



Moorgate Primary School



Science INTENT

Overview 2020/2021

Subject Lead: Alex Lees

Date Completed: July 2020



# Subject INTENT

## Science Overview 2020/21 – Subject Lead: Alex Lees

Whole School Overview					
	Research Project 1	Research Project 2	Research Project 3	Research Project 4	Research Project 5
<b>Mini Moorgate</b>	Animal Habitats	Materials	Plants	Zoo Animals	Farm Animals
<b>Nursery</b>	Looking after our bodies	Freezing and melting	Plants and Growth	Mini-beasts/ Lifecycles	Animal Habitats
<b>Reception</b>	Body parts	Animal habitats	Looking after our bodies and teeth	Floating and sinking Plants and Lifecycles	Freezing and Melting
<b>Year 1</b>	Seasonal changes	Seasonal changes	Animals, including Humans Seasonal changes	Everyday materials Seasonal changes	Plants Seasonal changes
<b>Year 2</b>	Animals including humans	Living things and their habitats	Materials	Planting and growing	
<b>Year 3</b>	Animals including humans	Rocks	Forces and Magnets	Light	Plants
<b>Year 4</b>	Electricity	All Living Things	Animals, Including Humans	Sound	States of Matter
<b>Year 5</b>	Earth and Space	Forces	Properties and changes of everyday materials	Living things and their habitats	Animals including humans:
<b>Year 6</b>	Electricity Animals including Humans	Animals including Humans Living things and their habitats	Evolution	Light	Living things and their habitats Evolution



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Mini Moorgate					
	Research Project 1	Research Project 2	Research Project 3	Research Project 4	Research Project 5
	Under the EYFS Framework, we would primarily follow the children’s interests. Therefore, the research project titles below are subject to change and only to be used as a guide.				
National Curriculum Area	<u>Materials</u>	<u>Animal Habitats</u>	<u>Plants</u>	<u>Zoo Animals</u>	<u>Farm Animals</u>
Enquiry Question	Can you explore the messy play? Can you explore the different textures? What does it feel like?	Can you go on a bear hunt? What did you find?	What do we need to plant our seeds?  What happens to the paper flower when added to the water?	What animals live at the zoo?	What animals live on the farm?  What did you see at the farm?
<b>Throughout the year, the children will be assessed against these EYFS statements</b>	<p><b><u>Understanding the world - 22-36 Months</u></b></p> <ul style="list-style-type: none"> <li>• Has a sense of own immediate family and relations.</li> <li>• In pretend play, imitates everyday actions and events from own family and cultural background, e.g. making and drinking tea.</li> <li>• Learns that they have similarities and differences that connect them to, and distinguish them from, others.</li> <li>• Enjoys playing with small-world models such as a farm, a garage, or a train track.</li> <li>• Notices detailed features of objects in their environment.</li> </ul> <p><b><u>Expressive Arts and Design - 22-36 Months</u></b></p> <ul style="list-style-type: none"> <li>• Experiments with blocks, colours and marks.</li> </ul> <p><b><u>Personal, Social and Emotional Development - 22-36 Months</u></b></p> <ul style="list-style-type: none"> <li>• Interested in others’ play and starting to join in.</li> <li>• Seeks out others to share experiences.</li> <li>• Expresses own interests and preferences</li> </ul> <p><b><u>Communication and Language - 22-36 months</u></b></p> <ul style="list-style-type: none"> <li>• Single channelled attention. Can shift to a different task if attention fully obtained – using child’s name helps focus.</li> <li>• Use a variety of questions</li> <li>• Learn new words rapidly and is able to use them in communicating</li> <li>• Identifies action words by pointing to the right picture, e.g., “Who’s jumping?”</li> <li>• Understands more complex sentences, e.g. ‘Put your toys away and then we’ll read a book.’</li> <li>• Understands ‘who’, ‘what’, ‘where’ in simple questions (e.g. Who’s that/can? What’s that? Where is.?).</li> </ul>				



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	<ul style="list-style-type: none"><li>• <i>Developing understanding of simple concepts.</i></li><li>• <i>Uses language as a powerful means of widening contacts, sharing feelings, experiences and thoughts.</i></li><li>• <i>Holds a conversation, jumping from topic to topic.</i></li><li>• <i>Learns new words very rapidly and is able to use them in communicating.</i></li><li>• <i>Uses gestures, sometimes with limited talk, e.g. reaches toward toy, saying 'I have it'.</i></li><li>• <i>Uses a variety of questions</i></li><li>• <i>Uses simple sentences</i></li><li>• <i>Beginning to use word endings</i></li></ul>
Key Vocabulary	wet, dry, soft, hard, bendy, stretchy, hot, cold, names of animals, seed, plant, leaf, flower, float, sink



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Nursery					
	Research Project 1	Research Project 2	Research Project 3	Research Project 4	Research Project 5
	Under the EYFS Framework, we would primarily follow the children’s interests. Therefore, the research project titles below are subject to change and only to be used as a guide.				
National Curriculum Area	<u>Looking after our bodies</u>	<u>Freezing and melting</u>	<u>Plants and Growth</u>	<u>Mini-beasts/ Lifecycles</u>	<u>Animal Habitats</u>
Enquiry Question	Who can help us look after our bodies?	How do we make ice?	What do you notice when the plants are growing?	How are butterflies created?	What animals might live on a farm/ in a zoo?
<b>Throughout the year, the children will be assessed against these EYFS statements</b>	<p><b><u>Understanding the World: 30-50 months</u></b></p> <ul style="list-style-type: none"> <li>• To comment and ask questions about aspects of their familiar world, such as the place where they live or the natural world.</li> <li>• To talk about some of the things they have observed, such as plants, animals, natural and found objects.</li> <li>• To talk about why things happen and how things work.</li> <li>• To develop an understanding of growth, decay and changes over time.</li> <li>• To show care and concern for living things and the environment.</li> </ul> <p><b><u>Physical Development: 30-50months</u></b></p> <ul style="list-style-type: none"> <li>• To observe the effects of physical activity on their bodies</li> </ul> <p><b><u>Expressive Arts and Design: 30-50 months</u></b></p> <ul style="list-style-type: none"> <li>• To begin to be interested in and describe the texture of things.</li> </ul>				
Key Vocabulary	doctor, nurse, dentist, bones, body, healthy, unwell, wet, dry, soft, hard, bendy, stretchy, hot, cold, ice, freeze, melt, mini-beast, caterpillar, chrysalis, butterfly, names of animals, habitat, seed, plant, leaf, flower, soil				



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Reception					
	Research Project 1	Research Project 2	Research Project 3	Research Project 4	Research Project 5
	Under the EYFS Framework, we would primarily follow the children’s interests. Therefore, the research project titles below are subject to change and only to be used as a guide.				
National Curriculum Area	<u>Body parts</u>	<u>Animal habitats</u>	<u>Looking after our bodies and teeth</u>	<u>Floating and sinking Plants and Lifecycles</u>	<u>Freezing and Melting</u>
Enquiry Question	Why do we have bones?	Where do animals live?	How do we keep our teeth clean?	What food is healthy?	Why does ice melt?
<b>Throughout the year, the children will be assessed against these EYFS statements.</b>	<p><b><u>Understanding the World –40-60 Months</u></b></p> <ul style="list-style-type: none"> <li>To look closely at similarities, differences, patterns and change.</li> </ul> <p><b><u>Physical Development – 40-60 Months</u></b></p> <ul style="list-style-type: none"> <li>To eat a healthy range of foodstuffs and understand a need for variety in food.</li> <li>To show some understanding that good practices with regard to exercise, eating, sleeping and hygiene can contribute to good health.</li> </ul> <p><b><u>Understanding the World – Early Learning Goal</u></b></p> <ul style="list-style-type: none"> <li>To know about similarities and differences in relation to places, objects, materials and living things.</li> <li>They talk about the features of their own immediate environment and how environments might vary from one another.</li> </ul> <p><b><u>Physical Development – Early Learning Goal</u></b></p> <p>To know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe.</p>				
Skills Taught	<ul style="list-style-type: none"> <li>Ask questions Demonstrate curiosity about the world around them.</li> <li>Make predictions with support or prompting, talk about what they think might happen based on their own experiences.</li> <li>Decide how to carry out an enquiry Respond to prompts to say what happened to objects, living things or events.</li> <li>Take measurements Use senses and simple equipment to explore the world around them, e.g. binoculars and magnifying glasses.</li> <li>Record data: talk to an adult about what has been found/found out.</li> <li>Present data talk to an adult about what has been found/found out.</li> <li>Answer questions using data.</li> </ul>				
Key Vocabulary	<p>General: Natural, wild, wildlife, native. Places</p> <p>Habitats - Woodland, desert, ocean, jungle, Arctic</p> <p>Microhabitats: - Log, stone, tree, dead leaves, soil.</p> <p>Seaside. Objects, British Autumn fruits and vegetables (e.g. apples, pears, beetroot, carrots, potatoes, butternut squash, sweetcorn, cauliflower).</p> <p>Bread: - Mix, knead, prove, rise. Materials</p> <p>Object, material, properties, suitable, pipette, recycling.</p>				



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	Properties - Waterproof, strong/weak, dense/less dense, hard/soft.				
Skills to be revisited		<ul style="list-style-type: none"><li>• To know about similarities and differences in relation to places, objects, materials and living things.</li></ul>	<ul style="list-style-type: none"><li>• To show some understanding that good practices with regard to exercise, eating, sleeping and hygiene can contribute to good health.</li></ul>	<ul style="list-style-type: none"><li>• To eat a healthy range of foodstuffs and understand a need for variety in food.</li><li>• To know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe.</li></ul>	<ul style="list-style-type: none"><li>• To look closely at similarities, differences, patterns and change.</li></ul>



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Year 1					
	Research Project 1	Research Project 2	Research Project 3	Research Project 4	Research Project 5
National Curriculum Area	<u>Seasonal changes</u>	<u>Seasonal changes</u>	<u>Animals, including Humans</u>  <u>Seasonal changes</u>	<u>Everyday materials</u>  <u>Seasonal changes</u>	<u>Plants</u>  <u>Seasonal changes</u>
Enquiry Question	Why do the leaves fall off the trees?	Would a snowman melt if you put a coat on him?	<u>Seasonal Changes:</u> What's yellow and growing everywhere?  <u>Animals including humans:</u> Are you a herbivore or a carnivore?	<u>Seasonal Changes:</u> What's yellow and growing everywhere?  <u>Materials:</u> Which of the three pigs' houses would last the longest?	<u>Seasonal Changes:</u> What has started to grow during this season?  <u>Plants:</u> What grows in your garden?
Skills Taught	Asking simple questions and recognising that they can be answered in different ways  Using their observations and ideas to suggest answers to questions  Gathering and recording data to help in answering questions	Observing closely, using simple equipment  Performing simple tests	Identifying and classifying  Using their observations and ideas to suggest answers to questions	Using their observations and ideas to suggest answers to questions	Using their observations and ideas to suggest answers to questions  Gathering and recording data to help in answering questions
Knowledge Taught (Curriculum Objectives)	Describe weather associated with the seasons and how day length varies Observe changes across the four seasons Observe weather associated with the seasons	Describe weather associated with the seasons and how day length varies Observe changes across the four seasons	Describe weather associated with the seasons and how day length varies Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals	Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching  Observe changes across the four seasons	Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies Identify and name a variety of common wild and garden



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			<p>Identify and name a variety of common animals that are carnivores, herbivores, and omnivores</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</p> <p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</p>	<p>Observe and describe weather associated with the seasons and how day length varies</p> <p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p>	<p>plants, including deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees</p>
Key Vocabulary	Summer, Spring, Autumn, Winter, Sun, Day, Moon, Night, Light, Dark		Fish, Reptiles, Mammals, Birds, Amphibians (+ examples of each) Herbivore, Omnivore, Carnivore, Leg, Arm, Elbow, Head, Ear, Nose, Back, Wings, Beak	Wood, Plastic, Glass, Paper, Water, Metal, Rock, Hard, Soft, Bendy, Rough, Smooth	Deciduous, Evergreen trees, Leaves, Flowers (blossom), Petals, Fruit, Roots, Bulb, Seed, Trunk, Branches, Stem
Skills to be revisited	<p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Using their observations and ideas to suggest answers to questions</p> <p>Gathering and recording data to help in answering questions</p>	<p>Observing closely, using simple equipment</p> <p>Performing simple tests</p>	<p>Identifying and classifying</p> <p>Using their observations and ideas to suggest answers to questions</p>	<p>Using their observations and ideas to suggest answers to questions</p>	<p>Using their observations and ideas to suggest answers to questions</p> <p>Gathering and recording data to help in answering questions</p>



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Year 2					
	Research Project 1	Research Project 2	Research Project 3	Research Project 4	Research Project 5
National Curriculum Area	<u>Animals including humans</u>	<u>Living things and their habitats</u>	<u>Uses of Everyday Materials</u>	<u>Plants</u>	
Enquiry Question	Why do animals have babies?	How do animals choose their home?	How can we change this play dough into different shapes?	What do plants need to grow?	
Skills Taught	Asking simple questions and recognising that they can be answered in different ways  Using their observations and ideas to suggest answers to questions	Identifying and classifying  Using their observations and ideas to suggest answers to questions	Observing closely, using simple equipment  Performing simple tests  Gathering and recording data to help in answering questions	Using their observations and ideas to suggest answers to questions	
Knowledge Taught (Curriculum Objectives)	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	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	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	Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy  Observe and describe how seeds and bulbs grow into mature plants	



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	<p>humans of exercise, eating the right amounts of different types of food, and hygiene</p> <p>Explore and compare the differences between things that are living, dead, and things that have never been alive</p>				
Key Vocabulary	<p>Survival, Water, Air, Food, Adult, Baby, Offspring, Kitten, Calf, Puppy, Exercise, Hygiene</p>	<p>Living, Dead, Habitat, Energy, Food chain, Predator, Prey, Woodland, Pond, Desert</p>	<p>Hard, Soft, Stretchy, Stiff, Shiny, Dull, Rough, Smooth, Bendy, Waterproof, Absorbent, Opaque, Transparent Brick, Paper, Fabrics, Squashing, Bending, Twisting, Stretching Elastic, Foil</p>	<p>Seeds, Bulbs, Water, Light, Temperature, Growth</p>	
Skills to be revisited	<p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Using their observations and ideas to suggest answers to questions</p>	<p>Identifying and classifying</p> <p>Using their observations and ideas to suggest answers to questions</p>	<p>Observing closely, using simple equipment</p> <p>Performing simple tests</p> <p>Gathering and recording data to help in answering questions</p>	<p>Using their observations and ideas to suggest answers to questions</p>	



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Year 3					
	Research Project 1	Research Project 2	Research Project 3	Research Project 4	Research Project 5
National Curriculum Area	<u>Animals including humans</u>	<u>Rocks</u>	<u>Forces and Magnets</u>	<u>Light</u>	<u>Plants</u>
Enquiry Question	What is the biggest muscle in the human body?	Which was the first dinosaur fossil found?	What magnets are used in everyday life?	If you look at the sun and the moon for too long what happens?	Do plants move?
Skills Taught	Asking relevant questions and using different types of scientific enquiries to answer them Setting up simple practical enquiries, comparative and fair tests 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 Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Identifying differences, similarities or changes related to simple scientific ideas and processes	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	Using straightforward scientific evidence to answer questions or to support their findings.
Knowledge Taught (Curriculum Objectives)	Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food;	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	Compare how things move on different surfaces Notice that some forces need contact between two objects, but magnetic forces can act at a distance	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	Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers



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	<p>they get nutrition from what they eat Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>that have lived are trapped within rock Recognise that soils are made from rocks and organic matter.</p>	<p>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.</p>	<p>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</p>	<p>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>
Key Vocabulary	Movement, Muscles, Bones, Skull, Nutrition, Skeletons,	Fossils, Soils, Sandstone, Granite, Marble, Pumice, Crystals, Absorbent	Magnetic, Force, Contact, Attract, Repel, Friction, Poles, Push, Pull	Light, Shadows, Mirror, Reflective, Dark, Reflection	Air, Light, Water, Nutrients, Soil, Reproduction, Transportation, Dispersal, Pollination, Flower
Skills to be revisited	<p>Asking relevant questions and using different types of scientific enquiries to answer them</p> <p>Setting up simple practical enquiries, comparative and fair tests</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Reporting on findings from enquiries, including oral and written explanations,</p>	<p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p>	<p>Identifying differences, similarities or changes related to simple scientific ideas and processes</p>	<p>Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</p>	<p>Using straightforward scientific evidence to answer questions or to support their findings.</p>



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	displays or presentations of results and conclusions				
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Year 4					
	Research Project 1	Research Project 2	Research Project 3	Research Project 4	Research Project 5
National Curriculum Area	<u><a href="#">Electricity</a></u>	<u><a href="#">All Living Things</a></u>	<u><a href="#">Animals, Including Humans</a></u>	<u><a href="#">Sound</a></u>	<u><a href="#">States of Matter</a></u>
Enquiry Question	How does electricity get across the country?	How does what we eat get processed to give us energy?	What happens to the food I eat inside my body?	Why can we hear different sounds?	What things can be a solid, liquid and a gas?
Skills Taught	<p>Asking relevant questions and using different types of scientific enquiries to answer them</p> <p>Setting up simple practical enquiries, comparative and fair tests</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p>	<p>Identifying differences, similarities or changes related to simple scientific ideas and processes</p>	<p>Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</p>	<p>Using straightforward scientific evidence to answer questions or to support their findings.</p> <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p>	<p>Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</p>
Knowledge Taught (Curriculum Objectives)	<p>Identify common appliances that run on electricity</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts,</p>	<p>Recognise that living things can be grouped in a variety of ways</p> <p>Explore and use classification keys to help group, identify and name a</p>	<p>Describe the simple functions of the basic parts of the digestive system in humans</p> <p>Identify the different types of teeth in humans and their simple functions</p>	<p>Identify how sounds are made, associating some of them with something vibrating</p> <p>Recognise that vibrations from sounds travel through a medium to the ear</p>	<p>Compare and group materials together, according to whether they are solids, liquids or gases</p> <p>Observe that some materials change state when they are</p>



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	<p>including cells, wires, bulbs, switches and buzzers</p> <p>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</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors</p>	<p>variety of living things in their local and wider environment</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things</p>	<p>Construct and interpret a variety of food chains, identifying producers, predators and prey</p>	<p>Find patterns between the pitch of a sound and features of the object that produced it</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>Recognise that sounds get fainter as the distance from the sound source increases</p>	<p>heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</p>
Key Vocabulary	<p>Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators</p>	<p>Vertebrates, Fish, Amphibians, Reptiles, Birds, Mammals, Invertebrates, Snails, Slugs, Worms, Spiders, Insects, Environment, Habitats</p> <p>Mouth, Tongue, Teeth, Oesophagus, Stomach, Small Intestine, Large Intestine, Herbivore, Carnivore, Canine, Incisor, Molar</p>		<p>Volume, Vibration, Wave, Pitch, Tone, Speaker</p>	<p>Solid, Liquid, Gas, Evaporation, Condensation, Particles, Temperature, Freezing, Heating</p>
Skills to be revisited	<p>Asking relevant questions and using different types of scientific enquiries to answer them</p> <p>Setting up simple practical enquiries, comparative and fair tests</p>	<p>Identifying differences, similarities or changes related to simple scientific ideas and processes</p>	<p>Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</p>	<p>Using straightforward scientific evidence to answer questions or to support their findings.</p> <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p>	



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	<p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p>			<p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p>	
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Year 5					
	Research Project 1	Research Project 2	Research Project 3	Research Project 4	Research Project 5
National Curriculum Area	<u><b>Earth and Space</b></u>	<u><b>Forces</b></u>	<u><b>Properties and changes of everyday materials</b></u>	<u><b>Living things and their habitats</b></u>	<u><b>Animals including humans:</b></u>
Enquiry Question	Is the sun the centre of our universe?	Where are forces?	How can materials change?	How are things the same and different?	Are we really that different?
Skills Taught	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Using test results to make predictions to set up further comparative and fair tests	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  Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations	Identifying scientific evidence that has been used to support or refute ideas or arguments	Identifying scientific evidence that has been used to support or refute ideas or arguments
Knowledge Taught (Curriculum Objectives)	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	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	Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and	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



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	<p>Describe the sun, Earth and moon as approximately spherical bodies</p> <p>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p>	<p>and friction, that act between moving surfaces</p> <p>Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect</p>	<p>thermal), and response to magnets</p> <p>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>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</p>		
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Key Vocabulary	Earth, Sun, Moon, Axis, Rotation, Day, Night, Phases of the Moon, star, constellation	Air resistance, Water resistance, Friction, Gravity, Newton, Gears, Pulleys	Hardness, Solubility, Transparency, Conductivity, Magnetic, Filter, Evaporation, Dissolving, Mixing	Mammal, Reproduction, Insect, Amphibian, Bird, Offspring	Foetus, Embryo, Womb, Gestation, Baby, Toddler, Teenager, Elderly, Growth, Development, Puberty
Skills to be revisited	<p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Using test results to make predictions to set up further comparative and fair tests</p>	<p>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p>	<p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations</p>	<p>Identifying scientific evidence that has been used to support or refute ideas or arguments</p>	<p>Identifying scientific evidence that has been used to support or refute ideas or arguments</p>



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Year 6					
	Research Project 1	Research Project 2	Research Project 3	Research Project 4	Research Project 5
National Curriculum Area	<u><b>Electricity</b></u> <u><b>Animals including Humans</b></u>	<u><b>Animals including Humans</b></u> <u><b>Living things and their habitats</b></u>	<u><b>Evolution</b></u>	<u><b>Light</b></u>	<u><b>Living things and their habitats</b></u>  <u><b>Evolution</b></u>
Enquiry Question	Can you reuse a battery?	What is a liger?	Can you have 2 sets of twins in a family?	Is there anyone that can compete with Teslar?	How did we evolve?
Skills Taught	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Using test results to make predictions to set up further comparative and fair tests	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  Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations	Identifying scientific evidence that has been used to support or refute ideas or arguments	Identifying scientific evidence that has been used to support or refute ideas or arguments
Knowledge Taught (Curriculum Objectives)	<u>Electricity – circuits</u> Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and	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 light appears to travel in straight lines Use the idea that light travels in straight lines to explain that objects are seen because they	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago



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	<p>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</p> <p>Use recognised symbols when representing a simple circuit in a diagram</p> <p><u>Animals including humans – human body</u></p> <p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans</p>	<p>differences, including micro-organisms, plants and animals</p> <p>Give reasons for classifying plants and animals based on specific characteristics</p>	<p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p>	<p>give out or reflect light into the eye</p> <p>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</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</p>	<p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p>
Key Vocabulary	Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators, Amps, Volts, Cell	Circulatory, Heart, Blood Vessels, Veins, Arteries, Oxygenated, Deoxygenated, Valve, Exercise, Respiration	Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetics	Refraction, Reflection, Light, Spectrum, Rainbow, Colour,	Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetics



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Skills to be revisited	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary Using test results to make predictions to set up further comparative and fair tests	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 Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations	Identifying scientific evidence that has been used to support or refute ideas or arguments	Identifying scientific evidence that has been used to support or refute ideas or arguments
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