



Science

Plants						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC aims	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 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		Describe the life process of reproduction in some plants.	
Skills	Identify, compare, group and sort a variety of common plants, including deciduous and evergreen trees, based on observable features. Label and	Observe and describe how seeds and bulbs change over time as they grow into mature plants. Describe how plants need water,	Name and describe the functions of the different parts of flowering plants (roots, stem, leaves and flowers). Describe		Group and sort plants by how they reproduce. Label and draw the parts of a flower involved in sexual reproduction in	



Science

	describe the basic structure of a variety of common plants.	light and a suitable temperature to grow and stay healthy.	the requirements of plants for life and growth (air, light, water, nutrients and room to grow) and how they vary from plant to plant. Investigate how water is transported within plants. Draw and label the life cycle of a flowering plant.		plants (stamen, filament, anther, pollen, carpel, stigma, style, ovary, ovule and sepal).	
Knowledge	Plants are living things. Common plants include the daisy, daffodil and grass. Trees are large, woody plants and are either evergreen or deciduous. Trees that lose their leaves in the autumn are called deciduous trees (e.g. oak, beech and rowan). Trees that keep their leaves all year round are called evergreen trees (e.g. holly and pine). The basic plant parts include root, stem, leaf, flower, petal, fruit, seed and bulb. Trees have a woody stem called a trunk.	Plants grow from seeds and bulbs. Seeds and bulbs need nutrients from soil, water and warmth to start growing (germinate). As the plant grows bigger, it develops leaves and flowers. Plants need water, light and a suitable temperature to grow and stay healthy. Without any one of these things, they will die.	The plant's roots anchor the plant in the ground and transport water and minerals from the ground to the plant. The stem (or trunk) support the plant above the ground. The leaves collect energy from the Sun and make food for the plant. Flowers make seeds to produce new plants. Different plants have different needs depending on their habitat. Examples include cacti, which need less water than is typical, and ferns, which can		Flowering plants reproduce sexually. The flower is essential for sexual reproduction. Other plants reproduce asexually. Bulbs, corms and rhizomes are some parts used in asexual reproduction in plants. Parts of a flower include the stamen, filament, anther, pollen, carpel, stigma, style, ovary, ovule and sepal. Pollination is when the male part of a plant (pollen) is carried, by wind, insects or other	



Science



			<p>grow in lower light levels. -Water is transported in plants from the roots, through the stem and to the leaves, through tiny tubes called xylem. - Flowers are important in the life cycle of flowering plants. The stages of a plant's life cycle include germination, flower production, pollination, fertilisation, seed formation and seed dispersal. Insects and the wind can transfer pollen from one plant to another (pollination). Animals, wind, water and explosions can disperse seeds away from the parent plant (seed dispersal).</p>		<p>animals, to the female part of the plant (carpel). The pollen travels to the ovary, where it fertilises the ovules (eggs). Seeds are then produced, which disperse far away from the parent plant and grow new plants.</p>	
Unit	Dinosaurs	Secret Garden	Through the ages		Australia	
Animals including human and evolution						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC aims	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and	Notice that animals, including humans, have offspring which	Identify that animals, including humans, need the right types	Describe the simple functions of the basic parts of the digestive	Describe the changes as humans develop to old age	Identify and name the main parts of the human circulatory



Science



	<p>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.</p>	<p>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</p>	<p>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.</p>	<p>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</p>	<p>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. • 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.</p>
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Science



Skills	Identify, compare, group and sort a variety of common animals, including fish, amphibians, reptiles, birds and mammals, based on observable features. Group and sort a variety of common animals based on the foods they eat. Label and describe the basic structure of a variety of common animals. Draw and label the main parts of the human body and say which body part is associated with which sense.	Describe the stages of human development (baby, toddler, child, teenager and adult) Describe the basic life cycles of some familiar animals (egg, caterpillar, pupa, butterfly; egg, chick, chicken; spawn, tadpole, froglet, frog). Describe what humans need to survive. Explain how animals, including humans, need water, food, air and shelter to survive. Describe the importance of a healthy lifestyle, including exercise, a balanced diet and good hygiene.	Compare and contrast the diets of different animals. Explain the importance and characteristics of a healthy, balanced diet. Describe how humans need the skeleton and muscles for support, protection and movement. Identify and group animals that have no skeleton, an internal skeleton (endoskeleton) and an external skeleton (exoskeleton).	Describe the purpose of the digestive system, its main parts and each of their functions. Identify the four different types of teeth in humans and other animals, and describe their functions. Construct and interpret a variety of food chains and webs to show interdependence and how energy is passed on over time.	Describe the changes as humans develop from birth to old age.	Name and describe the purpose of the circulatory system and the functions of the heart, blood vessels and blood. Explain the impact of positive and negative lifestyle choices on the body. Explain that the circulatory system in animals transports oxygen, water and nutrients around the body. Explain that living things have changed over time, using specific examples and evidence. Identify that living things produce offspring of the same kind, although the offspring are not identical to either parent. Describe how animals and plants can be bred to produce offspring with specific and desired characteristics (selective breeding). Identify how animals and plants are
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Science



						adapted to suit their environment, such as giraffes having long necks for feeding, and that adaptations may lead to evolution.
Knowledge	<p>Animals are living things. Animals can be sorted and grouped into six main groups: fish, amphibians, reptiles, birds, mammals and invertebrates. Carnivores eat other animals (meat), herbivores eat plants and omnivores eat other animals and plants. Different animal groups have some common body parts, such as eyes and a mouth, and some different body parts, such as fins or wings. The basic body parts are the head, arms, legs, nose, eyes, ears, mouth, hands and feet. The five senses are hearing, sight, smell, taste and touch. Ears are used for hearing, eyes are used to see, the nose is used to smell, the tongue is used to taste and skin gives the sense of touch.</p>	<p>Human offspring go through different stages as they grow to become adults. These include baby, toddler, child, teenager and adult. Animals have offspring that grow into adults. Different animals have different stages of growth or life cycles. Humans need water, food, air and shelter to survive. Animals need water, food, air and shelter to survive. Their habitat must provide all these things. A healthy lifestyle includes exercise, good hygiene and a balanced diet.</p>	<p>Animals cannot make their own food and need to get nutrition from the food they eat. Carnivores get their nutrition from eating other animals. Herbivores get their nutrition from plants. Omnivores get their nutrition from eating a variety of plants and other animals. Humans have to get nutrition from what they eat. It is important to have a balanced diet made up of the main food groups, including proteins, carbohydrates, fruit and vegetables, dairy products and alternatives, and fats and spreads. Humans need to stay hydrated by drinking water.</p>	<p>The digestive system is responsible for digesting food and absorbing nutrients and water. The main parts of the digestive system are the mouth, esophagus, stomach, small intestines, large intestines and rectum. The mouth starts digestion by chewing food and mixing it with saliva. The oesophagus transports the chewed food to the stomach, where it mixes with stomach acid and gets broken down into smaller pieces. In the small intestine, nutrients from the food are absorbed by the body. In the large intestine, water is absorbed by the body. The</p>	<p>Humans go through characteristic stages as they develop to old age. These stages include baby, infant, toddler, child, adolescent, young adult, adult and senior citizen. Puberty is the transition between childhood and adulthood.</p>	<p>The circulatory system includes the heart, blood vessels and blood. The heart pumps blood through the blood vessels and around the body. There are three types of blood vessel: arteries, veins and capillaries. They each have a different-sized hole (lumen) and walls. The blood carries gases (oxygen and carbon dioxide), water and nutrients to where they are needed. The red blood cells carry oxygen and carbon dioxide around the body. The blood also contains white blood cells, which protect the body from infection. Lifestyle choices can have a positive (exercise and</p>



Science



			<p>Humans have a skeleton and muscles for movement, support and protecting organs. Major bones in the human body include the skull, ribs, spine, humerus, ulna, radius, pelvis, femur, tibia and fibula. Major muscle groups in the human body include the biceps, triceps, abdominals, trapezius, gluteals, hamstrings, quadriceps, deltoids, gastrocnemius, latissimus dorsi and pectorals. Some animals have skeletons for support, movement and protection. Endoskeletons are those found inside some animals, such as humans, cats and horses. Exoskeletons are those found on the outside of some animals, such as beetles and flies.</p>	<p>remaining undigested waste is stored in the rectum before excretion through the anus. There are four different types of teeth: incisors, canines, premolars and molars. Incisors are used for cutting. Canines are used for tearing. Premolars and molars are used for grinding and chewing. Carnivores, herbivores and omnivores have characteristic types of tooth. Herbivores have many large molars for grinding plant material. Carnivores have large canines for killing and tearing meat. Food chains show what animals eat within a habitat and how energy is passed on over time. All food chains start with a producer, which is typically a green plant. The producer is eaten by a primary</p>		<p>eating healthily) or negative (drugs, smoking and alcohol) impact on the body. The role of the circulatory system is to transport oxygen, water and nutrients around the body. They are transported in blood and delivered to where they are needed. Scientists compare fossilised remains from the past to living species that exist today to hypothesise how living things have evolved over time. Humans and apes share a common ancestry and evidence for this comes from fossil discoveries and genetic comparison. Animals that sexually reproduce generate new offspring of the same kind by combining the genetic material of two individuals. Each offspring inherits two</p>
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Science

			Some animals have no skeleton, such as slugs and jellyfish	consumer (prey), which is eaten by a secondary consumer (prey), which is eaten by a tertiary consumer. All food chains end with a top or apex predator. Changes within a food chain, such as an abundance or lack of one food type, have an impact on the entire food chain.		of every gene, one from the female parent and one from the male parent. Animals and plants can be bred to produce offspring with specific and desired characteristics. This is called selective breeding. Examples include cows that produce large quantities of milk or crops that are disease resistant
Unit	School days and Paws, Claws and whiskers	Wriggle and Crawl	Predators	Burps, bottom and bile	PSHE link	Blood heart
Living things and their habitats						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC aims		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		<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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



Science



		<p>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.</p>		<p>can sometimes pose dangers to living things</p>		<p>animals based on specific characteristics.</p>
Skills		<p>Compare and group things that are living, dead or have never been alive. Describe a range of local habitats and habitats beyond their locality (rainforests, deserts, oceans and mountains) and what all habitats provide for the things that live there. Identify and name a variety of plants and animals in a range of habitats and microhabitats.</p>		<p>Compare, sort and group living things in a variety of ways based on observable features and behaviour. Explain how unfamiliar habitats, such as a mountain or ocean, can change over time and what influences these changes. Describe how environments can change due to human and natural influences and the impact this</p>	<p>Compare the life cycles of animals, including a mammal, amphibian, insect and bird. Describe the process of human reproduction. Describe the life process of reproduction in some plants and animals.</p>	<p>Use and construct classification systems to identify animals and plants from a range of habitats. Classify living things, including microorganisms, animals and plants, into groups according to common observable characteristics and based on similarities and differences. Research unfamiliar animals and plants</p>



Science

		Interpret and construct simple food chains to describe how living things depend on each other as a source of food.		can have on living things.		from a range of habitats, deciding upon and explaining where they belong in the classification system.
Knowledge		<p>Living things are those that are alive. Dead things are those that were once living but are no longer. Some things have never been alive. Local habitats include parks, woodland and gardens. Habitats beyond the locality include beaches, rainforests, deserts, oceans and mountains. All living things live in a habitat to which they are suited and it must provide everything they need to survive. A habitat is a place where a living thing lives. A microhabitat is a very small habitat. (E.g. rotting log or under a rock) - Food chains show how living things depend</p>		<p>Scientists classify living things according to shared characteristics. Animals can be divided into six main groups: mammals, reptiles, amphibians, birds, fish and invertebrates. These groups can be further subdivided. Classification keys are a scientific tools that aid the identification of living things. Habitats change over time, either due to natural or human influences. Natural influences include extreme or unseasonable weather. Human influences include habitat destruction or pollution. These changes can pose a</p>	<p>A life cycle is the series of changes in the life of a living thing and includes these basic stages: birth, growth, reproduction and death. Mammals' life cycles include the stages: embryo, baby, adolescent and adult. Amphibians' life cycles include the stages: egg, larva (tadpole), adolescent and adult. Some insects' (butterflies, beetles and bees) life cycles include the stages: egg, larva, pupa and adult. Birds' life cycles include the stages: egg, baby, adolescent and adult. Humans reproduce sexually, which involves two parents (one female and one male) and</p>	<p>Classification keys help us identify living things based on their physical characteristics. Scientists classify living organisms into broad groups according to their characteristics. Vertebrates are an example of a classification group. There are a number of ranks, or levels, within the biological classification system. The first rank is called a kingdom, the second a phylum, then class, order, family, genus and species. Living things are classified into groups, according to common observable characteristics and</p>



Science



		<p>on one another for food. All food chains start with a plant, followed by animals that either eat the plant or other animals.</p>		<p>risk to animals and plants that live in the habitat. Humans can affect habitats in negative ways, such as litter, pollution and land development, or positive ways, such as garden ponds, bird boxes and wildflower areas.</p>	<p>produces offspring that are different from the parents. Reproduction is the process of producing offspring and is essential for the continued survival of a species. There are two types of reproduction: sexual and asexual. Sexual reproduction involves two parents (one female and one male) and produces offspring that are different from the parents. Asexual reproduction involves one parent and produces offspring that is identical to the parent</p>	<p>based on similarities and differences.</p>
Unit		Wriggle and crawl		Misty mountain sierra	Farm	Darwin delight
Materials						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC aims	<p>Distinguish between an object and the material from which it is made. • Identify and name a variety of everyday materials, including wood, plastic, glass,</p>	<p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic,</p>			<p>Compare and group together everyday materials on the basis of their properties, including their</p>	



Science



	<p>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.</p>	<p>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.</p>			<p>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</p>	
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Science



					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.	
Skills	Identify and name what an object is made from, including wood, plastic, glass, metal, water and rock. Investigate and describe the simple physical properties of some everyday materials, such as hard or soft; stretchy or stiff; rough or smooth; opaque or transparent; bendy or rigid; waterproof or not waterproof and magnetic or nonmagnetic. Compare and group materials in a variety of ways, such as based on their physical properties; being natural or man-made and being recyclable or non-recyclable.	Compare the suitability of a range of everyday materials for particular uses. Describe how some objects and materials can be changed and how these changes can be desirable or undesirable.			Compare and group everyday materials by their properties, including hardness, solubility, transparency, conductivity (electrical and thermal) and magnetism. Explain, following observation, that some substances (solutes) will dissolve in liquid (solvents) to form a solution and the solute can be recovered by evaporating off the solvent. Separate mixtures by filtering, sieving and evaporating. Describe, using evidence from comparative or fair tests, why a material	



Science



					has been chosen for a specific use. Identify, demonstrate and compare reversible and irreversible changes	
Knowledge	<p>A material is what an object is made from. Everyday materials include wood, plastic, glass, metal, water, rock, brick, paper and fabric. Materials have different properties, such as hard or soft; stretchy or stiff; rough or smooth; opaque or transparent; bendy or rigid; waterproof or not waterproof; magnetic or non-magnetic. Materials can be grouped according to their properties.</p>	<p>A material's physical properties make it suitable for particular purposes, such as glass for windows and brick for building walls. Many materials are used for more than one purpose, such as metal for cutlery and cars. Some objects and materials can be changed by squashing, bending, twisting, stretching, heating, cooling, mixing and being left to decay.</p>			<p>Materials can be grouped according to their basic physical properties. Properties include hardness, solubility, transparency, conductivity (electrical and thermal) and magnetism. Some materials (solutes) will dissolve in liquid (solvents) to form a solution. The solute can be recovered by evaporating off the solvent by heating. Some mixtures can be separated by filtering, sieving and evaporating. Sieving can be used to separate large solids from liquids and some solids from other solids. Filtering can be used to separate small</p>	



Science

					<p>solids from liquids. Evaporating can be used to separate dissolved solids from liquids. A material's properties dictate what it can be used for. For example, cooking pans are made from metal, which is a good thermal conductor, allowing heat to quickly transfer from the hob to the contents of the pan. Reversible changes include heating, cooling, melting, dissolving and evaporating. Irreversible changes include burning, rusting, decaying and chemical reactions</p>	
Unit	Moon zoom	Magnificent monarchs			Fallen fields	
Seasonal changes						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC aims	Observe changes across the four seasons. • Observe and describe weather associated with the					



Science

	seasons and how day length varies					
Skills	Observe changes across the four seasons. Observe and describe how day length changes across the year. Observe and describe different types of weather.					
Knowledge	There are four seasons: spring, summer, autumn and winter. Certain events and weather patterns happen in different seasons. Day length (the number of daylight hours) is longer in the summer months and shorter in the winter months. Different types of weather include sun, rain, hail, wind, snow, fog, lightning, storm and cloud. The weather can change daily and some weather types are more common in certain seasons, such as snow in winter.					
Unit	Enchanted Woodland					
Rocks						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC aims			Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. • Describe in simple terms how			



Science

			fossils are formed when things that have lived are trapped within rock. • Recognise that soils are made from rocks and organic matter.			
Skills			Compare and group rocks based on their appearance, properties or uses. Describe simply how fossils are formed, using words, pictures or a model. Investigate soils from the local environment, making comparisons and identifying features.			
Knowledge			There are three different rock types: sedimentary, igneous and metamorphic. Sedimentary rocks form from mud, sand and particles that have been squashed together over a long time to form rock. Examples include sandstone and limestone. Igneous rocks are made from			



Science

			<p>cooled magma or lava. They usually contain visible crystals. Examples include pumice and granite. Metamorphic rocks are formed when existing rocks are heated by the magma under the Earth's crust or squashed by the movement of the Earth's tectonic plates. They are usually very hard. Examples include slate and marble. Fossils form over millions of years and are the remains of a once-living organism, preserved as rock. Scientists can use fossils to find out what life on Earth was like in prehistoric times. Fossils form when a living thing dies in a watery environment. The body gets covered by mud and sand and the soft tissues rot away. Over time, the ground</p>			
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Science



			hardens to form sedimentary rock and the skeletal or shell remains turn to rock. Soils are made from tiny pieces of eroded rock, air and organic matter. There are a variety of naturally occurring soils including, clay, sand and silt. Different areas have different soil types.			
Unit			Autumn 2			
Light						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC aims			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 their eyes. • Recognise that shadows are formed when the light from a light source is blocked by an opaque object.			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



Science



			<ul style="list-style-type: none">Find patterns in the way that the size of shadows change.			travels in straight lines to explain why shadows have the same shape as the objects that cast them.
Skills			Describe dark as being the absence of light and that we need light to be able to see. Group and sort materials as being reflective or non-reflective. Explain why light from the sun can be dangerous. Explain, using words or diagrams, how shadows are formed when a light source is blocked by an opaque object. Find patterns in the way shadows change during the day.			Identify that light travels in straight lines. Explain that, due to how light travels, we can see things because they give out or reflect light into the eye. Explain, using words, diagrams or a model, why shadows have the same shape as the objects that cast them and how shadows can be changed.
Knowledge			Dark is the absence of light and we need light to be able to see. Light can be reflected from different surfaces. Some surfaces are poor reflectors, such as some fabrics, while			Light travels in straight lines. Light sources give out light. They can be natural or artificial. When light hits an object, it is absorbed, scattered, reflected or a combination of all



Science



			<p>other surfaces are good reflectors, such as mirrors. Light from the Sun is damaging for vision and the skin. Protection from the Sun includes sun cream, sun hats, sunglasses, staying indoors or in the shade. A shadow is formed when light from a light source, such as the Sun, is blocked by an opaque object. Transparent objects allow light to pass through them and do not create shadows. Shadows change shape and size when the light source moves. For example, when the light source is high above the object, the shadow is short and when the light source is low down, the object's shadow is long.</p>			<p>three. Light from a source or reflected light enter the eye. Vertebrates, such as mammals, birds and reptiles, have a cornea and lens that refracts light that enters the eye and focuses it on the nerve tissue at the back of the eye, which is called the retina. Once light reaches the retina, it is transmitted to the brain via the optic nerve .A shadow appears when an object blocks the passage of light. Apart from some distortion or fuzziness at the edges, shadows are the same shape as the object. The distortion or fuzziness depends on the position or type of light source.</p>
Unit			Gods and Mortals			Hola Mexico
Forces and magnets						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6



Science



NC aims			<p>Compare how things move on different surfaces. • Notice that some forces need contact between two 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 two poles. • Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>		<p>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.</p>	
Skills			<p>Explain that an object will not move unless a push or pull (force) is applied, describing forces in action and whether the force requires direct contact</p>		<p>Explain that objects fall to Earth due to the force of gravity. Compare and describe, using a range of toys, models and natural objects,</p>	



Science



			<p>or whether the force can act at a distance (magnetic force). Compare and group materials based on their magnetic properties. Investigate and compare a range of magnets (bar, horseshoe and floating) and explain that magnets have two poles (north and south) and that opposite poles attract each other, while like poles repel each other.</p>		<p>the effects of water resistance, air resistance and friction. Describe and demonstrate how simple levers, gears and pulleys assist the movement of objects.</p>	
Knowledge			<p>An object will not move unless a pushing or pulling force is applied. Some forces require direct contact, whereas other forces can act at a distance, such as magnetic force. Some materials have magnetic properties. Magnetic materials are attracted to magnets. All magnetic materials are metals but not all metals are magnetic.</p>		<p>Gravity is a force of attraction. Anything with a mass can exert a gravitational pull on another object. The Earth's large mass exerts a gravitational pull on all objects on Earth, making dropped objects fall to the ground. Friction, air resistance and water resistance are forces that oppose motion and slow down moving objects.</p>	



Science



			<p>The metal iron is magnetic. Some materials have magnetic properties. Magnetic materials are attracted to magnets. All magnetic materials are metals but not all metals are magnetic. The metal iron is magnetic. Magnets have two poles (north and south). Opposite poles (north and south) attract each other, while like poles (north and north, or south and south) repel each other.</p>		<p>These forces can be useful, such as bike brakes and parachutes, but sometimes we need to minimise their effects, such as streamlining boats and planes to move through water or air more easily, and using lubricants and ball bearings between two surfaces to reduce friction. Mechanisms, such as levers, pulleys and gears, give us a mechanical advantage. A mechanical advantage is a measurement of how much a simple machine multiplies the force that we put in. The bigger the mechanical advantage, the less force we need to apply</p>	
Unit			Mighty metals		Scream machine	
State of matter						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6



Science



NC aims				<p>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</p>		
Skills				<p>Group and sort materials into solids, liquids or gases. Observe and explain that some materials change state when they are heated or cooled and measure or research the temperature in degrees Celsius (° C) at which materials change state. Describe the water cycle using</p>		



Science



				words or diagrams and explain the part played by evaporation and condensation.		
Knowledge				Materials can be grouped according to whether they are solids, liquids or gases. Solids stay in one place and can be held. Some solids can be squashed, bent, twisted and stretched. Examples of solids include wood, metal, plastic and clay. Liquids move around (flow) easily and are difficult to hold. Liquids take the shape of the container in which they are held. Examples of liquids include water, juice and milk. Gases spread out to fill the available space and cannot be held. Air is a mixture of gases. Heating or cooling materials can bring about a change of state. This change of state can be reversible		



Science

				<p>or irreversible. The temperature at which materials change state varies depends on the material. Water changes state from solid (ice) \rightleftharpoons liquid (water) at 0°C and from liquid (water) \rightleftharpoons gas (water vapour) at 100°C. The process of changing from a solid to liquid is called melting. The reverse process of changing from a liquid to a solid is called freezing. The process of changing from a liquid to a gas is called evaporation. The reverse process of changing from a gas to a liquid is called condensation. The water cycle has four stages: evaporation, condensation, precipitation, collection. Water in lakes, rivers and streams is warmed by the Sun, causing the liquid water to evaporate and rise</p>		
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Science



				into the air as water vapour. As the water vapour rises, it cools and condenses to form liquid water droplets in clouds. The clouds become full of water, until the water falls back to the ground as precipitation (rain, hail, snow and ice). The fallen water collects back in lakes, rivers and streams. Evaporation and condensation are caused by temperature changes		
Unit				Traders and raiders		
Sound						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC aims				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		



Science



				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.		
Skills				Explain how sounds are made and heard using diagrams, models, written methods or verbally. Compare and find patterns in the pitch of a sound, using a range of equipment, such as musical instruments. Compare how the volume of a sound changes at different distances from the source		
Knowledge				When an instrument is played, the air around or inside it vibrates. These vibrations travel as a sound wave. Sound waves travel		



Science



				through a medium, such as air or water, to the ear. Pitch is how high or low a sound is. Parts of an instrument that are shorter, tighter or thinner produce high pitched sounds. Parts of an instrument that are longer, looser or fatter produce low pitched sounds. Volume is how loud or quiet a sound is. The harder an instrument is hit, plucked or blown, the stronger the vibrations and the louder the sound. Sounds are louder closer to the sound source and fainter as the distance from the sound source increases.		
Unit				I am warrior		
Electricity						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC aims				Identify common appliances that run on electricity. • Construct a simple series		Associate the brightness of a lamp or the volume of a buzzer with the



Science



				<p>electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. • Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. • Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. • Recognise some common conductors and insulators, and associate metals with being good conductors.</p>		<p>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.</p>
Skills				<p>Compare common household equipment and appliances that are and are not powered by electricity. Construct operational simple series circuits using a range of components</p>		<p>Explain how the brightness of a lamp or volume of a buzzer is affected by the number and voltage of cells used in a circuit. Compare and give reasons for variations in how components in</p>



Science



				and switches for control. Predict and describe whether a circuit will work based on whether or not the circuit is a complete loop and has a battery or cell. Describe materials as electrical conductors or insulators.		electrical circuits function (brightness of lamps; volume of buzzers and function of on or off switches). Create circuits using a range of components and record diagrammatically using the recognised symbols for electrical components
Knowledge				Electricity is a type of energy. It is used to power many everyday items, such as kettles, computers and televisions. Electricity can also come from batteries. Batteries eventually run out of power and need to be recycled or recharged. Batteries power devices that can be carried around, such as mobile phones and torches. Electrical components include cells, wires, lamps, motors, switches and buzzers. Switches open and close a circuit and provide		Voltage is measured in volts (V) and is a measure of the difference in electrical energy between two parts of a circuit. The bigger the voltage, the more electrons are pushed through the circuit. The more voltage flowing through a lamp, buzzer or motor, the brighter the lamp, the louder the buzzer and the faster the motor. A circuit needs a power source, such as a battery or cell, with wires connected to both the positive and negative terminals.



Science

				<p>control. A series circuit is a simple loop with only one path for the electricity to flow. A series circuit must be a complete loop to work and have a source of power from a battery or cell. Electrical components include cells, wires, lamps, motors, switches and buzzers. Switches open and close a circuit and provide control. Electrical conductors allow electricity to flow through them, whereas insulators do not. Common electrical conductors are metals. Common insulators include wood, glass, plastic and rubber.</p>		<p>Other components include lamps, buzzers or motors, which an electric current passes through and affects a response, such as lighting a lamp or turning a motor. When a switch is open, it creates a gap and the current cannot travel around the circuit. When a switch is closed, it completes the circuit and allows a current to flow all the way around it. There are recognised symbols for different components of circuits.</p>
Unit				Road trip to USA		A child's war
Earth and space						
Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
NC aims					Describe the movement of the Earth, and other planets, relative to	



Science



					<p>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 the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</p>	
Skills					<p>Describe or model the movement of the planets in our Solar System, including Earth, relative to the Sun. Describe or model the movement of the Moon relative to Earth. Describe the Sun, Earth and Moon as approximately spherical bodies and use this knowledge to understand the phases of the Moon and eclipses. Use the idea of Earth's rotation to explain day and night, and the Sun's apparent</p>	



Science

Knowledge					movement across the sky.	
					<p>The Solar System is made up of the Sun and everything that orbits around it. There are eight planets in our Solar System: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. Earth orbits around the Sun and a year (365 days) is the length of time it takes for Earth to complete a full orbit. The Moon orbits Earth, completing a full orbit every month (28 days). The Sun, Earth, Moon and other planets and stars are roughly spherical. All planets are spherical because their mass is so large that they have their own force of gravity. This force of gravity pulls all of a planet's material towards its centre, which compresses it into the most</p>	



Science

					<p>compact shape – a sphere. As Earth orbits the Sun, it also spins on its axis. It takes Earth a day (24 hours) to complete a full spin. During the day, the Sun appears to move through the sky. However, this is due to the Earth rotating and not the Sun moving. Earth rotates to the east or, if viewed from above the North Pole, it rotates anti-clockwise, which means the Sun rises in the east and sets in the west. As Earth rotates, different parts of it face the Sun, which brings what we call daytime. The part facing away is in shadow, which is night time.</p>	
Unit					Stargazers	



Science





Science

-Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Animals including humans Amphibians, birds, fish, mammals, reptiles, carnivores, herbivore, omnivore, sight, hearing, touch, taste, smell, head, neck, ear, mouth, shoulder, hand, fingers, leg, foot, thumb, eye, nose, knee, toes, teeth, elbow</p>	<p>Animals including humans Survival, Water, Air, Food, Adult, Baby, Offspring, Kitten, Calf, Puppy, Exercise, Hygiene, Living, dead, never alive, habitats, micro-habitats, food, food chain, leaf litter, shelter, sea shore, woodland, ocean, rainforest, conditions, desert, damp, shade</p>	<p>Animals including humans Movement, muscles, bones, skull, nutrition, skeletons, camouflage, cannibal, carnivore, consumer, apex predator, decomposer, endoskeleton, exoskeleton, food chain, herbivore, omnivore, parasite, prey, scavenger, species, terrestrial, vasculature, venomous, xylem.</p>	<p>Animals including humans Mouth, tongue, teeth, oesophagus, stomach, small intestine, large intestine, herbivore, carnivore, canine, incisor, molar, abdomen, absorb, acid, bile, blood vessel, , bowel, calcium carbonate, canine, colon, decay, dentine, enamel, enzyme, faeces, rectum, saliva, uvula.</p>	<p>Animals including humans Foetus, Embryo, Womb, Gestation, Baby, Toddler, Teenager, Elderly, Growth, Development, Puberty</p>	<p>Animals including humans Oxygenated, Deoxygenated, Valve, Exercise, Respiration Circulatory system, heart, lungs, blood vessels, blood, artery, vein, pulmonary, alveoli, capillary, digestive, transport, gas exchange, villi, nutrients, water, oxygen, alcohol, drugs, tobacco.</p>
<p>Plants Deciduous, Evergreen trees, Leaves, Flowers (blossom), Petals, Fruit, Roots, Bulb, Seed, Trunk, Branches, Stem</p>	<p>Plants Leaves, trunk, branch, root, seed, bulb, flower, stem, wild, garden, deciduous, evergreen, observe, grow, compare, record, temperature, predict, measure, diagram, germinate, warmth, sunlight.</p>	<p>Plants Air, light, water, nutrients, soil, support, anchor, reproduction, pollination, dispersal, transportation, energy, growth, seedling, carbon dioxide, oxygen, material, photosynthesis, chlorophyll</p>	<p>Living things and their habitats Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, snails, slugs, worms, spiders, Insects, environment, habitats, abyss, adaptation, aquatic, arthropod, bioluminescent, consumer, coral, crustacean, diversity, food chain, marine, mollusc, oceanography, polyp, reef, sea anemone, sonar.</p>	<p>Living things and their habitats Mammal, Reproduction, Insect, Amphibian, Bird, Offspring, Stigma, Style, Pollen, Petal, Anther, Filament, Sepal, Ovary, Ovule.</p>	<p>Living things and their habitats Classification, Vertebrates, Invertebrates, Micro-organisms, Amphibians, Reptiles, Mammals, Insects</p>
<p>Everyday Materials Wood, Plastic, Glass, Paper, Water, Metal, Rock, Hard, Soft, Bendy, Rough, Smooth</p>	<p>Living things and their habitats Living, Dead, Habitat, Energy, Food chain, Predator, Prey, Woodland, Pond, Desert</p>	<p>Rocks Rocks, igneous, metamorphic, sedimentary, anthropic, permeable, impermeable, chemical fossil, body fossil, trace fossil, Mary Anning, cast fossil, mould fossil, replacement fossil, extinct, organic matter, top soil, sub soil, base rock.</p>	<p>States of Matter Solid, Liquid, Gas, Evaporation, Condensation, Particles, Temperature, Freezing, Heating</p>	<p>Properties and changes of materials Hardness, Solubility, Transparency, Conductivity, Magnetic, Filter, Evaporation, Dissolving, Mixing</p>	<p>Evolution and Inheritance Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetics</p>



Science

<p>Seasonal Changes Summer, Spring, Autumn, Winter, Sun, Day, Moon, Night, Light, Dark</p>	<p>Everyday materials and their uses Hard, Soft, Stretchy, Stiff, Shiny, Dull, Rough, Smooth, Bendy, Waterproof, Absorbent, Opaque, Transparent Brick, Paper, Fabrics, Squashing, Bending, Twisting, Stretching Elastic, Foil</p>	<p>Light Light source, dark, reflect, ray, mirror, bounce, visible, beam, sun, glare, travel, straight, opaque, shadow, block, transparent, translucent.</p>	<p>Sound Amplitude, volume, quiet, loud, ear, pitch, high, low, particles, instruments, wave.</p>	<p>Earth and Space Earth, Sun, Moon, Axis, Rotation, Day, Night, Phases of the Moon, star, constellation</p>	<p>Light Refraction, Reflection, Light, Spectrum, Rainbow, Colour,</p>
		<p>Forces and magnets Magnetic, force, contact, attract, repel, friction, poles, push, pull, alloy, gravity, malleable, mineral, molten, motion, newton, oxidise, properties, rust, bronze, iron</p>	<p>Electricity Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators</p>	<p>Forces Air resistance, Water resistance, Friction, Gravity, Newton, Gears, Pulleys</p>	<p>Electricity Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators, Amps, Volts, Cell</p>