Year 4 Curriculum Map

Year 4 – Animals, including humans

Lesson Intention	National Curriculum Reference	Scientific Enquiry Covered	Rocket Words Covered	Resources Needed
Identify the organs in the digestive system	Describe the simple functions of the basic parts of the digestive system in humans	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	digestive system oesophagus stomach small intestine large intestine	Glue, scissors, handout, pen and pencils, craft materials and whiteboards
Describe the functions of the main organs in the digestive system	Describe the simple functions of the basic parts of the digestive system in humans	Making systematic and careful observations Reporting on findings from enquiries, including oral and written explanations	saliva peristalsis absorb liver gall bladder	Pen, pencils and a digestive system model
Identify the types of human teeth and their functions	Identify the different types of teeth in humans and their simple functions	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	incisors canines molars jaw gum	A mirror and coloured pencils
Investigate the effects of different liquids on the teeth	Identify the different types of teeth in humans and their simple functions	Setting up simple practical enquiries, comparative and fair tests Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	enamel plaque tooth decay cavity fluoride	Beverages: sugary - soda, energy drink (e.g. Red Bull), sports drink (Gatorade), juice; acidic - vinegar, orange juice, water (control), milk (control), clear cups or glasses (one for each drink) with covers or pieces of foil or plastic wrap and rubber bands to cover, eggs, an extra toothbrush and toothpaste
Understand food chains	Construct and interpret a variety of food chains, identifying producers, predators and prey	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	ecosystem producer consumer prey predator	Coloured card, string and coloured pencils
Explore food webs	Construct and interpret a variety of food chains, identifying producers, predators and prey	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	food web tundra hide interdependence threatened	Pens and pencils, books and access to the internet

Year 4 Curriculum Map

Year 4 - Living things and their habitats				
Lesson Intention	**National Curriculum Reference**	**Scientific Enquiry Covered**	**Rocket Words Covered**	**Resources Needed**
Explore different habitats	Recognise that living things can be grouped in a variety of ways	Identifying differences, similarities or changes related to simple scientific ideas and processes	habitat microhabitat conditions adapted camouflage	Glue and scissors
Research a habitat	Making a guide to local living things (non-statutory)	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	coastal grassland environment climate exposure	Pencils, colouring pens and research tools, such as books and the internet
Explore how animals can be classified	Recognise that living things can be grouped in a variety of ways. 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	classify characteristics vertebrate invertebrate species	Pencil, scissors, glue
Create a classification key	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	sub-groups identify criteria classification keys organism	Pencil
Adaptations and classification within species	Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment	Identifying differences, similarities or changes related to simple scientific ideas and processes	adapted region features colouring blubber	Colouring pencils
Explore and classify pond plants	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	ecosystem oxygenised flowering plant non-flowering plant pond dipping	Colouring pencils For pond dipping (optional): a clear container/viewing trays/bucket, teaspoons, nets, magnifying glasses and clip boards

Year 4 Curriculum Map

Year 4 - Living things and their habitats – Conservation				
Lesson Intention	**National Curriculum Reference**	**Scientific Enquiry Covered**	**Rocket Words Covered**	**Resources Needed**
Describe ecosystems and how they are affected by changes in the seasons	Recognise that environments can change and that this can sometimes pose dangers to living things	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	ecosystem Northern Hemisphere Southern Hemisphere migrate monsoon	Research tools, such as books and the internet
Understand human impact on the environment through deforestation	Recognise that environments can change and that this can sometimes pose dangers to living things	Using straightforward scientific evidence to answer questions or to support their findings	rainforest deforestation drought biodiversity recycling	Research tools, such as books or the internet. Resources for air pollution catchers: index cards, petroleum jelly, sticky tape and decibel metres
Explore air pollution	Recognise that environments can change and that this can sometimes pose dangers to living things	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	fossil fuels pollution greenhouse gases emissions climate change	Index cards, petroleum jelly, sticky tape and decibel metres
Understand water pollution	Recognise that environments can change and that this can sometimes pose dangers to living things	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	chemicals sewage contaminate pesticides water treatment plant	Research tools such as books or the internet and a muddy glass of water
Explore methods that can be used to conserve water	Recognise that environments can change and that this can sometimes pose dangers to living things	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	conserve drought freshwater pure water butt	Paper, pencils and pens
Understand that humans can have a positive impact on nature	Recognise that environments can change and that this can sometimes pose dangers to living things	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	endangered marine sanctuaries protect conservation areas recycling	Paper, pencils, pens and research resources such as books and the internet

Year 4 Curriculum Map

Year 4 - States of matter				
Lesson Intention	**National Curriculum Reference**	**Scientific Enquiry Covered**	**Rocket Words Covered**	**Resources Needed**
Compare and group the 3 states of matter	Compare and group materials together, according to whether they are solids, liquids or gases	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	matter solid liquid gas volume	Examples of the 3 states of matter, scissors, glue and pencils
Explore how particles behave in solids, liquids and gases	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	particle bond arranged cooled heated	Ruler, pencil, water, an ice tray, a freezer, a kettle/stove and a thermometer/temperature probe
Investigate melting points	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	particle melting melting point temperature thermometer	Mini whiteboards, variety of foods to melt (such as butter, coconut oil, dark, milk and white chocolate, gummy bear, different cheeses), tealight stand, tealight, metal pie cases, tongs, matches, **or** access to a kitchen stove with a saucepan and bowl over boiling water, thermometer
Explore freezing and boiling points	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)	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	freezing reverse boiling sublimation deposition	Computers/tablets, squared paper, coloured pencils, ruler, pencil
Explore evaporation and condensation	Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	evaporation condensation absorb water vapour process	Cups or beakers, water, measuring cylinders, graph paper, ruler, pencil
Understand the water cycle	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	water cycle precipitation surface runoff transpiration groundwater	Coloured pencils, pencil, glue and scissors

Year 4 Curriculum Map

Year 4 – Sound				
Lesson Intention	**National Curriculum Reference**	**Scientific Enquiry Covered**	**Rocket Words Covered**	**Resources Needed**
Identify how sounds are made	Identify how sounds are made, associating some of them with something vibrating	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusion	vibration medium waves eardrum signals	Resources for children to create their presentations, either on paper or digitally
Explore how vibrations from sounds travel through a medium to the ear	Recognise that vibrations from sounds travel through a medium to the ear	Identifying differences, similarities or changes related to simple scientific ideas and processes	source energy particles echo vacuum	Sugar grains, cling film, bowl, speaker string, wire coat hanger, tank of water, two rocks, 2l plastic bottle (bottom cut off) and an inflated balloon
Explore sound insulation	Recognise that vibrations from sounds travel through a medium to the ear	Setting up simple practical enquiries, comparative and fair tests	materials reflect absorb insulate defenders	Card, sticky tape and a range of resources to explore, such as foil, cotton wool, bubble wrap, fabric, scrap paper or shredded newspaper and foam
Explore volume	Find patterns between the volume of a sound and the strength of the vibrations that produced it	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	volume decibels decibel metre amplitude power	A range of weights, a ruler, a decibel metre (you can download an app via a phone or tablet), pencils, graph paper and a drum
Explore pitch	Find patterns between the pitch of a sound and features of the object that produced it	Identifying differences, similarities or changes related to simple scientific ideas and processes	pitch high pitch low pitch instruments orchestra	Resources for making musical instruments, such as boxes, kitchen rolls, elastic bands of different thickness, a selection of storage boxes, rice, lentils or beans, card, scissors, glue, tape, string, glass tubes/bottles or drinking glasses of different sizes, spoons and pencils
Explore sounds from near and from far	Recognise that sounds get fainter as the distance from the sound source increases	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	energy particles travel sound source fade	Music through a speaker, tape measure, a decibel metre (you can download an app via a phone or tablet), pencils and graph paper

Year 4 Curriculum Map

Year 4 – Electricity

Lesson Intention	National Curriculum Reference	Scientific Enquiry Covered	Rocket Words Covered	Resources Needed
Explore electrical appliances and electrical safety	Identify common appliances that run on electricity	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	electricity batteries mains electricity appliance plug socket	Pen, pencils and colouring equipment
Learn about electrical components in a series circuit	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	circuit series circuit component cell battery	Batteries, bulb, alligator clips, buzzers or bell, switch and wires, colouring pencils
Investigate electrical circuits	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	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	incomplete circuit complete circuit battery wire bulb	Batteries, bulb, alligator clips, buzzers or bell, switches and wires
Explore conductors and insulators	Recognise some common conductors and insulators, and associate metals with being good conductors	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	electrical conductor electrical insulator metal copper plastic	Batteries, bulb, alligator clips, wires, a variety of materials and objects that can be investigated, such as tin foil, fabric, a coin, a rubber, paper, wood and classroom objects that could have both a part that is a conductor and a part that is an insulator
Learn about electrical switches	Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit	Setting up simple practical enquiries, comparative and fair tests Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	switch complete circuit control electrical conductor incomplete circuit	Batteries, bulb, alligator clips, wires, a variety of materials that can be investigated, such as paper clips, pins, safety pins and coins. Include resources for the children to stick or pin their switches to, such as card or cardboard.
Apply knowledge of conductors and insulators	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 some common conductors and insulators, and associate metals with being good conductors	Using straightforward scientific evidence to answer questions or to support their findings	non-renewable energy renewable energy wind turbines solar panels hydropower	Batteries, bulbs, buzzers, alligator clips and wires. 1 thick corrugated cardboard base per pair/group (approximately 25 cm x 25 cm and prepared in advance). A variety of materials which can be used to construct the game, such as paper clips, tin foil, copper wire, rubber bands, tape, paper, and cardboard. Example electric circuit games, if you have them.