Meadowbank Primary School
Lifelong Learners, Leaders of Change, Lasting Legacy

Science Progression of Skills, Knowledge and Vocabulary Map 2023-2024

Understanding the World	**Foundation Stage**					
	EYFS Statutory Educational Programme: **Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children's personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children's vocabulary will support later reading comprehension.**					
The Natural World	**Foundation Stage 1** **Cause and Effect, Structures**			**Foundation Stage 2** **Cause and Effect, Structures**		
	Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary. Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the natural environment and all living things. Comments and ask questions about aspects of their familiar world, such as the place where they live or the natural world. Explore and talk about different forces they can feel. Talk about the differences between materials and changes they notice.			Explore the natural world around them. Look closely at similarities and differences, patterns and change in nature. Describe what they see, hear and feel whilst outside. Make observations of animals, plants and matter, and explain why some things occur, and talk about changes. Recognise some environments that are different from the one in which they live. Understand the effect of changing seasons on the natural world around them. Begin to understand the effect their behaviour can have on the environment. Know about similarities and differences in relation to places, objects, materials and living things.		
Year Group Connected Concepts	**Key Stage 1** **Cause and Effect, Structures**		**Lower Key Stage 2** **Cause and Effect, Structures**		**Upper Key Stage 2** **Cause and Effect, Structures**	
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Working Scientifically to Enquire	Ask simple questions using their prior knowledge.	Ask simple questions and recognising that they can be answered in different ways.	Ask and answer relevant questions.	Ask relevant questions and use different types of scientific enquiries to answer them.	Plan different types of scientific enquiries to answer questions.	Plan different types of scientific enquiries to answer questions including recognising and controlling variables where necessary.
Working Scientifically To Observe	Observe closely, talking about what is noticed.	Observe closely, using simple equipment. Use their observations and ideas to suggest answers to questions.	Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Use straightforward scientific evidence to answer questions or to support their findings.	Set up simple practical enquiries, comparative and fair tests. Use straightforward scientific evidence to answer questions or to support findings. Draw simple conclusions, make predictions or new values, suggest improvements and raise further questions.	Take measurements, using a range of scientific equipment, with increasing accuracy and precision.	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Identifying scientific evidence that has been used to support or refute ideas or arguments and use this when making predictions.

Working Scientifically To Conduct	Perform simple tests and talk about how to make it fair.	Perform simple tests including some fair tests and making predictions. .	Use results to draw simple conclusions, make predictions and suggest improvements and raise further questions referring to evidence. Set up simple practical enquiries, comparative and fair tests, reporting on findings from enquiries.	Make systematic and careful observations and where appropriate make accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Identify differences, similarities or changes related to simple scientific ideas and processes.	Use test results to make predictions to set up further comparative and fair tests. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.	Use test results to make predictions to set up further comparative & fair tests. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
Working Scientifically to Respond	Identify and classify using a given criteria.	Identify and classify using their own criteria. Gather and record data to help in answering questions.	Identify differences, similarities or changes related to simple scientific ideas and processes. Gather, record, classify and present data in a variety of ways to help in answering questions.	Gather, record, classify and present data in a variety of ways to help answer questions, record findings sing simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. Report on findings from enquiries, including oral & written explanations, displays or presentations of results and conclusions.	Report and present findings from enquiries, including conclusions, causal relationships and explanations.	Offer practical suggestions of how working methods could be used. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral & written forms such as displays & other presentation.
Year Group Connected Concepts	**Key Stage 1** **Cause and Effect, Structures**		**Lower Key Stage 2** **Cause and Effect, Structures**		**Upper Key Stage 2** **Cause and Effect, Structures**	
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Plants	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees.	Observe and describe how seeds and bulbs grow into mature plants. Find out about and describe how plants need water, light and a suitable temperature to grow and stay healthy.	Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. 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. Investigate the way in which water is transported within plants. Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed			

			formation and seed dispersal.			
Key vocabulary	*Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud. names of trees in local area, garden and wild flowering plants.*	*As year 1+ light, shade, sun, warn, cool, water, grow, healthy.*	*Photosynthesis, pollen, insect/wind, pollination, seed formation, seed dispersal- wind dispersal, animal, dispersal, water dispersal, pollen, roots, stem, trunk, leaves, absorb, nutrients, reproduce, germination, stamen, style.*			
Assessment and indicators	TAPS focussed assessment: Leaf looking. Name trees and other plants they see regularly. Describe key features of the trees and plants e.g. shapes of leaves/colour of the flower/blossom. Point out trees which lost their leaves and those who keep them all year. Point to and name parts of a plant. Use simple charts to sort. Use photos to talk about how plants change.	TAPS focussed assessment: Comparing plant growth in different conditions. Describe how plants that have grown from seeds and bulbs have developed over time. Identify plants that grew well in different conditions. Spot similarities and differences between bulbs and seeds. Nurture seeds and bulbs into mature plants identifying the different requirements of different plants.	TAPS focussed assessment: How much water do plants need? Explain the function of the parts of a flowering plant. Describe the life cycle of flowering plants, including pollination, seed formation, seed dispersal and germination. Give different methods of pollination and seed dispersal, including examples. Explain observations made during investigations. Look at features of seeds to decide on method of dispersal. Draw and label a diagram of their created flowering plant to show its parts and their role and method of pollination and seed dispersal.			
Year Group Connected Concepts	**Key Stage 1** **Cause and Effect, Structures**		**Lower Key Stage 2** **Cause and Effect, Structures**		**Upper Key Stage 2** **Cause and Effect, Structures**	
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Animals, including humans	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets). Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Notice that animals, including humans, have offspring which grow into adults. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions. Construct and interpret a variety of food chains, identifying producers, predators and prey.	Describe the changes as humans develop to old age.	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported within animals, including humans.
Key vocabulary	*Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, reptile, amphibian, mammal, omnivore, carnivore, herbivore, all senses.*	*Offspring, grow, adults, nutrition, reproduce, survival, water, food, air, exercise, hygiene, survival, exercise.*	*Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, support, protect, skull, ribs, spine, muscles, joints.*	*Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, incisor, canine, herbivore, omnivore.*	*Puberty, vocabulary linked to describe a range of sexual characteristics.*	*Heart, pulse, rate, pumps, blood, blood vessel, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle.*
Assessment and indicators	TAPs focussed assessment: Animal classification. Name a range of animals which includes animals from each of the vertebrate groups. Describe the key features of named animals. Label key features on a picture/diagram. Write descriptively about an animal. Write a 'what am I? Riddle about an animal. Describe what a range of animals eat.	TAPs focussed assessment: Comparing hand spans. Sequence the stages of a baby and observe these changes. Describe how animals change as they get older. Develop understanding of how insects change (more than a butterfly) through lifecycle diagrams. Explain what humans and other animals need to survive this could be through planning a trip to a desert island.	TAPs focussed assessment: Investigating the human skeleton. Name the nutrients found in food. State that to be healthy we need to eat the right types of food to give us the correct amount of these nutrients. Name some bones that make up the skeleton giving examples that support, help them move or provide protection. Describe how muscles and joints help them to move.	TAPs focussed assessment: Teeth in liquid. Sequence the main parts of the digestive system. Draw the main parts of the digestive system onto a human outline. Describe what happens in each part of the digestive system. Point to three different types of teeth in their mouth and talk about what each is used for. Demonstrate journey of food through body.	TAPs focussed assessment: Growth survey. Explain the changes that takes place in boys and girls during puberty. Explain how a baby changes physically as it grows and also what it is able to do.	TAPs focussed assessment: Heart rate poses. Draw a diagram of the circulatory system, label the parts and annotate it to show what the parts do. Explain the positive and negative effects on diet, exercise, drugs and lifestyle on the body.

	Compare and classify animals.	Describe how to keep clean and healthy. Has a good understanding of the food plate and understands 'a healthy balanced diet'. Can create a diet for an athlete. Create a menu to substitute food from the 'eat well' plate. Understands the effect of exercise on the body.	Classify food groups (high /low nutrients), answer questions about nutrients in food, and use data to look for patterns. Give similarities and differences between skeletons.	Make a dental record. explain teeth in animals and if they are carnivores, herbivores or omnivores.		
Year Group Connected Concepts	**Key Stage 1 Cause and Effect, Structures**		**Lower Key Stage 2 Cause and Effect, Structures**		**Upper Key Stage 2 Cause and Effect, Structures**	
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Materials and Matter	Materials Distinguish between an object and the material from which it is made. Identify and name a variety Of everyday materials, including wood, plastic, glass, metal, water, and rock. Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties.	Materials Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Rocks and Soils Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Describe in simple terms how fossils are formed when things that have lived are trapped within a rock. Recognise that soils are made from rocks and organic matter.	States of Matter Compare and group materials together, according to whether they are solids, liquids or 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). Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	Materials Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Demonstrate that dissolving, mixing and changes of state are reversible changes.	

					Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.	
Key vocabulary	*Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see through, not see through.*	*Wood, plastic, glass, metal, water, rock, brick, paper, fabric, card, rubber, use/useful, suitable/unsuitable, hard/soft, stretchy/stiff. rigid/flexible, waterproof/absorbent, strong/weak, rough/smooth, transparent/opaque, shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching.*	*Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb, water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil.*	*Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle*	*Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/not reversible, change, burning, rusting, new material.*	
Assessment and indicators	TAPs focussed assessment: Ways to test reflectiveness Label a picture/diagram of an object made from different materials. Describe the properties of materials. Sort materials using their properties. Test evidence to answer a question.	TAPs focussed assessment: Materials Hunt Name an object, say what material it is made from, identify properties and make a link between property and use. Whilst changing a shape of an object can describe the actions used. Use suitable vocabulary. Use simple tests relevant to properties. Describe similarities and differences.	TAPs focussed assessment: Reporting on Rocks Name some types of rock and give physical features of each. Explain how a fossil is formed. Explain that soils are made from rocks and also contain living/dead matter. Classify rocks in a range of ways using scientific vocabulary. Test properties of rocks. show understanding of how fossils were formed. Can identify plant/animal matter in soil and test water retention of soils.	TAPs focussed assessment: Dunking biscuits Create a concept map, including arrows linking the key vocabulary. Name properties of solids, liquids and gases. Give everyday examples of melting and freezing. Give everyday examples of evaporation and condensation. Describe the water cycle. Give reasons to justify why something is a solid liquid or gas. Give examples of things that melt freeze and how they vary	TAPs focussed assessment: Insulation layers/nappies Explain everyday uses of material e.g. how bricks, wood, glass are used in buildings. Explain what dissolving is, giving examples. Name equipment used for filtering and sieving. Use knowledge of liquids, gases and solids to suggest how materials can be recovered from solutions or mixtures by evaporation, filtering or sieving. Describe simple reversible and no reversible changes to materials, giving examples.	

				Give the melting points of some materials. Using their data, can explain what affects how quickly a solid melts. Measure temperatures using a thermometer. Explain why there is condensation on the inside the hot water cup but on the outside of the icy water cup From their data, can explain how to speed up or slow down evaporation. Present their learning about the water cycle in a range of ways	Create chart/table grouping materials using properties. Suggest appropriate material for purpose. Explain results from investigations involving dissolving and no reversible change.	
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Seasonal changes	Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.					
Key vocabulary	*Weather (sunny, rainy, windy, snowy etc) seasons (winter, summer, spring, autumn) sun, sunrise, sunset, day length*					
Assessment and indicators	TAPs focussed assessment: Seasonal change Name four seasons and identify when in the year they occur. Observe and describe weather in different seasons. Describe days being longer in summer and shorter in winter. Present data in tables					

	charts and compare seasons					
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Living things		Explore and compare the differences between things that are living, dead, and things that have never been alive. Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including microhabitats. Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.		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. Recognise that environments can change and that this can sometimes pose dangers to living things.	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics. Evolution and Inheritance Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
Key vocabulary		*Living, dead, never been alive, suited, suitable, basic need, food, food chain, shelter, move, feed, names of local habitats e.g. pond, woodland, names of micro habitats e.g. under logs, in bushes etc.*		*Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate.*	*Lifecycle, mammal, amphibian, germination, seed formation, insect, bird, pollination, life processes, plants, animals, reproduction, environment, dispersal, growth, living, eggs, and seeds.*	*Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering and nonflowering.* *Evolution and Inheritance* *Offspring, sexual reproduction, vary, characteristics, suited,*

						adapted, environment, inherited, species, fossils.
Assessment and indicators		TAPs focussed assessment: Woodlice habitat Find a range of items which are dead, living. Name plants/animals which live in different habitats and micro habitat. Talks about the features of the animal/plant and how they are suited to the habitat. Talks about what the animal eats. Constructs a food chain.		TAPs focussed assessment: Local survey Name living things in a range of habitats, giving key features that helped identify them. Give examples of how an environment may change both naturally and due to human impact. Use classification keys to identify unknown plants and animals.	TAPs focussed assessment: Life Cycle research Describes the lifecycles of mammals, amphibians and insects using diagrams. Describes similarities and differences between them.	TAPs focussed assessment: Invertebrate research/Outdoor keys Give examples of animals in the five vertebrate groups and some of the invertebrate groups. Give key characteristics of the five vertebrate groups and some invertebrate groups. Give examples of flowering and non-flowering plants. Use classification keys to identify unknown plants and animals. Create classification keys. Give a number of characteristics that explain why an animal belongs to a particular group. Evolution and Inheritance TAPs focussed assessment: Egg Strength Explain the process of evolution. Give examples of how plants and animals are suited to their environment. Give examples of how an animal or plant has evolved over time e.g. penguin, peppered moth. Give examples of things that lived millions of years ago and the fossil evidence to support this.
Year Group Connected Concepts	**Key Stage 1 Cause and Effect, Structures**		**Lower Key Stage 2 Cause and Effect, Structures**		**Upper Key Stage 2 Cause and Effect, Structures**	
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Light and Sound			Light	Sound	Earth and Space	Light

Earth and Space			Recognise that they need light in order to see things and that dark is the absence of light Notice that light is reflected from surfaces Recognise that light from the sun can be dangerous and that there are ways to protect our eyes Recognise that shadows are formed when the light source is blocked by a solid object Find patterns in the way the size of the shadows change	Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sounds travel through a medium to the ear Find patterns between the pitch of a sound and features of the object that produced it Find patterns between the volume of a sound and the strength of the vibrations that produced it Recognise that sounds get fainter as the distance from the sound source increases	Describe the movement of the Earth and other planets, relative to the sun in the solar system. Describe the movement of the moon relative to the Earth. Describe the Sun, Earth and Moon as approximately spherical bodies. Use Earth rotation to explain day and night due to the apparent movement of the sun across the sky.	Recognise that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
Key vocabulary			*Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous.*	*Sound, source, vibrate, vibration, travel, pitch, volume, faint, loud, insulation.*	*Earth, Sun, Moon, Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune, Pluto (dwarf planet), spherical, solar system, rotates, star, orbit, planets, axis, night, day, season, galaxy, meteorite.*	*Year 3 vocabulary plus light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous.*
Assessment and indicators			TAPs focussed assessment: Make shadows Describe how we see objects in lights and can describe dark as the absence of light. Know it is dangerous to look at the sun. Define transparent, translucent and opaque. Describe how shadows are formed. Predict what materials will be more/less visible.	TAPs focussed assessment: String telephones Describe different types of objects producing different sounds and that the sound is produced by vibration in the object. Describe sounds travelling through different mediums such as air, water, metal. Find patterns between pitch and volume and the features of the object producing it. Recognise that sounds get fainter as the distance from	TAPs focussed assessment: Solar System research/craters Show using diagrams the movement of the Earth and moon. Explain the rotation of the Earth and how this causes night and day. Explain evidence gathered about the position of shadows in terms of movement of the Earth. Explain how a sundial works. Explain why we have time zones.	TAPs focussed assessment: Investigating shadows Describe with diagrams how light travels in straight lines, either from sources or reflected from other objects into our eyes. Describe with diagrams how light travels in straight lines past translucent or opaque objects to form a shadow of the same shape.

				the sound source increases. Explain what happens when you strike a drum or pluck a string Demonstrates how to increase or decrease pitch and volume.		
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Forces and Magnets			Compare how things move on different surfaces Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance Observe how magnets attract or repel each other and attract some materials and not others 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 Describe magnets as having 2 poles Predict whether 2 magnets will attract or repel each other, depending on which poles are facing		Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Identify the effects of air resistance, water resistance and friction, that act between moving surfaces Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect	
Key vocabulary			*Force, push, pull, twist, contact force, noncontact force, magnetic, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel. magnetic material, metal, iron, steel, poles, north pole, south pole.*		*Gravity, earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears.*	

Assessment and indicators			TAPs focussed assessment: Testing the strength of magnets Give examples of forces in everyday life. Give examples of objects moving differently on different surfaces. Name a range of magnets and show how the poles attract and repel. Draw diagrams using arrows to show the attraction and repulsion between the poles of magnets. Use results to describe how objects move on different surfaces. Use results to make predictions. Use some classification to know some metals are not magnetic. Use test data to rank magnets.		TAPs focussed assessment: Spinners Demonstrate the effect of gravity acting on an unsupported object. Give examples of friction, water resistance and air resistance. Give examples of when it is beneficial to have high or low friction, water resistance, and air resistance. Demonstrate how pulleys, levers and gears work.	
Year Group Connected Concepts	**Key Stage 1** **Cause and Effect, Structures**		**Lower Key Stage 2** **Cause and Effect, Structures**		**Upper Key Stage 2** **Cause and Effect, Structures**	
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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		Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. Use recognised symbols when representing a simple circuit in a diagram.

				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.		
Key Vocabulary				*Electrical, appliance, mains, plug, circuit, component, cell, battery, positive, negative, connect/connectors, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol.*		*Circuits, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage* *nb: children do not need to understand what voltage is but will use volts and voltage to describe different batteries. the words cells and batteries are now used interchangeably*
Assessment and indicators				TAPs focussed assessment: Does it conduct electricity? Name the components in a circuit. Make an electric circuit. Control a circuit using a switch. Name some metals that are conductors. Name materials that are insulators. Communicate structures of circuits using drawings. Incorporate a switch. Add a circuit with a switch to a D&T project and demonstrate how it works. Describe how a switch works.		TAPs focussed assessment: Bulb brightness Explain how a circuit operates to achieve particular operations, such as control the light for a torch with different brightness's or make a motor go faster or slower. Make circuits to solve particular problems such as a quiet and a loud burglar alarm. Carry out fair tests exploring. Changes in circuits. Make circuits that can be controlled as part of a D&T project.