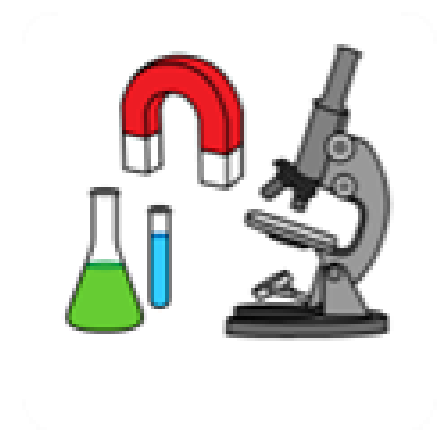




**Stoneferry Science**  
Planning Document  
Year 4



# Autumn Modules

Where does all the food go? - Digestive system	Our Changing World	Good Vibrations—Sound
<p>Key Concepts Delivered - <b>Biology</b></p> <ul style="list-style-type: none"> <li>Organisms require a supply of energy and materials.</li> <li></li> </ul>	<p>Key Concepts Delivered - <b>Biology</b></p> <ul style="list-style-type: none"> <li></li> </ul>	<p>Key Concepts Delivered - <b>Biology</b></p> <p><b>Physics: Energy:</b> There are many different forms of energy eg: light, sound, electricity, heat and wind</p>
<p><b>National Curriculum Objectives</b></p> <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>Describe the basic functions of the main parts of the digestive system in humans</li> <li>identify the different types of teeth in humans and their simple functions</li> </ul>	<p><b>National Curriculum Objectives</b></p> <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul>	<p><b>National Curriculum Objectives</b></p> <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>identify how sounds are made, associating some of them with something vibrating</li> <li>recognise that vibrations from sounds travel through a medium to the ear</li> <li>find patterns between the pitch of a sound and features of the object that produced it</li> <li>find patterns between the volume of a sound and the strength of the vibrations that produced it</li> </ul> <p>recognise that sounds get fainter as the distance from the sound source increases</p>
<p><b>Relevant Prior Learning</b></p> <p>In Year 3 the children learnt that the food we eat provides nutrition for our bodies to be healthy. They will know the kind of nutrients their bodies need and the correct amounts of these. They will also have learnt that humans and some other animals have a skeletal system which provides support, protection and movement.</p>	<p><b>Relevant Prior Learning</b></p> <p>Children will have explored how plants grow.</p>	<p><b>Relevant Prior Learning</b></p> <p>In Key Stage 1 the children learnt about sounds around them and the 5 senses. They will be aware of different sources of sound. They should know that sound is a form of energy.</p>
<p><b>Expected Outcomes</b></p> <p>The children will know that living things include: animals, plants and micro-organisms.</p> <p>They will know how to classify these into broad groups and be able to explain their reasons</p> <p>They will cultivate micro-organisms over time.</p>	<p><b>Expected outcome</b></p> <p>The children will know that deciduous trees lose their leaves in winter whereas evergreens do not. They will also know that seeds and berries are visible at different times dependednt on their life cycles.</p>	<p><b>Expected outcome</b></p> <p>The children will know the components of the circulatory system. They will be familiar with the relevant vocabulary. They will know the make up of blood and the role of blood in the body&gt; Children will describe and explain the functions of valves, arteries and veins in the transportation of blood.</p>

## Autumn term - Where does all the food go?

Module	Snap Science recommended lessons	National Curriculum Objectives	Expected outcome	Vocabulary	Suggested Resources
Where does all the food go?	Lesson 2  Where food goes inside the body	<p><b>Enquiry Type</b> - Using secondary sources of information to answer questions</p> <p><b>LO:</b> Describe the basic functions of the main parts of the digestive system in humans</p> <p><b>Working Scientifically:</b> Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p>	Children will know where our food goes after it has been eaten	mouth, oesophagus, stomach, small intestine, large intestine, rectum, anus, digestive system, digestion	Large sheets of paper, poster/ mounting putty, camera, access to the internet
Where does all the food go?	Lesson 3  Types of teeth	<p><b>Enquiry Type</b> - Grouping and classifying things</p> <p><b>LO:</b> Identify the different types of teeth in humans and their simple functions</p> <p><b>Working Scientifically:</b> Making systematic and careful observations</p>	Children will know the different teeth that humans have	teeth, canine, incisor, premolar, molar, jaw	Small plastic mirrors
Where does all the food go?	Lesson 4  Functions of teeth	<p><b>Enquiry Type</b> - Grouping and classifying things</p> <p><b>LO:</b> Identify the different types of teeth in humans and their simple functions</p> <p><b>Working Scientifically:</b>  Using straightforward scientific evidence to answer questions or to support their findings</p>	Children will understand the functions of each different type of tooth	teeth, canine, incisor, molar, cutting, tearing, grinding	Scissors, forks, potato mashers, apple segments, long chewy sweets, bananas

## Autumn term - Where does all the food go?

Module	Snap Science recommended lessons	National Curriculum Objectives	Expected outcome	Vocabulary	Suggested Resources
Where does all the food go?	Lesson 8	<p><b>Enquiry Type</b> - Finding things out using secondary sources of information</p> <p><b>LO:</b> Describe the simple functions of the basic parts of the digestive system in humans</p> <p><b>Working Scientifically:</b> Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p>	Children will know how food is broken down in the digestive system	mechanical process, chemical process, absorb, nutrients, water, saliva, chemicals, enzyme, mouth, oesophagus, stomach, small intestine, large intestine, rectum, anus	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
Where does all the food go?	Lesson 9 Modelling the digestive system	<p><b>Enquiry Type</b> -</p> <p><b>LO:</b> Describe the simple functions of the basic parts of the digestive system in humans</p> <p><b>Working Scientifically:</b> Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p>	Children will know how a model represents the digestive system and explain the process	digestion, digestive system, mechanical process, chemical process, enzymes	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

## Autumn Term—Our Changing World

Module	Snap Science recommend-ed lessons	National Curriculum Objectives	Expected outcome	Vocabulary	Suggested Resources
<p><b>Our Changing World</b></p>	<p>Lesson 2 How can we classify trees by looking their leaves?</p>	<p>NC: Explore and use classification keys to help group, identify and name a variety of living things in their local environment</p> <p>LO: To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>WS: I can record and present findings using simple scientific language, written and oral presentations, drawings, diagrams, keys, bar charts and tables</p> <p>NB This lesson will be returned to Each term to observe and record the appearance of different trees in the local area. Noting and describing the appearance of different tree types</p>	<p>Chidlren will know what different trees look like within autumn and draw and label these</p>	<p>Camera, Sets of three different leaves</p> <p>Deciduous, evergreen</p>	<p>cameras</p>

## Autumn Term—Good Vibrations

Module	Snap Science recommended lessons	National Curriculum Objectives	Expected outcome	Vocabulary	Suggested Resources
Good Vibrations	Lesson 1 What do we know about sounds?	<b>Enquiry Type - Exploration</b> <b>LO:</b> Identify how sounds are made, associating some of them with something vibrating <b>Working Scientifically:</b> identify differences, similarities or changes related to simple scientific ideas or processes	Children will know how to orally explain their understanding of sounds.	loud, quiet, high, low, repeating, continuous	Tambourine, sound recording device
Good Vibrations	Lesson 2 How are sounds made?	<b>Enquiry Type - Comparative and fair testing</b> <b>LO:</b> Identify how sounds are made, associating some of them with something vibrating <b>Working Scientifically:</b> Recording findings using drawings and labelled diagrams	Children will know different ways to make a sound.	strike, blow, shake, pluck, vibration, vibrate	A range of instruments, e.g. tambourine, triangle, cymbals, drum, penny whistle, guitar, shoe box with lid removed, large rubber bands, ruler, tuning forks, small container of water, table tennis ball, cotton thread, sticky tape
Good Vibrations	Lesson 4 How do sounds travel?	<b>Enquiry Type - Carrying out simple comparative and fair tests</b>  <b>LO:</b> Recognise that vibrations from sounds travel through a medium to the ear  <b>Working Scientifically:</b> Using straightforward evidence to answer questions or to support their findings	Children will know how a sound travels through a medium from source to ear	vibration, vibrate, solid, air, particles	Drum, coat hangers, string, scissors, other metal objects of different sizes, such as cutlery, grills from ovens

## Autumn Term - Good Vibrations

Module	Snap Science recommended lessons	National Curriculum Objectives	Expected outcome	Vocabulary	Suggested Resources
Good Vibrations	Lesson 4 Quieter and louder	<p><b>Enquiry Type</b> - Carrying out simple comparative and fair tests</p> <p><b>LO:</b> Find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p><b>Working Scientifically:</b> Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions diagrams</p>	Children will know how to make quieter and louder sounds	vibration, vibrate, volume, strength of vibrations	Instruments, paper cups, tins with lids removed, plastic food containers with lids, e.g. margarine tubs, cotton wool, rice, pasta, dried kidney beans, wooden beads, paperclips, data loggers or iPads with an app, e.g. decibel 10th, to measure sound volume
Good Vibrations	Lesson 5 Changing sounds as we move from the source	<p><b>Enquiry Type</b> - Carrying out simple comparative and fair tests</p> <p><b>LO:</b> Recognise that sounds get fainter as the distance from the sound source increases</p> <p><b>Working Scientifically:</b> Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment,</p>	Children will know how a sound changes as you move further away from the source	sound, sound source, fainter, distance	PE hoops, PE markers, sound sources, e.g. bell, keys, shakers (from previous lesson), money pot, baby's rattle, maracas, metre sticks, trundle wheels (optional), data loggers
Good Vibrations	Lesson 6 +7 Pitch	<p><b>Enquiry Type</b> - Noticing patterns</p> <p><b>LO:</b> Find patterns between the pitch of a sound and features of the object that produced it</p> <p><b>Working Scientifically:</b> Reporting on findings from enquiries, including oral and written explanations</p>	<p>Children will know what creates pitch</p> <p>Children will know how pitch changes by using air.</p>	vibration, vibrate, pitch, high, low	Pan pipes, singing tubes, slide whistle, straws, scissors, sticky tape, rulers

# Spring Modules

In A State	Our Changing World	Switched On
<p>Key Concepts Delivered - <b>Chemistry:</b></p> <ul style="list-style-type: none"> <li>States of matter</li> <li></li> </ul>	<p>Key Concepts Delivered - <b>Biology</b></p> <ul style="list-style-type: none"> <li></li> </ul>	<p>Key Concepts Delivered - <b>Physics</b></p> <ul style="list-style-type: none"> <li>Energy—The universe follows unbreakable rules that are all about forces, matter and energy</li> </ul>
<p><b>National Curriculum Objectives</b></p> <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>compare and group materials together, according to whether they are solids, liquids or gases</li> <li>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)</li> <li>identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> </ul>	<p><b>National Curriculum Objectives</b></p> <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul>	<p><b>National Curriculum Objectives</b></p> <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>identify common appliances that run on electricity</li> <li>construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>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</li> <li>recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> </ul> <p>recognise some common conductors and insulators, and associate metals with being good conductors</p>
<p><b>Relevant Prior Learning</b></p> <p>Children have classified materials in Year 2 and recognised differences in their material properties such as hardness.</p>	<p><b>Relevant Prior Learning</b></p> <p>Children will have explored how plants grow.</p>	<p><b>Relevant Prior Learning</b></p> <p>Children learnt about energy when studying sound in the Autumn term. They will have also looked at simple circuits in Year 2. They will know that energy is not created but converted from one form to another. This will be the first time the children have explored stored chemical energy.</p>
<p><b>Expected Outcomes</b></p> <p>Children will know the characteristic properties of solids, liquids and gases and classify these.</p> <p>They will know changes of state and begin to understand freezing and boiling points as identifying characteristics of a material. They will also know the names of some common gases.</p> <p>They will know the stages of the water cycle and how this links to changing states.</p> <p>Children will know the term reversible and explain changes which are so.</p>	<p><b>Expected outcome</b></p> <p>Children will know how trees change in appearance through the seasons.</p>	<p><b>Expected outcome</b></p> <p>Children will know what an electrical appliances, and know the difference between those which are powered by mains and battery (including those with integral rechargeable batteries).</p> <p>Children will know that electricity can be used to produce light, sound, heat and movement.</p> <p>Children will know how to make simple series circuits with cells, wires, bulbs, buzzers and motors, and the names of components.</p> <p>They will know how a switch works and what conductors and insulators are.</p>



## Spring Term—In a State

Module	Snap Science recommended lessons	National Curriculum Objectives	Expected outcome	Vocabulary	Suggested Resources
In a State	Lesson 1 Properties of materials	<p><b>Enquiry Type</b> - Grouping and classifying</p> <p><b>LO:</b> Compare and group materials together according to whether they are solids, liquids or gases</p> <p><b>Working Scientifically:</b> Identifying differences, similarities or changes related to scientific ideas and processes</p>	Children will know materials as solids or liquids and state their properties	solid, liquid, hard, soft, pour, flow, pile, pool, surface, horizontal, runny, viscous, transparent, opaque, sticky, grain, powder, force	Mini whiteboards and pens; 10–16 sets of: cotton wool, aluminium foil, wood, clear rigid plastic, containers of salt, water, milk, colourless shower gel, ketchup (or materials with similar properties); a range of solids and liquids to include: hard, rigid materials (such as wood, rigid plastic, glass, ceramic, metal, rock), flexible materials (fabric, foil, string, wire), soft and malleable materials (modelling clay, clay, salt dough, tack), sponge, cotton wool, granular and powdery materials (salt, sugar, sand, talcum powder, cornflour, bicarbonate of soda), transparent and opaque materials, liquids of different viscosity (water, milk, shower gel, washing up liquid, handwash, undiluted squash, ketchup, syrup); additional containers for pouring; magnifiers; two large sheets of sticky notes
In a State	Lesson 2 Melting Ice	<p><b>Enquiry Type</b> - Observing over time leading to fair testing</p> <p><b>LO:</b> 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</p> <p><b>Working Scientifically:</b> Setting up simple practical enquiries, comparative and fair tests</p>	Children will know how ice melts and plan and carry out a fair test.	ice, water, melt, observe, measure, fair test, variable, shape, size, temperature	Ice hands, trays, measuring equipment such as measuring cylinders, rulers, tape measures, string, weighing scales
In a State	Lesson 3 Fair test	<p><b>Enquiry Type</b> - Fair test</p> <p><b>LO:</b> 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</p> <p><b>Working Scientifically:</b> Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p>	Children will know how to collect, interpret and draw conclusions from data	collect, present, interpret, data, ice, water, melt, time, temperature, shape, size, fair, variable, axis, scale, interval	Ice blocks/shapes appropriate for the different investigations, trays/containers for the ice, measuring equipment as required by children's investigation plans

## Spring Term - In a State

Module	Snap Science recommended lessons	National Curriculum Objectives	Expected outcome	Vocabulary	Suggested Resources
In a State	Lesson 4 Melting and Freezing	<p><b>Enquiry Type</b> - Observing changes over time</p> <p><b>LO:</b> 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</p> <p><b>Working Scientifically:</b> Identifying differences, similarities or changes related to simple scientific ideas and processes</p>	Children will know the definition of melting and freezing	ice, water, solid, liquid, melt, melting, freeze, freezing, solidify, solidifying, heating, cooling, states of matter, change of state, temperature melting point, freezing point, process	Small foil cases (5 or 6 per group depending on how many materials are used), bowls (1 per group), thermometers (1 per group), a source of hot water, small samples of materials for testing (such as chocolate, butter, solid vegetable fat, soft margarine, wax, metal such as a coin)
In a State	Lesson 5 Air—gases	<p><b>Enquiry Type</b> - Exploring</p> <p><b>LO:</b> Compare and group materials together, according to whether they are solids, liquids or gases</p> <p><b>Working Scientifically:</b> 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</p>	Children will be able to explain what air is and how it relates to properties of a gas	gas, air, carbon dioxide, helium, oxygen, bubbles, empty	Transparent plastic cup, paper towel, transparent container of water (a small fish tank is ideal), food colouring, a bowl of water, a tray, sponges (include some natural ones with large air spaces), digital scales or a metre ruler and string, two identical balloons, one fully inflated the other slightly inflated, raisins, clear plastic cups of lemonade, ping pong balls, folded paper or card fans (or could use number fans from maths resources)
In a State	Lesson 7 and 8 Together Evaporation	<p><b>Enquiry Type</b> - Fair test</p> <p><b>LO:</b> Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</p> <p><b>Working Scientifically:</b> Making systematic and careful observations and, where appropriate, measurements using standard units, using a range of equipment including thermometers and data loggers</p>	Children will know that when a liquid changes state to a gas this is called evaporation  <b>(They will relate this to the investigation they have carried out.)</b>	dry, temperature, wind, variable, fair test, control, keep the same, evaporate, water vapour	3–5 identical squares of thin cotton fabric per group (it is easier to see whether darker colours are wet or dry), a different sized square of the fabric and a square of a different type of fabric, 1 or 2 table top or floor standing fans, somewhere to hang the fabric squares such as string stretched across the room plus pegs, timers (count up) or a clock, measuring spoons or syringes, thermometers

## Spring Term

Module	Snap Science recommended lessons	National Curriculum Objectives	Expected outcome	Vocabulary	Suggested Resources
In a State	Lesson 9 Boiling	<p><b>Enquiry Type</b> - Observing change over time</p> <p><b>LO:</b> 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</p> <p><b>Working Scientifically:</b> Using straightforward scientific evidence to answer questions or to support their findings</p>	Children will know that different materials have different boiling points	boil, boiling, boiling point, water vapour, steam, liquid, gas, temperature, time, data logger	A means of boiling water and observing it, such as a Pyrex pan on portable stove, data logger with temperature sensor, thermometer

## Spring Term - Our Changing World

Module	Snap Science recommend-ed lessons	National Curriculum Objectives	Expected outcome	Vocabulary	Suggested Resources
<p><b>Our Changing World</b></p>	<p>Lesson 1: How can we classify trees by looking their leaves?</p>	<p>NC: Explore and use classification keys to help group, identify and name a variety of living things in their local environment</p> <p>LO: To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>WS: I can record and present findings using simple scientific language, written and oral presentations, drawings, diagrams, keys, bar charts and tables</p> <p>NB This lesson will be returned to Each term to observe and record the appearance of different trees in the local area. Noting and describing the appearance of different tree types</p>	<p>Chidlren will know what different trees look like within Spring and draw and label these</p>	<p>Camera, Sets of three different leaves</p> <p>Deciduous, evergreen</p>	<p>cameras</p>

## Spring Term - Switched On

Module	Snap Science recommended lessons	National Curriculum Objectives	Expected outcome	Vocabulary	Suggested Resources
Switched On	Lesson 1 Power Sources	<p><b>Enquiry Type</b> - Grouping and classifying</p> <p><b>LO:</b> Identify common appliances that run on electricity</p> <p><b>Working Scientifically:</b> Identifying differences, similarities or changes related to simple scientific ideas and processes</p>	Children will know the power source of a number of appliances	electricity, electrical, mains, plugged in, battery, power, sets, rechargeable, solar, wind up, sound, light, heat, movement	Wind-up torch, solar- powered calculator, other solar-powered item (e.g. a light or a toy), sticky notes
Switched On	Lesson 2 Light up a bulb in a circuit	<p><b>Enquiry Type</b> - Exploring</p> <p><b>LO:</b> Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wire, bulbs, switches and buzzers</p> <p><b>Working Scientifically:</b> Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p>	Children will know how to create an electrical circuit and connect components to light up a bulb.	cell, wire, bulb, bulb holder, circuit, buzzer, motor, complete, break, metal, component, short circuit, terminal	Enough cells (AA batteries), bulbs (1.5 volt), bulb holders, wires, buzzers and motors for children to work in pairs
Switched On	Lesson 3 and 4 (Combined) Explaining a circuit	<p><b>Enquiry Type</b> - Exploring</p> <p><b>LO:</b> Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wire, bulbs, switches and buzzers</p> <p><b>Working Scientifically:</b> Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts,</p>	<b>Children will know how to make a range of different electrical circuits. And record observations.</b>	cell, wire, bulb, bulb holder, circuit, buzzer, motor, complete, break, metal, component, short circuit, terminal	Enough cells (AA batteries), bulbs (1.5 volt), bulb holders, wires, buzzers and motors for children to work in pairs

## Spring Term - Switched On

Module	Snap Science recommended lessons	National Curriculum Objectives	Expected outcome	Vocabulary	Suggested Resources
Switched On	Lesson 5 Switches	<p><b>Enquiry Type</b> - Exploring</p> <p><b>LO:</b> Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p><b>Working Scientifically:</b> Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p>	Children will know how a switch works in a circuit and what it does	cell, wires, bulb, switch, make, break, connect, disconnect, flow, electricity, circuit, complete, press switch, toggle switch	Enough cells, wires, bulbs and commercially available switches for paired work (at least one toggle switch needed for demonstration, ideally more), examples of handmade toggle and press (push to make) switches, materials for making switches (as listed on the resource sheets), scissors, wire cutters and strippers, hole punches or card
Switched On	Lesson 6 Wires and conductors	<p><b>Enquiry Type</b> - Grouping and classifying</p> <p><b>LO:</b> Recognise some common conductors and insulators and associate metals with being good conductors</p> <p><b>Working Scientifically:</b> Setting up simple practical enquiries and recording, classifying and presenting data in a variety of ways to help answer questions</p>	Children will know which materials conduct electricity	cell, bulb, wires, complete circuit, short circuit, flow, property, electrical conductor, electrical insulator, names of materials to be tested, table, Venn diagram, Carroll diagram	Enough bulbs, cells and wires (3 per circuit) for paired work. Sets of materials to test (1 per table group) which could include: string, plastic drinking straw, milk bottle or jam jar, wooden dowel or ruler, polystyrene, fabric strips, plastic ruler, steel safety ruler or unbent paperclip, aluminium can. (Do not use labelled metal samples and include some materials which are a similar shape to wire. Ensure metal items do not have an insulating coat of paint or varnish.)
Switched On	Lesson 7&8 Conductors and Insulators	<p><b>LO:</b> Recognise some common conductors and insulators and associate metals with being good conductors</p> <p><b>Working Scientifically:</b> Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p>	<b>Children will know the definitions of conductors and insulators and explain materials and uses for both</b>	circuit, contacts, complete, break, make, electrical conductor, electrical insulator, tilt switch, pendulum switch	Resources to demonstrate conductors and insulators - create circuits and complete the circuit with different materials

# Summer Modules

Who am I and Where does all that food Go?	Our Changing World	Human Impact
<p>Key Concepts Delivered -</p> <p><b>Biology:</b> Organisms require a supply of energy and materials.</p> <p><b>Biology:</b>Genetic information.</p> <p><b>Biology:</b> Evolution.</p>	<p>Key Concepts Delivered -</p> <p><b>Biology</b></p>	<ul style="list-style-type: none"> <li>Key Concepts Delivered -</li> </ul> <p><b>Biology:</b> Evolution.</p>
<p><b>National Curriculum Objectives</b></p> <p><b>Pupils should be taught to:</b></p> <p><b>Where does all that food go?</b></p> <ul style="list-style-type: none"> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul> <p>Who am I?</p> <ul style="list-style-type: none"> <li>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> </ul>	<p><b>National Curriculum Objectives</b></p> <p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul>	<p><b>National Curriculum Objectives</b></p> <p><b>Pupils should be taught to:</b></p> <p>recognise that environments can change and that this can sometimes pose dangers to living things</p>
<p><b>Relevant Prior Learning</b></p> <p>Children will have learnt about what humans eat, and how this is digested. They will have explored human teeth and know the different types of teeth.</p> <p>Who am I?</p> <p>Children will have classified and used keys to explore different rock types.</p>	<p><b>Relevant Prior Learning</b></p> <p>Children will have explored how plants grow.</p>	<p><b>Relevant Prior Learning</b></p> <p>Children will know how food chains work and what the habitat of an animal is.</p>
<p><b>Expected Outcomes</b></p> <p><b>Children will know how to construct food chains and the various component parts. They will know the impact of one element of the chain being removed.</b></p> <p><b>Who am I?</b></p> <p>Children will know how to identify animals from a range of habitats. They will know how to construct keys, and use yes/no questions about characteristic differences between the animals. They will know pond and seashore animals and common land invertebrates</p>	<p><b>Expected outcome</b></p> <p>Children will know how trees change in appearance through the seasons.</p>	<p><b>Expected outcome</b></p> <p>Children will know the positive and negative ways that humans change the environment, locally and globally, and impact on other living things. They will know how industry and housing can damage local habitats and also how humans can increase biodiversity by developing environments such as country parks and nature reserves.</p> <p>This know what happens if food chains are broken by habitat disruption or the removal of a species from an ecosystem.</p> <p>Children will know some global issues by researching the impact of deforestation, ocean pollution (oil spill) and global warming on ecosystems.</p>

## Summer Term— Where does that food go (food chains)

Module	Snap Science recommended lessons	National Curriculum Objectives	Expected outcome	Vocabulary	Suggested Resources
Where does that food go (food chains)	Lesson 6	<p><b>Enquiry Type</b> - Using secondary sources of information to answer questions</p> <p><b>LO:</b> Construct and interpret a variety of food chains, identifying producers, predators and prey</p> <p><b>Working Scientifically:</b> Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p>	Children will know how to create a food chain and food web	food, plants, animals, food chain, food web, producer, consumer, predator, prey	Straws, scissors, string, access to the internet or books or research
Where does that food go (food chains)	Lesson 7	<p><b>Enquiry Type - Grouping and classifying</b></p> <p><b>LO:</b> Construct and interpret a variety of food chains, identifying producers, predators and prey</p> <p><b>Working Scientifically:</b> Identifying differences, similarities or changes related to simple scientific ideas</p>	Children will know how to construct a food chain for a particular habitat	food chain, food web, energy, producer, consumer, predator, prey, herbivore, omnivore, carnivore	



## Summer Term— Who am I?

Module	Snap Science recommended lessons	National Curriculum Objectives	Expected outcome	Vocabulary	Suggested Resources
Who am I?	Lesson 1 Using Keys	<p><b>Enquiry Type</b> - Grouping and classifying</p> <p><b>LO:</b> Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p><b>Working Scientifically:</b> Making systematic and careful observations. They should choose the challenge based on previous experience of using keys. Challenge children who can use keys easily to make one</p>	Children will know how to use a key to identify animals	sort, classify, identify, features, sequence, key, distinguish, observations, vocabulary to describe features appropriate for the collection of animals to be identified	Pond/seashore life identification keys, sticky notes, <a href="http://www.gatekeeperel.co.uk/index.html">www.gatekeeperel.co.uk/index.html</a> , (identification guides, free downloads and interactives), <a href="http://www.field-studies-council.org/publications/fold-out-charts.aspx">www.field-studies-council.org/publications/fold-out-charts.aspx</a> (identification charts)
Who am I?	Lesson 2 Using keys	<p><b>Enquiry Type</b> - Grouping and classifying</p> <p><b>LO:</b> Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p><b>Working Scientifically:</b> Making systematic and careful observations and recording findings using diagrams or keys</p>	Children will know which yes/no questions to ask to identify an animal	sort, classify, identify, features, sequence, key, distinguish, similarities, differences, observations	Equipment for collecting and observing animals living in water (nets, trays, magnifiers, etc.), camera, identification charts
Who am I?	Lesson 3 Classifying vertebrates	<p><b>Enquiry Type</b> - Grouping and classifying</p> <p><b>LO:</b> Recognise that living things can be grouped in a variety of ways</p> <p><b>Working Scientifically:</b> Identifying differences, similarities or changes related to simple scientific ideas and processes</p>	Children will know what a vertebrate is and how to classify them	vertebrate, fish, amphibian, reptile, bird, mammal, backbone, hair, scales, feathers, eggs, wings, beak, lungs, gills, cold blooded, warm blooded, suckle,	
Who am I?	Lesson 4	<p><b>Enquiry Type</b> - Grouping and classifying</p> <p><b>LO:</b> To recognise characteristics of some of the main invertebrate groups</p> <p><b>Working Scientifically:</b> Identifying differences, similarities or changes related to simple scientific ideas and processes</p>	Children will know what an invertebrate is and how to classify them	sort, group, classify, features, observations, key, distinguish, head, thorax, abdomen, wing, segment, antennae, insects, arachnids (spiders), crustaceans, myriapods, molluscs, worms	

## Summer Term - Our Changing World

Module	Snap Science recommend-ed lessons	National Curriculum Objectives	Expected outcome	Vocabulary	Suggested Resources
<p><b>Our Changing World</b></p>	<p>Lesson 3 How can we classify trees by looking their leaves?</p>	<p>NC: Explore and use classification keys to help group, identify and name a variety of living things in their local environment</p> <p>LO: To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>WS: I can record and present findings using simple scientific language, written and oral presentations, drawings, diagrams, keys, bar charts and tables</p> <p>NB This lesson will be returned to Each term to observe and record the appearance of different trees in the local area. Noting and describing the appearance of different tree types</p>	<p>Children will know how trees change in appearance throughout the year and explain this through a series of diagrams and labelled diagrams.</p>	<p>Camera, Sets of three different leaves  Deciduous, evergreen</p>	<p>cameras</p>

## Summer Term— Human Impact

Module	Snap Science recommended lessons	National Curriculum Objectives	Expected outcome	Vocabulary	Suggested Resources
<b>Human Impact</b>	Lesson 1: What impact do humans have locally?	<b>Enquiry Type</b> - Grouping and classifying things <b>LO:</b> Recognise that environments can change and that these changes can sometimes pose dangers to living things <b>Working Scientifically:</b> Identifying differences, similarities or changes related to simple scientific ideas and processes	Children will know examples of positive and negative ways in which humans change the environment	environment, impact, positive, negative, litter, pollution, biodiversity, ecosystem, habitat, derelict, graffiti, traffic, destroy, create	Coloured pens, prepared activity sheets with slides printed out from the slideshow and stuck in the middle of large sheets of paper (A3 or A2)
<b>Human Impact</b>	Lesson 2: How can we find out about litter?	<b>Enquiry Type</b> - Grouping and classifying things <b>LO:</b> Recognise that environments can change and that these changes can sometimes pose dangers to living things <b>Working Scientifically:</b> Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Children will know how to plan a survey	impact, positive, negative, litter, pollution, waste, category, names of materials and items of litter (vocabulary will differ slightly according to the challenge group and the types of litter found in or near the school), location	Items made from different materials may be needed for some children to handle
<b>Human Impact</b>	Lesson 3: What types of litter are dropped locally?	<b>Enquiry Type</b> - Looking for patterns <b>LO:</b> Recognise that environments can change and that these changes can sometimes pose dangers to living things <b>Working Scientifically:</b> Gathering, recording, classifying and presenting data in a variety of ways to help answer questions	Children will know how to carry out a survey	environment, impact, litter, categories, tally chart, pictogram, bar chart, axes, scale	Litter pickers and/or gardening or disposable gloves (sturdy plastic bags could be an alternative), bags for collecting the litter, clipboards, data collection sheets (one per group, prepared in Lesson 2), digital camera
<b>Human Impact</b>	Lesson 4: Why does clearing litter matter?	<b>Enquiry Type</b> - Finding things out using secondary sources of information <b>LO:</b> Recognise that environments can change and that these changes can sometimes pose dangers to living things <b>Working Scientifically:</b> Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Children will know the impact of human behaviour on animals	litter, names of locally occurring wild/farm animals	Items of litter/rubbish for each group, to include: drinks can, food tin, plastic bottle or milk container, glass jar, plastic carrier bag, fishing line, plastic can holder, balloon, food packaging (burger box, pre-packed sandwich container). Teacher demonstration item: tin and lid with sharp edges, (handle with care and keep away from children)

## Summer Term— Who am I?

Module	Snap Science recommended lessons	National Curriculum Objectives	Expected outcome	Vocabulary	Suggested Resources
Human Impact	Lesson 5	<p><b>Enquiry Type</b> - Finding things out using secondary sources of information</p> <p><b>LO:</b> Recognise that environments can change and that these changes can sometimes pose dangers to living things</p> <p><b>Working Scientifically:</b> Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions; using straightforward scientific evidence to answer ques-</p>	Children will know the impact of humans on a food chain (locally)	food chain, producer, consumer, human impact, predator*, prey*	Poster paper and pens, access to the internet (Challenge 3), microphone (optional)
Human Impact	Lesson 6	<p><b>Enquiry Type</b> - Finding things out using secondary sources of information</p> <p><b>LO:</b> Recognise that environments can change and that these changes can sometimes pose dangers to living things</p> <p><b>Working Scientifically:</b> Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions; using straightforward scientific evidence to answer ques-</p>	Children will know the impact of humans on a food chain (in a different part of the world)	habitat, global issue, destruction, deforestation, rainforest, pollution, climate change, food chain, producer, consumer, human impact	Poster paper and pens, access to the internet

## Summer Term

Module	Lesson Structure	National Curriculum Objectives	Enquiry Type	Resources
Human Impact <b>Teach with In a State</b>	Lesson 1: What impact do humans have locally?	NC: Recognise that environments can change and that these changes can sometimes pose dangers to living things LO: I recognise that environments can change and that this can sometimes pose dangers to living things WS: I can identify differences, similarities or changes related to simple scientific ideas or processes	Grouping and classifying things	Coloured pens, prepared activity sheets with slides printed out from the slideshow and stuck in the middle of large sheets of paper (A3 or A2)
Human Impact <b>Teach with In a State</b>	Lesson 2: How can we find out about litter?	NC: Recognise that environments can change and that these changes can sometimes pose dangers to living things LO: I recognise that environments can change and that this can sometimes pose dangers to living things WS: I can record and present findings using simple scientific language, written and oral presentations, drawings, diagrams, keys, bar charts and tables	Grouping and classifying things	Items made from different materials may be needed for some children to handle
Human Impact <b>Teach with In a State</b>	Lesson 3: What types of litter are dropped locally?	NC: Recognise that environments can change and that these changes can sometimes pose dangers to living things LO: I recognise that environments can change and that this can sometimes pose dangers to living things WS: I can record and present findings using simple scientific language, written and oral presentations, drawings, diagrams, keys, bar charts and tables	Looking for patterns	Litter pickers and/or gardening or disposable gloves (sturdy plastic bags could be an alternative), bags for collecting the litter, clipboards, data collection sheets (one per group, prepared in Lesson 2), digital camera
Human Impact <b>Teach with In a State</b>	Lesson 4: Why does clearing litter matter?	NC: Recognise that environments can change and that these changes can sometimes pose dangers to living things LO: I recognise that environments can change and that this can sometimes pose dangers to living things WS: I can record and present findings using simple scientific language, written and oral presentations, drawings, diagrams, keys, bar charts and tables	Finding out things using secondary sources of information	Items of litter/rubbish for each group, to include: drinks can, food tin, plastic bottle or milk container, glass jar, plastic carrier bag, fishing line, plastic can holder, balloon, food packaging (burger box, pre-packed sandwich container). Teacher demonstration item: tin and lid with sharp edges, (handle with care and keep away from
Human Impact <b>Teach with In a State</b>	Lesson 5: What happens when a food chain is broken?	NC: Recognise that environments can change and that these changes can sometimes pose dangers to living things LO: I recognise that environments can change and that this can sometimes pose dangers to living things WS: I can ask relevant questions and use different types of scientific enquiry to answer them including comparative and fair tests	Finding out things using secondary sources of information	Poster paper and pens, access to the internet (Challenge 3), microphone (optional)

## Summer Term

Module	Lesson Structure	National Curriculum Objectives	Enquiry Type	Resources
<p style="text-align: center;"><b>In a State</b></p> <p style="text-align: center;"><b>Teach with Human Impact</b></p>	<p>Lesson 10:</p> <p>Where did the water come from?</p>	<p>NC: Observe that some materials changes state when they are heated or cooled and measure or research the temperature at which this happens in degrees Celsius</p> <p>LO: I can describe how materials change state at different temperatures</p> <p>WS: I can identify differences, similarities or changes related to simple scientific ideas and processes</p>	<p>Exploration</p>	<p>Kettle, glass jars with lids (two per group), ice, cans of soft drink (one per group), mirrors or metal spoons, a metal baking tray and thermometer</p>
<p style="text-align: center;"><b>In a State</b></p> <p style="text-align: center;"><b>Teach with Human Impact</b></p>	<p>Lesson 11:</p> <p>What does rain come from?</p>	<p>NC: Identify the part played evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</p> <p>LO: I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</p> <p>WS: I can record and present findings using simple scientific language, written and</p>	<p>Exploration and finding things out using secondary sources of information</p>	<p>Clear bowl of warm water, clingfilm or plate, ice, large paper and pens for posters, scissors and glue (for Challenges 1 and 2)</p>