

## Year 3 Programme of Study for Science

Earth rocks			
<p><b>Working Scientifically</b> NC <b>Statutory Learning Objectives</b></p>	<ul style="list-style-type: none"> <li>• Asking relevant questions and using different types of scientific enquiries to answer them</li> <li>• Setting up simple practical enquiries, comparative and fair tests.</li> <li>• Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</li> <li>• Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</li> <li>• Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</li> <li>• Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</li> <li>• Using results to draw conclusions, make predictions for new values, suggest improvements and raise further questions.</li> <li>• Identifying differences, similarities or changes related to simple scientific ideas and processes.</li> <li>• Using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>		
Unit 1.1 Hard rock cafe			
<p>NC Statutory Learning Objectives</p>	<ul style="list-style-type: none"> <li>• To explore different kinds of rocks and their properties.</li> <li>• Compare and group together different kinds of rocks on the basis of their appearance and simple properties.</li> <li>• To collect and record data from observations and tests.</li> </ul>	<p>Success criteria</p>	<ul style="list-style-type: none"> <li>• I can compare and group rocks.</li> <li>• I can test for and describe some properties of rocks.</li> <li>• I can decide the best way to record and present my results.</li> </ul>
<p><b>Scientific language</b></p>		<p>Mineral, rock, permeable, impermeable, crystals, ore</p>	
<p><u>Testing rocks</u> page 8</p>		<p>Quick challenges</p>	<p>Challenge children to find rocks around school and identify what they have been used for. Look at groups of rocks and decide on the grouping criteria.</p>
<p><b>Whole class learning</b> Demonstrate to children how to test the properties of rocks: hardness, permeability, fizziness, floatability.</p>		<ol style="list-style-type: none"> <li>1. In pairs, children are given a rock to find everything about, including all the tests demonstrated. They then produce a fact file about their rock.</li> <li>2. As a class compare the properties of each rock to find out which have the same.</li> </ol>	
<p><u>Rocks for dinner</u> page 9</p>		<p>Quick challenges</p>	<p>Ask children to find rocks that look like they are made from more than one thing and discuss minerals and ore. Look closely at coal and sandstone with magnifiers. Explain that the clear white bits are used to make glass.</p>
<p><b>Whole class learning</b> Show children a range of equipment used to make a meal e.g. pots and pans. Discuss which they think may come from rocks. Ask them to</p>		<ol style="list-style-type: none"> <li>1. In pairs, children use the internet and food labels to discover which minerals we eat and where they come from. They decide how to report their findings to the rest of the class.</li> <li>2. Each pair is given one mineral and they produce a bar chart to show the different amounts in various foods.</li> </ol>	

sort them into different groups. Explain which rock each item is made from.	3. Compare the weight of a magazine and newspaper and try to explain why.
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### Unit 1.2 A family affair

NC Statutory Learning Objectives	<ul style="list-style-type: none"> <li>To explore different types of rock families.</li> <li>To recognise that soil comes from rock and organic matter.</li> <li>To set up and carry out simple, practical activities and fair tests.</li> </ul>	Success criteria	<ul style="list-style-type: none"> <li>I can describe some ways rocks are made.</li> <li>I can carry out tests to show differences in soils.</li> <li>I can explain what soil is and why it isn't all the same.</li> </ul>
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Scientific language	Igneous, magma, sediment, sedimentary, granite, marble, sand, clay, limestone, humus
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Rock families page 12	Quick challenges	Watch Tigtag video and children explain what they have seen. Demonstrate a sedimentary mixture settling.
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<b>Whole class learning</b> Explain that igneous rocks are formed when magma cools on the Earth's surface. Demonstrate an igneous rock forming using chocolate chips. Explain/model how sedimentary rocks are formed.	<ol style="list-style-type: none"> <li>Children make igneous rocks from white and dark chocolate.</li> <li>Children demonstrate the sedimentary process using bread, jam, peanut butter, raisins and cream crackers.</li> <li>Children are given 3 different rocks and have to decide which type of rock they have. Reporting back explaining their reasoning.</li> <li>Children rub hard and soft rocks together to show how they can be broken down and freeze some rock in water.</li> </ol>
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Soil investigation page 14	Quick challenges	Dig a 60cm hole and look at how the colour and particles change. Look at soil with magnifiers and compare it to broken rock pieces.
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<b>Whole class learning</b> Introduce the children to a simple soil key and model how to use it so they can try and name some different soils.	<ol style="list-style-type: none"> <li>Children investigate 3 different types of soil to identify what they are.</li> <li>Children compare the permeability of 3 different types of soil by planning and carrying out their own fair test. They conclude a relationship between soil particle size and how well it drains.</li> </ol>
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### Unit 1.3 Fantastic fossils

NC Statutory Learning Objectives	<ul style="list-style-type: none"> <li>To find out how fossils are formed.</li> <li>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</li> <li>To use results to draw conclusions and suggest improvements or new questions.</li> </ul>	Success criteria	<ul style="list-style-type: none"> <li>I can describe how some fossils are formed.</li> <li>I can identify patterns, similarities and differences in my results.</li> <li>I can explain how I could improve my experiments and some further questions they have made me think about.</li> </ul>
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Scientific language	Fossil, extinct, palaeontologist
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Leaving an impression page 18	Quick challenges	Listen to 'I am a palaeontologist'. Sink plastic dinosaurs into air drying clay. Children reveal the 'fossil' left.
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<p><b>Whole class learning</b> Explain that fossils can be made in different ways. Demonstrate the different ways using peas: not fossilised, fossil in ice, mummified, completely fossilised, fossilised but changed in the process, leaves imprint.</p>	<ol style="list-style-type: none"> <li>1. Children try activity on <a href="http://www.bbc.co.uk/sn/prehistoric_life/dinosaurs/burying_bodies/">www.bbc.co.uk/sn/prehistoric_life/dinosaurs/burying_bodies/</a></li> <li>2. Children investigate the best substance to make a fossil.</li> <li>3. Children produce a flow chart to show how a fossil maybe formed.</li> <li>4. Children look at different fossils and map them on a map of the world.</li> </ol>	
<p><b>Is it a fossil?</b> page 19</p>	<p>Quick challenges</p>	<p>Watch YouTube clip about Otzi the ice man and show images of frozen and mummified fossils.</p>
<p><b>Whole class learning</b> Show some fossils to the children and ask them to talk about the different animals they look like. Explain that sometimes fossils are remains that are preserved in ice.</p>	<ol style="list-style-type: none"> <li>1. Children experiment with what effect freezing has on fossils by drawing plants, fish and meat before and after freezing.</li> <li>2. Children make amber fossils and compare to real life images.</li> </ol>	
<p><b>End of topic assessment</b></p>	<p>Children to all complete the interactive activity 'Earth rocks' topic test to assess knowledge.</p>	

## Opposites attract

<p>Working Scientifically NC Statutory Learning Objectives</p>	<ul style="list-style-type: none"> <li>• Asking relevant questions and using different types of scientific enquiries to answer them</li> <li>• Setting up simple practical enquiries, comparative and fair tests.</li> <li>• Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</li> <li>• Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</li> <li>• Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</li> <li>• Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</li> <li>• Using results to draw conclusions, make predictions for new values, suggest improvements and raise further questions.</li> <li>• Identifying differences, similarities or changes related to simple scientific ideas and processes.</li> <li>• Using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>		
<h3>Unit 5.1 Magnetic forces</h3>			
<p>NC Statutory Learning Objectives</p>	<ul style="list-style-type: none"> <li>• To compare how things move on different surfaces.</li> <li>• To notice that some forces need contact between two objects, but magnetic forces can act at a distance.</li> </ul>	<p>Success criteria</p>	<ul style="list-style-type: none"> <li>• I can explain the difference between a contact and non-contact force.</li> <li>• I can plan comparative and fair tests, and collect accurate results.</li> <li>• I can use the results of my tests to explain</li> </ul>

	<ul style="list-style-type: none"> <li>To observe how magnets attract or repel each other.</li> </ul>		some properties of magnets.
<b>Scientific language</b>	Force, magnet, contact, non-contact		
<b>What do magnets do?</b> page 72	Quick challenges	Ask children to think of where they have come across magnets and what they do. Emphasise that magnets produce a force. Ask children to look out for more magnets.	
<b>Whole class learning</b> Show the children the BBC clip on pushes and pulls and ask them to list all the pushes and pulls they see. Discuss how these objects are in contact with each other.	3. In groups, the children explore different magnets and record their findings. 4. In pairs, the children discuss the difference between magnetic forces and those seen in the clip.		
<b>Investigating magnets</b> page 73	Quick challenges	Show video clip - magnets and then take the children outside to create dances about magnets attracting and repelling.	
<b>Whole class learning</b> Present the children with a collection of magnets and ask them to jot down how they are the same and different. Explain that they are going to develop skills in investigating.	4. Children come up with their own investigation to answer one of the following questions: Are different magnets equally strong? Are bigger magnets stronger than smaller magnets? Which materials can magnetic forces pass through? How do magnets behave towards each other? How far does the magnetic force spread away from the magnet?		
<b>Unit 5.2 Is it magnetic?</b>			
NC Statutory Learning Objectives	<ul style="list-style-type: none"> <li>To observe how magnets attract some materials and not others.</li> <li>To 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.</li> </ul>	Success criteria	<ul style="list-style-type: none"> <li>I can name the three metals that can be made into a magnet.</li> <li>I can explain the difference between a magnetic and non-magnetic material.</li> <li>I can list ten uses of magnets.</li> </ul>
<b>Scientific language</b>	Attract, repel, magnetic, non-magnetic, iron		
<b>Sorted!</b> page 76	Quick challenges	Show the children how to make a magnet by rubbing a fridge magnet against a paper clip and get the children to do the same.	
<b>Whole class learning</b>			

<p>Provide the children with a collection of materials and ask them to predict which will attract to a magnet and those which will not. Using a strong magnet test the materials and sort them accordingly. Ask them to come up with some generalisations about materials which are magnetic,</p>	<ol style="list-style-type: none"> <li>5. In groups, children use magnets to recycle different cans.</li> <li>6. Children discuss the difference between a magnet and a magnetic material,</li> </ol>		
<p><b>Magnetic circus</b> page 77</p>	<p>Quick challenges</p>	<p>Ask children to think of where they have come across magnets and what they do. Have they spotted any more magnets?</p>	
<p><b>Whole class learning</b> Tell the children they are going to make a class display all about magnets and what they have learnt so far.</p>	<ol style="list-style-type: none"> <li>3. In groups children choose an area to research and present information for display.</li> <li>4. In pairs, they make a fridge magnet, a snake charmer and a fishing game.</li> </ol>		
<p><b>Unit 5.3 Poles to pole</b></p>			
<p>Learning Objectives</p>	<ul style="list-style-type: none"> <li>• To describe magnets as having two poles.</li> <li>• To predict whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul>	<p>Success criteria</p>	<ul style="list-style-type: none"> <li>• I can explain what a magnetic pole is and what it can do.</li> <li>• I can describe the Earth's magnetic field and explain what it does to magnets.</li> <li>• I can predict what will happen when like and unlike poles of a magnet are brought together.</li> </ul>
<p>Scientific language</p>	<p>Pole, magnetic North, compass, prediction</p>		
<p><b>What are magnetic poles</b> page 80</p>	<p>Quick challenges</p>	<p>Ask the children to make a concept map putting together what they have learned so far about magnets.</p>	
<p><b>Whole class learning</b> Show the children a compass and explain that the compass has a magnet spinning on a pivot. Show them what happens when the needle move and comes to rest - explain that it seems always to stop facing the same way and it must be able to move freely.</p>	<ol style="list-style-type: none"> <li>5. Children investigate which part of a magnet has the greatest pull.</li> <li>6. In groups, children investigate and test different ways of suspending a magnet so it moves freely.</li> <li>7. Children explain how a magnet works using diagrams, after research.</li> </ol>		

<u>The magnetic rule</u> page 81	Quick challenges	Share ideas as a class to revise topic so far. Show the children a piece of dowel and three ring magnets. Ask them to predict what might happen if you put the magnets on the dowel one by one.
<b>Whole class learning</b> Tell the children they are now going to investigate what happens when the poles of two magnets are brought together. Record predictions.	<ol style="list-style-type: none"> <li>3. Children investigate and record results scientifically, writing a rule for what they discover.</li> <li>4. They watch the Tigtag video: Magnetism and discuss</li> <li>5. Children write a poem to remember the rule.</li> </ol>	
<b>End of topic assessment</b>	Children to all complete the interactive activity 'Opposites attract' topic test to assess knowledge.	

### How does your garden grow?

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### Unit 4.1 Plant parts

<b>NC Statutory Learning Objectives</b>	<ul style="list-style-type: none"> <li>• To identify and describe the functions of different parts of flowering plants-roots, stem, leaves, flowers.</li> <li>• To investigate how water is transported within plants.</li> </ul>	<b>Success criteria</b>	<ul style="list-style-type: none"> <li>• I can identify the different parts of a plant and their functions</li> <li>• I can set up simple, practical enquiries.</li> <li>• I can describe how water is transported in plants.</li> </ul>
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<b>Scientific language</b>	Root, stem, flower, leaves		
<u>Plant parts</u> page 54	Quick challenges	Explain why tall trees don't fall over. What's keeping them up? Think about the different plants we eat.	
<b>Whole class learning</b> Bring in examples of plants for the children to look at. Get children to	<ol style="list-style-type: none"> <li>5. Children examine trees and compare how they are similar to plants.</li> <li>6. In groups, they grow broad beans on damp cotton wool. They take photos as they grow roots and shoots.</li> </ol>		

<p>discuss what job they think each part of the plant does. Watch the 'Plant parts song'.</p>	<p>7. Children make a collage of a plant and label with what each part does.</p>		
<p><b>Water transportation</b> page 55</p>	<p>Quick challenges</p>	<p>Watch the Tigtag video - 'Giant Redwoods'. Show the children a tall tree and discuss how we could get water to someone sat at the top.</p>	
<p><b>Whole class learning</b> As a class set up 'The very thirsty cactus' experiment. Keeping record of the height and diameter of it every day. Explain that the stem of the plant is full of many, long tubes that draw water up from the roots.</p>	<p>5. Children stand sticks of celery in coloured water and observe what happens. 6. In groups, the children carry out the same experiment with carnations. 7. Children explore sucking up water in very long straws. 8. Children test the strength of different amounts of straws to explain why stems are so strong. 9. Children make pictures from printing leaves looking at the patterns of veins.</p>		
<p><b>Unit 4.2 Long live plants</b></p>			
<p>NC Statutory Learning Objectives</p>	<ul style="list-style-type: none"> <li>• To 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.</li> <li>• To ask relevant questions and use different types of scientific enquiry to answer them.</li> </ul>	<p>Success criteria</p>	<ul style="list-style-type: none"> <li>• I can describe what plants need to grow and stay healthy.</li> <li>• I can compare the effects of different conditions on plant growth.</li> <li>• I can ask relevant questions and use different types of scientific enquiry to answer the.</li> </ul>
<p><b>Scientific language</b></p>	<p>Veins, germinate</p>		
<p><b>Let's get growing</b> page 60</p>	<p>Quick challenges</p>	<p>Discuss the strangest place you have seen plants growing. Look at plant fertiliser and discuss why plants need it.</p>	
<p><b>Whole class learning</b> Take one bunch of tulips. Put some in a vase with water and some without water. Children predict what will happen. Then observe what happens every day.</p>	<p>7. Children investigate growing seeds on cotton wool with water and without. 8. Children investigate growing seeds on in soil, sand, cotton wool and nothing.</p>		
<p><b>Let there be light</b> page 61</p>	<p>Quick challenges</p>	<p>What do leaves do? Discuss and they research together.</p>	
<p><b>Whole class learning</b> Get out in the fresh air and look at the variety of leaves. Collect some examples and take pictures. Discuss the different</p>	<p>5. In groups children set up various experiments to test whether plants need light, space and what depth to plant. They observe what happens over time, taking measurements and record what they discover.</p>		

shapes and types of leaves, making observational drawings.

**Unit 4.3 Flower power**

<p><b>Learning Objectives</b></p>	<ul style="list-style-type: none"> <li>To explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> <li>To record the findings using drawings and labelled diagrams.</li> </ul>	<p><b>Success criteria</b></p>	<ul style="list-style-type: none"> <li>I can name the different parts of a flower and explain what they do.</li> <li>I can explain what pollination is.</li> <li>I can describe some of the different ways plants spread their seeds.</li> <li>I can record my findings using drawings and labelled diagrams.</li> </ul>
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<p><b>Scientific language</b></p>	<p>Pollen, pollination, ovary, sepals, stamen, carpel, stigma, style, ovule, petal</p>
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<p><b>What is pollen page 64</b></p>	<p><b>Quick challenges</b></p>	<p>Discuss hay fever. Do you know what causes it? Show and name some different flowers.</p>
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<p><b>Whole class learning</b> Take a close look at a lily or tulip. Identify the different parts of the flower. Point out where the pollen is made. Take each part out carefully and stick on a large piece of paper to label and count.</p>	<ol style="list-style-type: none"> <li>Children label the parts of a flower.</li> <li>They role play the process of pollination and film it.</li> <li>Children play the 'Pollen park' game.</li> <li>Carry out a plant survey of local flowers.</li> <li>Write a story about the day in the life of a honey bee.</li> </ol>
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<p><b>Seed spreading page 66</b></p>	<p><b>Quick challenges</b></p>	<p>What do the children think happens to a flower once it has been pollinated? Demonstrate a coconut floating and discuss why it is important to the coconut tree.</p>
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<p><b>Whole class learning</b> Show the children real seeds from packets and discuss what seeds are and why plants make them. Look at real fruit, cutting it in half to see what is inside. Discuss why plants make fruit for the seeds. How does it help in spreading the seeds. Discuss different ways seeds can be dispersed.</p>	<ol style="list-style-type: none"> <li>Children dry out seeds from fruit and grow them.</li> <li>They take part in the 'Big Seed Challenge' to see who can get their seed to travel the furthest.</li> </ol>
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<p><b>End of topic assessment</b></p>	<p>Children to all complete the interactive activity 'How does your garden grow' topic test to assess knowledge.</p>
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## We are astronauts

<p><b>Working Scientifically</b> NC <b>Statutory Learning Objectives</b></p>	<ul style="list-style-type: none"> <li>• Asking relevant questions and using different types of scientific enquiries to answer them</li> <li>• Setting up simple practical enquiries, comparative and fair tests.</li> <li>• Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</li> <li>• Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</li> <li>• Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</li> <li>• Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</li> <li>• Using results to draw conclusions, make predictions for new values, suggest improvements and raise further questions.</li> <li>• Identifying differences, similarities or changes related to simple scientific ideas and processes.</li> <li>• Using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>
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### Unit 6.1 What's out there?

<p><b>Working Scientifically</b> NC Statutory <b>Learning Objectives</b></p>	<ul style="list-style-type: none"> <li>• To observe and draw the Moon from real life and secondary sources.</li> <li>• To make a model rocket and explain how it works.</li> </ul>	<p><b>Success criteria</b></p>	<ul style="list-style-type: none"> <li>• I can describe the appearance of the near and far side of the Moon.</li> <li>• I can explain how a space rocket works.</li> <li>• I can investigate a model rocket to see what makes it work well.</li> </ul>
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<b>Scientific language</b>	Moon, rocket, thrust, crater, sphere
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<b>Dark side of the moon</b> page 86	Quick challenges	Ask children to draw from memory what they think the Earth's Moon looks like. Compare to a picture and discuss how we know what it looks like.
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<p><b>Whole class learning</b> Tell the children they are going to make some 'Moon craters'. Show the children different photographs of the moon at different types of the moon. Explain that we can only see one half of the moon. Later show them photographs of the other side.</p>	<p>8. In groups, the children make craters from cocoa powder. 9. In pairs, the children draw out the phases of the moon. 10. The children discuss what the other side what look like and draw it.</p>
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<b>Making rockets</b> page 87	Quick challenges	Discuss what they already know about rockets. Show video clip of rockets taking off.
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<p><b>Whole class learning</b> Tell children they are going to make a model rocket. Demonstrate how to make a simple rocket.</p>	<p>10. Children make a simple rocket and then carry out one of the following investigations. Does the shape of the balloon affect the distance? Does the length of the straw affect it? Does the type of the string affect it? Does the angle of the string affect it?</p>
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## Unit 6.2 The landings

Working scientifically NC Statutory Learning Objectives	<ul style="list-style-type: none"> <li>To describe what happened in the 'Space Race' in the 1960.</li> <li>To design and build some model rockets and a Moon lander.</li> </ul>	Success criteria	<ul style="list-style-type: none"> <li>I can name some famous cosmonauts and astronauts and explain what they did.</li> <li>I can describe some of the problems scientists have solved to help people travel into space.</li> <li>I can design and build a model Moon lander.</li> </ul>
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<b>Scientific language</b>	Cosmonaut, astronaut, taikonaut, shock absorber
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<b>The first human in space</b> page 90	Quick challenges	What launch of Sputnik 1 and discuss. Start a timeline to show how space flight developed.
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<b>Whole class learning</b> Discuss with children what else scientists might need to do before they could put people in space. Tell the story of Yuri Gagarin: the first human in space.	9. Children create an exciting learning wall about Yuri Gagarin. 10. Children record the information they discover on the timeline.
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<b>Can we land on the Moon?</b> page 91	Quick challenges	Show children carefully selected sections of the 'JFK Moon Speech' and discuss.
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<b>Whole class learning</b> Show children the Tigttag video 'The first moon landing' and discuss key points. Discuss the difficulties of landing on the moon.	6. In pairs, children design a Moon lander. 7. In groups, they research the space race and add information to the timeline.
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## Unit 6.3 Space survival

Working scientifically Learning Objectives	<ul style="list-style-type: none"> <li>To identify which foods are best to take into space and explain why.</li> <li>To know what factors affect the design of a spacesuit.</li> </ul>	Success criteria	<ul style="list-style-type: none"> <li>I can name some foods that you could eat in space.</li> <li>I can investigate what might make some food last longer.</li> <li>I can explain why a spacesuit is designed the way it is.</li> </ul>
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<b>Scientific language</b>	Freeze drying, thermo-stabilised food, water cooling, air tight, UV
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<b>Space food</b> page 94	Quick challenges	Ask the children to bring in one item of food they think will be suitable for space travel.
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<p><b>Whole class learning</b> Explain to the children the problem of eating fresh fruit in space. Show children some ways of making it last longer. Discuss weightlessness and the problems this causes to eating.</p>	<p>13. Children investigate ways of making space food. 14. In groups, children make containers to stop food floating away.</p>	
<p><b>Making spacesuits</b> page 95</p>	<p>Quick challenges</p>	<p>Show the children the 'The best dressed astronaut story book' video.</p>
<p><b>Whole class learning</b> Tell they are going to look at the different parts of the spacesuit. Introduce to different investigations.</p>	<p>8. Children investigate UV protection, materials to stop space dust, making things airtight, flexibility, keeping cool and grip for Moon boots. 9. Children design and make a spacesuit.</p>	
<p><b>End of topic assessment</b></p>	<p>Children to all complete the interactive activity 'We are astronauts' topic test to assess knowledge.</p>	

## Teeth and eating

<p>Working Scientifically NC Statutory Learning Objectives</p>	<ul style="list-style-type: none"> <li>• Asking relevant questions and using different types of scientific enquiries to answer them</li> <li>• Setting up simple practical enquiries, comparative and fair tests.</li> <li>• Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</li> <li>• Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</li> <li>• Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</li> <li>• Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</li> <li>• Using results to draw conclusions, make predictions for new values, suggest improvements and raise further questions.</li> <li>• Identifying differences, similarities or changes related to simple scientific ideas and processes.</li> <li>• Using straightforward scientific evidence to answer questions or to support their findings.</li> </ul>		
<h3>Unit 4.1 Tremendous teeth</h3>			
<p>NC Statutory Learning Objectives</p>	<ul style="list-style-type: none"> <li>• To classify and identify different types of teeth and their functions.</li> <li>• To recognise why and how we must take care of them.</li> <li>• To make observations and form conclusions.</li> </ul>	<p>Success criteria</p>	<ul style="list-style-type: none"> <li>• I can classify teeth into four groups and identify them.</li> <li>• I can describe the functions of human teeth.</li> <li>• I can compare our teeth to those of other animals.</li> <li>• I can explain simply why we must take care of our teeth.</li> <li>• I can describe how we should look after our</li> </ul>

			teeth. • I can suggest ideas that are supported by observations.
<b>Scientific language</b>	Molar, incisor, canine, enamel, decay		
<b>First impressions</b> page 54 (Y4 book)	Quick challenges	Remind children of the difference between carnivores and herbivores and look at the differences between their teeth. Set up demonstrations with bones and vinegar. Eat bread without using teeth.	
<b>Whole class learning</b> Discuss milk teeth and adult teeth and why we lose teeth as we grow. Look at and discuss the different types of teeth using mirrors. Look at the bites and teeth charts and discuss what they are used for.	<ol style="list-style-type: none"> <li>11. Children study their teeth with mirrors and name the teeth.</li> <li>12. Children bit down on polystyrene plates to make impressions and compare with others.</li> <li>13. Look at jaws of carnivores, herbivores and omnivores and name the teeth.</li> <li>14. Children bite food and then guess who it was, using bite impressions.</li> </ol>		
<b>Tough teeth</b> page 55 (Y4 book)	Quick challenges	Look at bones in vinegar set up and discuss what has happened, comparing to teeth. Brush teeth then use disclosing tablet to show plaque left.	
<b>Whole class learning</b> Show children images of what happens if we don't look after our teeth. Discuss the different ways to look after teeth. Look at dental products and discuss what each one does. Discuss fluoride. Watch a TV advert for dental care.	<ol style="list-style-type: none"> <li>1. Children make a TV advert for a new dental product using everything they have learnt.</li> </ol>		
<b>Unit 4.2 Have you got guts?</b>			
NC Statutory Learning Objectives	<ul style="list-style-type: none"> <li>• To describe the function of parts of the human digestive system.</li> <li>• To make observations and record findings using scientific language and labelled diagrams.</li> </ul>	Success criteria	<ul style="list-style-type: none"> <li>• I can identify parts of the human digestive system.</li> <li>• I can describe what some parts of the digestive system do.</li> <li>• I can use a model to represent what happens in our stomach.</li> <li>• I can use scientific language and diagrams to explain how the digestive system works.</li> <li>• I can conduct and research scientific information.</li> </ul>
<b>Scientific language</b>	Digestion, mouth, oesophagus, stomach, small intestine, large intestine, anus, nutrients, energy		

<b>Food's incredible journey page 58 (Y4 book)</b>	<b>Quick challenges</b>	Look at fruit and discuss why humans need food. Ask children to name any parts of the body involved in eating and digesting.
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<b>Whole class learning</b> Watch the Tigtag film 'Food's incredible journey'. Discuss and draw a diagram of the journey introducing new vocabulary. Discuss in detail the function of each part.	<ol style="list-style-type: none"> <li>11. In groups, they draw around someone and sketch all the parts of the body involved in digestion in the correct place with clear labels.</li> <li>12. Children research each part of the digestive system and produce a definition for each part.</li> </ol>	
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<b>Let's make a stomach! page 59 (Y4 Book)</b>	<b>Quick challenges</b>	Compare a tube of toothpaste to the food pipe. Discuss favourite meals.
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<b>Whole class learning</b> Place biscuits and banana inside a zip-lock bag and add a tablespoon of water (saliva), then crunch it up (chewing). Now mimic stomach by adding an acid (orange juice) and keep kneading until you get a paste. Squeeze through a small hole into a nylon stocking (small intestine) and demonstrate removing water	<ol style="list-style-type: none"> <li>8. In groups, the children make their own stomachs.</li> <li>9. They explore the digestive system using their own food mixture.</li> </ol>	
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**Unit 4.3 The deadly and the dead**

<b>Learning Objectives</b>	<ul style="list-style-type: none"> <li>• To recognise what a food chain represents.</li> <li>• To construct and interpret a variety of food chains.</li> <li>• To identify producers, predators and prey.</li> </ul>	<b>Success criteria</b>	<ul style="list-style-type: none"> <li>• I can construct a food chain.</li> <li>• I can name a producer, predator and prey.</li> <li>• I can generalise about what a producer, predator and prey are.</li> <li>• I can explain what various food chains show.</li> </ul>
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<b>Scientific language</b>	Carnivore, herbivore, omnivore, molars, incisors, canines		
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<b>A chain reaction page 62 (Y4 book)</b>	<b>Quick challenges</b>	Look at pictures of animals and discuss which are carnivores, herbivores and omnivores. Discuss how their teeth give them away?
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<b>Whole class learning</b> Discuss food chains, making the point that it is a chain, one eats the other, which eats the other, and so on.	<ol style="list-style-type: none"> <li>15. Children use their knowledge of herbivores and carnivores to create a food chain, including humans.</li> <li>16. Using food chains they create a poster to explain to others.</li> </ol>	
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<p><b>Who do you eat?</b> page 63 (Y4 book)</p>	<p>Quick challenges</p>	<p>Name plants and animals from pictures. Go for a walk to the local park and discuss how you can name the trees.</p>
<p><b>Whole class learning</b> Take the children outside to find evidence of consumers, producers and prey. Build up food chains based on what they find and discuss whether this changes with the seasons.</p>	<p>10. Children construct food chains for animals for other countries e.g. polar regions or desert. 11. They produce an exciting news article about the killing of an animal and who did it.</p>	
<p><b>End of topic assessment</b></p>	<p>Children to all complete the interactive activity 'Teeth and eating' topic test to assess knowledge.</p>	