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	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
EYFS Science • 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. •	**All about me** **Seasonal change:** • *Our changing world*-What is happening to the trees (Autumn) **Humans:** • Exploring the world around us using our five **senses** • Label body parts • **Senses** walk-encourage the children to explore the natural world around them and focus on what they can see, hear and feel. • Look at their baby photos and talk about what is the same/different? • Look at differences between people (handspan/feet size)	**Celebrations** **Seasonal change:** • *Our changing world*-What is the weather like? (Winter)	**Amazing Animals** **Seasonal change:** • *Our changing world*-What is happening to the trees (Spring) • *Biology*-Animals and Plants **Animals excluding humans:** • Matching pictures of animals and their young • Observe young animals closely and talk about how they change over time. • Ask questions about different animals and their young. • Play with small world animals, matching adults to their young • Talk about similarities and differences between animals and their young, including patterns, spots or stripes. • Scientific enquiry-observing over time. How does the ...change over time? • Classification • Match animals and their young	**Isn't life wonderful** **Seasonal change:** • *Our changing world*-What can I grow for my dinner? **Living things and their habitats:** • Explore life cycles **Plants:** • Healthy food we can grow/plant How/where do different fruits/vegetables grow (e.g., in the ground, on a plant or tree?) • Label parts of the plants • Using magnifiers to explore plants and seeds • Plant seeds (vegetables – cress) • Look after seeds – plant beans • Cameras to record growth	**Kings and Queens** **Seasonal change:** • *Our changing world*-What is happening to the trees (Summer)	**Let's explore** **Seasonal change:** • *Our changing world*-What is the weather like? (Summer) **Forces:** • Floating and sinking-can you make a boat float? • Talk about how they changed objects to make them float or sink. • Test how cars move down a ramp • Talk about how they changed how the cars rolled down ramps

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		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Year 1	Unit:	Seasonal change: Deciduous trees and parts of plants.	Animals including humans (Human body)	Seasonal changes (evergreen trees)	Every day materials	Seasonal change (identify and name common plants and trees).	Animals including humans (animals).
	Title as a question:	What are deciduous trees?	What are the parts of the body?	What is the difference between deciduous and evergreen trees?	What are different objects made from?	How do plants change and grow over time?	How are animal's bodies different?
	Awe and Wonder	Visiting outdoor locations to see the changes in trees.	Create own heads, shoulders knees and toes song and record for website.	Visiting outdoor locations to see the changes in trees.	Investigate different materials in our environment.	Visiting outdoor locations to see the changes in trees.	Visit a petting zoo.
	Suggested investigations	PLAN Example of Work Y1 Seasonal changes FV.pdf PLAN Example of Work Y1 Plants FV.pdf	PLAN Example of Work Y1 Animals including humans FV.pdf	PLAN Example of Work Y1 Seasonal changes FV.pdf PLAN Example of Work Y1 Plants FV.pdf	PLAN Example of Work Y1 Everyday materials FV.pdf	PLAN Example of Work Y1 Seasonal changes FV.pdf PLAN Example of Work Y1 Plants FV.pdf	PLAN Example of Work Y1 Everyday materials FV.pdf
	Scientist	Maria Sibylla Merian Scientists across the Curriculum FV.pdf.pdf	Leonardo Da Vinci Scientists across the Curriculum FV.pdf.pdf	Maria Sibylla Merian Scientists across the Curriculum FV.pdf.pdf	Chester Greenwood Scientists across the Curriculum FV.pdf.pdf	Jim Cantore Scientists across the Curriculum FV.pdf.pdf	Joan Beauchamp Procter Scientists across the Curriculum FV.pdf.pdf
	Oracy outcome	Children can explain what a deciduous tree is.	Children can name the main human body parts.	Children can explain what an evergreen tree is.	Children can explain why they chose a certain material for an umbrella.	Present findings of how the trees changed over time.	Children to explain how they sorted the animals and give reasons.
	Links to other subjects						
	Work scientifically	• asking simple questions and recognising that they can be answered in different ways • observing closely, using simple equipment • performing simple tests					

<table>
<tr><td colspan="8">Threshold Concepts</td></tr>
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<tr><td colspan="3"></td><td colspan="9">• identifying and classifying
• using their observations and ideas to suggest answers to questions
• gathering and recording data to help in answering questions</td></tr>
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		Knowledge	**Lesson 1** To know that a tree will change over the year. To know that different trees have different leaves and this helps us to identify them. **WS**- To know how to use observations to answer questions. **Lesson 2** To know and label the basic structure a tree **WS**- To know how to make close observations. **Lesson 3** To know that leaves are different shapes and sizes and this will help us to identify the tree it is from. **WS**- To know how to observe closely using simple equipment. **Lesson 4** To know that a tree is a plant. To know that some trees lose their leaves in different seasons. To know how to accurately label a tree. **WS**- To know how to identify parts of a tree. **Lesson 5** To know that deciduous trees lose their leaves in Autumn. To know there are four seasons in the UK **WS-** To know how to gather data to answer a question.	**Lesson 1** To know some basic body parts (Head shoulders knees and toes) **WS-** To know how to make close observations. **Lesson 2** To know the parts of the face (nose, mouth, cheek, lips) **WS:** To know how to make careful observations **Lesson 3** To know which part of the body is associated with each sense. **Lesson 4** To know which part of the body is associated with each sense. **WS:** To know how to gather data to answer a question.				

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		A	Advancing	Advancing	Advancing	Advancing	Advancing	Advancing
		D	Deep	Deep	Deep	Deep	Deep	Deep
	Biology	**Understand plants**	• Identify and name a variety of common wild and garden plants, including deciduous trees. • Identify and describe the basic structure of a variety of common flowering plants, including trees. • Observe changes across the four seasons. • Identify and describe the basic structure of a variety of common flowering plants, including trees. • Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.		• Identify and name a variety of common wild and garden plants, including evergreen trees. • Identify and describe the basic structure of a variety of common flowering plants, including trees. • Observe changes across the four seasons. • Identify and describe the basic structure of a variety of common flowering plants, including trees. • Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.		• Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. • Identify and describe the basic structure of a variety of common flowering plants, including trees. • Observe changes across the four seasons. • Identify and describe the basic structure of a variety of common flowering plants, including trees. • Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.	

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Understand animals and humans		• 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. • Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). • Identify and name a variety of common animals that are carnivores, herbivores and omnivores.
Investigate living things						
Understand evolution and inheritance						

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	Chemistry	Investigate materials				• Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. • Distinguish between an object and the material from which it is made. • Describe the simple physical properties of a variety of everyday materials. • Compare and group together a variety of everyday materials on the basis of their simple physical properties. Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and paper/cardboard for particular uses		
	Physics	Understand movement, forces and magnets						
		Understand light and seeing						
		Investigate sound and hearing						
		Understand electrical circuits						

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		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
	Understand the Earth's movement in space	• Observe and describe weather associated with the seasons and how day length varies. • Observe the apparent movement of the sun during the day		• Observe and describe weather associated with the seasons and how day length varies. • Observe the apparent movement of the sun during the day			• Observe and describe weather associated with the seasons and how day length varies. • Observe the apparent movement of the sun during the day
Year 2	Title	Plants (Bulbs) Living things	Uses of every day materials	Animals including humans	Uses of every day materials	Living things and their habitats.	Plants - seeds
	Title as a question:	How do bulbs grow? What is a habitat?	How can we use different materials?	What happens to animals as they grow older?	Can we change the shape of materials?	How are is an animal's habitat suited to its needs?	What do plants need to grow?
	Awe and Wonder	Visit a range of different habitats and compare.	Environment walk to identify materials.	Children to share baby photos and compare how they have changed.	Visitor in school - people who have created useful new materials.	Create a habitat for an imaginary creature and explain why.	Plant and grow plants in the classroom.
	Suggested investigations	PLAN Examples of Work Y2 Plants FV.pdf PLAN Examples of Work Y2 Living things and their habitats FV.pdf	PLAN Examples of Work Y2 Uses of everyday materials FV.pdf	PLAN Examples of Work Y2 Animals including humans FV.pdf	PLAN Examples of Work Y2 Uses of everyday materials FV.pdf	PLAN Examples of Work Y2 Living things and their habitats FV.pdf	PLAN Examples of Work Y2 Plants FV.pdf
	Scientist	Daniel Solander Scientists across the Curriculum FV.pdf.pdf	Dr Pearl Agyakwa Scientists across the Curriculum FV.pdf.pdf	Elizabeth Garrett Anderson Scientists across the Curriculum FV.pdf.pdf	Charles Macintosh Scientists across the Curriculum FV.pdf.pdf	Prem Singh Gill Scientists across the Curriculum FV.pdf.pdf	Angie Burnett Scientists across the Curriculum FV.pdf.pdf

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Oracy outcome	Children explain what a habitat is.	Explain why certain materials were chosen for different jobs.	Children explain what happens to them as they get older.	Children to choose a material for a given job and explain why they chose this.	Explain their food chain to an audience.	Children explain what things a plant needs to grow.
Links to other subjects	Explain how they sorted the objects.	Debate why certain materials might be the best for a given job including reasons for their choice.				
Work scientifically	• Observing closely, using simple equipment. • Asking simple questions and recognising that they can be answered in different ways. • Performing simple tests and recording data. • Gathering and recording data to help in answering questions. • Using observations and ideas to suggest answers to questions.	Identifying and classifying. • Using observations and ideas to suggest answers to questions. • Performing simple tests and recording data. • Observing closely, performing simple tests and using observations to suggest answers to questions, and gathering and recording data to help in answering questions. • Gathering and recording data to help in answering questions.	• Observing closely, using simple equipment. • Asking simple questions and recognising that they can be answered in different ways. • Performing simple tests and recording data. • Gathering and recording data to help in answering questions. • Using observations and ideas to suggest answers to questions.	• Using observations and ideas to suggest answers to questions. • Gathering and recording data to help in answering questions. • Performing simple tests and recording data. • Observing closely, using simple equipment.	• Using observations and ideas to suggest answers to questions. • Gathering and recording data to help in answering questions.	• Observing closely, using simple equipment. • Asking simple questions and recognising that they can be answered in different ways. • Performing simple tests and recording data. • Gathering and recording data to help in answering questions. • Using observations and ideas to suggest answers to questions.

		Knowledge	**Lesson 1** To know that things are living, dead and never been alive. **WS:** To know how to identify things that are living, dead and never been alive. **Lesson 2** To know that seeds and bulbs grow into plants. **WS:** To know how to observe and classify seeds. **Lesson 3** To know that a plant bulb contains all the parts of a complete mini plant with enough food to help it start to grow. **WS:** to know how to make close observations using simple equipment **Lesson 4** To know that different plants and animals grow and live in different habitats **WS**: to know how to classify animals and plants according to habitat. **Lesson 5** To know that habitats provide the basic needs for the animals and plants that live and grow there. **WS**: to identify and classify animals living in one habitat. **Lesson 6** To know that seeds can be found in fruits and what plants need to grow. **WS:** To know how to make close observations using simple equipment	**Lesson 1** To know about the features and suitability of glass for particular purposes **WS:** To identify the properties of glass. **Lesson 2** To know about the suitability of a range of different materials for particular purposes. **WS**: to know how to gather data to answer a question **Lesson 3** To know that some materials are more suitable for a particular job and how the shapes of some objects can be changed by squashing, bending, twisting and stretching **WS:** to know how to perform simple tests to answer a question **Lesson 4** TAPs To know the suitability of a variety of everyday materials including paper, cardboard, plastic and fabric. **WS:** To know how to ask questions and know that they can be answered in a variety of ways **Lesson 5** To know the shapes of some objects can be changed by squashing, bending, twisting and stretching **WS:** to know that questions can be answered in different ways **Lesson 6** To know the name of the materials from which different objects are made and talk about properties using a wide vocabulary **WS**: N/A				
	Assessment questions	B	Basic	Basic	Basic	Basic	Basic	Basic
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	Biology	**Understand plants**	• Observe and describe how bulbs grow into mature plants.					• Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.
		Understand animals and humans			• Notice that animals, including humans, have offspring which grow into adults. • Investigate 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.	
		Investigate living things	• To explore and compare the differences between things that are living, things that are dead and things that have never been alive. • 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.			

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Chemistry		Understand evolution and inheritance						
Chemistry		Investigate materials		• 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. • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard, for particular uses.		
Physics		Understand movement, forces and magnets						
Physics		Understand light and seeing						
Physics		Investigate sound and hearing						
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Physics		Understand the Earth's movement in space						

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Year 3	Title as a question	Plants: Seed dispersal	Rocks and soils	Forces and magnets	Animals including humans (nutrition and how we move)	Light shadows	Plants (parts of flowers and life cycles).
		How do plants disperse their seeds?	What are the features of different types of rock?	What is a force and how do magnets work?	Why is nutrition important for animals?	How are shadows formed?	What is the life cycle of a plant?
	Awe and Wonder	Visit the gardens to observe a range of different seeds.	Visitor to bring different rocks for children to handle.	Children to create a compass using magnets..	Create a healthy meal using the different food groups.	Children to play shadow tig.	Grow plants from seeds in class.
	Suggested investigations	PLAN Examples of Work Y3 Plants FV.pdf	PLAN Examples of Work Y3 Rocks FV.pdf	PLAN Examples of Work Y3 Forces and magnets FV.pdf	PLAN Examples of Work Y3 Animals including humans FV.pdf	PLAN Examples of Work Y3 Light FV.pdf	PLAN Examples of Work Y3 Plants FV.pdf
	Scientist	Dr Kelsey Byers Scientists across the Curriculum FV.pdf.pdf	Anjana Khatwa Scientists across the Curriculum FV.pdf.pdf	Leonardo Da Vinci Scientists across the Curriculum FV.pdf.pdf	Adelle Davis Scientists across the Curriculum FV.pdf.pdf	Percy Shaw Scientists across the Curriculum FV.pdf.pdf	Jan Ingenhousz Scientists across the Curriculum FV.pdf.pdf
	Oracy outcome	Children explain how imaginary seeds could be transported using their features.	Debate which rocks should be grouped together using given criteria and giving reasons.	Children to explain how magnets could be used in everyday life.	Children to present their menu and explain why they chose each food.	Children to explain how shadows are formed.	Children to create a presentation for the class about the life cycle of a plant.
	Links to other subjects						
	Knowledge	**Lesson 1** To know the functions of different parts of flowering plants (roots; stem/trunk; leaves; and flowers). **WS:** To know how to record findings using scientific language **Lesson 2**	**Lesson 1** To know the difference between 2 types of rocks **WS.** To know how to identify differences through close observations **Lesson 2** To know how different rocks are formed.				

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	Understand plants This concept involves becoming familiar with different types of plants, their structure and reproduction.	**Understand animals and humans** This concept involves becoming familiar with different types of animals, (including humans) and the life processes they share.	**Investigate living things** This concept involves becoming familiar with a wider range of living things, including habitats, food chains and life cycles.	**Understand evolution and inheritance** This concept involves understanding that organisms adapt and, change over time.	**Investigate materials** This concept involves becoming familiar with a range of materials, their properties, uses and reversible/irreversible changes.	**Understand movement, forces and magnets** This concept involves understanding what causes motion.	**Understand light and seeing** This concept involves understanding that we need light to see and that light can be reflected from surfaces.	**Investigate sound and hearing** This concept involves understanding how sound is produced, how it travels and how it is heard.	**Understand electrical circuits** This concept involves understanding circuits and their role in electrical applications.	**Understand the Earth's movement in space** This concept involves understanding what causes seasonal changes, day and night.

			Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
			To know **the part that flowers play in the life cycle of flowering plants, including seed dispersal.** **WS**: To know how to classify and present data in a variety of ways to help in answering questions **Lesson 3** To know that plants need room to grow **WS** To know how to set up a simple scientific comparative test. To know how to make systematic observations **Lesson 4** To know the part that flowers play in the life cycle of flowering plants, including seed dispersal **WS**: To know how to make systematic observations. **Lesson 5** To know that plants need air to grow. **WS:** to know how to set up a simple practical enquiry/comparative test **Lesson 6** To know how seeds are dispersed **WS**: To know how to gather, record and present data	To know the features of different types of rock To know that fossils are contained in sedimentary rocks **Lesson 3** To know the simple physical properties of different rocks. **WS**: To know how to record findings in a table **Lesson 4** To know how to scratch test rock samples To know how to identify the hardest rock from a sample To know which rock material will last over time **WS**: To know how to report on findings from enquiries **Lesson 5** To know how fossils are formed, through a hands-on modelling activity and are confident in retelling the whole sequence of events within the process. **WS**: To know how to report findings using oral and written explanations **Lesson 6** To know the difference between soils and know how to sort them according to different observable characteristics To know how to identify organic (plant and animal matter) and inorganic (rock) material within soils. **WS:** To know how to set up simple practical enquiries.				

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		A	Advancing	Advancing	Advancing	Advancing	Advancing	Advancing
		D	Deep	Deep	Deep	Deep	Deep	Deep
	Work scientifically		• 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. • Setting up simple practical enquiries, comparative and fair tests. • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	• Asking relevant questions and using different types of scientific enquiries to answer them. • Identifying differences, similarities or changes related to simple scientific ideas and processes. • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. • Using straightforward scientific evidence to answer questions or to support their findings. • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • Asking relevant questions and using different types of scientific enquiries to answer them.	• Setting up simple practical enquiries, comparative and fair tests. • 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. • 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. • Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using	Visitor to bring different rocks for children to handle.	• Setting up simple practical enquiries, comparative and fair tests. • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. • 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. • Using straightforward scientific evidence to answer questions or to support their findings. • Identifying differences, similarities or changes related to simple scientific ideas and processes.	• 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. • Setting up simple practical enquiries, comparative and fair tests. • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.

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			Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
				• Setting up simple practical enquiries, comparative and fair tests. • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	a range of equipment, including thermometers and data loggers. • Using straightforward scientific evidence to answer questions or to support their findings.		• Setting up simple practical enquiries, comparative and fair tests; making accurate measurements using standard units, using a range of equipment, for example thermometers and data loggers. • Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	• Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
	Biology	**Understand plants**	• Explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.			PLAN Examples of Work Y3 Rocks FV.pdf		• Identify and describe the functions of different parts of flowering plants: roots, stem, 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.

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		Understand animals and humans		• Identify that animals, including humans, need the right types and amounts of nutrition, that they cannot make their own food and they get nutrition from what they eat. • Identify that humans and some animals have skeletons and muscles for support, protection and movement.		Anjana Khatwa Scientists across the Curriculum FV.pdf.pdf		
		Investigate living things				Debate which rocks should be grouped together using given criteria and giving reasons.		
		Understand evolution and inheritance						
	Chemistry	Investigate materials				• Compare and group together different kinds of rocks on the basis of their simple, physical properties. • Relate the simple physical properties of some rocks to their formation (igneous or sedimentary). • Describe in simple terms how fossils are formed when things that have lived are trapped within sedimentary rock. • Recognise that soils are made from rocks and organic matter.		

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	Physics	**Understand movement, forces and magnets**			• Notice that some forces need contact between two objects, but magnetic forces can act at a distance. • Compare how things move on different surface • 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. • Observe how magnets attract or repel each other and attract some materials and not others. • Describe magnets as having two poles. • Predict whether two magnets will attract or repel each other, depending on which poles are facing.			

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Understand light and seeing					• 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 a solid object. • Find patterns in the way that the size of shadows changes	
Investigate sound and hearing						
Understand electrical circuits						
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		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Year 4	Y4 Science	Living things and their habitats. (Changes in habitats).	States of matter.	Electricity	Sound	Living things: classification	Animals including humans Digestive System and food chains
	Title as a question	How do changing habitats affect animals?	How can we change the state of a material?	Will the bulb light up?	How do we hear?	How can we group living things?	How do we digest food?
	Awe and Wonder	Visit local habitats and view animals in their own habitat.	Chocolate melting and becoming solid again.	Light show in the hall.	Music with Steve: pitch and volume.	Mobile zoo – different types of amphibians etc Brockholes trip	Dentist to visit school. Make poo!
	Suggested investigations	PLAN Examples of Work Y4 Living things and their habitats FV.pdf	PLAN Examples of Work Y4 States of matter FV.pdf	PLAN Examples of Work Y4 Electricity FV.pdf	PLAN Examples of Work Y4 Sound FV.pdf	PLAN Examples of Work Y4 Living things and their habitats FV.pdf	PLAN Examples of Work Y4 Animals including humans FV.pdf
	Scientist	Wangari Maathai Scientists across the Curriculum FV.pdf.pdf	Anders Celsius Scientists across the Curriculum FV.pdf.pdf	William Kamkwamba Scientists across the Curriculum FV.pdf.pdf	Aristotle Scientists across the Curriculum FV.pdf.pdf	Kelsey Archer Barnhill Scientists across the Curriculum FV.pdf.pdf	William Beaumont Scientists across the Curriculum FV.pdf.pdf
	Oracy outcome	Children to create a presentation about the importance of protecting habitats.	Debate: Are all changes reversible?	Children to debate whether circuits will work or not based on images.	Children to explain which material they chose with the reason for their choice – class discussion.	When presented with a key, discuss where a range of animals would fit, justifying their choices.	Compare the teeth of herbivores and carnivores and explain the difference between them.
	Links to other subjects						

		Knowledge		**Lesson 1:** To know how to compare and group materials together according to whether they are solids, liquids or gases. **WS:** To know how to ask relevant questions. To know how to identify differences, similarities or changes related to simple scientific ideas and processes **Lesson 2:** To know that some materials change state when they are heated or cooled and to measure or research the temperature at which this happens in degrees Celsius (°C). **WS**: To know how to take accurate measurements. **Lesson 3:** To know 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). **WS:** To know how to report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. **Lesson 4:** To know the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. **WS:** To know how to set up a simple practical enquiry, comparative and fair tests making systematic and careful observations **Lesson 5**: To know the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature **WS**: reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	**Lesson 1:** To know that common appliances that run on electricity. **WS:** To know record, classify and present data in a variety of ways			

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Assessment questions	B	Basic	Basic	Basic	Basic	Basic	Basic
	A	Advancing	Advancing	Advancing	Advancing	Advancing	Advancing
	D	Deep	Deep	Deep	Deep	Deep	Deep

		Work scientifically	• Identifying differences, similarities or changes related to simple scientific ideas and processes. • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • Using straightforward scientific evidence to answer questions or to support their findings. • Recognising statements that do and do not support an argument.	• Identifying differences, similarities or changes related to simple scientific ideas and processes. • Setting up simple practical enquiries, comparative and fair tests. • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. • Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • Using straightforward scientific evidence to answer questions or to support their findings. • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. • Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	• Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • Identifying differences, similarities or changes related to simple scientific ideas and processes.	• Identifying differences, similarities or changes related to simple scientific ideas and processes. • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. • Using straightforward scientific evidence to answer questions or to support their findings. • Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. • 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 results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • Setting up simple practical enquiries, comparative and fair tests. • Asking relevant questions and using different types of scientific enquiries to answer them. • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.	• Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • Identifying differences, similarities or changes related to simple scientific ideas and processes.	• Asking relevant questions and using different types of scientific enquiries to answer them. • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. • 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. • Identifying differences, similarities or changes related to simple scientific ideas and processes. • 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. • Setting up simple practical enquiries, comparative and fair tests.

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Biology	Understand plants						
	Understand animals and humans						• Identify that animals, including humans, need the right type and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat (Year 3). • 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.
	Investigate living things					• Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. • Recognise that living things can be grouped in a variety of ways.	

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		Understand evolution and inheritance	• Recognise that environments can change and that these changes can sometimes pose dangers to living things.					
	Chem	Investigate materials						
		Understand movement, forces and magnets						
		Understand light and seeing						
	Physics	Investigate sound and hearing				• 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 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.		

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	Understand electrical circuits			• Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wire, bulbs, switches and buzzers. • Identify whether or not a lamp will light in a simple series circuit, based on whether a 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.			
	Understand the Earth's movement in space						
		Forces	Earth and space	Properties and changes in materials	Properties and changes of materials.	Living things and their habitats.	Animals including humans.
Year 5	Title as a question	What are forces?	How does the Earth move in space?	How can we group materials?	How can we separate solids, liquids and gasses?	How are the life cycles of amphibians, mammals and insects different?	How do we change as we age?
	Awe and Wonder	Design and make parachutes.	Link to Eid and the moon.	Show children wood burning: what happens to it?	Alien soup: how to separate	Observe life cycles of animals and plants in their local environment.	Chicks in school

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Suggested investigations	PLAN Examples of Work Y5 Forces FV.pdf	PLAN Examples of Work Y5 Earth and space FV.pdf	. PLAN Examples of Work Y5 Properties and changes of materials FV.pdf	PLAN Examples of Work Y5 Properties and changes of materials FV.pdf	PLAN Examples of Work Y5 Living things and their habitats FV.pdf	PLAN Examples of Work Y5 Animals including humans FV.pdf
Scientist	Isaac Newton Scientists across the Curriculum FV.pdf.pdf	Stephen Hawking Scientists across the Curriculum FV.pdf.pdf	Spencer Silver and Arthur Fry Scientists across the Curriculum FV.pdf.pdf	Raquel Prado Scientists across the Curriculum FV.pdf.pdf	David Attenborough Scientists across the Curriculum FV.pdf.pdf	Rodger Arliner Young Scientists across the Curriculum FV.pdf.pdf
Oracy outcome	Children debate which parachute they believe will fall the fastest and give reasons why.	Children to explain why the rotation of the earth causes day and night.	Children to debate materials: conductor or insulator.	Explain how to separate the alien soup.	Children explain the difference between sexual and asexual reproduction.	Children to explain what happens to animals (including humans) as they get older.
Links to other subjects						

		Knowledge	**Lesson 1** To know about magnetic forces and friction WS – To know how to take measurements using a force meter **Lesson 2** To know that unsupported objects fall towards and that air resistance slows this down. WS – I knowhow to use scientific evidence to support my ideas. **Lesson 3 TAPs** To know about some variables that effect air resistance. WS – To know how to use test results to set up further enquiries. **Lesson 4** To know about the effects of water resistance WS – To know how to report and present findings from enquiries. **Lesson 5** To know how to make and use a pulley system to transport something. WS – To know how to report conclusions in oral and written forms. **Week 6** To know how to demonstrate the effects of using levers, pulleys and gears using a Rube Goldberg machine. WS – To present findings from enquiries about causal relationships	**Lesson 1** To know the movement of the moon relative to the earth. Lesson 2 To know the movement of the Earth, and other planets, relative to the Sun in the solar system. WS – to know how to accurately represent the solar system in a labelled, scientific diagram. **Lesson 3** To know that the earth's rotation on its axis is responsible for day and night. WS - to know that the earth's rotation is responsible for the apparent movement of the Sun across the sky in a labelled, scientific diagram. **Lesson 4 - TAPs** To know about some key features of the other planets in our solar system including the different lengths of time orbits take, dependent on the planet's distance from the Sun. WS- to know how to report and present findings from independent research enquiries using appropriate vocabulary. **Lesson 5** To know the relative size and distance of the planets in our solar system WS – To know how to accurately measure distances. **Lesson 6** To know how craters are formed and that asteroids and meteorites are present in our solar system. WS – To know how to plan a fair/comparative test and how to control variables.				
	Assessment questions	B	Basic	Basic	Basic	Basic	Basic	Basic
		A	Advancing	Advancing	Advancing	Advancing	Advancing	Advancing
		D	Deep	Deep	Deep	Deep	Deep	Deep
	Work scientifically		• Taking measurements, using a wide range of scientific equipment, with increasing accuracy and	• Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables,	• Recording data and results of increasing complexity using scientific diagrams and labels, classification	• Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree	• Reporting and presenting findings from enquiries, including conclusions, causal relationships and	• Reporting and presenting findings from enquiries, including conclusions,

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	Understand plants This concept involves becoming familiar with different types of plants, their structure and reproduction.	**Understand animals and humans** This concept involves becoming familiar with different types of animals, (including humans) and the life processes they share.	**Investigate living things** This concept involves becoming familiar with a wider range of living things, including habitats, food chains and life cycles.	**Understand evolution and inheritance** This concept involves understanding that organisms adapt and, change over time.	**Investigate materials** This concept involves becoming familiar with a range of materials, their properties, uses and reversible/irreversible changes.	**Understand movement, forces and magnets** This concept involves understanding what causes motion.	**Understand light and seeing** This concept involves understanding that we need light to see and that light can be reflected from surfaces.	**Investigate sound and hearing** This concept involves understanding how sound is produced, how it travels and how it is heard.	**Understand electrical circuits** This concept involves understanding circuits and their role in electrical applications.	**Understand the Earth's movement in space** This concept involves understanding what causes seasonal changes, day and night.

			Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
			precision, and taking repeat readings when appropriate. • Identifying scientific evidence that has been used to support or refute ideas or arguments. • 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. • 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. • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs and bar and line graphs.	scatter graphs and bar and line graphs. • 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. • Taking measurements, using a wide range of scientific equipment, with increasing accuracy and precision, and taking repeat readings when appropriate. • Identifying scientific evidence that has been used to support or refute ideas or arguments. • Using test results to make predictions to set up further comparative and fair tests.	keys, tables, scatter graphs and bar and line graphs. • 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. • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. • Taking measurements, using a wide range of scientific equipment, with increasing accuracy and precision, and taking repeat readings when appropriate. • Identifying scientific evidence that has been used to support or refute ideas or arguments. • Using test results to make predictions to set up further comparative and fair tests.	of trust in results, in oral and written forms such as displays and other presentations. • Using test results to make predictions to set up further comparative and fair tests. • Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	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.	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. • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs and bar and line graphs.

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		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
				•	•	•	•
Biolo	Understand plants						
	Understand animals and humans					• Explain 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. • Starting All Over Again - Plants • Describe the changes as humans develop to old age.
	Investigate living things						
	Understand evolution and inheritance						

Threshold Concepts											
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			Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
	Chemistry	**Investigate materials**			• Compare and group together everyday materials based on evidence from comparative and fair tests, including hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets. • Give reasons, based on evidence from comparative and fair tests, for specific uses of everyday materials, including metals, wood and plastic.	• Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. • Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.		
	Physics	**Understand movement, forces and magnets**	• Identify the effects of air resistance, water resistance and friction, which act between moving surfaces. • Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. • Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.					
		Understand light and seeing						

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		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
	Investigate sound and hearing						
	Understand electrical circuits						
	Understand the Earth's movement in space		• Describe the movement of the Earth, and other planets, relative to the Sun in the Solar System. • Use the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. • Describe the movement of the Moon relative to the Earth.				
Move and Learn (Accrington Academy workshop)		• Look at the components of the Eatwell Guide • Understand what it means to have a balanced diet • Apply your knowledge about the Eatwell Guide to design a balanced menu for a day • Understand why we need to stay hydrated • Identify how to stay hydrated • Other factors that affect hydration levels					
Year 6	Y6 Science	Living things and their habitats.	Electricity	Animals including humans (Circulatory system)	Evolution and inheritance	Light	Transition
	Title as a question	How can we classify different types of animals?	What are the different parts of a circuit?	How does the human circulatory system work?	What is evolution and inheritance?	How do we see objects?	
	Awe and Wonder	• Create a class zoo of invented plasticine animals.	• Create a useful circuit such as a burglar alarm.	• Lambs heart dissection.		• Show children colours on bubbles – learn why this happens.	

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		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
	Suggested investigations	PLAN Examples of Work Y6 Living things and their habitats FV.pdf	PLAN Examples of Work Y6 Electricity FV.pdf	PLAN Examples of Work Y6 Animals including humans FV.pdf	PLAN Examples of Work Y6 Evolution and inheritance FV.pdf	PLAN Examples of Work Y6 Light FV.pdf	
	Scientist	• Carl Linnaeus Scientists across the Curriculum FV.pdf.pdf	• Nikola Tesla Scientists across the Curriculum FV.pdf.pdf	• Santorio Santorio Scientists across the Curriculum FV.pdf.pdf	• Charles Darwin Scientists across the Curriculum FV.pdf.pdf	• Euclid Scientists across the Curriculum FV.pdf.pdf	
	Oracy outcome	• Children debate where animals should be placed and give reasons why.	• Explain why a range of circuits will / will not work.	• Children to create a presentation of how the circulatory system works to present to parents.	• Children to create a presentation on the work of Charles Darwin.	• Children to explain how light travels and why shadows are formed.	
	Links to other subjects						

		Knowledge		**Lesson 1:** To know how to construct an electrical circuit and name the components of a circuit. **WS: To know how to** ask relevant questions and use different types of scientific enquiries to answer them To know how to set up simple practical enquiries **Lesson 2:** To know that symbols are used to represent circuit components **WS:** To know how to use scientific diagrams **Lesson 3:** To know how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. **WS:** To know how to report findings about causal relationships. **Lesson 4:** To know how to alter the brightness of a bulb and give reasons for this. **WS:** To know how to plan a scientific enquiry to answer a question, recognising and controlling variables. **Lesson 5:** To know the number of, and voltage of cell, effects the brightness of a bulb **WS:** To know how to take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate **Lesson 6:** To know how to work systematically to create a range of circuits. To identify the dough as a conductor and recognise the need for a complete circuit (without a short circuit) in order for the LED/bulb to light **WS:** To know how to use recognised symbols when representing a simple circuit in a diagram.	**Lesson 1:** To know some parts of the circulatory system **WS:** NA – pre assessment week **Lesson 2**: To know how to identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood. **WS:** present 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 **Lesson 3**: To know the impact of diet, exercise, drugs and lifestyle on the way bodies function. **WS**: To know how to record data and results of increasing complexity using tables, scatter graphs, bar and line graphs **Lesson 4**: To know the main parts of the human circulatory system, and describe the functions of the heart, blood **WS**: To know how to report and present findings from enquiries, including conclusions, and degree of trust in results. **Lesson 5**: to know the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. **WS:** To know how to use test result to make predictions to set up further comparative and fair tests. **Lesson 6**: To know that diet, exercise, drugs and lifestyle effect the way their bodies function. To know the ways in which nutrients and water are transported within animals, including humans			

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		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
				WS: To know that scientific evidence can be used to support or refute ideas			
Assessment questions	B	Basic	Basic	Basic	Basic	Basic	Basic
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	D	Deep	Deep	Deep	Deep	Deep	Deep

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		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
	Work scientifically	• Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs. • 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. • Planning different types of enquiries to answer questions including recognising and controlling variables where necessary.	• Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs. • 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. •	• Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs. • 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. • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.	• Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs. • Identifying scientific evidence that has been used to support or refute ideas or arguments. • Planning different types of enquiries to answer questions including recognising and controlling variables where necessary. • 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. • Using test results to make predictions to set up further comparative and fair tests. • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs. • Planning different types of enquiries to answer questions including recognising and controlling variables where necessary. • 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.	• Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, and bar and line graphs. • 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.
Biology	**Understand plants**						

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	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Understand animals and humans						
Investigate living things	• 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.					

		Understand evolution and inheritance				• Recognise that living things produce offspring of the same kind, but that offspring normally vary and are not identical to their parents. • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. • Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. • Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. • Recognise that living things produce offspring of the same kind, but that offspring normally vary and are not identical to their parents. • 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.		
	Ch	Investigate materials						
	Physics	Understand movement, forces and magnets						
		Understand light and seeing					• 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	

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			Unit 1		Unit 2		Unit 3		Unit 4		Unit 5	Unit 6
											explain that objects are seen because they give out or reflect light into the eye. • Recognise that light appears to travel in straight lines. • Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them	
		Investigate sound and hearing										
		Understand electrical circuits										
		Understand the Earth's movement in space										