

Theme : Animals including humans - BIOLOGY																																				
	Year 1						Year 2						Year 3						Year 4						Year 5						Year 6					
	Au 1	Au 2	Sp 1	Sp 2	Su 1	Su 2	Au 1	Au 2	Sp 1	Sp 2	Su 1	Su 2	Au 1	Au 2	Sp 1	Sp 2	Su 1	Su 2	Au 1	Au 2	Sp 1	Sp 2	Su 1	Su 2	Au 1	Au 2	Sp 1	Sp 2	Su 1	Su 2	Au 1	Au 2	Sp 1	Sp 2	Su 1	Su 2
Curriculum objectives	<ul style="list-style-type: none"> • identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • identify and name a variety of common animals that are carnivores, herbivores and omnivores • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense 						<ul style="list-style-type: none"> • 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. 						<ul style="list-style-type: none"> • 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. 						<ul style="list-style-type: none"> • describe the simple functions of the basic parts of the digestive system in humans • identify the different types of teeth in humans and their simple functions • construct and interpret a variety of food chains, identifying producers, predators and prey 						<ul style="list-style-type: none"> • describe the changes as humans develop to old age 						<ul style="list-style-type: none"> • 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. 					
Vocabulary	Fish, amphibians, reptiles, birds, mammals, carnivore, herbivore, omnivore, head, neck, arms, elbows, knees, legs, face, ears, eyes, hair, mouth, teeth, smell, hear, touch, sight, taste,						adults, offspring, needs, survival, water, food, air, exercise, food, hygiene, basic needs.						Internal organs, heart, lungs, liver, kidney, brain, skeletal, skeleton, muscle, digest, blood vessels, blood, impact, diet, exercise, drugs, lifestyle, nutrients, water, damage						Digestion, mouth, saliva, moistens, oesophagus, stomach, transports, acid, enzymes, small intestine, absorb, water, incisors, canines, molars, grinding, floss, brush, sun, producers, consumers, prey, predator						growth, aging, changes, human, description, puberty, growing, gestation, baby, toddler, adult, teenager.						Mammal, animal difference, similar, Evolution, adaption, difference, similar, inheritance, advantageous, disadvantageous, Charles Darwin, Not identical, characteristics, variation, evolution, adaptation, environment, advantageous, disadvantageous, species, suites, unsuited.					
Opportunities to work scientifically	Investigate human senses e.g. Which part of my body is good for feeling, which is not? Which food/flavours can I identify by taste? Which smells can I match? Look for patterns between people e.g. Do people with big hands have big feet?						How does my body change during exercise? The children will predict how the body may change after exercise and they show their results. Does being older make you faster/fitter? Compare reception children to Year 6 children. Eg: will the Year 6 children be able to do more star jumps in 1 minute because they are older? Make predictions and test.						Classifying food into food groups The children will classify the different types of food for example dairy, protein Investigate patterns asking questions such as: • Can people with longer legs run faster? • Can people with bigger hands catch a ball better?						How do different liquids effect the shell of an egg? The children will observe over time the effects of different liquids on the shell of an egg (similar material to teeth) What are the different parts of the digestive system? The children will create the different parts of the digestive system and then watch how the food changes going through each part of it.						Can we group the different gestation periods of animals? The children look for patterns when researching the different gestation periods of animals.						Who has the largest lung capacity in the class? The children will blow into a tube which is linked to a balloon. The children will look at patterns between boys and girls/size/height. What affects our pulse rate? Take a baseline pulse rate and then exercise and measure the pulse rate. The children will then exercise further and measure their pulse rate.					

Theme : Materials and States of Matter - CHEMISTRY

	Year 1						Year 2						Year 3	Year 4						Year 5						Year 6
	Au 1	Au 2	Sp 1	Sp 2	Su 1	Su 2	Au 1	Au 2	Sp 1	Sp 2	Su 1	Su 2		Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2	
	Every Day Materials						Use of Every Day Materials							States of Matter						Properties and changes of materials						
Curriculum objectives	<ul style="list-style-type: none"> 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. 						<ul style="list-style-type: none"> 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 							<ul style="list-style-type: none"> 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 						<ul style="list-style-type: none"> 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 . 						
Vocabulary	Materials, metal, plastic, wood, paper, glass, clay, rock, fabric, sand, hard, soft, rough, smooth, shiny, dull, bendy, waterproof, strong, weak, group, object, sort, stretchy, magnetic, non-magnetic, transparent.						Wood, metal, plastic, glass, brick, rock, paper, cardboard, solid, changeable, squashing, bending, twisting, stretching, uses, materials.							Solids, liquids, gases, heated, cooled, temperature, degrees, Celsius, water cycle, evaporation, temperature, condensation						Compare, group, properties, hardness, solubility, transparency, conductivity, electrical, thermal, magnetic, dissolve, liquid, solid, gas, substance, solution, mixtures, separated, filtering, sieving, evaporating, reversible, irreversible.						
Opportunities to work scientifically	Test the properties of objects e.g. absorbency of cloths, strength of party hats made of different papers, stiffness of paper plates, waterproofness of shelters. Classify in different ways one type of object made from a range of materials e.g. a collection of spoons made of different materials.						Which material is the best for making a space suit? The children will investigate the suitability of different materials (waterproof, flexible, comfort, warmth) and conclude Make suggestions about alternative materials for a purpose that are both suitable and unsuitable							Do gases weigh anything? Investigating the weight of a gas (carbon dioxide) by finding out which fizzy drink is the fizziest. Do all solids have the same melting point? The children will be find out the melting points of chocolate, butter and ice. Investigating water – solid to a liquid through melting/liquid to a gas through steam and then turning back into a liquid/adding salt to ice Does water evaporate at the same rate? Creating a mini water world and observing the water cycle.						What materials will dissolve in water? The children will have sand, sugar, salt, flour and iron fillings and they will have to predict which will dissolve and then find out which do and why.						

Theme : Plants - BIOLOGY

Theme : Plants - BIOLOGY																					
	Year 1						Year 2						Year 3						Year 4	Year 5	Year 6
	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2			
Curriculum objectives	<ul style="list-style-type: none"> • 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 						<ul style="list-style-type: none"> • 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 						<ul style="list-style-type: none"> • 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 								
Vocabulary	Deciduous, evergreen, habitat, leaves, flowers, petals, fruits, roots, bulb, seed, trunk, branches, stem						light, growing conditions, healthy, temperature, soil, branches, seedling,						Plants, stigma, pollen, stamen, stem, reproduction, germinate, pollinate, fertilise, life cycle, photosynthesis,								
Opportunities to work scientifically	<p>In what order do the parts of a plant grow? The children will grow two different plants and will observe over time at what point different parts of the plant grown and identify them.</p> <p>Make observations of how plants change over a period of time.</p> <p>Can sort and group parts of plants using similarities and differences</p>						<p>What does a plant need to grow? Children investigate what a plant needs to grow through removing one of its key requirements and observing what happens to the plant over time.</p>						<p>How is water transported in plants? Children use celery and water with food dye to investigate how water is transported in plants, including what factors affect this transportation, such as heat and light</p> <p>Observe what happens to plants over time when the leaves or roots are removed.</p>								

Theme : Living things and their environment and Seasonal changes - BIOLOGY

	Year 1						Year 2						Year 3	Year 4						Year 5						Year 6					
	Au 1	Au 2	Sp 1	Sp 2	Su 1	Su 2	Au 1	Au 2	Sp 1	Sp 2	Su 1	Su 2		Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2
Curriculum objectives	<ul style="list-style-type: none"> Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies. 						<ul style="list-style-type: none"> 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. 							<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 can sometimes pose dangers to living things 						<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 						<ul style="list-style-type: none"> describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals give reasons for classifying plants and animals based on specific characteristics 					
Vocabulary	Autumn, Spring, Summer, Winter, weather, day length, sun, wind, rainbow, cloud, umbrella, storm, lightning, rain, snow, fog						Living, dead, habitats, suited, adapted, depend, micro-habitats, food chain, producer, primary consumer, secondary consumer, source, sun, herbivore, carnivore, omnivore, decomposer							Animals, vertebrate, invertebrate, mollusc, insect, mammal, flowering, non-flowering, bush, tree, danger, organisms, endangered, environment, plants, animals, amphibians, insects, birds						Life cycles, process, reproduction, asexual, sexual, rainforest, oceans, desert,						Genus, order, species, Kingdom, phylum, Micro-organisms, classification, classify, Carl Linnaeus. Mollusc, amphibian, annelid, crustacean, arachnid, thorax, abdomen					
Opportunities to work scientifically	Classification The children will be given different pictures which have different features of the seasons and group and classify them into spring, summer, autumn, winter, spring Use the outdoor school environment to observe changes in the seasons						Classification - The children will classify living, dead and never living into different groups, using the school indoor and outdoor environment. The children will predict what they may see in a microhabitat and then investigate to conclude if they are correct.							How can we group animals and plants? The children will group different animals into vertebrate and invertebrates. Invertebrate hunt in the Weaver Woodland						How can we group animals according to their life cycle? The children will be given different animals and they have to find different ways of grouping them according to their life cycle. Investigation in growing plants without seeds. Investigation to compare growing plants from seeds and from other parts of the plant.						Microorganisms: Investigation 1 – the effect of conditions on speed of mould growth on bread Investigation 2 – best conditions for growing yeast (balloons over the end of test tubes with yeast, sugar and water set at varying temperatures)					

Theme : Forces and magnets - PHYSICS

	Year 1	Year 2	Year 3					Year 4	Year 5					Year 6	
			Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2		Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2
Curriculum objectives			<ul style="list-style-type: none"> • 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. 						<ul style="list-style-type: none"> • 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. 						
Vocabulary			Force, push, pull, open, surface, magnet, magnetic, attract, repel, magnetic poles, North, South						effort, energy, magnet, magnetism, gravity, newton, accelerate, attract, repel, air resistance, water resistance, friction, mass						
Opportunities to work scientifically			Which materials are magnetic? The children will create a fair test to find out which materials in the class are magnetic and which are not. Classifying materials The children will sort different materials due to their properties Explore how magnets work at a distance e.g. through the table, in water, jumping paper clips up off the table.						What is the relationship between gravity, mass and weight? Design investigations to learn how gravity affects weight. Online Ramp investigation using different surfaces to learn about fair testing. (friction) Design fair tests using ramps with different surfaces. Helicopter and parachute investigations to find out about air resistance.						

Theme : **Electricity - PHYSICS**

Theme : Electricity - PHYSICS																
	Year 1	Year 2	Year 3	Year 4						Year 5	Year 6					
				Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2		Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2
Curriculum objectives				<ul style="list-style-type: none"> • 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 conductor 							<ul style="list-style-type: none"> • 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 					
Vocabulary				Bulb, bright, simple circuits, buzzer, components, motor, wire, conductor, insulator, electrical appliance, cells, battery, switches, lamp, metals,							Voltage, brightness, volume, switches, danger, series circuit. Plus the vocabulary from year 4.					
Opportunities to work scientifically				Investigating complete and incomplete circuits. How can we make the bulb brighter? The children will be given different parts of a circuit and they will have to make the bulb brighter. What conducts electricity? The children will be given different objects to see if they conduct electricity. Investigating switches – can we make our own switch?							How can you increase the volume of the buzzer? The children will make circuits using a buzzer to make Morse code to show signals to their partner.					

Theme : **Light - PHYSICS**

	Year 1	Year 2	Year 3					Year 4	Year 5	Year 6					
			Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2			Aut 1	Aut 2	Spr 1	Spr 2	Sum 1
Curriculum objectives			<ul style="list-style-type: none"> • 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 sizes of shadows change. 							<ul style="list-style-type: none"> • 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 understanding that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. 					
Vocabulary			light, see, dark, reflect, surface, blocked, solid, artificial, torch, candle, lamp, sunlight, natural, star, sun, moon, dangerous, protect eyes, shadow							Reflect, reflective, mirror, distance, light source, light, direction, travel, dark, darkness, transparent, opaque, translucent, block, absorb, shadow, sun, straight lines					
Opportunities to work scientifically			Which materials are more reflective? Investigate suitable materials for a reflective strip on a school bag. Explore how shadows vary as the distance between a light source and an object or surface is changed.							The children will investigate using reflected light to make their own periscope. Measure angles of reflection to produce the clearest image.					

Specific KS2 themes (not progressive)																			
	Year 1	Year 2	Year 3				Year 4				Year 5				Year 6				
			Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1
Theme			Rocks and Soils CHEMISTRY				Sound PHYSICS				Earth and Space PHYSICS				Evolution and Inheritance BIOLOGY				
Curriculum objectives			<ul style="list-style-type: none"> 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 				<ul style="list-style-type: none"> 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. 				<ul style="list-style-type: none"> 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. 				Evolution and Inheritance <ul style="list-style-type: none"> 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 				
Vocabulary			Appearance, physical, properties, hard, soft, shiny, dull, rough, smooth, absorbent, fossils, sedimentary, rock, soils, organic matter, buildings, gravestones, grains, crystals				Vibrate, vibration, air, medium, ear, hear, sound, volume, pitch, faint, fainter, loud, louder, string, percussion, woodwind, brass				Planets, moon, space, infinite, terrestrial, gravity, atmosphere, habitable zone, temperature, liquid water, photosynthesis, star, sun, solar system, galaxy, phases, tidal bulge, magnetism				difference, similar, Evolution, adaption, difference, similar, traits, inheritance, advantageous, disadvantageous, Charles Darwin, Not identical, characteristics, variation, evolution, adaptation, environment,				
Opportunities to work scientifically			How are rocks different? The children will be given different rocks and will have to group and classify them. Which rock would be suitable to make a statue from? The children perform the scratch test to see which rocks are the least hard. Testing various rocks for permeability and use results to decide on uses of that rock. What is soil made of? The children will have soil in water and watch how it separates over time.				Creating a rubber band instrument and observing the vibrations of the 'strings'. What happens when the strings are tightened? Making and using a string telephone. Investigating ways to absorb sound by soundproofing.				Design a model of the solar system using different objects of suitable, relative size (fruit, balls) Use drama to learn about the movement of the planets. STEM investigations linked to soil samples, craters and volcanoes. Find out about the phases of the moon by investigating using a torch as a light source and a small ball. Keep a moon diary for a month.				Investigation to model Charles Darwin's observations of the Galapagos finches – tweezers of varying sizes to collect 'seeds' in a specified time. (representing survival of the fittest theory with different beak sizes)				