

Science Key Content Autumn MTP 2021-2022

		Down on the Farm		Substantive Knowledge		Assessment	
EYFS	Unit of work	Autumn changes Winter		Earth and space		Assessment will be supported by Development Matters documentation through observations.	
	Key Content	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					
	Second order concepts	I can identify similarities and differences		I can use written and oral expression		I understand cause and consequence	
	I can discuss continuity and change						
YEAR 1	Autumn 1	If you go down to the woods...		Key Concepts		Assessment	
	Unit of work	EVERYDAY MATERIALS USING OUR SENSES		Chemistry: Materials (properties and changes) Biology: Organisms require a supply of energy and materials		Snap science EoU Assessment	
	Suggested lessons	Children explore materials: wood, metal and plastic. They sort them into the correct labelled hoops. How are the materials different? Texture, appearance? Then children sort pictures of materials (from catalogue)	Show children objects made of glass- describe the texture, colour, weight, transparency. What is made of glass? Place in labelled hoop. Do the same with brick. Show them natural rocks- what are these? Describe the rocks. Pour water from jug into plastic cups- describe water. Children explore and compare materials. How are they the same and how are they different?	Show children different types of paper. Show presents wrapped in kitchen roll- these were hard to wrap. Would you have wrapped a present in these? What should I have used? Give the children 5 paper samples they practise painting on each, dropping water on each and writing on each. Which is the best for the different tasks?	Pass fabric around for children to explore- which is their favourite? Record words given. Do children know which fabric is which? Fabrics made into many things- pas around clothes samples. Children draw different fabrics and what item of clothing is may be used for. Draw different fabrics and stick piece next to it on sheet. Children compare drawings, do they agree or disagree with the clothing they have suggested for different fabrics	Play Simon says- children identify different body parts. Ask children different parts of the body and write on the board to support with later labelling activity. Then work in partners and compare body parts- are your hands and feet the same size, look at eye colour etc. Think about questions they could ask to compare. Children draw life sized drawing of themselves and add features. Then stick on the wall to compare.	Use last week's drawings to recap parts of the body. Explain how we use parts of the body to sense the world around us. Introduce 5 senses. Explain that today we are looking at the sense of taste- which body part will we be using? Explain we will be taste testing different things today. What foods do they like? What flavour is it? Who likes sweet foods? Who prefers savoury foods?

	Key Content	I can name, compare and group a variety of everyday materials and describe their simple, physical properties						
		I can identify, name, draw and label the basic parts of the human body.						
	WS and Second order concepts	I can identify and classify according to simple criteria I can identify similarities and difference						
		I can perform simple tests, including observations and the gathering and recording of data I can use written and oral expression in science						
		I can perform simple tests, involving observations and the gathering and recording of data I can identify similarities and differences						
	Autumn 2	If you go down to the woods...			Key Concepts		Assessment	
	Unit of work	Using Our Senses Our Changing World			Chemistry: Materials (properties and changes)		Snap science EoU Assessment	
					Biology: Organisms require a supply of energy and materials			
	Suggested lessons	Children use feely bags and feely feet boxes to describe what different objects feel like. Can they identify the different objects? Using our senses L4	Children smell different objects and describe what they can smell. Can they identify what the objects is that they are smelling? Using our senses L5	Different sensory stations placed around the classroom- children use their senses to describe and identify the different objects Using our senses L6	Children visit the school grounds or locality at different seasons of the year, making observations of the changing natural world as they carry out seasonal 'scavenger hunts' Sensing seasons - L2 and 3	Children make a series of visits to the school grounds and locally, and make observations of any animal life they see there. Animal antics - L1	Children look closely at garden plants around the school, including flowering plants, learn their names and make simple comparisons. By the end of this lesson they understand that garden plants are different, but have some similarities Plants - L1	Children look closely at wild plants growing locally, learn their names and make simple comparisons. By the end of this lesson they understand that wild plants are all different, but have some features in common. Plants - L2 EoU assessment
	Key Content	I can use my sense of touch to find out more about the world around me						
	I can use my sense of smell to carry out an investigation							
	I can describe how I could use my other senses instead of sight to identify a variety of objects and materials							
	I can make observations of the school grounds during different seasons of the year							
	I can observe how leaves change throughout the year.							
WS and Second order concepts	I can perform simple tests, involving observations and the gathering and recording of data I understand continuity and change							
	I can perform simple tests, involving observations and the gathering and recording of data I understand continuity and change							
	I can identify and classify according to simple criteria I can identify similarities and differences							
	I can perform simple tests, involving observations and the gathering and recording of data I can use oral and written expression in science							
	I can identify and classify according to simple criteria I can identify similarities and differences							
	I can perform simple tests, involving observations and the gathering and recording of data I can use oral and written expression in science							
YEAR 2	Autumn 1	Plagues, Pus and inferno			Key Concepts		Assessment	
	Unit of work	MATERIALS: Good Choices			Chemistry: Materials (properties and changes)		Snap science EoU Assessment	

Suggested lessons	In this lesson children observe and compare features of objects. By the end of this lesson they have revised the names of some everyday materials and compared objects made from these, referring to the materials' properties. This is a recap of learning that took place in Year 1, Module 4, Everyday Materials. L1	In this lesson children identify which materials are appropriate for certain objects and which are not. By the end of this lesson they are able to explain why some materials are unsuitable for certain objects, based on their properties. L3	In this lesson children test a collection of fabrics by rubbing them on a rough stone surface to find out which ones are the most hardwearing. By the end of this lesson they are able to choose the most appropriate material for a toddler's dungarees. L4	In this lesson children test a collection of curtain fabrics to find out which ones let the least and the most light through, by placing them over a window in the top or lid of a box and looking through an eye-hole to check how light it is inside the box. They decide which fabric would be best for making a bedroom dark. L5	In this lesson children carry out a comparative test to find out which types of materials are appropriate or not appropriate to make a teabag. L6	In this lesson children compare different balls to find out how bouncy they are. By the end of this lesson they are able to put the balls in order of how well they bounce and relate this to the properties of the materials from which the balls are made L7	
Key Content	<p>I can describe and compare the features of a range of everyday materials.</p> <p>I can identify appropriate uses for materials.</p> <p>I can identify 'hardwearing' materials for a specific purpose.</p> <p>I can identify which materials let the least and most light through.</p> <p>I can identify appropriate materials to make a teabag.</p> <p>I can identify suitable materials to make a ball bounce.</p>						
WS and Second order concepts	<p>I can ask questions about what I notice and I can observe closely I can identify similarities and differences</p> <p>I can ask questions about what I notice. I can identify similarities and differences</p> <p>I can gather and record data to help me answer questions. I can identify similarities and differences</p> <p>I can use different types of Scientific enquiry to gather and record data, using simple equipment I can carry out simple comparative test I can use oral and written expression in science</p>						
Autumn 2	Plagues, Pus and inferno			Key Concepts		Assessment	
Unit of work	Materials: Shaping Up What's in your habitat?			Chemistry: Materials (properties and changes) Biology: Organisms require a supply of energy and materials		Snap science EoU Assessment	
Suggested lessons	How can I make different shapes? In this lesson children use actions, gestures and drama to develop their understanding of the words 'squash', 'stretch', 'bend' and 'twist'. By the end of	In this lesson children test different objects and sort them according to which actions can be used to change their shapes. By the end of this lesson children have completed a table or	This is the first part of a two-part lesson. In this lesson children link the actions from previous lessons to the properties of materials and test materials for those properties. The lesson builds on	This is part two of a two-part lesson. In this lesson children use their charts and tables from Lesson 3 to help them decide suitable uses for different materials. By the end of this lesson children are	In this lesson children visit several different habitats locally and look at what makes up the habitat. This includes looking at living things (plants and animals), things that once lived and things that have never been	Snap Science Biology our changing world lesson 1 This lesson is part of a series: it sets the foundation for Lesson 2 which comprises a series of revisits	Snap Science Biology our changing world lesson 2 In this series of lessons children carry out surveys to see what animals are visible at different times

		<p>this lesson, they have learned to use the words to describe ways of changing the shape of an object.</p>	<p>Venn diagram and learned that different objects made from the same material can have different properties. This lesson follows on closely from Lesson 1.</p>	<p>the Year 1, Everyday materials, Lesson 8, and develops children's understanding of the properties flexible, stretchy, rigid and stiff. By the end of this lesson they are also able to describe materials as being squashy or elastic.</p>	<p>able to link the properties of materials with their uses.</p>	<p>alive. By the end of the lesson they are able to explain that habitats include rocks, soils, water and air (things that have never lived) and different types of animals and plants (dead or alive). They also recognise that there are different types of habitats</p>	<p>to the habitats. In this series of lessons children look at and identify some of the animals and plants that live in a habitat. By the end of the lessons they are able to talk about the types of animals and plants that live in different habitats. It is best for these lessons to take place at the start of the year before the weather gets colder and it becomes harder to find the animals.</p>	<p>of the year in the habitats studied in Lesson 1. By the end of the lessons they have discovered that there are different numbers of each species at different times of the year and that they may be in different stages of their life cycles. These lessons should take place at least once a term, with possibly more visits in the spring and summer terms.</p>
	Key Content	<p>I understand that some materials can changes shape through a range of actions.</p> <p>I understand that some materials can changes shape through a range of actions.</p> <p>I can describe and compare the features of a range of everyday materials.</p> <p>I understand what makes up a range of different habitats.</p> <p>I understand what makes up a range of different habitats.</p>						
	WS and Second order concepts	<p>I can find things out using secondary sources of information I can identify similarities and differences</p> <p>I can group and classify things I can identify similarities and differences</p> <p>I can group and classify things and I can gather and record data to help me answer questions I can identify similarities and differences</p> <p>I can find things out using secondary sources of information and I can communicate my ideas about what I do and what I find out in a variety of ways I can use written and oral expression in science</p> <p>I can find things out using secondary sources of information and I can communicate my ideas about what I do and what I find out in a variety of ways I can use written and oral expression in science</p> <p>I can communicate my ideas about what I do and what I find out in a variety of ways I can use written and oral expression in science</p>						
YEAR 3	Autumn 1	Land before time			Key Concepts		Assessment	
	Unit of work	Rock Detectives Our Changing World			Chemistry: Materials (properties and changes)		Biology: Organisms require a supply of energy and materials	
							Snap science EoU Assessment	

Suggested lessons	<p>Our changing world, lesson 1, 2 and 3. 'Are plants the same all year?' video BBC - Primary Science - Plants</p> <p>During this series of lessons the children will revisit the same two trees or shrubs to look at how the leaves change through the year.</p>	Lesson 4 and 5 Our changing world Observing berries and flowering plants.	Rock Detectives Lessons 1 and 2 Chn will identify/group/sort rocks	Rock Detectives Lesson 3 Identify where and how rocks are used.	Rock Detectives Lesson 6 Compare how rocks change over time.	Rock Detectives Lesson 7 Make links between soils and the rocks they are made from.	Complete snap shot assessment (rock properties) this lesson. See snap science for assessment
Key Content	<p>I can describe how leaves and flowers change through the year.</p> <p>I can describe the time of year that I am most likely to find particular berries on flowers</p> <p>I can describe the part flowers play in the life cycle of flowering plants.</p> <p>I can explore and describe properties of rocks.</p>						
WS and Second order concepts	<p>I can identify differences, similarities or changes related to simple scientific ideas and process I can identify similarities and differences</p> <p>I can ask relevant questions and use different types of scientific enquiry to answer them, including comparative and fair tests I understand responsibility in science</p> <p>I can use results to draw simple conclusions, suggest improvements and ask new questions I can use written and oral expression in science</p> <p>I can gather, record, classify and present data in a variety of different ways to help answer questions I can identify similarities and differences and use written and oral expression in science</p> <p>I can record findings and present data using simple scientific language, written and oral explanations, diagrams, pictures, keys, bar charts and tables I can use written and oral expression</p> <p>I can record findings and present data using simple scientific language, written and oral explanations, diagrams, pictures, keys, bar charts and tables I can discuss continuity and change through written and oral expression</p>						
Autumn 2	Land before time		Key Concepts			Assessment	
Unit of work	Our Changing World Can You See Me?		Biology: Organisms require a supply of energy and materials			Snap science EoU Assessment	

	Suggested Lessons	Our changing world, lesson 1, 2 and 3. 'Are plants the same all year?' video BBC - Primary Science - Plants During this series of lessons the children will revisit the same two trees or shrubs to look at how the leaves change through the year.	This is probably the first time that children will have studied light in science, although they will have developed some ideas about light and dark from their general experiences. In this lesson children will begin to understand that light is needed for us to see things and that some objects are easier to see than others.	In this lesson children will develop their understanding of how light is reflected from surfaces, and investigate how different surfaces reflect different amounts of light. By the end of the lesson children will be able to compare different materials on the basis of their 'shininess' and relate this to how they reflect the light	In this lesson children will make reflective strips and explore ways to make it easier to make things (including themselves) be seen in the dark. This activity builds on the ideas raised in the previous lessons about how light reflects off the surface of objects. By the end of this lesson children will be able to describe the choices that they have made and explain how to make things or people more visible in the dark.	In this lesson children will begin to explore shadows for the first time. They will make shadows, helping them to understand what makes shadows form. By the end of the lesson children will be able to describe the relationship between the shape of the object and the shape of the shadow. This builds on work on shadow length in the context of seasonal changes in Key Stage 1.	In this lesson children build on work from the previous lesson. They make real shadows of themselves and other objects, draw the shadows and look for patterns between the object making the shadow and the shadow. The focus of this lesson is to look more closely at the shapes of shadows. By the end of the lesson children will be able to explain what affects the shape of a shadow.	In this lesson children will build on Lesson 6 to further develop their understanding of shadows, their shapes and size. At the end of the lesson children will be able to describe the relationship between the relative positions of the object and light source and the shadow created
	Key Content	<p>I can describe how leaves and flowers change through the year.</p> <p>I understand that light is necessary in order for us to see objects.</p> <p>I recognise that light is reflected from surfaces.</p> <p>I recognise that light is reflected from surfaces.</p> <p>I recognise that we need light in order to see things and that dark is the absence of light.</p> <p>I understand how a shadow is formed.</p> <p>I can describe and explain why the shape and size of a shadow might change.</p>						
	WS and Second order concepts	<p>I can ask relevant questions and use different types of scientific enquiry to answer them, including comparative and fair tests I can use written and oral expression</p> <p>I can identify similarities, differences or changes related to simple scientific ideas and processes I can identify similarities and differences</p> <p>I can ask relevant questions and use different types of scientific enquiry to answer them, including comparative and fair tests I understand how to be a responsible scientist</p> <p>I can record findings and present data using simple scientific language, written and oral explanations, diagrams, pictures, keys, bar charts and tables I can identify similarities and differences using written and oral expression</p> <p>I can use results to draw simple conclusions, suggest improvements and ask new questions I understand continuity and change and show this through written and oral expression</p> <p>I can record findings and present data using simple scientific language, written and oral explanations, diagrams, pictures, keys, bar charts and tables I understand continuity and change and show this through using written and oral expression</p> <p>I can notice patterns and I can record findings and present data using simple scientific language, written and oral explanations, diagrams, pictures, keys, bar charts and tables I can discuss continuity and change</p>						
YEA	Autumn 1	The Empire strikes Back!			Key Concepts		Assessment	
	Unit of work	Our Changing World Where Does All That Food Go?			Chemistry: Materials (properties and changes)		Snap science EoU Assessment	

**Biology:
Organisms require a supply of energy and materials**

Suggested lessons	<p>In this lesson children will use their observations of the key features of leaves to classify the leaves of a variety of trees in their local environment. They will devise a simple classification key to sort leaves that they find. By the end of the lesson they will know the main characteristics used to classify leaves. This lesson should be carried out when trees are in full leaf, i.e. spring or summer. It builds on learning about the features and functions of leaves in Year 3 and links with learning about keys in the Y4 Who am I? module. Resources needed: Camera, sets of three different leaves.</p>	<p>In this lesson children will learn about the basic parts of the digestive system. By the end of the lesson the children will be able to say where the food goes as it travels through the body. Resources needed: Large sheets of paper, poster/mounting putty, camera, access to the internet.</p>	<p>During this lesson, children will learn about how digestion takes place in different parts of the digestive system. By the end of the lesson they will understand that food can be broken down mechanically and chemically and then absorbed into the body. They will be able to identify in which organs food is broken down in these different ways. They will also learn what is removed from the food in each organ. Resources needed: Fruit, blender, crackers, porridge, digestive enzymes (can be bought at a chemist or health food shop), clear cup or beaker, spoon, video camera, access to the internet or books for research on digestion.</p>	<p>During this lesson, children will consolidate their learning about the parts of the digestive system by presenting what they have learned using different types of models. By the end of the lesson they will have created a model to present their understanding of the digestive system. Resources needed: Bowl, scissors, forks, potato masher, blender, socks, plastic bag, empty bottle of digestive enzyme tablets, tights, peppercorns, water, bowl, plastic container with lid, different coloured modelling clay, computer with animation package.</p>	<p>In this lesson children will learn about the types of teeth that humans have and how these differ in children and adults. By the end of the lesson they will be able to identify and name the types of teeth that they have. Resources needed: Small plastic mirrors.</p>	<p>In this lesson children will learn about the functions of the different types of teeth. By the end of the lesson they will have identified that incisors are used for cutting, canines for tearing and molars for grinding. Resources needed: Scissors, forks, potato mashers, apple segments, long chewy sweets, banana.</p>	<p>Complete snap shot assessment (rock properties) this lesson. See snap science for assessment</p>
Key Content	<p>I can explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>I can describe the simple functions of the basic parts of the digestive system in humans and how food travels through the human body.</p> <p>I can describe how digestion takes place in different parts of the digestive system.</p> <p>I can create a model of the digestive system.</p> <p>I can describe the different types of teeth and know how these differ between children and adults.</p> <p>I can describe the functions of different types of teeth.</p>						
WS and Second order concepts	<p>I can ask relevant questions and use different types of scientific enquiry to answer them including comparative and fair tests I can identify similarities and differences whilst understanding how to be responsible scientist</p> <p>I can ask relevant questions and use different types of scientific enquiry to answer them including comparative and fair tests I can identify similarities and differences</p> <p>I can ask relevant questions and use different types of scientific enquiry to answer them including comparative and fair tests I can identify continuity and change whilst understanding how to be responsible scientist</p>						

	<p>I can ask relevant questions and use different types of scientific enquiry to answer them including comparative and fair tests I can understand how to be responsible scientist</p> <p>I can record and present findings using simple scientific language, written and oral presentations, drawings, diagrams, keys, bar charts and tables and I can make careful observations and take accurate measurements using standard units I can use written and oral expression</p> <p>I can identify differences, similarities or changes related to simple scientific ideas and processes and I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions I can identify similarities and differences and use written and oral expression</p>						
Autumn 2	The Empire strikes Back!			Key Concepts		Assessment	
Unit of work	Good Vibrations			Biology: Organisms require a supply of energy and materials		Snap science EoU Assessment	
Suggested lessons	<p>Apart from the work on hearing in Year 1 this is likely to be the first time that children will have studied sound in science. However, they will have developed some ideas about sound from their general experiences and in this lesson children will share these ideas, which will allow you to gauge previous understanding. By the end of the lesson children will have gathered questions to explore during the rest of the module.</p>	<p>In this lesson, children will explore how sounds are made. They will notice that often there is something that visibly moves, or that we can feel moving when a sound is made (e.g. the skin of a drum moves when hit), but that sometimes these movements may be invisible (e.g. the movement of air) or so small that we can't feel them. By the end of the lesson children will be able to start to associate some sounds with vibrations. This will be a noisy lesson.</p>	<p>In this lesson children will make ear gongs to explore how sounds travel from the source to our ears. They will learn that sound needs a medium to travel through and by the end of the lesson they will have explored and tested how sounds travel through different materials.</p>	<p>In this lesson children will explore different instruments to compare the volume of sound that they produce. They will also learn how to measure the loudness of the sound produced. By the end of the lesson they will be able to explain what makes a sound louder or quieter.</p>	<p>In this lesson the children will carry out an investigation to explore how sounds get fainter as you move away from the source of the sound. By the end of this lesson they will be able to justify their findings by giving examples to demonstrate that sounds get fainter as you move away from the source.</p>	<p>In this lesson children will explore different ways to change the pitch of a note produced by a plucked string/band. By the end of the lesson they will understand that the pitch of the note is affected by the length, thickness and tautness of the string/band.</p>	<p>In this lesson children will explore how air can be used to make sounds with different pitches. By the end of the lesson they will have identified that it is the air in the instrument that is vibrating to make the sound and not the instrument itself. Using this they will be able to explain that the longer the pan pipe, the more air is vibrating, therefore the lower the note that is produced</p>
Key Content	<p>I can ask questions about how sound is created.</p> <p>I am beginning to identify how sounds are made, associating some of them with something vibrating.</p> <p>I can explore how sound travels from the source to our ears.</p> <p>I can compare the volume of sound produced of a range of instruments.</p> <p>I can describe the relationship between the volume of a sound, the strength of the vibrations and the distance from its source.</p> <p>I can describe the different ways that the pitch of a sound can be affected.</p> <p>I can explore how air can be used to make sounds of different pitches.</p>						
WS and Second	<p>I can identify differences, similarities or changes related to simple scientific ideas or processes I can identify similarities and differences</p> <p>I can record and present findings using simple scientific language, written and oral presentations, drawings, diagrams, keys, bar charts and tables I can identify similarities and differences using written and oral expression</p>						

	order concepts	I can record and present findings using simple scientific language, written and oral presentations, drawings, diagrams, keys, bar charts and tables I can identify similarities and differences using written and oral expression						
		I can record and present findings using simple scientific language, written and oral presentations, drawings, diagrams, keys, bar charts and tables I can use written and oral expression						
		I can ask relevant questions and use different types of scientific enquiry to answer them including comparative and fair tests I can use written and oral expression						
		I can identify differences, similarities or changes related to simple scientific ideas and process I can identify similarities and differences						
		I can record and present findings using simple scientific language, written and oral presentations, drawings, diagrams, keys, bar charts and tables I can use written and oral expression						
YEAR 5	Autumn 1	Up the Chimneys, Down the mines			Key Concepts		Assessment	
	Unit of work	Get Sorted Everyday Materials			Chemistry: Materials (properties and changes)		Snap science EoU Assessment	
	Suggested lessons	In this lesson children identify, compare and group materials based on their properties and according to their own or given criteria.	In this lesson children investigate solids and compare them according to their properties.	In this lesson children carry out various comparative tests, exploring the viscosity of liquids.	In this lesson children explore the ways in which metals are used around their school and in the wider world, and link these uses to the properties of the metals	In this lesson children identify and investigate the wide-ranging properties of plastics. Children will write their findings in graphs and charts	In this lesson children plan and carry out a fair test investigation into different types of plastic carrier bags, building on a lesson where they sorted, grouped and tested a wide range of plastics according to their properties. Children will present their findings on graphs and charts	In this lesson children investigate different brands of nappies, coming up with their own questions and methods of enquiry. They identify the evidence that they need to collect so that they can provide information to parents about the various brands of nappy on offer and the brand claims.
	Key Content	I can compare and group materials based on their properties. I can investigate and compare the properties of a range of solids. I can investigate and explore the viscosity of liquids. I can investigate and explore the properties of metals. I can investigate and explore the properties of a range of plastics. I can carry out an investigation linked to the strength of plastics. I can plan and carry out my own investigation linked to everyday materials.						
	WS and Second	I can plan and carry out scientific enquiry using a range of scientific equipment and variables in order to answer questions I can identify similarities and differences whilst ensuring I am a responsible scientist						

order concepts	I can identify scientific evidence that has been used to support or refute ideas or arguments I can discuss significant individuals' scientific theories					
	I can use test results to make predictions to set up further comparative and fair tests I understand how to be a responsible scientist					
	I can plan and carry out scientific enquiry using a range of scientific equipment and variables in order to answer questions I understand how to be a responsible scientist					
	I can report and present findings from enquiries including conclusions, explanations, data and diagrams I can identify similarities and differences using written and oral expression					
	I can plan and carry out scientific enquiry using a range of scientific equipment and variables in order to answer questions I understand how to be a responsible scientist					
	I can report and present findings from enquiries including conclusions, explanations, data and diagrams I can identify similarities and differences using written and oral expression					
	I can report and present findings from enquiries including conclusions, explanations, data and diagrams I can identify similarities and differences using written and oral expression					
Autumn 2	Up the Chimneys, Down the mines			Key Concepts		Assessment
Unit of work	Marvellous Mixtures Materials: All Change!			Chemistry: Materials (properties and changes)		Snap science EoU Assessment
Suggested lessons	In this lesson children are introduced to the idea that materials can mix in different ways and that they can be separated. They make their own sieves to separate a complex mixture of dry solids.	In this lesson children investigate dissolving solids. Children investigate what makes a difference to how rapidly a solid dissolves	In this lesson children use their knowledge of evaporation and condensation to work out how to get materials back from a solution by investigating a real world problem: how to produce drinkable water from seawater, using limited equipment. EOU Assessment – Marvellous Mixtures	In this lesson children begin to explore how materials change when they are brought together in different ways. They identify types of changes and group them according to whether they think the change could be reversed, and then according to the conditions needed to bring about the change.	In this lesson children set up an investigation to observe the changes that take place when some metals are exposed to the air or water.	In this lessons, children collate the results of the observation enquiries begun a couple of weeks before in Lesson 3, draw conclusions and present them to their peers. EOU Assessment – All Change!
				In this lesson, as an example of a non-reversible change, children explore a variety of solids and liquids that react chemically when they are mixed.		
Key Content	I am beginning to understand that materials can mix in different ways and that some can be separated					
	I understand that some solids dissolve in liquids					
	I can investigate what makes a solid dissolve more rapidly in a liquid					
	I can use my understanding of condensation and evaporation to work out how to get materials back from a solution					

		I am beginning to think about how changes in materials can be reversed					
		I can explore non-reversible changes in materials					
		I can describe what happens to some metals when they are exposed to air or water					
		I can observe and discuss the changes involved in burning candles					
		I can draw conclusions from my investigations and present my findings about rust to my peers					
	WS and Second order concepts	I can report and present findings from enquiries including conclusions, explanations, data and diagrams I can use written and oral expression					
		I can report and present findings from enquiries including conclusions, explanations, data and diagrams I can use written and oral expression]					
		I can report and present findings from enquiries including conclusions, explanations, data and diagrams I can identify similarities and differences using written and oral expression					
I can report and present findings from enquiries including conclusions, explanations, data and diagrams I can discuss continuity and change using written and oral expression							
	I can identify scientific evidence that been used to support or refute ideas or arguments I can use written and oral expression						
	I can use test results to make predictions to set up further comparative and fair tests I can discuss continuity and change whilst being a responsible scientist						
YEAR 6	Autumn 1	Around the World in 80 Days		Key Concepts		Assessment	
	Unit of work	Our Changing World Everything Changes		Earth and Space Biology: Organisms require a supply of energy and materials Evolution		Snap science EoU Assessment	
	Suggested lessons	Chn investigate and discuss how characteristics of living things e.g. height, size, colour vary from individual to individual. Look at developing understanding of inheritance and explore how characteristics are passed on from parents to offspring. Sort dogs into breeding pairs in order to produce offspring with particular characteristics.	Chn. begin to investigate ways in which the environment can affect how plants grow. They make observations and plan and set up a fair test to investigate a demonstrable effect that the environment has on plants	Example ways in which physical feature and behaviour of living things make them more suited to the particular habitat in which they live and how adaptations of living things help them to survive in their environment	In this lesson children apply their knowledge of how changes in an environment can cause living things to become extinct.	In this lesson children build on their knowledge of fossils from Year 3. They use fossils to examine how plants and animals may have looked in the past and, based on their features, suggest the environment in which they may have lived. By the end of this lesson children will know that fossils provide evidence of living things that no longer exist and information about how the environment has	During these lessons children build and expand on the work in other biology modules undertaken during Years 5 and 6. They visit a variety of different locations around the school grounds and in the wider environment, identifying examples of animals that they observe and describing what the animals are doing at different times of the year. By the end of these lessons children are able to describe examples of animal behaviour and, based on their observations, suggest reasons for the behaviours and relate them to, for example, the stage of the animal's reproductive cycle, its feeding habits, and adaptations that make the animal suited to the environment in which it lives.

					changed over very long periods of time.	EoU Assessment
	Chn. build on selective breeding activities from previous lesson and extern learning to subject of selective breeding for food and its advantages and disadvantages	Chn. continue to develop their knowledge and understanding of how environmental variables affect plant populations by carrying out and analysing results of investigations	Chn. observe the variety of bird life located around their school and within the local area throughout the year and identify patterns in the data they collect	In this lesson children explore further what living things need in order to survive by designing imaginary animals that have adapted to suit a specific environment. It provides a good opportunity for children to reflect on their learning so far in this module about variation and adaptation.	In this lesson children explore how natural selection works. By the end of this lesson children are able to recognise that natural selection helps to explain how living things have evolved over long periods of time and that these change have led to the organisms that exist today.	
Key Content	I can investigate and discuss the characteristics of living things					
	I can describe the advantages of selective breeding for food and its advantages and disadvantages					
	I can investigate ways in which the environment can affect how plants grow					
	I understand that changes in the environment can have an impact on living things					
	I can describe how adaptation of living things help them to survive in their environment					
	I can observe and identify patterns in the variety of bird found around school					
	I understand how changes in an environment can cause living things to become extinct					
	I can describe what living things need to in order to survive in a specific environment					
	I examine fossils to gain an understanding of how plants and animals may have looked in the past and can suggest the environment they may have lived in					
	I can describe the process of natural selection					
WS and Second order concepts	I can observe and describe what animals are doing at different times of the year					
	I draw conclusions, explain and evaluate my methods and findings, communicating these in a variety of ways I can identify similarities and differences using written and oral expression					
	I can identify scientific evidence that has been use to support or refute ideas or arguments I understand significance in science					
	I raise further questions that could be investigate, based on data and observations I can identify similarities and differences and discuss continuity and change					
	I record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs I use written and oral expression					
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	I ask my own questions about the scientific phenomena that I am studying, and select the most appropriate ways to answer these questions, recognising and controlling variables where necessary I understand how to be a responsible scientist					
	I record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs I use written and oral expression					
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Autumn 2	Around the World in 80 Days		Key Concepts		Assessment	
Unit of work	Our Changing World Nature Library		Earth and Space Biology: Organisms require a supply of energy and materials		Snap science EoU Assessment	

	Suggested lessons	In this lesson children build on their knowledge from previous years about how living things can be grouped together in different ways according to the characteristics they have in common; this is classification.	In this lesson children decide ways in which to group plants. They apply their classification skills to different types of plants, giving their reasons for the groups and justifying them to others.	<p>In this lesson children consider the classification of animals. After revising their knowledge of different types of animals from previous years, they investigate in more detail the grouping and classification of vertebrates.</p> <p>This lesson follows on from Lesson 3 and deliberately adopts the same pattern and activities in order for children to explore the classification of invertebrates.</p>	In this lesson children apply some of the things they have learned in the previous lessons in this module to living things in the school environment. They use their knowledge of classification and their identification skills to create a school log book.	In this lesson children are introduced to the idea that plants and animals are only two types of living things and that there are three further kingdoms – fungi, bacteria and protista. Together they are often described as micro-organisms.	In this lesson children plan and set up an investigation to observe how micro-organisms grow and multiply over time. The results of this investigation need to be recorded over time. Weekly opportunities to observe changes are needed during the enquire stage, ideally over four weeks.	EoU Assessment
	Key Content	<p>I can demonstrate an understanding of classification</p> <p>I can identify and group plants using classification keys</p> <p>I can group and classify vertebrates</p> <p>I can identify and classify living things within my school environment</p> <p>I am beginning to understand that microorganisms are also living things</p> <p>I can observe and investigate how microorganisms grow and multiply over time</p>						
	WS and Second order concepts	<p>I record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs I use written and oral expression</p> <p>I record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs I use written and oral expression</p> <p>I record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs I use written and oral expression</p> <p>I record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs I use written and oral expression</p> <p>I draw conclusions, explain and evaluate my methods and findings, communicating these in a variety of ways I can use written and oral expression</p> <p>I can identify scientific evidence that has been used to support or refute ideas or arguments I understand significance in science</p>						