.ogdentrust.com/ https://www.bbc.co.uk/bitesize/topics/zkbbkqt https://www.stem.org.uk/resources/community/collection/12347/year-5-earth-and-space
Evolution and inheritance	https://www.bbc.co.uk/bitesize/topics/zvhhvcw https://www.stem.org.uk/resources/community/collection/12648/year-6-evolution-and-inheritance http://www.coreknowledge.org.uk/resources/Science%20Resource%20Pack-%20Year%206-%20Evolution.pdf
Electricity	https://www.ogdentrust.com/ https://www.bbc.co.uk/bitesize/topics/zj44jxs https://www.stem.org.uk/resources/community/collection/12390/year-6-electricity
Forces	https://www.bbc.co.uk/bitesize/topics/znmmn39 https://www.bbc.co.uk/bitesize/clips/zch4wxs https://www.stem.org.uk/resources/community/collection/12696/year-5-forces
Light	https://www.ogdentrust.com/ https://www.stem.org.uk/resources/community/collection/12741/year-6-light https://www.bbc.co.uk/bitesize/topics/zbssqk7

Working Scientifically Year 3 and 4 (To be complete during every topic)

- 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 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.



Year Five and Six Science Long Term Plan Cycle A



Autumn				Spring			Summer		
Year 5 - Properties and changes of materials				Year 6 - Electricity			Year 5 - Living Things and their habitats		
<ul style="list-style-type: none"> compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic demonstrate that dissolving, mixing and changes of state are reversible changes 				<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"> describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird <p>Describe the life process of reproduction in some plants and animals.</p>		
Key Vocabulary				Key Vocabulary			Key Vocabulary		
Recap appropriate LKS2 Vocabulary and: Transparency Conductivity Thermal Filtering	Reversible & irreversible changes New Materials Chemical changes Solution	Evaporate Boiling Mixing Separation Soluble	Sieve Magnetic Solubility Dissolving Saturated	Year 4 vocabulary and: Neutrons Protons Electrons Resistance	Appliances Mains Wires Bulbs Current	Battery Buzzer Switch Conductor Insulator	Appropriate Key Stage 1 vocabulary and: Life cycles	Fur Size Feathers Leaves Flowers Bird	Bulbs Seeds Amphibian Mammal Insect Reproduction
Suggested Texts				Suggested Texts			Suggested Texts		
Kensuke's Kingdom by Michael Morpurgo (F) Itch by Simon Mayo (F) Essential Physical Science - Solids, Liquids and Gases (NF)							The Boy Who Harnessed the wind by William Kamkwamba (NF) The Boy Who Invented TV by Kathleen Krull (NF)		
Autumn				Spring			Summer		
Year 5 - Forces				Working scientifically			Year 6 - Animals including humans		
<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 Recognize that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. 				With the aim to cover all working scientific objectives in the progression of skills document but with recorded evidence. To record data using : <ul style="list-style-type: none"> - Tally charts - Tables - Line graphs - Pie charts (Year 6) 			<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 recognize 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. 		
Key Vocabulary				Key Vocabulary			Key Vocabulary		
Year 3 vocabulary and: Gravity Air resistance Water resistance Load Fulcrum	Friction Levers Pulley Gears Buoyancy Streamlined Mechanism	Newton Opposing Streamline Effort	Plan Variables Measurements Accuracy	Precision Scientific diagrams Classification Graphs	Data Predictions Conclusion Relationships	Support Identify Patterns Quantitative measurements	Appropriate Lower Key Stage 2 Vocabulary and: Heart Valves Vein Blood	Drugs Artery Life style Blood vessels Capillaries Involuntary muscle	Plasma Drug/Alcohol Nutrients Food groups

Suggested Texts	Suggested Texts	Suggested Texts
Charlotte's Web - Lifecycle (F) Life Cycles - Everything from start to finish DK (NF)		Pig Heart Boy by Malorie Blackman (F) Professor Astro Cat's Human Body Odyssey by Dominic Walliman & Ben Newman (NF)



Year Five and Six Science Long Term Plan Cycle B



Autumn				Spring			Summer		
Working scientifically With the aim to cover all working scientific objectives in the progression of skills document but with recorded evidence. To record data using : <ul style="list-style-type: none"> - Tally charts - Tables - Line graphs - Scatter graphs 				Year 6 – Living Things and their habitats <ul style="list-style-type: none"> • describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals • Give reasons for classifying plants and animals based on specific characteristics. 			Year 6 – Evolution and inheritance <ul style="list-style-type: none"> • recognize that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • recognize 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. 		
Key Vocabulary				Key Vocabulary			Key Vocabulary		
Plan Variables Measurements Accuracy	Precision Scientific diagrams Classification Graphs	Data Predictions Conclusion Relationships	Support Identify Patterns Quantitative measurements	Appropriate prior vocabulary and: Deciduous Non deciduous	Skin/damp Scales Eggs Asexual Fertilise	Metamorphosis Reproduce Gestation Life Cycle	Fossils Adaptation Evolution Characteristics Ancestor	Reproduction Genetics Variation Biome	Inherited Environmental Mutation Extinct
Suggested Texts				Suggested Texts			Suggested Texts		
				Beetle Boy By M. G Leonard - Classification (F) Insect Soup by Barry Louis Polisar Animal Classification (Life Science Stories) (NF)			One Smart Fish by Christopher Wormell (F) The Milliebird by Jules Pottle (F) Our Family Tree by Lisa Westburg Peters (NF) What is Evolution by Louise Spilsbury (NF)		
Autumn				Spring			Summer		
Year 5 – Earth and Space <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. 				Year 6 – Light <ul style="list-style-type: none"> • recognise that light appears to travel in straight lines • use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. 			Year 5 – Animals including humans <ul style="list-style-type: none"> • Describe the changes as humans develop to old age. 		
Key Vocabulary				Key Vocabulary			Key Vocabulary		
Recap some of the appropriate Key Stage 1 Vocabulary and: Solar system Moon	Sun Sphere/spherical Rotation Day/night Planets Earth Orbit	Stationary Axis Mercury, Venus, Jupiter, Saturn, Uranus, Neptune. Geocentric and heliocentric.		LKS2 Vocabulary and: Refraction Periscope Reflected rays Incident rays Angle of incident Refraction	Visible spectrum Prism Optic nerve Ciliary muscle Cornea Iris		Key Stage 1 Vocabulary and: OAP Life cycle Toddler	Baby Teenager Adolescent Adult Infant	
Suggested Texts				Suggested Texts			Suggested Texts		
George's Secret Key to the Universe by Lucy Hawking & Stephen Hawking (F) Dr Maggie's Grand Tour of the Solar System by Dr Maggie Aderin-Pocock (NF) George's Secret Key to the Universe				The King Who Banned the Dark by Emily Haworth-Booth (F)			The Tin Snail by Cameron McAllister (F) Leonardo's Dream by Hans de Beer Moving up with Science - Forces and Magnets (NF)		