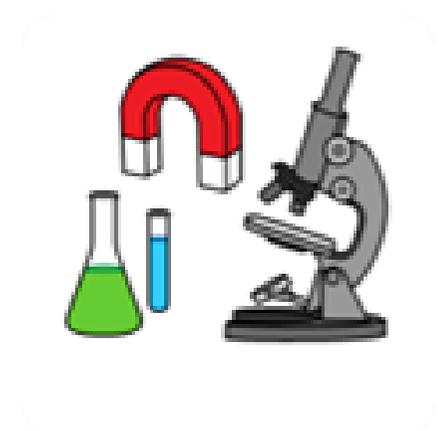


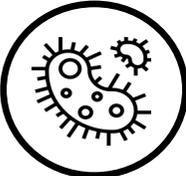
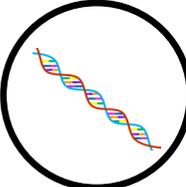
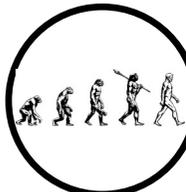


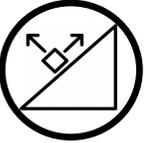
Science Medium Term Planning

Year 5

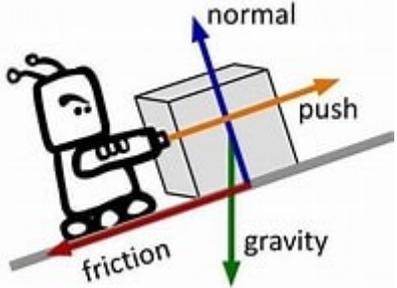
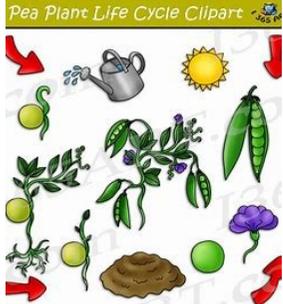
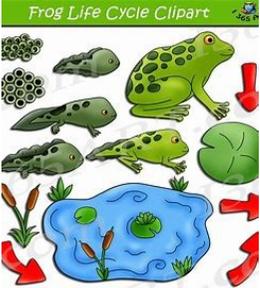
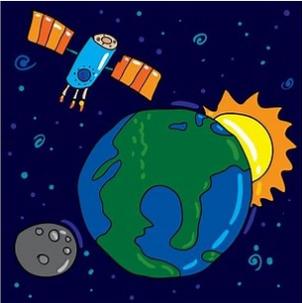


Key Concepts Overview

Key Concepts	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Organisms require a supply of energy and materials.</p> 	<p>Seasonal Changes</p> <p>To know the four seasons and describe changes in the weather.</p> <p>To describe how tree and plants change through the seasons.</p>	<p>Seasonal Changes</p> <ul style="list-style-type: none"> Plants Habitats Animals 	<p>Seasonal Changes</p> <ul style="list-style-type: none"> Plants Habitats Animals 	<p>Seasonal Changes</p> <ul style="list-style-type: none"> Plants Habitats Animals 	<p>Seasonal Changes</p> <ul style="list-style-type: none"> Plants Habitats Animals Earth and Space 	<p>Seasonal Changes</p> <ul style="list-style-type: none"> Plants Habitats Animals
	<p>Organisms require a supply of energy and materials.</p> <p>Genetic information</p> 	<p>Animals including humans</p> <p>To name different parts of the body - particularly those associated with the five senses.</p> <p>To name and describe common animals.</p> <p>To describe what food carnivores, herbivores and omnivores might eat.</p>	<p>Animals including humans</p> <p>To explain what humans and animals need to survive and the importance of looking after our bodies - including the need for exercise, eating the right amount of food and hygiene.</p> <p>Notice that animals, including humans, have offspring that grow into adults.</p>	<p>Animals including humans</p> <p>To explain why we need food to keep us alive.</p> <p>To describe the main functions of the skeleton and muscles.</p>	<p>Animals including humans</p> <p>To explain the parts of the digestive system.</p> <p>To know the different types of teeth.</p> <p>To describe a variety of food chains.</p>	<p>Animals including humans</p> <p>To describe how our bodies changes as we age.</p>
<p>Organisms require a supply of energy and materials.</p> <p>Evolution</p> 	<p>Living things and their habitats</p> <p>To know the differences between living, dead and never lived.</p> <p>To describe simple adaptations of animals in relation to their habitats.</p> <p>Create simple food chains.</p>	<p>Living things and their habitats</p> <p>To know the differences between living, dead and never lived.</p> <p>To describe simple adaptations of animals in relation to their habitats.</p> <p>Create simple food chains.</p>	<p>Living things and their habitats</p> <p>To use classification keys to group living things in a variety of ways.</p> <p>To recognise that environments can change.</p> <p>To identify dangers to living things.</p>	<p>Living things and their habitats</p> <p>To use classification keys to group living things in a variety of ways.</p> <p>To recognise that environments can change.</p> <p>To identify dangers to living things.</p>	<p>Living things and their habitats</p> <p>To describe the life cycles of different animal groups.</p> <p>To describe how some animals and plants reproduce.</p>	<p>Living things and their habitats</p> <p>To classify plants and animals and give reasons for their choices based on characteristics.</p>
	<p>Plants</p> <p>To name and describe the simple features of common plants and trees.</p> <p>To name and describe the different parts of flowers and trees.</p>	<p>Plants</p> <p>To know what plants need to grow and stay healthy.</p>	<p>Plants</p> <p>To know the job of each part of the flower in the life cycle of a plant.</p> <p>To know what different plants need to live and grow.</p> <p>To describe how water is transported through a plant.</p>			
						<p>Evolution and inheritance</p> <p>To explain that the kind of things on Earth now are different to millions of years ago.</p> <p>Give examples of how living things have adapted.</p> <p>Explain how living things produce offspring which is similar but not identical.</p>

Key Concepts	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Energy 			Light To describe some sources of light. To notice that light can be reflected from surfaces. To describe some simple properties of light including shadows.			Light To explain how light travels and how we see objects. To describe why we see shadows.
				Sound To recognise sound is made by vibrations and describe how the size of these effect pitch and volume.		
			Electricity To construct, draw, label and make predictions about simple circuits. To know some good conductors and insulators. To identify some common appliances that run on electricity.		Electricity To explain the effect of the number of cells on lights and buzzers in a circuit. To give reasons for variations in how different elements of a circuit function.	
Forces 			Forces and Magnets To understand the effect of friction and contact forces. To describe magnetic and non-magnetic materials. To describe a magnetic force.		Forces I understand the force of gravity. I can identify the effects of air resistance. I can use simple mechanisms.	
Materials  States of Matter 	Materials To name and describe a variety of materials and their properties. To group materials based on their properties.	Materials To describe the properties and suitability of everyday materials.	Materials (rocks) To group rocks according to simple properties. To know how rocks and fossils are formed. To know what soil is made from.	States of matter To recognise the three common states of matter and understand how some materials can change state. To identify the part played by condensation and evaporation in the water cycle.	Materials To explain how to combine or separate mixtures and solutions. To understand reversible and irreversible changes. To compare and group materials based on more complex properties—including hardness, solubility, transparency, conductivity and response to magnets	
The Earth in relation to the universe  The Earth spins on its axis					Earth and Space To describe the movement of Earth, moon and sun and their relationship to each other and other planets.	

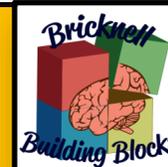
Year 5 Science—Yearly Overview

Autumn	Spring	Summer
<p style="text-align: center;">Feel the force</p> 	<p style="text-align: center;">Marvellous mixtures</p> 	<p style="text-align: center;">Reproduction in plants and animals</p> 
<p style="text-align: center;">Get sorted</p>  <p style="text-align: right; font-size: small;">#134549463</p>	<p style="text-align: center;">Materials: All change!</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Reversible Changes</p>  <p>Physical change, from solid to liquid to gas and back again, is a reversible change.</p> </div> <div style="text-align: center;"> <p>Irreversible Changes</p>  <p>Any reaction, such as burning, that causes new substances to be formed is called a Chemical Change. These changes are irreversible.</p> </div> </div>	<p style="text-align: center;">Circle of life</p> 
<p style="text-align: center;">Everyday materials</p> 	<p style="text-align: center;">The Earth and Beyond</p> 	

Autumn Term

Feel the Force

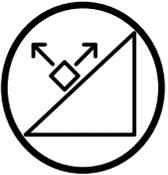
Physics

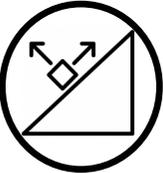


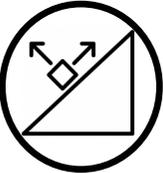
<i>Prior Learning</i>	<ul style="list-style-type: none"> • Can pupils recognise contact and non-contact forces? • Do pupils understand that magnetic forces act at a distance? • Can pupils predict/explain why a magnet will attract or repel?
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<i>End Points</i>	<ul style="list-style-type: none"> • I understand the force of gravity. • I can identify the effects of air resistance. • I can use simple mechanisms.
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<i>Vocabulary</i>	<table border="0"> <tr> <td>gravity</td> <td>pulley</td> </tr> <tr> <td>resistance</td> <td>gear</td> </tr> <tr> <td>air resistance</td> <td>force</td> </tr> <tr> <td>mechanisms</td> <td>water resistance</td> </tr> <tr> <td>lever</td> <td></td> </tr> </table>	gravity	pulley	resistance	gear	air resistance	force	mechanisms	water resistance	lever	
gravity	pulley										
resistance	gear										
air resistance	force										
mechanisms	water resistance										
lever											

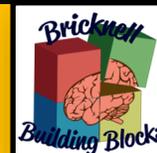
Key Concept	Second Order Concepts	Lesson Sequence	Learning Objectives	Enquiry Type	Resources
 <i>Forces</i>	Responsibility	Lesson 1	OO: I can identify the effects of air resistance, water resistance and friction that act between moving surfaces. LO: I am beginning to measure forces using a Newton meter. WS: I can plan and carry out scientific enquiry using a range of scientific equipment and variables in order to answer questions.	Pattern seeking	Newton meters Modelling clay Match boxes with different materials glued to the bottom—sandpaper, foil, rubber gloves
	Significance	Lesson 2	OO: I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. LO: I can investigate scientific evidence linked to theories about how things fall. WS: I can identify scientific evidence that has been used to support or refute ideas or arguments.	Carrying out comparative and fair tests	Objects to drop to demonstrate something falling Empty camera film canisters Modelling clay Cupcake cases timers

Key Concept	Second Order Concepts	Lesson Sequence	Learning Objectives	Enquiry Type	Resources
 <p data-bbox="311 826 385 847">Forces</p>	Responsibility	Lesson 4	<p>OO: I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>I can identify the effects of air resistance, water resistance and friction that act between moving surfaces.</p> <p>LO: I can describe and explain air resistance.</p> <p>WS: I can use test results to make predictions to set up further comparative and fair tests.</p>	Carrying out comparative and fair tests	<p>String</p> <p>Scissors</p> <p>Plastic bin liners</p> <p>Different sized small plastic</p> <p>Materials—tissue paper, plastic, fabric, card, paper</p>
		Lesson 5	<p>OO: I can identify the effects of air resistance, water resistance and friction that act between moving surfaces.</p> <p>LO: I can describe and explain water resistance and know that this is a form of friction.</p> <p>WS: I can plan and carry out scientific enquiry using a range of scientific equipment and variables in order to answer questions.</p>	Carrying out comparative and fair tests	<p>Modelling clay</p> <p>Bubble bath</p> <p>Measuring cylinders</p> <p>Timers</p> <p>Jugs</p> <p>Scales</p> <p>Kitchen foil</p> <p>Sticky notes</p> <p>Elastic bands</p>
	Written and oral expression	Lesson 7	<p>OO: I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>LO: I am beginning to investigate what happens to objects when a force is applied.</p> <p>WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.</p>	Pattern seeking	<p>Springs</p> <p>Paper clips</p> <p>Rubber bands</p> <p>Hanging weights</p> <p>Newton meters</p> <p>Tape measures</p> <p>Modelling clay</p> <p>Small objects from around the classroom to hand on rubber bands</p>

Key Concept	Second Order Concepts	Lesson Sequence	Learning Objectives	Enquiry Type	Resources
 <p data-bbox="311 826 385 847">Forces</p>	Responsibility	Lesson 8	<p>OO: I recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p> <p>LO: I understand that mechanisms are devices that change the effect of a force.</p> <p>WS: I can plan and carry out scientific enquiry using a range of scientific equipment and variables in order to answer questions.</p>	Carrying out comparative and fair tests	<p>Everyday objects that use levers - scissors, pliers</p> <p>Empty tins</p> <p>Wooden spoons</p> <p>1 litre bottles of water</p> <p>Carboard tubes</p> <p>Modelling clay</p> <p>Newton meters</p> <p>Books</p>
	Written and oral expression	Lesson 9	<p>OO: I recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p> <p>LO: I can explore how a pulley is used to lift objects.</p> <p>WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.</p>	Pattern seeking	<p>Wooden dowel</p> <p>Pulleys</p> <p>Cotton reels</p> <p>String</p> <p>Small bucket</p> <p>Sand</p> <p>Newton meters</p> <p>Weights and hanging masses</p>
	Written and oral expression	Lesson 10	<p>OO: I recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p> <p>LO: I can identify and describe where gears are used in everyday life.</p> <p>WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.</p>	Pattern seeking	<p>Balloon whisk</p> <p>Rotary whisk</p> <p>2 bowls</p> <p>Egg whites</p> <p>Cheap clock with removable back</p> <p>Plastic gear wheels</p> <p>Plastic bricks</p> <p>Axels</p>

Get Sorted and Everyday Materials

Chemistry



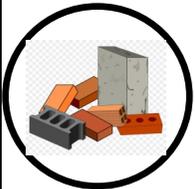
<i>Prior Learning</i>	<ul style="list-style-type: none"> Can pupils describe the characteristics of states of matter? Can pupils describe how materials change state at different temperatures? Do pupils understand the part played by condensation and evaporation in the water cycle?
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<i>End Points</i>	<ul style="list-style-type: none"> To compare and group materials based on more complex properties—including hardness, solubility, transparency, conductivity and response to magnets
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<i>Vocabulary</i>	<table style="width: 100%;"> <tr> <td style="width: 50%;">solubility</td> <td style="width: 50%;">conductivity</td> </tr> <tr> <td>evaporation</td> <td>sieving</td> </tr> <tr> <td>thermal</td> <td>mixture</td> </tr> <tr> <td>dissolving</td> <td>filter</td> </tr> <tr> <td>solution</td> <td>reversible/irreversible</td> </tr> </table>	solubility	conductivity	evaporation	sieving	thermal	mixture	dissolving	filter	solution	reversible/irreversible
solubility	conductivity										
evaporation	sieving										
thermal	mixture										
dissolving	filter										
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Key Concept	Second Order Concepts	Lesson Sequence	Learning Objectives	Enquiry Type	Resources
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 <i>materials</i>	Written and oral expression	Lesson 1	<p>OO: I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>I can compare and group together everyday materials on the basis of their properties.</p> <p>LO: I can compare and group materials based on their properties.</p> <p>WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.</p>	Identifying and classifying	<p>Sticky notes</p> <p>Familiar classroom objects—pen, pencil, paper clip, sweatshirt, trainer, stapler, ruler, water bottle, lunch box, rubber</p> <p>Substances—milk, shaving foam, ketchup, butter, yoghurt, yoghurt, jelly, hair gel, sand, flour, sugar</p>
		Lesson 2	<p>OO: I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>LO: I can investigate and compare the properties of a range of solids.</p> <p>WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.</p>	Carrying out comparative and fair tests	<p>Marshmallows, jelly sweets, chocolate buttons, cooked pasta, foil, elastic, tights, sponge, polystyrene, sand, soil, plastic toy, metal object, piece of fabric, glass bottle</p> <p>Water</p> <p>Tray or large bowl</p>

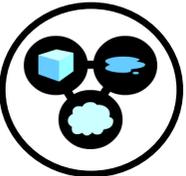
Key Concept	Second Order Concepts	Lesson Sequence	Learning Objectives	Enquiry Type	Resources
 <i>materials</i>	Responsibility	Lesson 3	OO: I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. LO: I can investigate and explore the viscosity of liquids. WS: I can plan and carry out scientific enquiry using a range of scientific equipment and variables in order to answer questions.	Identifying and classifying	Honey, cooking oil, syrup, milk, washing up liquid, bubble solution, lemonade, yoghurt Ramps Teaspoons Tablespoons Stop watches
	Significance	Lesson 4	OO: I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. LO: I can investigate and explore the properties of metals. WS: I can identify scientific evidence that has been used to support or refute ideas or arguments.	Identifying and classifying	Magnets Objects made from metals
	Written and oral expression	Lesson 5	OO: I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. LO: I can investigate and explore the properties of a range of plastics. WS: I can plan and carry out scientific enquiry using a range of scientific equipment and variables in order to answer questions.	Identifying and classifying	Large bowl or jug Variety of spoons—metal, plastic, wooden Collection of objects made of plastics Research materials
	Responsibility	Everyday Materials Lesson 2	OO: I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. LO: I can carry out an investigation linked to the strength of plastics. WS: I can plan and carry out scientific enquiry using a range of scientific equipment and variables in order to answer questions.	Carrying out comparative and fair tests	Lengths of dowel Modelling clay Weights and masses Stop watches Different types of plastic bag
		Everyday Materials Lesson 4	OO: I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. LO: I can investigate and explore how a cool bag affects the temperature of hot and cold food. WS: I can take measurements, using a wider range of scientific equipment, with increasing accuracy and precision and taking repeat reading when appropriate.	Carrying out comparative and fair tests	Thermometers Data loggers Hot water in plastic containers Ice cubes Cool bags

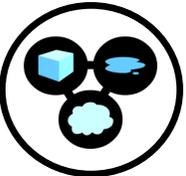
Key Concept	Second Order Concepts	Lesson Sequence	Learning Objectives	Enquiry Type	Resources
 <p><i>materials</i></p>	Significance	Lesson 6	<p>OO: I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>LO: I I can plan and carry out my own investigation linked to everyday materials.</p> <p>WS: I can identify scientific evidence that has been used to support or refute ideas or arguments.</p>	Carrying out comparative and fair tests	<p>Water jugs</p> <p>Measuring cylinders</p> <p>Pipettes</p> <p>Variety of nappies</p>

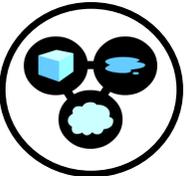
Spring Term

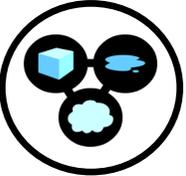
Marvellous Mixtures and Materials: All change!

Chemistry

<p><i>Prior Learning</i></p>	<ul style="list-style-type: none"> • Can pupils describe the characteristics of states of matter? • Can pupils describe how materials change state at different temperatures? • Do pupils understand the part played by condensation and evaporation in the water cycle? 														
<p><i>End Points</i></p>	<ul style="list-style-type: none"> • To explain how to combine or separate mixtures and solutions. • To understand reversible and irreversible changes. 														
<p><i>Vocabulary</i></p>	<table border="0"> <tr> <td>solubility</td> <td>conductivity</td> </tr> <tr> <td>evaporation</td> <td>sieving</td> </tr> <tr> <td>thermal</td> <td>mixture</td> </tr> <tr> <td>dissolving</td> <td>filter</td> </tr> <tr> <td>solution</td> <td>reversible/irreversible</td> </tr> </table>					solubility	conductivity	evaporation	sieving	thermal	mixture	dissolving	filter	solution	reversible/irreversible
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<p>Key Concept</p>	<p>Second Order Concepts</p>	<p>Lesson Sequence</p>	<p>Learning Objectives</p>	<p>Enquiry Type</p>	<p>Resources</p>										
 <p><i>States of Matter</i></p>	<p>Responsibility</p>	<p>Lesson 1</p>	<p>OO: I can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <p>LO: I am beginning to understand that materials can mix in different ways and that some can be separated.</p> <p>WS: I can plan and carry out scientific enquiry using a range of scientific equipment and variables in order to answer questions.</p>	<p>Identifying and classifying</p>	<p>Disposable plates—hole punched to make sieves</p> <p>Selection of fabrics</p> <p>Kitchen materials - rice, raisins, large pasta, flour, dried lentils, dried peas, sugar, coffee granules</p> <p>Paperclips</p> <p>Plastic spiders</p> <p>Foil trays</p> <p>Plastic beakers</p> <p>Magnets</p> <p>Spoons</p>										

Key Concept	Second Order Concepts	Lesson Sequence	Learning Objectives	Enquiry Type	Resources
 <p><i>States of Matter</i></p>	Responsibility	Lesson 2	<p>OO: I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</p> <p>LO: I understand that some solids dissolve in liquids.</p> <p>WS: I can use test results to make predictions to set up further comparative and fair tests.</p>	Identifying and classifying	<p>Sand, salt, fruit syrup, brown sugar, powder paint, flour, sugar, sand, coffee granules, baby powder</p> <p>Beakers</p> <p>Liquids—oil, vinegar, water</p> <p>Beakers</p> <p>Spoons</p> <p>Weighing equipment</p> <p>Measuring jugs</p>
		Lesson 3	<p>OO: I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</p> <p>LO: I can investigate what makes a solid dissolve more rapidly in a liquid.</p> <p>WS: I can plan and carry out scientific enquiry using a range of scientific equipment and variables in order to answer questions.</p>	Planning comparative and fair tests	<p>Rock salt, table salt, icing sugar, demerara sugar, granulated sugar</p> <p>Water</p> <p>Beakers</p> <p>Teaspoons</p> <p>Measuring equipment</p> <p>timers</p>
		Lesson 4	<p>OO: I can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <p>LO: I can use my understanding of condensation and evaporation to work out how to get materials back from a solution.</p> <p>WS: I can plan and carry out scientific enquiry using a range of scientific equipment and variables in order to answer questions.</p>	Observation over time	<p>Large bowls</p> <p>Salt solution</p> <p>Jugs</p> <p>Desk lamps or other strong light sources - sunlight may work</p> <p>Cling film</p>

Key Concept	Second Order Concepts	Lesson Sequence	Learning Objectives	Enquiry Type	Resources
 <p data-bbox="324 874 427 938"><i>States of Matter</i></p>	Written and oral expression	Materials: All Change! Lesson 1	OO: I can identify, with reasons, whether changes in materials are reversible or not I can explain that some changes of state result in the formation of new material and that this kind of change is not usually reversible. LO: I am beginning to think about how changes in materials can be reversed. WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.	Identifying and classifying	Small bottles of lemonade Shaving foam cannisters Salt Water Chocolate buttons Beakers Plates
	Responsibility	Materials: All Change! Lesson 2	OO: I can explain that some changes of state result in the formation of new material and that this kind of change is not usually reversible. LO: I can explore non-reversible changes in materials. WS: I can use test results to make predictions to set up further comparative and fair tests.	Carrying out comparative and fair tests	Latex gloves Solids: bicarbonate of soda, baking powder, vitamin c tablets, indigestion tablets Liquids: water, vinegar, lemon juice Beakers Cups Teaspoons Milk bottles Small pop bottles
		Materials: All Change! Lesson 3	OO: I can explain that some changes of state result in the formation of new material and that this kind of change is not usually reversible. LO: I can describe what happens to some metals when they are exposed to air or water. WS: I can plan and carry out scientific enquiry using a range of scientific equipment and variables in order to answer questions.	Observation over time	Iron nails Metal paint Paint brushes Vaseline, oil, salt, lemon juice, vinegar, lemonade, water Beakers Clingfilm Range of metal objects

Key Concept	Second Order Concepts	Lesson Sequence	Learning Objectives	Enquiry Type	Resources
 <p data-bbox="327 472 427 536"><i>States of Matter</i></p>	<p data-bbox="483 300 618 403"><i>Written and oral expression</i></p>	<p data-bbox="651 300 763 355">Materials: All Change!</p> <p data-bbox="651 379 730 403">Lesson 4</p>	<p data-bbox="831 300 1480 355">OO: I can explain that some changes of state result in the formation of new material and that this kind of change is not usually reversible.</p> <p data-bbox="831 379 1447 403">LO: I can observe and discuss the changes involved in burning a candle.</p> <p data-bbox="831 427 1480 483">WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.</p>	<p data-bbox="1525 300 1715 323">Observation over time</p>	<p data-bbox="1800 300 2085 419">Candles Metal containers filled with sand Glass jars</p>
		<p data-bbox="651 504 763 560">Materials: All Change!</p> <p data-bbox="651 584 730 608">Lesson 5</p>	<p data-bbox="831 504 1480 560">OO: I can explain that some changes of state result in the formation of new material and that this kind of change is not usually reversible.</p> <p data-bbox="831 584 1469 639">LO: I can draw conclusions from my investigations and present my findings about rust to my peers.</p> <p data-bbox="831 663 1469 719">WS: WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.</p>	<p data-bbox="1525 504 1715 528">Observation over time</p>	<p data-bbox="1800 504 2096 560">Materials used in lesson 3 investigating rusting</p>

The Earth and Beyond

Earth Science



<i>Prior Learning</i>	<ul style="list-style-type: none"> NEW KEY CONCEPT Can pupils describe seasonal changes?
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<i>End Points</i>	<ul style="list-style-type: none"> To describe the movement of Earth, moon and sun and their relationship to each other and other planets.
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<i>Vocabulary</i>	<table border="0"> <tr> <td>lunar</td> <td>hemisphere</td> </tr> <tr> <td>spherical</td> <td>orbit</td> </tr> <tr> <td>equator</td> <td>poles</td> </tr> <tr> <td>axis</td> <td>asteroid</td> </tr> <tr> <td>tilt</td> <td>eclipse</td> </tr> </table>	lunar	hemisphere	spherical	orbit	equator	poles	axis	asteroid	tilt	eclipse
lunar	hemisphere										
spherical	orbit										
equator	poles										
axis	asteroid										
tilt	eclipse										

Key Concept	Second Order Concepts	Lesson Sequence	Learning Objectives	Enquiry Type	Resources
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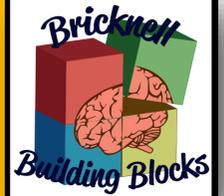
 <p><i>Earth spins on its axis</i></p>	Written and oral expression	Lesson 1	OO: I can describe the movement of the Earth, and other planets, relative to the Sun in the solar system. LO: I can make careful observations of the night sky. WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.	Research	Paper
		Lesson 2	OO: I can describe the movement of the Earth, and other planets, relative to the Sun in the solar system. LO: I can create a diagram of the solar system and can explain the Earth's orbit. WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.	Research	Ball of string Chalk Eight large balls Strips of card—each with the name of a planet
		Lesson 3	OO: I can use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. LO: I can explain how the Earth rotates and how this links to the sun. WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.	Pattern seeking	Globe Blu tac Torch Cocktail stick compass

Key Concept	Second Order Concepts	Lesson Sequence	Learning Objectives	Enquiry Type	Resources
 <p><i>Earth spins on its axis</i></p>	Written and oral expression	Lesson 6	<p>OO: I can describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</p> <p>LO: I can describe how the Earth's tilt on its axis causes seasonal changes and changes in daylight hours.</p> <p>WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.</p>	Observation over time	<p>Torches</p> <p>Globe</p> <p>Blu tac</p> <p>Dowel</p> <p>Modelling clay</p> <p>Research material</p>
	Responsibility	Lesson 8	<p>OO: I can describe the movement of the Moon relative to the Earth.</p> <p>LO: I can explain how the moon appears to change shape over a month.</p> <p>WS: I can use test results to make predictions to set up further comparative and fair tests.</p>	Observation over time	<p>Dark paper</p> <p>Chalks</p> <p>A large ball—half covered with white plastic, half with black</p> <p>Black sugar paper</p> <p>Calendar for the month ahead</p>

Summer Term

Circle of Life

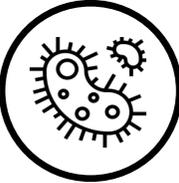
Biology

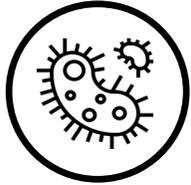


<i>Prior Learning</i>	<ul style="list-style-type: none"> Can pupils construct and interpret a variety of food chains? Can pupils identify producers, consumers, predators and prey within a food chain? Can pupils use classification keys to group and sort animals?
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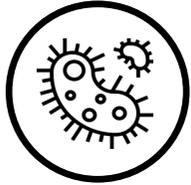
<i>End Points</i>	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.
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<i>Vocabulary</i>	<table border="0"> <tr> <td>organism</td> <td>consumer</td> </tr> <tr> <td>respire</td> <td>predator</td> </tr> <tr> <td>nutrition</td> <td>prey</td> </tr> <tr> <td>excretion</td> <td>producer</td> </tr> <tr> <td>life cycle</td> <td></td> </tr> </table>	organism	consumer	respire	predator	nutrition	prey	excretion	producer	life cycle	
organism	consumer										
respire	predator										
nutrition	prey										
excretion	producer										
life cycle											

Key Concept	Second Order Concepts	Lesson Sequence	Learning Objectives	Enquiry Type	Resources
 O <i>Organisms</i>	Written and oral expression	Lesson 1	OO: I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. LO: I can compare and contrast different animal life cycles identifying common features and differences. WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.	Research	Sticky notes Research material Non-fiction books
		Lesson 3	OO: I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. LO: I can identify some common characteristics in the life cycles of amphibians. WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.	Research	Sticky notes Research material Non-fiction books

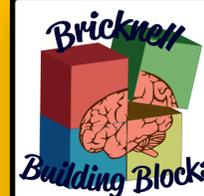


Organisms

Key Concept	Second Order Concepts	Lesson Sequence	Learning Objectives	Enquiry Type	Resources
 <p>Organisms</p>	<p><i>Written and oral expression</i></p>	Lesson 4	<p>OO: I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>LO: I can identify some common characteristics in the life cycles of insects.</p> <p>WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.</p>	Research	<p>Sticky notes</p> <p>Research material</p> <p>Non-fiction books</p>
		Lesson 5	<p>OO: I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>LO: I can identify some common characteristics in the life cycles of birds..</p> <p>WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.</p>	Research	<p>Sticky notes</p> <p>Research material</p> <p>Non-fiction books</p>
	<p><i>Significance</i></p>	Lesson 6	<p>OO: I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>LO: I can demonstrate and apply my understanding of animal life cycles.</p> <p>WS: I can identify scientific evidence that has been used to support or refute ideas or arguments.</p>	Research	<p>Sticky notes</p> <p>Research material</p> <p>Non-fiction books</p>
		Lesson 7	<p>OO: I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>LO: I can describe and explain how humans are using science to help endangered animals complete their life cycles.</p> <p>WS: I can identify scientific evidence that has been used to support or refute ideas or arguments.</p>	Research	<p>Sticky notes</p> <p>Research material</p> <p>Non-fiction books</p> <p>www.konicaminolta.com/kids/endangered_animals</p>

Reproduction in plants and animals

Biology

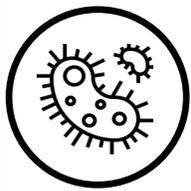


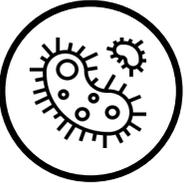
<i>Prior Learning</i>	<ul style="list-style-type: none"> • Can pupils describe what happens to humans as they age? • Can pupils describe the different functions of a flower? • Can pupils describe what a plant needs to survive? • Can pupils describe the life cycle of a flowering plant?
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<i>End Points</i>	<ul style="list-style-type: none"> • To describe how some animals and plants reproduce. • To describe how our bodies change as we age.
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<i>Vocabulary</i>	<table style="width: 100%;"> <tr> <td>reproduce</td> <td>germination</td> </tr> <tr> <td>asexual</td> <td>fertilisation</td> </tr> <tr> <td>sexual</td> <td>offspring</td> </tr> <tr> <td>puberty</td> <td>sibling</td> </tr> <tr> <td>growth</td> <td></td> </tr> </table>	reproduce	germination	asexual	fertilisation	sexual	offspring	puberty	sibling	growth	
reproduce	germination										
asexual	fertilisation										
sexual	offspring										
puberty	sibling										
growth											

Key Concept	Second Order Concepts	Lesson Sequence	Learning Objectives	Enquiry Type	Resources
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 <i>Organisms</i>	Written and oral expression	Lesson 1	OO: I can describe the life process of reproduction in some plants and animals. I can name, locate and describe the functions of the main parts of plants, including those involved in reproduction. LO: I can explain the part that flowers play in the life cycle of a flowering plant. WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.	Identifying and classifying	Flowers—large enough for children to identify male and female organs Magnifying glasses
	Significance	Lesson 2	OO: I can describe the life process of reproduction in some plants and animals. I can name, locate and describe the functions of the main parts of plants, including those involved in reproduction. LO: I understand the role a flower plays in the reproductive cycle of plants. WS: I can identify scientific evidence that has been used to support or refute ideas or arguments.	Identifying and classifying	A variety of flowers - use images of single sex flowers (courgette, marrow, holly) Magnifying glasses Modelling clay Junk modelling resources

Key Concept	Second Order Concepts	Lesson Sequence	Learning Objectives	Enquiry Type	Resources
 <p>Organisms</p>	<p><i>Written and oral expression</i></p>	<p>Lesson 3</p>	<p>OO: I can describe the life process of reproduction in some plants and animals.</p> <p>I can name, locate and describe the functions of the main parts of plants, including those involved in reproduction.</p> <p>LO: I can describe and explain asexual reproduction in plants.</p> <p>WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.</p>	<p>Research</p>	<p>Examples of bulbs—garlic, onions, shallots</p> <p>Plants in pots—fuchsia, begonia, geranium</p>
		<p>Lesson 6</p>	<p>OO: I can describe the changes as humans develop to old age.</p> <p>LO: I can describe and explain the key stages of the life cycle of a human.</p> <p>WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.</p>	<p>Pattern seeking</p>	<p>N/A</p>
		<p>Lesson 7</p>	<p>OO: I can describe the changes as humans develop to old age.</p> <p>LO: I understand the life cycle stage of puberty in girls.</p> <p>WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.</p>	<p>Identifying and classifying</p>	<p>Large sheets of paper and pens for poster making</p>
		<p>Lesson 8</p>	<p>OO: I can describe the changes as humans develop to old age.</p> <p>LO: I understand the life cycle stage of puberty in boys.</p> <p>WS: I can report and present findings from enquiries including conclusions, explanations, data and diagrams.</p>	<p>Identifying and classifying</p>	<p>Large sheets of paper and pens for poster making</p>