

MODULE OVERVIEW CHART

Module number and name	Lesson number and name	National curriculum links	Working scientifically links	Scientific enquiry type	Lesson summary
Year 4 Module Our Changing World	1: How can we classify trees by looking at their leaves?	Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	Grouping and classifying things	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.
	2: How can we classify and identify deciduous trees in winter?	Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Looking for patterns	In this lesson children will look at deciduous trees and consider features other than leaves that can be used to classify them. By the end of the lesson the children will be aware of different tree shapes, the type of bark, buds and vein patterns. They will have looked for similarities and differences between trees and identified possible patterns. These patterns can be turned into questions that will require a follow-on visit to gather evidence to support or refute the pattern. It is best to do this lesson at the end of winter or in the early spring.
	3: How can we classify plants by looking at their flowers?	Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	Finding things out using secondary sources of information	This lesson builds on learning about flowering plants in Year 3. It should be repeated at several times during the year so that children can observe, classify and identify a range of different flowers, including tree blossom, spring bulbs and summer flowers. By the end of the year they will be able to use different information sources to identify a variety of flowers, and to construct their own flower classification keys.
Year 4 Module 1 In a State	1: What are my properties?	Compare and group materials together according to whether they are solids, liquids or gases	Identifying differences, similarities or changes related to scientific ideas and processes	Grouping and classifying	In this lesson children will explore the properties of solids and liquids, demonstrating what they already know. By the end of this lesson they will be able to use key properties to distinguish between solids and liquids.
	2: What happens to the ice hands?	Observe that some materials change state when they are heated or cooled and measure or research the temperature at which this happens in degrees Celsius °C	Setting up simple practical enquiries, comparative and fair tests	Observing over time leading to fair testing	In this lesson children will use ideas from observing melting ice to help them to plan a fair test investigation to answer a question. In Lesson 3 they will carry out their investigation and draw conclusions. By the end of this lesson children will have planned a fair test and will know that melting and freezing are changes of state.
	3: What makes a difference to how fast ice melts?	Observe that some materials change state when they are heated or cooled and measure or research the temperature at which this happens in degrees Celsius °C	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Fair test	In this lesson children will carry out the investigations planned in Lesson 2 and present and interpret the data. By the end of this lesson children will be able to describe the effect of temperature, shape and size on how fast ice blocks melt.

Module number and name	Lesson number and name	National curriculum links	Working scientifically links	Scientific enquiry type	Lesson summary
	4: What are melting and freezing?	Observe that some materials change state when they are heated or cooled and measure or research the temperature at which this happens in degrees Celsius °C	Identifying differences, similarities or changes related to simple scientific ideas and processes	Observing changes over time	In this lesson children consolidate their understanding of the processes of melting and freezing and explore how materials behave when they are heated or cooled. By the end of this lesson children will know that different materials melt at different temperatures and will be able to define melting and freezing.
	5: Are spaces really empty?	Compare and group materials together, according to whether they are solids, liquids or gases	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers; reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Exploring	In this lesson children will explore the properties of air. By the end of this lesson children will know that gases are materials with substance and weight.
	6: What state am I in?	Compare and group materials together, according to whether they are solids, liquids or gases	Identifying differences, similarities or changes related to simple scientific ideas and processes	Grouping and classifying	In this lesson children will consolidate their understanding of the properties of solids, liquids and gases. By the end of this lesson children will know that there are three states of matter and be able to recognise the characteristics of each of them.
	7: How can we get it dry?	Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	Making systematic and careful observations and, where appropriate, measurements using standard units, using a range of equipment including thermometers and data loggers	Fair test	In this lesson children will investigate factors that affect how fast fabric dries and learn the term evaporation. By the end of this lesson children will have collected data and recorded it in a table. In Lesson 8 children will draw conclusions from their data. Enrichment Lesson 4 offers children the opportunity to present their data in graphs.
	8: What is evaporation?	Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Fair test	In this lesson children will experience evaporation in a range of contexts and will draw conclusions from the data collected in Lesson 7. By the end of this lesson children will be able to describe what the data shows and use their developing understanding of evaporation to explain their findings.
	9: What is boiling?	Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius °C	Using straightforward scientific evidence to answer questions or to support their findings	Observing change over time	In this lesson children will observe and measure water boiling, interpret temperature graphs from a data logger and research boiling of other liquids. By the end of this lesson children will know that liquids have characteristic boiling points, including water, which boils at 100°C, and will be able to identify the boiling point on a time and temperature graph.
	10: Where did the water come from?	Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius °C	Identifying differences, similarities or changes related to simple scientific ideas and processes	Exploration	In this lesson children will observe and discuss condensation happening in a range of contexts. By the end of this lesson they will be able to recognise where condensation is occurring and annotate a drawing to show changes of state.

INTRODUCTION

Module number and name	Lesson number and name	National curriculum links	Working scientifically links	Scientific enquiry type	Lesson summary
	11: Where does rain come from?	Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables	Exploration and finding things out using secondary sources of information	In this lesson children will explore the role of evaporation and condensation in the water cycle through a physical model and an animation. By the end of this lesson they will be able to label the processes on a diagram of the water cycle.
	12: What have we learned about changes of state?	Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	Identifying differences, similarities or changes related to simple scientific ideas and processes	n/a	In this lesson children will demonstrate their current understanding of changes of state. It also provides opportunities to address misconceptions and answer questions from Lesson 11. By the end of this lesson children will have presented their ideas about changes of state on a concept map.
	Enrichment 1: Which chocolate should we choose?	Observe that some materials change state when they are heated or cooled and measure or research the temperature at which this happens in degrees Celsius °C	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	Fair test	In this lesson children will solve a problem by comparing how long different types of chocolate take to melt. By the end of this lesson children will have recorded data, drawn conclusions and used their knowledge of solids and liquids to recognise the point at which chocolate has melted. This is best taught after Lesson 4.
	Enrichment 2: Why do we put salt on icy roads?	Observe that some materials change state when they are heated or cooled and measure or research the temperature at which this happens in degrees Celsius °C	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	Observing over time and comparative test	In this lesson children investigate materials with different freezing points, explore the effect of adding salt to ice and make ice cream. By the end of this lesson children will know that adding salt reduces the freezing point of water and be able to give some applications of this. This lesson is best taught between Lessons 4 and 5.
	Enrichment 3: How does the thermometer work?	Compare and group materials together according to whether they are solids, liquids or gases	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	Exploration	In this lesson children will measure temperatures using different types of equipment and make their own simple thermometer. By the end of this lesson children will be able to measure temperature in °C, will know that liquids and gases expand when heated and will be able to use this to explain how a liquid in glass thermometer and the thermometer they have made work. This lesson has links with properties of liquids and gases (Lesson 5) and temperature measurement (Lesson 9) or could be taught at the end of the unit. Children will apply the knowledge of liquids and gases developed in Lessons 1–5.
	Enrichment 4: Why do we use graphs?	Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius °C	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	n/a	This lesson provides an opportunity to practise and consolidate or extend data presentation skills. It builds on the data presentation in Lesson 3. It is written to be taught between Lessons 7 and 8 but could be adapted to be used with other data from different contexts if further practice was needed. In this lesson children present their investigation data on a graph and consider the benefits of doing this. By the end of this lesson children will be able to draw a bar or bar line graph to help them to answer an investigation question.
Year 4 Module 2 Good Vibrations	1: What do we know about sounds?	Identify how sounds are made, associating some of them with something vibrating	Identifying differences, similarities or changes related to simple scientific ideas and processes	Exploration	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

Module number and name	Lesson number and name	National curriculum links	Working scientifically links	Scientific enquiry type	Lesson summary
					the end of the lesson children will have gathered questions to explore during the rest of the module.
	2: How are sounds made?	Identify how sounds are made, associating some of them with something vibrating	Record findings using drawings and labelled diagrams	Carrying out simple comparative and fair tests	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.
	3: How do sounds travel?	Recognise that vibrations from sounds travel through a medium to the ear	Using straightforward evidence to answer questions or to support their findings	Carrying out simple comparative and fair tests	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.
	4: How can we make a sound louder and quieter?	Find patterns between the volume of a sound and the strength of the vibrations that produced it	Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions diagrams	Carrying out simple comparative and fair tests	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.
	5: How do sounds change as we move away from the source?	Recognise that sounds get fainter as the distance from the sound source increases	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including data loggers	Carrying out simple comparative and fair tests	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.
	6: How can we change the pitch of a plucked note?	Find patterns between the pitch of a sound and features of the object that produced it	Using results to draw simple conclusions	Noticing patterns	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.
	7: How can we use air to make music?	Find patterns between the pitch of a sound and features of the object that produced it	Reporting on findings from enquiries, including oral and written explanations	Noticing patterns	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.
	Enrichment 1: How can we make the best string telephone?	Identify how sounds are made, associating some of them with something vibrating	Setting up simple comparative and fair tests	Carrying out simple comparative and fair tests	In this lesson children will explore how string telephones are made and work. They will experiment by making different ones and seeing which is the most effective. They will need to consider how to vary the string telephone and how to test its effectiveness.
	Enrichment 2: How can we muffle sound?	Find patterns between the volume of a sound and the strength of the vibrations that produced it	Using results to draw simple conclusions	Carrying out simple comparative and fair tests	In this lesson children will consider why it is important at times to muffle sounds, and explore different materials that can be used to muffle sounds.

INTRODUCTION

Module number and name	Lesson number and name	National curriculum links	Working scientifically links	Scientific enquiry type	Lesson summary
	Enrichment 3: Can all animals hear?	Recognise that vibrations from sounds travel through a medium to the ear	Asking relevant questions and using different types of scientific enquiries to answer them	Finding things out using secondary sources of information	In this lesson children will think about why it is important for animals to hear. They will then ask questions about the ears and hearing of different animals. They will sort the questions according to whether they can be researched or not. By the end of the lesson they will have had an opportunity to research the answers to the questions and have presented their findings.
	Enrichment 4: What is an echo?	Identify how sounds are made, associating some of them with something vibrating	Gathering, recording, classifying and presenting data in a variety of ways to answer questions	Finding things out using secondary sources of information	In this lesson children will learn about echoes and how these are used by animals. By the end of the lesson they will understand that echoes are produced when a sound is reflected off a hard surface and that the ear hears the sound after hearing the original sound. They will also be familiar with animals that use echolocation.
Year 4 Module 3 Switched On	1: What makes it work?	Identify common appliances that run on electricity	Identifying differences, similarities or changes related to simple scientific ideas and processes	Grouping and classifying	In this lesson children will learn about different sources and uses of electricity. By the end of this lesson they will know that electrical items can be powered by mains electricity or batteries and that electricity can be used to produce light, sound, heat and movement. This lesson also provides an opportunity to assess what children already know about electricity.
	2: Can you light the bulb?	Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wire, bulbs, switches and buzzers	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	Exploring	In this lesson children explore making circuits using different components. By the end of this lesson children will know the names of common components and will be able to make and draw complete circuits.
	3: How does a circuit work?	Identify whether or not a lamp will light in a simple series circuit, based on whether a lamp is part of a complete loop with a battery	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Exploring	In this lesson children will learn more about how electricity flows in a complete circuit and how to use a model to explain their observations. By the end of this lesson children will be able to use a model to explain how a simple circuit works.
	4: Why doesn't it work?	Identify whether or not a lamp will light in a simple series circuit, based on whether a lamp is part of a complete loop with a battery	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	Exploration	In this lesson children will learn more about how electricity flows through components in a complete circuit and apply their knowledge to identify and correct circuits which will not work. By the end of this lesson children will be able to recognise correct and incorrect circuits and identify some simple things to look for and try if a circuit does not work.
	5: What does a switch do?	Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	Exploring	In this lesson children will make and use toggle and press switches. By the end of this lesson they will know that a switch is a controlled break which stops electricity flowing to all parts of the circuit.
	6: What can we use instead of wires?	Recognise some common conductors and insulators and associate metals with being good conductors	Setting up simple practical enquiries and recording, classifying and presenting data in a variety of ways to help answer questions	Grouping and classifying	This is the first part of a two-part lesson. In this lesson children will test materials to see whether they are electrical conductors or insulators and record information in tables, Venn diagrams and Carroll diagrams. By the end of this lesson they will be able to identify common conductors and insulators and interpret information presented in different ways. In Lesson 7 children will

Module number and name	Lesson number and name	National curriculum links	Working scientifically links	Scientific enquiry type	Lesson summary
					obtain further evidence about conductors and insulators and write a conclusion.
	7: What types of material conduct electricity?	Recognise some common conductors and insulators and associate metals with being good conductors	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	Grouping and classifying	This is the second part of a two-part lesson. In this lesson children will consider what they can conclude from the data collected in Lesson 6 and collect further data so they can be more certain about their conclusions. By the end of this lesson children will know that metals are conductors of electricity, most non-metals are electrical insulators and conclusions can only be based on the evidence collected, which must be sufficient.
	8: How are electrical conductors and insulators used?	Recognise some common conductors and insulators and associate metals with being good conductors	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	n/a	In this lesson children will learn more about the properties and uses of conductors and insulators and will make tilt and pendulum switches. By the end of this lesson they will know that some materials are better electrical conductors than others and be able to choose suitable materials to make the different parts of a switch.
	9: What do we now know about electricity?	Identify common appliances that run on electricity; construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers; identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery; recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit; recognise some common conductors and insulators, and associate metals with being good conductors	Using straightforward scientific evidence to answer questions or to support their findings	n/a	In this lesson children will review what they have learned and consolidate or extend their knowledge of the key concepts. By the end of this lesson children will have produced a piece of extended writing about electricity.
	Enrichment 1: How can we connect up the quiz board?	Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers	Using straightforward scientific evidence to answer questions or to support their findings	n/a	In this lesson children will make an electric quiz board. By the end of this lesson children will be able to make a quiz board using multiple series circuits.
Year 4 Module 4 Where Does All That Food Go?	1: What do we know about food?	Identify that animals, including humans, need the right type and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat (Year 3)	Asking relevant questions	Finding things out using secondary sources of information	In this lesson children will share what they have previously learned about food and nutrition. This builds on the work in the Year 3 module, Amazing bodies. By the end of the lesson children will have gathered questions to explore during the remaining lessons.

INTRODUCTION

Module number and name	Lesson number and name	National curriculum links	Working scientifically links	Scientific enquiry type	Lesson summary
	2: Where does the food go inside your body?	Describe the basic functions of the main parts of the digestive system in humans	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Finding things out using secondary sources of information	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.
	3: What sort of teeth do we have?	Identify the different types of teeth in humans and their simple functions	Making systematic and careful observations	Grouping and classifying things	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.
	4: Why do we have different types of teeth?	Identify the different types of teeth in humans and their simple functions	Using straightforward scientific evidence to answer questions or to support their findings	Grouping and classifying things	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.
	5: How can we look after our teeth?	Identify the different types of teeth in humans and their simple functions	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Finding things out using secondary sources of information	In this lesson children will learn about a range of ways to look after their teeth. By the end of the lesson the children will be able to give several different ways in which they can look after their teeth and explain why it is important to do so.
	6: What do animals eat?	Construct and interpret a variety of food chains, identifying producers, predators and prey	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Finding things out using secondary sources of information	This is the first of two lessons about food chains in this module, and builds on work done in Year 2. Children will apply their understanding of food chains in the Human impact module lesson 'What happens when a food chain is broken?' In this lesson the children will create food chains and webs for different habitats. By the end of the lesson they will be able to construct and interpret a variety of food chains.
	7: What do animals' teeth tell us	Construct and interpret a variety of food chains, identifying producers, predators and prey	Identifying differences, similarities or changes related to simple scientific ideas and processes	Grouping and classifying things	In this lesson children will use evidence from animal skulls to identify the correct position of an animal in a food chain. By the end of the lesson the children will understand about producers and consumers, and they will be able to identify which animals are predators, prey or both. They will understand that a food chain shows what different animals eat in a habitat and that the arrows show the flow of energy.
	8: How is food broken down?	Describe the simple functions of the basic parts of the digestive system in humans	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Finding things out using secondary sources of information	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.
	9: How can we model the digestive system?	Describe the simple functions of the basic parts of the digestive system in humans	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	n/a	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.

Module number and name	Lesson number and name	National curriculum links	Working scientifically links	Scientific enquiry type	Lesson summary
	Enrichment 1: How good is toothpaste?	Identify the different types of teeth in humans and their simple functions	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	Carrying out simple comparative and fair tests	In this lesson children will carry out different investigations to learn about the role of toothpaste in looking after teeth. By the end of the lesson they will have learned that toothpaste protects teeth from being attacked by acids, and that brushing with toothpaste is more effective at removing stains from teeth than brushing without toothpaste.
	Enrichment 2: Can we make a good toothpaste?	Identify the different types of teeth in humans and their simple functions	Setting up simple practical enquiries, comparative and fair tests	Carrying out simple comparative and fair tests	In this lesson the children will try out different recipes for home-made toothpaste. By the end of the lesson they will know why toothpastes contain a range of different ingredients and they will have made and tested some of their own.
Year 4 Module 5 Human Impact	1: What impact do humans have locally?	Recognise that environments can change and that these changes can sometimes pose dangers to living things	Identifying differences, similarities or changes related to simple scientific ideas and processes	Grouping and classifying things	In this lesson children will consider the impact that humans have on the local environment. By the end of this lesson they will be able to identify some positive and negative ways that humans change the environment. This lesson includes an out-of-school task, the results of which will be considered at the start of Lesson 2.
	2: How can we find out about litter?	Recognise that environments can change and that these changes can sometimes pose dangers to living things	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Grouping and classifying things	This is the first part of a two-part lesson. In this lesson children will interpret data about waste and plan a litter survey. The Explore section of this lesson uses the outcomes from an out-of-school activity introduced in Lesson 1. By the end of this lesson children will be able to interpret data presented in a bar chart and draw up a data collection sheet. In Lesson 3 children will carry out their litter surveys and present their findings. Preparation required: Use the notes, drawings and/ or photographs that children collected from the out-of-school activity at the end of Lesson 1 to make a display of human impact that is evident locally.
	3: What types of litter are dropped locally?	Recognise that environments can change and that these changes can sometimes pose dangers to living things	Gathering, recording, classifying and presenting data in a variety of ways to help answer questions	Looking for patterns	This is the second part of a two-part lesson. In this lesson children will carry out the litter survey planned in Lesson 2. By the end of this lesson they will have collected and presented data about an aspect of human impact on the environment. Preparation required: ensure that all adults accompanying the children have been fully briefed about health and safety and the activity to be carried out. Prepare a tally chart for the adult accompanying the group undertaking Challenge 1.
	4: Why does clearing litter matter?	Recognise that environments can change and that these changes can sometimes pose dangers to living things	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Finding things out using secondary sources of information	In this lesson children will learn about the impact that different types of litter can have on wildlife. By the end of this lesson they will understand why it is important to dispose of waste responsibly. Preparation required: ask colleagues and/or children in advance to bring in items of clean rubbish.
	5: What happens when a food chain is broken?	Recognise that environments can change and that these changes can sometimes pose dangers to living things	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions; using straightforward scientific evidence to answer questions to support findings	Finding things out using secondary sources of information	In this lesson children will learn about what a food chain is and link changes in a food chain to their previous learning about human impact. They will relate this to a real life situation for a new building project. By the end of the lesson children will understand and appreciate the impact that humans can have on the stability of the food chain.

INTRODUCTION

Module number and name	Lesson number and name	National curriculum links	Working scientifically links	Scientific enquiry type	Lesson summary
	6: What is the impact of habitat destruction in other parts of the world?	Recognise that environments can change and that these changes can sometimes pose dangers to living things	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions; using straightforward scientific evidence to answer questions to support their findings	Finding things out using secondary sources of information	In this lesson children will apply their recent learning about local food chain destruction to explore human impact further afield. They will research different issues and present their findings. By the end of the lesson children will be able to explain some of the implications of human impact on the location being studied.
	Enrichment 1: What do zoos do?	Recognise that environments can change and that these changes can sometimes pose dangers to living things	Recognising statements that do and do not support an argument	Finding things out using secondary sources of information	This is the first part of a two-part lesson In this lesson children will consider the pros and cons of keeping animals in zoos, and begin to prepare arguments for a debate. By the end of this lesson children will have identified some arguments for and against keeping animals in zoos. In the next lesson (Enrichment Lesson 2) children will take on roles and debate whether animals should be kept in zoos. Preparation: First-hand experience of a zoo would be useful.
	Enrichment 2: Should we have zoos?	Recognise that environments can change and that these changes can sometimes pose dangers to living things	Using straightforward scientific evidence to answer questions or to support their findings	Finding things out using secondary sources of information	This is the second part of a two-part lesson. In this lesson children will roleplay a debate about zoos. By the end of this lesson they will have considered the arguments for and against zoos and decided who presented the better case.
Year 4 Module 6 Who Am I?	1: Who are you?	Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment	Making systematic and careful observations. They should choose the challenge based on previous experience of using keys	Grouping and classifying	In this lesson children use keys to identify pond or seashore animals, and builds on their use of keys to sort rocks in Year 3, Module 2. It provides an opportunity for children to learn about a habitat that they may not have visited and will not necessarily be experiencing during this module (although a later visit would be beneficial). By the end of this lesson children will be able to identify an animal using a key and ask yes/no questions to distinguish between animals. In Lesson 2 children will visit a local water habitat, therefore this habitat should not be the focus of Lesson 1.
	2: Who lives here?	Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment	Making systematic and careful observations and recording findings using diagrams or keys	Grouping and classifying	In this lesson children visit a local water habitat, which should be a different habitat from the one considered in Lesson 1. They collect, observe and identify animals and later, in the classroom, find their own ways to sort and identify them. By the end of this lesson the children will have written yes/ no questions to distinguish between the animals and many children will have used them to construct a key. This lesson involves working outside the classroom. If an off-site visit is needed the lesson may need to be spread over more than one day.
	3: How are vertebrates grouped?	Recognise that living things can be grouped in a variety of ways	Identifying differences, similarities or changes related to simple scientific ideas and processes	Grouping and classifying	In this lesson children learn the characteristics of the five vertebrate groups. By the end of this lesson they will be able to identify and explain why an animal is a fish, amphibian, reptile, bird or mammal.
	4: How are invertebrates grouped?	Recognise that living things can be grouped in a variety of ways	Identifying differences, similarities or changes related to simple scientific ideas and processes	Grouping and classifying	In this lesson children classify common land invertebrates into groups. By the end of this lesson they will know the characteristics of six groups of invertebrates and be able to assign animals to those groups. This lesson could be extended to include the observation or collection of invertebrates in or near the school grounds. Alternatively this could be carried out as a separate enrichment activity.