



St. Patrick's Science Curriculum

EYFS	<u>Early Learning Goal – Understanding the World (The Natural World)</u> - Explore the natural world around them, making observations and drawing pictures of animals and plants. - Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.				
Y1	<u>EYFS</u>	<u>Everyday Materials</u>	<u>Plants</u>	<u>Animals Including Humans</u>	<u>Seasonal Changes</u> (Also visit in Winter to explore changes)
Y2	<u>Uses of Everyday Materials</u>		<u>Living Things and Their Habitats</u>	<u>Animals Including Humans</u>	<u>Plants</u>
Y3	<u>Forces and Magnets</u>	<u>Animals Including Humans</u>	<u>Rocks</u>		<u>Plants</u> <u>Light</u>
Y4	<u>Animals Including Humans</u>	<u>States of Matter</u>	<u>Living Things and Their Habitats</u>		<u>Sound</u> <u>Electricity</u>
Y5	<u>Properties and Changes of Materials</u>		<u>Living Things and Their Habitats</u>	<u>Animals Including Humans</u>	<u>Forces</u> <u>Earth and Space</u>
Y6	<u>Evolution and Inheritance</u>	<u>Animals Including Humans</u>	<u>Living Things and Their Habitats</u>		<u>Electricity</u> <u>Light</u>



EYFS Vocabulary

Pandas

Animals Including Humans	Plants	Materials	Seasonal Changes	Earth and Space	Sound, Light and Electricity
head	tree	material	Summer	Earth	loud
eyes	leaf	wood	Spring	Moon	quiet
nose	flowers	glass	Autumn	Sun	noise
mouth	stem	paper	Winter	star	
ears	seed	hard	Season		
hands		soft	Moon		
fingers			Sun		
feet			day		
toes			light		
arm			night		
leg					
animal					



EYFS Vocabulary

Year R

Animals Including Humans	Plants	Materials	Seasonal Changes	Earth and Space	Sound, Light and Electricity
head	tree	material	Summer	Earth	loud
eyes	trunk	wood	Spring	Planet	quiet
nose	branch	glass	Autumn	Moon	volume
mouth	leaves	paper	Winter	Sun	sound
ears	flowers	hard	Season	space	
hands	stem	soft	Moon	star	
fingers	petals	shiny	Sun		
feet	fruit	rough	day		
toes	roots	smooth	light		
arm	bulb		night		
leg	seed				
animal					
human					
back					
face					
hair					

Year 1 	Everyday Materials	Plants	Animals Including Humans	Summer - Seasonal Changes (Visit throughout the Year to allow observations of change over time)
Knowledge	- 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.	- 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.	- 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 inc. 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. - Scientist: Tanesha Allen (Zoologist who studies badgers)	- observe changes across the 4 seasons - observe and describe weather associated with the seasons and how day length varies
Vocabulary	object, material, property, group, wood, plastic, glass, metal, water, rock, hard, soft, strong, flexible, heavy, light, stretchy	deciduous trees, evergreen trees, flowering plants, willow, oak, horse chestnut, maple, silver birch, sycamore	fish, amphibians, birds, mammals, carnivores, herbivores, omnivores, reptiles.	Summer, winter, autumn, spring, seasons, similarities and differences, day length

Intent	To explore a range of materials. To discuss key characteristics. To carry out investigations. To make choices about the best materials for specific objects	To name flowering plants. To name and identify the basic parts of a plant. To draw similarities and differences between flowering plants	To be able to classify and group a range of animals according to characteristics	To understand how seasons change. To understand the characteristics of Autumn, Winter, Spring and Summer
Possible Implementation	To carry out investigations i.e make a boat and investigate whether it floats/sinks, make a teddy's umbrella and whether it is waterproof or not, make a teddy's jacket for the rain and the sun.	To carry out investigations; to plant flowering plants and measure growth as a class, cut a flower off the top of the plant and see what happens if replanted, complete seed investigations, plant non-flowering plants	To classify toy animals as a class, group and individually. To group animals together according to their key characteristics.	To keep a diary of the weather each day for a week and discuss the changes (This could be done once in each season)
Questions to measure impact	Which materials could you make a boat from? Why? Which materials are suitable for X? Why?	What are the basic parts of a plant? Name the names of different trees and plants you know. What is different/similar between flowering and non-flowering plants?	Name some animals. What does herbivore, carnivore and omnivore mean? Can all animals live together? Explain your answer. Why do we see different animals at different times of the year? (Link to Seasons topic)	What changes do you notice in Autumn, Winter, Spring and Summer? Why do we change the types of clothes we wear at different times in the year?
Possible Enrichment Opportunities	Pour water over different materials to see what happens. Explore materials at a local	Plant flowers in the classroom or around the school and watch grow. Go to a garden centre	Visit a farm and see new-born animals Have hatching chicks	Walk around the school during each season and take photos

ties	playground or on our adventure playground. What materials can they see? What properties do these materials have?	and see the different trees and plants. Go on a walk to Rectory Road Park and see different trees and flowers, Complete a scavenger hunt of trees and flowers Hold a teddy bear picnic using plants as food (l.e tomatoes)	in school/classrooms Play with toy animals. Go on a hunt to find different insects. Pupils to do show and tell about their pets or animals at home.	to compare. Play with snow in the playground.
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Year 2 	Uses of Everyday Materials	Living Things and Their Habitats	Animals Including Humans	Plants
Knowledge	• 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 • Scientist: Dr Pearl Agyakwa (Materials scientist who studies why some materials wear out and others don't)	• 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	• 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	• 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

Vocabulary	Materials, wood, cardboard, metal, plastic, glass, brick, Rock, paper, squashing, Bending, twisting, stretching, transparent, opaque, rigid, flexible, brittle, suitable	Differences, living, dead, habitats, Plants, animals, Food sources, Food chain, prey, predator	Offspring, water, food, air, exercise, hygiene, babies, grow, humans, animals.	Seeds, bulbs, growth, plants, water, light, temperature, healthy
Intent	To identify and compare a range of materials. To explore a range of materials and change them by squashing, bending, twisting and stretching	To draw similarities and differences between things which as living, dead and never alive. To know what a habitat is. To describe different habitats. To identify different habitats and give examples of animals in that habitat. To name a variety of animals and habitats. To understand and read a simple food chain.	To know what humans' basic need to survive. To classify food as either from plants or animals. To understand the importance of exercise. To understand the need to eat the right food. To notice how humans change over time.	To understand how bulbs/seeds grow. To know how bulbs/seeds change into plants. To understand the importance of water, light and warmth towards growth.
Possible Implementation	<u>Recap Year 1 learning:</u> To distinguish between an object and the material from which it is made, To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock, To describe the simple physical properties of a variety of everyday materials, To compare and group together a variety of everyday materials on the basis of their simple physical properties. To carry out investigations i.e make boats using various materials justifying choice. To make choices about the	<u>Recap Year 1 learning:</u> identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals, To identify and name a variety of common animals that are carnivores, herbivores and omnivores, To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) Talk about and discuss photos of pets at home. Play with toy animals and classify them in various groups. Discuss simple food chain and make food	<u>Recap Year 1 learning:</u> Meanings of herbivore, carnivore, omnivore. Pupils bring in photos from when they were younger to discuss changes. Carry out investigations: mouldy bread using clean, washed and dirty hands; track heart-beat pre and post heartbeat.	<u>Recap Year 1 learning:</u> To identify and describe the basic structure of a variety of common flowering plants, including trees. To carry out investigations; plant seeds/bulbs in a range of places to explore importance of warmth, light and water. Watch time lapse video of growing seeds and plants

	best materials for objects.	chain collages. Discuss various habitats around the world and make habitats using shoe boxes. Watch live stream webcams of various animals around the world.		
Questions to measure impact	Why is x the best material for x? What is not a good material to use? Why? How can you change a material? Explain.	What's a habitat? What are the different habitats you know? Can x (animal) live in x (habitat)? Why/why not? Why are there different habitats? Explain a food chain. Where does food come from	How can you be healthy? Why is exercise important? What do you need to survive? Where does food come from? What foods come from plants/animals/both? How do humans change over time? Explain.	How do seeds/bulbs grow best? What do seeds/bulbs need to grow? How do seeds/bulbs change?
Possible Enrichment Opportunities	Find different materials around the school/home. Bring in different materials and discuss suitability.	Visit a zoo/ farm RSPCA/ RSPCB / Vet visit	Visit from a doctor Cooking healthy foods (individual – not a meal)	Plant seeds/bulbs around school/classroom and watch grow. Complete a plant scavenger hunt Collect conkers (both the seed and the outside covering)

Year 3 	Forces and Magnets	Animals Including Humans	Rocks	Plants	Light
Knowledge	• 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.	• 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	• 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 rock • recognise that soils are made from rocks and organic matter	• 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	• 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 • find patterns in the way that the size of shadows change • Scientist: Percy Shaw (Inventor of the cat's eye)

Vocabulary	pull, push, motion, magnetism, magnets, repel, poles, attract, north pole, south pole, metal	Exoskeleton, endoskeleton, Muscles, protection, nutrition, support, movement, vitamins, minerals, fat, protein, water, diet, carbohydrates, fruit, vegetables, dairy, sugar, brain, rib cage heart, lungs, joints, skull, spine, pelvis, bone, socket, femur, collar bone,	igneous, limestone, volcano, granite, marble, slate, sedimentary, sand, sandstone, chalk, clay, metamorphic, magma, lava, pumice, properties, rocks, absorbent, nonporous, shiny, dull, rough, smooth, permeable, surface, texture, fossils.	plants, stem, trunk, seedling, seed, petals, leaves, bulb, pollinator, germination, seed dispersal, fertilisation, seed formation, growing, flowering, photosynthesis.	transparent, translucent, opaque, shadow, light source, dark, light rays, reflection, Sun, Moon, sunlight, pupil, eyes, retina, iris
Intent	To make comparisons between how different things move on a range of surfaces. To understand and notice similarities and differences between different forces. To observe how magnets behave towards other magnets. To group magnetic and non-magnetic everyday materials. To understand that magnets have two poles	To understand the nutritional value behind food. To understand that humans and most animals have a skeleton and why they need it (<u>Not</u> to include teeth in any detail) To understand the need for and the use of muscles	To identify similarities and difference between kinds of rocks. To understand how fossils were made over time. To understand what fossils are To examine the work of a well known scientist.	To identify and describe the functions of the different parts of a flowering plant To understand the requirements for a plant to grow well To understand the way in which water is transported within plants To understand the life cycle of flowering plants	To understand that light is needed to see. To understand that light is reflect from surfaces. To understand the dangers if the sun and ways to protect themselves against it. To understand how shadows form and how they change over time

Possible Implementation	Play with different types of magnets. Carry out investigations; test for and group magnetics and non-magnetic materials using magnets. Push cars down different surfaces and time the amount of time they take to do this	<u>Recap Year 1 learning:</u> To identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. <u>Recap Year 2 learning:</u> To find out about and describe the basic needs of animals, including humans, for survival (water, food and air), To describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. Explore model skeletons individually, pairs and group Make and label bones in skeleton To create a 'healthy plate' incorporating different types of foods To carry out investigations: how much sugar is in drinks?	<u>Recap Year 2 learning:</u> identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses Make fossils using Plaster of Paris. To carry out investigations on rocks based on their appearance and physical properties Investigate the different layers of rocks and soil Group and classify different types of rocks. Learn about Mary Anning	<u>Recap Year 1 learning:</u> To identify and describe the basic structure of a variety of common flowering plants, including trees. <u>Recap Year 2 learning:</u> To observe and describe how seeds and bulbs grow into mature plants, To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. To dissect a flower and label its simple parts To carry out investigations: to plant flowering plants and measure growth as class, cut a flower off the top of the plant and see what happens if replanted, cut a flowering plant in half and put each half in different colour water pots and see what happens over time to the petals ('walking water' investigation)	To carry out investigations; refract light through prisms, draw around shadows in the playground at different times during the day to notice changes in shadows, make shadow puppets
Questions to measure impact	Why are magnets useful? Give examples of magnetic and non-	What's the difference between an endo and exo skeleton? What types of	How are fossils made? Why was Mary Anning important? Give	What are the basic parts of a plant? What are their functions? Name	How do we see? Explain your answer How do we make

	magnetic materials What happens when two magnets meet? What happens when opposite/the same poles meet?	food do humans need? Give examples of them (I.e carbohydrates, protein, sugars, etc) What do muscles do? Why are they important? How do humans stay healthy?	examples of different types of rocks How are rocks similar or different? Are all rocks the same? Explain your answer	the names of different trees and plants you know What does a plant need in order to grow well? How does water travel around a plant?	shadows? What happens to your shadow during the day when it is sunny? What can you do to protect yourself in the sun? Why is it important to protect yourself?
Possible Enrichment Opportunities	Find different magnetic/non-magnetic materials around the school/home	Invite a doctor and / or physiotherapist in for questions and answers. Link to DT by designing and creating a healthy meal.	Have a visit from a geologist / palaeontologist / archaeologist Contact Winchester Science Centre to see if they could send someone in with some of their dinosaur fossils.	Dissect and play with sycamore seeds Grow flowering plants in class/around the school	Put sun cream, hat and sunglasses on, when out in the sun. See people who have been sunburnt. Pupils to bring sunhats and sun cream to school 'Safe in the sun' poster competition

Year 4 	Animals Including Humans (Not including food chains)	States of Matter	Living Things and Their Habitats (Including food chains)	Sound	Electricity
Knowledge	• 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	• 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	• 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 • construct and interpret a variety of food chains, identifying producers, predators and prey • Scientist: Rachel Carson	• 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	• 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 • 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

Vocabulary	Digestive system: mouth, teeth, tongue, oesophagus, stomach, liver, anus, large intestines, small intestines, urine, faeces, molars, canines, premolars, incisors, wisdom teeth, milk/baby teeth, adult teeth.	States of matter, solid, liquid, gas, melt, degree Celsius, boil, freeze, materials, particles, Water cycle, rain, water, evaporation, condensation, precipitation, heat, cool, collection, water vapour, density, viscosity.	Classification, keys, fish, amphibians, reptiles, birds, mammals, food chain, herbivores, omnivores, carnivores, food source, prey, predator, consumer, producer, food web, earthquakes, storms, fires, floods, droughts, deforestation, pollution, global warming, environment, tsunami, volcanoes, tornadoes, earthquakes, hurricanes, man made,	sound waves, vibration, louder, high pitch, quieter, lower pitch, volume, sound source, distance, fainter, outer ear, pinna, eardrum, ear canal, inner ear, balance, middle ear, ear canal, auditory nerve.	electrical safety, circuit, bulb, buzzer, cell, battery, switch, wires, conductor, insulators, brightness, component, complete circuit, mains, electrical current.
Intent	To explain some parts of the digestive system in humans. To explain the different types of teeth in humans and what their function.	To compare and classify a range of solids, liquids and gases. To investigate how states of matter change through heating or cooling. To measure in degrees Celsius (°C). To understand the water cycle with a focus on evaporation and condensation	To show and explain that living things can be grouped together in various ways. To group and classify a range of living things. To use classification keys to help group, identify and name a variety of living things. To explain how environments can cause changes and to understand that animals can sometimes be put in danger due to these changes. To describe and explain a variety of food chains, naming producers, predators and prey	To identify parts of the ear. To understand how sound travels through vibrations. To explore different pitches. To identify patterns in sound and volume.	To identify appliances that run on electricity. To construct a circuit. To identify and name parts of a circuit using key vocabulary. To understand the importance of a switch. To understand that a circuit must be complete. To identify common conductors and insulators. To associate metals with being conductors.

Possible Implementation	<u>Recap Year 3 learning:</u> To 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. Classify different types of teeth and establish what they are used for. Take apart and put teeth models back together. Investigate what teeth do using similar tools. Tooth decay investigation using egg shells.	Find a range of solids and liquids and classify them. Identify and notice differences between solids, liquids and gases. Collect rainfall, measure puddle size over time. Make own water cycles. Carry out investigations: melt ice cubes in a warm and cold place, measure the viscosity of various liquids and the rate of evaporation for various liquids. , make lava lamps,	<u>Recap Year 1 learning:</u> To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals, To identify and name a variety of common animals that are carnivores, herbivores and omnivores, To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) <u>Recap Year 2 learning:</u> To 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. Make: a hurricane in a jar, jelly earthquakes, jelly volcanoes, volcano experiments; sweet classification keys using liquorice all sorts. Classify and group toy animals individually, in pairs or in groups. Watch Newsround for	<u>Recap Year 3 learning:</u> To identify that humans and some other animals have skeletons and muscles for support, protection and movement. Explore the world around them minimising a sense (hearing) Hear/see the trains travelling in and out of Stanmore station. Carry out investigations: Ear gongs using metal, wooden and plastic hangers, make a panpipe using different length straws.	Explore and make circuits individually, in pairs and in groups using a range of resources typical of a circuit (wires/cells etc) and not typical (metal spoons, wooden rolling pins etc) static butterfly experiment
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			reports on earthquakes, oil slicks, tsunamis, hurricanes and volcanoes		
Questions to measure impact	What are the names and functions of human teeth? Which ones are the most important? Why? How are human teeth different/similar to other animal teeth? Why? What are the names and functions of the human digestion system?	What are the differences between solids, liquids and gases? Name different solid, liquids and gases. What is evaporation and condensation? What happens in the water cycle? What happens to a solid, liquid or gases when it is heated/ cooled?	How can humans affect animals/the environment positively/negatively? How can animals/humans be affected if an environment changes? How could you group different living things? Explain your reasoning What are the different types of animals? How are omnivore, carnivore and herbivore animals similar or different to each other? Why? What's a food chain? What's a food web? What's the same/difference between food chains and food webs? Give examples of and explain these terms; producers, predators and prey	What are the parts of the ear? Which part is the most useful? Why? How does sound change volume and pitch? Explain how sound travels	What appliance runs on electricity? What uses direct/alternating current? How can you tell? Explain your answer What are conductors and insulators? How are they different? Are spoons conductors or insulators? Explain your answer
Possible Enrichment Opportunities	Visit from a dental nurse	Observe the windows on a rainy day Mini Water World	Zoolab animal workshop	Learn British Sign Language	Take apart electrical items to see how they work

Year 5 	Properties and Changes of Materials	Living Things and Their Habitats	Animals Including Humans	Forces	Earth and Space
Knowledge	• 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.	• 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 • Scientist: Eva Crane (Studied bees and their life cycle)	• describe the changes as humans develop to old age	• 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	• 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 the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky

Vocabulary	filtering, sieving, evaporating, irreversible, reversible, dissolve, mixing, burning, melting, freezing, condensing, conductors, insulators, solid, liquid, gas,	bird, mammal, amphibian, insect, life process, plants, animals, pollination, life cycle, fertilisation, gestation, offspring, metamorphosis, baby, pollen, stamen, ovary, stigma, ovule	child, young, childhood, adolescence, teenager, adulthood, health, parent	gears. push, pull, cogs, magnetism, water resistance, air resistance, friction, pulleys, levers, mechanisms, gravitational pull, weight, mass, streamline, newtons	months, years, axis, night, day, orbit, time zones, spherical, rotations, world, universe, stars, moon, dwarf planets, Solar system, planets, asteroids, comets, Sun, Earth, Mercury, Mars, Venus, Jupiter, Saturn, Neptune, Uranus
Intent	To 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. To know that some materials will dissolve in liquid to form a solution. To describe how to recover a substance from a solution. To use knowledge of solids, liquids and gases to decide how mixtures might be separated (filtering, sieving and evaporating) To give reasons for the particular uses of everyday materials, including metals, wood and plastic To understand and give examples of reversible and irreversible changes	To describe the life cycles of different types of animals. To explore how different living things produce offspring.	To describe the changes as humans develop to old age.	To identify the effects of air resistance, water resistance and friction. To explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. To understand that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	To describe the movement of the Earth and other plants relative to the Sun To describe the movement of the Moon relative to Earth To describe the shape and key properties of the Sun, Earth and Moon To be able to explain day and night and the apparent movement of the sun across the sky.
Possible Implemen-	<u>Recap Year 2 learning:</u> To find out how the shapes of solid objects made	<u>Recap Year 1 learning:</u> To identify	<u>Recap Year 1 learning:</u> To know	<u>Recap Year 3 learning:</u> To	<u>Recap Year 1 learning:</u> To observe

tation	from some materials can be changed by squashing, bending, twisting and stretching. <u>Recap Year 4 learning:</u> To compare and group materials together, according to whether they are solids, liquids or gases, To 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), To identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. Dissolving activities; dissolve candy canes, dissolve salt/sugar in water Filtering activities; make own filter, filter dirty Irreversible activities; coke and mento rockets, cooking activities, bicarbonate of soda activities, burn paper Play with magnets	and name a variety of common animals including fish, amphibians, reptiles, birds and mammals <u>Recap Year 2 learning:</u> To notice that animals, including humans, have offspring which grow into adults <u>Recap Year 3 learning:</u> To investigate the way in which water is transported within plants, To explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. Make life cycles for mammals/amphibians and birds Cut tops of plants and replant them Dissect flowers and locate reproductive parts of a plant	that humans and other animals can grow. <u>Recap year 2 learning:</u> notice that animals, including humans, have offspring which grow into adults Bring in photos of themselves/family at different ages and notice differences over time.	compare how things move on different surfaces, To notice that some forces need contact between two objects, but magnetic forces can act at a distance. To carry out investigations; push cars down a range of surfaces and time how long they take to go down them; wear a range of footwear and travel on different surfaces and see what happens; how much force is needed to break eggshells? Make; plastic bottle/film cannister rockets, a parachute for a boiled egg. a boat which floats, a balloon powered car, a CD hovercraft	changes across the four seasons, To observe and describe weather associated with the seasons and how day length varies Make solar system/rocket models Make a pinhole camera. Make sun dials. Track lunar cycles Use different pieces of fruit and the playground in relation to the actual size to illustrate the size and planets in space (fruit and distance in correlation to the actual size)
Questions to measure impact	How can you separate solids/liquids/gases? What does filter/sieve/evaporate mean? Give examples of irreversible and	How do plants reproduce? Explain your answer.	What happens to humans over time? Explain your	Why is gravity useful? What would happen if you didn't have x	How does the Moon move around the Earth? How does the Earth move around

	reversible changes.	How are different animals classified into groups? What do you know about the life cycles of different animals?	answer	(force)? Why? What forces do you know? What do they do?	the Sun? What does the Earth/Sun/Moon look like? Describe Why is there day and night? Why does the Sun seem to move in the sky?
Possible Enrichment Opportunities	Density activities; oil and water, 'dancing raisins' Evaporation activities; draw around puddles and time their evaporation/measure their decreasing size Absorption activities; add liquids to sugar cubes, make sugar cube towers	Visit a local pond or the Basingstoke Canal to find out more about the wildlife there. Contact Basingstoke Canal Centre?	Write letters to local care homes / lead a collection for the residents.	Find out the most common force in action in school/at home	Visit to Winchester Science Centre with workshops Look at stars in the night sky Make constellations and star signs

Year 6 	Evolution and Inheritance	Animals Including Humans	Living Things and Their Habitats	Electricity	Light
Knowledge	- 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 Scientist: Charles Darwin	- 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	- describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals - give reasons for classifying plants and animals based on specific characteristics	- 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 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
Vocabulary	evolution, inheritance, inherited traits, genetics, genes, fossils, natural selection, variations, offspring, adaptation, habitat, environment, Charles Darwin	drug, alcohol, nutrients, exercise, diet, circulatory system, heart, blood vessels, arteries, capillaries, oxygenated blood,	classification characteristics, traits, kingdom, phylum, class, order, family, genes, species, Carl Linnaeus, bacteria, species, micro	circuit, bulb, buzzer, cell, battery, switch, wires, brightness, symbols, component, series circuit, complete circuit, electrical current, voltage.	transparent, translucent, opaque, shadow, light source, dark, reflection, refraction, spectrum, prism

		deoxygenated blood, plasma, platelets, red blood cells, white blood cells.	organism, vertebrate, invertebrate		
Intent	To recognise that living things have changed and adapted over time and that fossils provide information about living things that inhabited the Earth millions of years ago. To recognise that living things produce offspring of the same kind. To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	To identify and name the main parts of the human circulatory system To describe the functions of the heart, blood vessels and blood To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function To describe the ways in which nutrients and water are transported within animals, including humans.	To understand and describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences To give reasons for classifying plants and animals based on specific characteristics	To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit To 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 To use recognised symbols when representing a simple circuit in a diagram.	To understand that light appears to travel in straight lines. To understand that objects are seen because they give out or reflect light into the eye. To be able to 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. To explain why shadows have the same shape as the objects that cast them.
Possible Implementation	<u>Recap Year 3 learning:</u> To describe in simple terms how fossils are formed when things that have lived are trapped within rock <u>Recap Year 4 learning:</u> To identify the different types of teeth in humans and their simple functions <u>Recap Year 5 learning:</u> To	<u>Recap Year 2 learning:</u> To find out about and describe the basic needs of animals, including humans, for survival (water, food and air), To describe the importance for humans of exercise, eating the right amounts of different	<u>Recap Year 1 learning:</u> To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals, To identify and name a variety of common animals that are carnivores, herbivores and omnivores, To describe and compare	<u>Recap Year 4 learning:</u> To identify common appliances that run on electricity, To construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers, To identify whether or not a lamp	<u>Recap Year 3 learning:</u> To recognise that they need light in order to see things and that dark is the absence of light, To notice that light is reflected from surfaces, To recognise that light from the sun can be dangerous and that

	describe the changes as humans develop to old age. Look at various animals and investigate how they have adapted to their environment. Examine the theories of evolution constructed by Darwin and Wallace. Identify scientific evidence that has been used to support or refute ideas or arguments; Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago in the context of the evolution of plants, animals and humans. Identify how adaptation may lead to evolution by examining the advantages and disadvantages of specific adaptations (e.g slime) and the role of human intervention in the process of evolution.	types of food, and hygiene. Recap <u>Year 3 learning:</u> To identify that humans and some other animals have skeletons and muscles for support, protection and movement. Play with model hearts Complete exercise activities and track the impact on the body over time	the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) <u>Recap Year 2 learning:</u> To 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. <u>Recap Year 4 learning:</u> recognise that living things can be grouped in a variety of ways, To explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Look at various animals and investigate their similarities and differences. To give reasons for classifying plants and animals based on specific characteristics (liquorice all sorts / selection of given animals) Find out about the Linnaean System of classification. Identify the	will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. To recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit, To recognise some common conductors and insulators, and associate metals with being good conductors. Play with circuits using buzzers, bulbs and switches Investigate where buzzers/alarms are used in real life Use a range of materials to increase volume of buzzer and brightness of bulbs	there are ways to protect their eyes, To recognise that shadows are formed when the light from a light source is blocked by an opaque object, To find patterns in the way that the size of shadows change Make telescopes using mirrors Use prisms to explore light Create shadow puppets Play with torches and a range of materials and record what pupils find out
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			characteristics of mammals, birds, insects, reptiles, amphibians, fish, arachnids, annelids, crustaceans, echinoderms and molluscs. Give reasons for classifying plants and animals based on specific characteristics by exploring unusual or fictitious creatures and designing their own curious creature. 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 by exploring helpful and harmful microorganisms. Identify the characteristics of different types of micro-organisms. Experiment using bread – what conditions does mould / fungus need to grow? Group organisms found in the local habitat.		
Questions to measure impact	How have humans adapted over time? How have animals and humans adapted to the	What are the main parts of the circulatory system? What does the heart	How could you classify/group living things? Give examples of common observable	How do you make a light brighter or dimmer? How do you make a buzzer louder	How does light travel? How do you know? How can we see things? What

	environment around them? Can you give examples? What does 'adaption' mean? Why are offspring the same as their parents?	do? How does blood travel around the body? Explain How can drugs, diet, exercise and lifestyle impact the body? Explain	characteristics	or quieter? What are the key symbols when representing a simple circuit?	would happens if there wasn't light? Why? What happens when something blocks light?
Possible Enrichment Opportunities	Read DNA Detective books	Hands on Science (Heart Dissection workshop) Police talk on drugs	Pair up with Year 4 on Zoolab animal workshop? (End of Spring 1)	Make fruit batteries (lemon) Build an electric motor	Create a mirror maze Walk in the dark/without the sense of sight Watch shadow puppet show