Year 3/4 Curriculum Map – Cycle A

Year 3 – Forces and magnets

Lesson Intention	National Curriculum Reference	Scientific Enquiry Covered	Rocket Words Covered	Resources Needed
Explore contact and non-contact forces	Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	force contact force non-contact forces air resistance friction	A range of PE and playground equipment.
Compare how things move on different surfaces	Compare how things move on different surfaces	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	motion surface resistance texture tilt	A toy boat (or wooden block), thick books, a stopwatch, a cardboard/wooden ramp, a selection of materials e.g. bubble wrap, cling-film, paper, felt and sandpaper. (NB: any object can be timed moving down the ramp, but for a measurable effect, pick an object that slides - not rolls. Avoid toys with wheels or balls).
Explore different types of magnets	Describe magnets as having 2 poles Predict whether 2 magnets will attract or repel each other, depending on which poles are facing	Setting up simple practical enquiries, comparative and fair tests	magnet attract repel bar magnet horseshoe magnet	Bar magnets and horseshoe magnets.
Explore the properties of magnets and everyday objects that are magnetic	Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	magnetism magnetic magnetic field iron steel	A range of magnets and everyday classroom objects.
Understand that magnetic forces can act at a distance	Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment	non-contact forces magnetism attract non-magnetic materials recycle	5 different types of magnet, paperclips, something to hold the magnet, a thin thread, tape and a ruler or tape measure.
Explore the everyday uses of magnets	Describe magnets as having two poles	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	compass magnetic needle magnetic north direction orienteering	Compasses, clipboards and writing tools.

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Year 3/4 Curriculum Map – Cycle A

Year 3 – Light Unit

Lesson Intention	National Curriculum Reference	Scientific Enquiry Covered	Rocket Words Covered	Resources Needed
Identify the difference between light sources and non light sources	Recognise that they need light in order to see things and that dark is the absence of light	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	light source natural artificial reflect	Glue and scissors.
Explore the light that comes from the sun and how to stay safe	Recognise that light from the sun can be dangerous and that there are ways to protect their eyes	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	vitamin D ultraviolet rays sunburn exposure protection	UV beads, a range of sun creams with at least 3 different SPF values, black paper, sticky tack and a plate.
Explore materials which are reflective	Notice that light is reflected from surfaces	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	fluorescent high visibility reflective surface materials	Torches and a range of materials to investigate, such as tin foil, paper, wood, metal and fabric.
Discover how shadows are formed	Recognise that shadows are formed when the light from a light source is blocked by an opaque object	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	shadow opaque sundial rays blocks	Torch, opaque objects (enough for each child to have one), pencils and paper.
Investigate how shadows change throughout the day	Find patterns in the way that the size of shadows change	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	position cast opposite direction length	Data from the shadow stick investigation, ruler and graph paper.
Investigate how you can change the size of a shadow	Find patterns in the way that the size of shadows change	Identifying differences, similarities or changes related to simple scientific ideas and processes	size shape closer further puppet	Shadow puppet stage, lighting and handout with puppet silhouettes.

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Year 3/4 Curriculum Map – Cycle A

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.

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Year 3/4 Curriculum Map – Cycle A

Year 3 – Plants

Lesson Intention	National Curriculum Reference	Scientific Enquiry Covered	Rocket Words Covered	Resources Needed
Compare the effect of different factors on plant growth	Explore the requirements of plants for life and growth (air, light, water, nutrients from soil and room to grow) and how they vary from plant to plant	Asking relevant questions and using different types of scientific enquiries to answer them Setting up simple practical enquiries, comparative and fair tests	nutrients fertiliser nursery potassium stunted	Planting equipment, seeds.
Identify and describe the functions of different parts of a flowering plant and how they are used in photosynthesis	Identify and describe the functions of different parts of a flowering plant	Making systematic and careful observations Reporting on findings from enquiries, including oral and written explanations	chlorophyl stomata xylem photosynthesis UV light	Onions and a glass of water.
Investigate the way in which water is transported within plants	Investigate the way in which water is transported within plants	Making systematic and careful observations	xylem phloem absorb stomata transpiration	Celery in dyed water (prepared 2 days before), cut flowers, water and dye.
Explore the part that flowers play in the life cycle of flowering plants	Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	anther stigma style filament reproduction	Plasticine and a white board.
Understand the pollination process and the ways in which seeds are dispersed	Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	pollination pollen nectar seed dispersal pollinator	Equipment so pupils can create a class display.
Compare the effect of different factors on plant growth	Explore the requirements of plants for life and growth (air, light, water, nutrients from soil and room to grow) and how they vary from plant to plant	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	germination vulnerable anchor sapling formation	Plants from the experiment.

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Year 3/4 Curriculum Map – Cycle A

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 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 voltage	PhET slide, batteries, bulb, alligator clips, buzzers, bell, switch and wires.
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	current power battery wire bulb	PhET slide, batteries, bulb, alligator clips, buzzers, bell, switch 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	conductor insulator metal copper rubber	PhET Slide, 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 current control complete circuit incomplete circuit	PhET Slide, batteries, bulb, alligator clips, wires, a variety of materials that can be used as a switch such as paper clips, tin foil, pins, safety pins and coins. Include some resources for the children to stick or pin their switches to, such as card or cardboard.
Investigate how electrical components can change within a circuit	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	Ask relevant questions and using difference types of scientific enquiries to answer them	non-renewable energy renewable energy wind turbines solar panels hydropower	PhET Slide, batteries, bulbs, alligator clips and wires.

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Year 3/4 Curriculum Map – Cycle A

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.

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