



Sacred Heart Catholic Primary School
Science Key Knowledge Overview



EYFS Curriculum						
Unit	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Humans 1) Know that you can describe humans by using hair colours, eye colours and skin colours. 2) Know that you can describe humans by their age (young, old, baby, toddler, child, adult, old person) 3) Know that humans have similarities and differences in appearance. 4) Know that people look after them (families, teachers, doctors, dentists etc.) Animals excluding humans 1) Know that some animals live on land. 2) Know that some animals live in water. 3) Know that some animals live in the jungle. 4) Know that some animals live in a desert.	Materials 1) Know that some materials are natural. 2) Know that certain materials are better for certain jobs (e.g. modelling). 3) Know that you can reuse materials. 4) Know that some materials melt (ice, water). 5) Know that some materials are waterproof. 6) Know that some materials are hard and some materials are soft. 7) Know that some materials are strong and some materials are weak. Light 1) Know what a shadow is and identify the object that creates it. 2) Know where light comes from (light source). 3) Know that see-through objects make pale shadows.	Sound 1) Know that humans hear sounds through their ears. 2) Know that sounds can be loud or quiet. 3) Know that sounds can be high or low. 4) Know that sounds can come from lots of different places.	Living Things & their Habitats 1) Know that plants can be identified as trees, bushes, flowers, vegetables and herbs. 2) Know that minibeasts can be found in our local area. 3) Know that different plants and animals are found in different places. 4) Know that humans can cause damage to living things.	Forces 1) Know that some objects float. 2) Know that some objects sink. 3) Know how to move sand in different ways. 4) Know how to move water in different ways. 5) Know that the wind can make things move.	Earth & Space 1) Know that when the sky changes the temperature can change. 2) Know that when the sky changes the brightness changes. 3) Know that Earth is in space. 4) Know that the Sun is in space. 5) Know that the Moon is in space. 6) Know that using binoculars or a telescope can make things look larger. 7) Know that using binoculars or a telescope can make things look closer. 8) Know that some animals are nocturnal.

	5) Know that some animals live in the North and South pole. 6) Know that some animals live in hot places. 7) Know that some animals live in cold places.	4) Know that non-see-through objects make darker shadows. 5) Know that shadows change throughout the day.				
Throughout the year	Seasonal change: 1) Know that the weather changes throughout the year. 2) Know that humans wear different clothes depending on the time of the year. 3) Know that they can create shelter to protect them from rain or sun. 4) Know that the ground changes when it rains. 5) Know that the animals they see will change depending on the time of year. 6) Know that the plants they see will change depending on the time of year. 7) Know that there are four seasons (spring, summer, autumn, winter). * Play and explore outside in all seasons and in different weather * Observe living things throughout the year					
Year 1						
Unit	Autumn 1 Animals inc humans – animals 1) Know that animals vary in terms of structure e.g. wings, tails, ears etc. 2) Know that animals have different skin coverings e.g. scales, feathers and hair. 3) Know that the structure and skin coverings of animals are used to identify them. 4) Know that animals eat specific things; some eat other animals, some eat plants and some eat both.	Autumn 2 Animals inc humans – humans 1) Know that humans have key parts in common (head, body, eyes, ears, mouth, teeth, legs) 2) Know that humans are unique. 3) Know that humans find out about the world using their senses. 4) Know that humans have five senses (sight, touch, taste, hearing and smelling).	Spring 1 Materials 1) Know that objects can be made of one material or more than one material. 2) Know that some objects can be made from different materials e.g. plastic, metal or wooden spoons. 3) Know that materials can be described by their properties e.g. shiny, stretchy, rough etc. 4) Know that some materials can have different forms and	Spring 2 Plants 1) Know that there are many different plants growing in our local area. 2) Know that every plant has a specific name. 3) Know that plants can be identified by key characteristics. 4) Know that plants have common parts, (leaf, flower, root, seed, trunk, branch, stem, stalk) but they vary between different types of plants. 5) Know some trees keep their leaves all year around. 6) Know that some trees drop their leaves in autumn and grow them again in spring.	Summer 1	Summer 2 Seasonal Changes 1) Know that in the UK the day length is the longest in mid-summer and it gets shorter each day until mid-winter. 2) Know that in the UK the day length is the shortest in mid-winter and it gets longer every day until mid-summer. 3) Know that the weather changes with the seasons.

	5) Know that there are animal groups that animals can be classified into.	5) Know that each sense is linked to a particular part of the body.	different properties e.g. plastic.		4) Know that in the UK it is usually colder and rainier in winter. 5) Know that in the UK it is usually hotter and dryer in the summer. 6) Know that the weather changes the number of minibeasts found outside. 7) Know that the weather affects seed and plant growth. 8) Know that the weather affects the amount of leaves on the trees. 9) Know that the weather affects the clothing people wear.	
Throughout the year	Plants: 1) Know that plants change in appearance over the year. 2) Know that some plants lose leaves. 3) Know that buds develop into flowers. 4) Know that flowers develop into seeds or berries. 5) Know that at any particular time, only some of the plant parts will be present and to ensure correct identification, all parts should be considered. *Pupils should therefore visit the same plants throughout the year gathering additional clues for identification. Seasonal change: 1) Know that the weather changes throughout the year. 2) Know that the changing weather affects living things. * Pupils should be gathering data about seasonal change regularly throughout the year. If data is gathered regularly, this can be reviewed at the end of the year.					
Year 2						
Unit	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Everyday materials 1) Know that objects are made of materials that have properties that are suitable for their purpose.		Animals inc humans 1) Know that animals, including humans,	Plants	Living Things & their Habitats 1) Know that all objects are living, dead or never been alive.	

	2) Know that when something is made, the material's properties are compared with the properties of other materials to choose the most suitable one. This is done through simple tests and classifying. 3) Know that a material can be suitable for different purposes. 4) Know that an object can be made of different materials. 5) Know that some materials can be changed in shape by bending, stretching, squashing and twisting and this is a property of the material. 6) Know that some materials can be changed in shape by bending, stretching, squashing and twisting and this could be because of how the material has been processed e.g. thickness.	have offspring which grow into adults. 2) Know that humans and some animals have offspring that are young and they grow into adults. 3) Know that some animals lay eggs that hatch to young (or other stages) and then grow into adults. 4) Know that the young of some animals don't look like their parents e.g. tadpoles. 5) Know that all animals, including humans, have the basic needs of feeding, drinking and breathing that must be satisfied in order to survive. 6) Know that to grow into healthy adults you need the right amounts and types of food and exercise. 7) Know that good hygiene prevents infections and illnesses.	1) Know that plants can grow from seeds or bulbs. 2) Know that seeds or bulbs germinate and grow into seedlings which then continue to grow into mature plants. 3) Know that some mature plants have flowers which then develop into seeds/berries/fruits etc. 4) Know that seeds and bulbs need to be planted outside at particular times of the year. 5) Know that plants grow at different rates. 6) Know that some plants grow better in full sun, some grow better in partial sun and some grow better in the shade. 7) Know that plants need different amounts of water and space to grow well.	2) Know that living things are plants (including seeds) and animals. 3) Know that dead things include dead animals and plants and parts of animals and plants that are no longer attached (leaves, twigs, shells, fur, hair and feathers). 4) Know that an object made of wood is classed as dead. 5) Know that objects made from fossil fuels have never been alive. 6) Know that animals live in a habitat that it is suited to them and they have features that allow them to move and find food. 7) Know that plants live in a habitat that is suited to them and they have features that help them grow well. 8) Know that the habitat provides the basic needs for animals and plants (shelter, food, water). 9) Know that within a habitat there are micro-habitats. 10) Know that micro-habitats have different conditions and this affects what living things live there. 11) Know that the plants and animals in a habitat depend on each other for food and shelter. 12) Know that the way animals get their food from plants and other animals can be shown in a food chain.
Throughout the year	Living Things & Their Habitats: 1) Know that the animals visible in a habitat will change depending on the weather and the season. * In order to build up a full picture of the animals in a habitat, the habitat should be visited at different times throughout the year. Plants: 1) Know that seeds need to be planted in spring usually and bulbs need to be planted in autumn usually.			

2) Know that for seeds and bulbs to reach full maturity, they need to complete their life cycle.
 *Once planted, the beds will need to be visited regularly to weed and make observations of growth.

Year 3

Unit	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Plants 1) Know that many plants (not all) have roots, stem/trunk, leaves and flowers/blossom. 2) Know that the roots absorb water and nutrients from the soil and anchor the plant in place. 3) Know that the stem transports water and nutrients around the plant. 4) Know that the stem holds the leaves and flowers up in the air to enhance photosynthesis, pollination and seed dispersal. 5) Know that leaves use sunlight and water to make the plant's food. 6) Know that some plants have flowers which enable the plant to reproduce. 7) Know that pollen is produced by the male part of the plant. 8) Know that pollination is when pollen is transferred from the male part to the female part of other flowers.	Animals inc humans (skeletons/movement) 1) Know that humans have skeletons which help them move and provide protection and support. 2) Know that humans have muscles to help them move. 3) Know that some animals have skeletons which help them move and provide protection and support. 4) Know that animals have muscles to help them move.	Forces and magnets 1) Know that a force is a push or a pull. 2) Know that the texture of the object and the texture of the surface may affect how an object moves over a surface. 3) Know that a magnet attracts magnetic material. 4) Know that iron, nickel and stainless steel are magnetic. 5) Know that magnets have two poles called north pole and south pole. 6) Know that the strongest part of the magnet are the poles. 7) Know that two like poles will repel. 8) Know that two unlike poles will attract. 9) Know that for some forces to act there must be contact but for some forces there doesn't need to be contact (magnetism).	Rocks and soil 1) Know that rock is a naturally occurring material. 2) Know that different types of rocks have different properties (hardness, absorption of water) 3) Know that rocks can be different shapes and sizes (stones, pebbles, boulders). 4) Know that soil is ground down rock mixed with organic matter (plant and animal material). 5) Know that the type of rock, size of rock pieces and the amount of organic matter affect the properties of the soil. 6) Know that some rocks contain fossils that were formed millions of years ago. 7) Know that fossils were created when animals and plants died and fell to the seabed where they	Light and shadow 1) Know that we see objects because our eyes sense light. 2) Know that dark is the absence of light. 3) Know some sources of light (e.g. Sun, light bulbs and candles). 4) Know that some objects reflect light. 5) Know that light from the Sun can damage your eyes but there are ways to avoid it (wearing sunglasses and not looking directly at the Sun). 6) Know that shadows are formed when an opaque or translucent object is blocking light from a light source. 7) Know that the size of a shadow depends on the position of a light source, the object and the surface.	Animals inc humans (nutrition) 1) Know that animals need to eat to get the nutrients they need. 2) Know that food contains a range of nutrients (carbohydrates, protein, vitamins, minerals, fats, sugars, water and fibre) which is needed for the body to stay healthy. 3) Know that a piece of food will have a range of nutrients.

	9) Know that seeds are formed and these are dispersed in different ways. 10) Know that different plants require different conditions for germination and growth.			were covered by other material, squashed and then the animal and plant matter is replaced by minerals from the water.		
Throughout the year	Plants: 1) Know that plants have an annual cycle – having buds, flowers, seeds/berries at certain times in the year. *Pupils should therefore visit the same plants throughout the year gathering evidence linked to their life cycle e.g. collecting seeds and taking photographs or making observational drawings for buds, flowers etc.					
Year 4						
Unit	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Living Things & Their Habitats 1) Know living things can be grouped by their features. 2) Know classification keys can be used to identify and name living things. 3) Know that a living thing's environment may change naturally by flooding, fire, earthquakes etc. 4) Know that a living thing's environment may change because of humans. This could be positive or negative. 5) Know that environments change with the seasons and this impacts the things that live there.	Animals including Humans 1) Know that food enters the body through the mouth and digestion starts when the teeth start to break the food down. Saliva is added and the tongue rolls the food into a ball. 2) Know food is swallowed and then it passes down the oesophagus to the stomach. 3) Know that food is broken down in the stomach by being churned around and by chemicals being added. 4) Know that food passes into the small intestine. Here nutrients are removed from food and	Materials – States of matter. 1) Know that a solid keeps its shape and has a fixed volume. 2) Know that a liquid has a fixed volume but changes shape to fit the container. 3) Know that a liquid can be poured and keeps a level, horizontal surface. 4) Know that a gas fills all available space; it has no fixed shape or volume. 5) Know that melting is when a solid changes to a liquid. 6) Know that freezing is when a liquid changes to a solid and that the freezing point of water is 0 degrees. 7) Know that boiling is when a liquid changes to a gas because it is heated to a specific temperature and bubbles of gas can be seen in the liquid. 8) Know that evaporation is similar to boiling, it is liquid changing to a gas, but it happens slower at lower temperatures than boiling. 9) Know that evaporation happens quicker if the temperature is higher, the liquid is spread out or it is windy.		Electricity 1) Know that many household devices and appliances run on electricity, some plug in and some use batteries. 2) Know that an electrical circuit consists of a cell or battery connected to a component using wires. 3) Know if there's a break in the circuit, the component will not work. 4) Know that a switch can be added into a circuit to turn the component on and off. 5) Know that metals are good conductors	Sound 1) Know that sound produces vibrations that travel from a source through a medium to our ears. 2) Know that different mediums (solids, liquids, gases) can carry sound, but sound cannot carry through a vacuum (an area empty of matter). 3) Know that the vibrations cause the inside of our ears to vibrate allowing us to hear the sound. 4) Know that the volume of a sound depends on the size of the vibrations.

		leave the digestive system to be used elsewhere in the body. 5) Know that food passes into the large intestines next. Here water is removed for use elsewhere in the body. 6) Know that what is left in the large intestine then passes to the rectum. It then leaves the body through the anus when you go to the toilet. 7) Know that humans have four types of teeth: incisors are for cutting, canines for tearing, molars and premolars for grinding (chewing). 8) Know that living things can be classified as producers, predators and prey depending on their place in the food chain.	10) Know that condensation is when a gas changes to a liquid because it is cooled. 11) Know that water at the surface of seas/rivers evaporates into water vapour (gas). 12) Know that this gas rises, cools and condenses back into clouds. 13) Know that when too much water has condensed, the water in the cloud gets too heavy and precipitation falls. .	and can be used as wires in a circuit. 6) Know that non-metallic solids are insulators except graphite. 7) Know that water can conduct electricity.	5) Know that pitch means the highness or lowness of a sound. 6) Know that the features of the object producing the sound can impact the pitch e.g. smaller object usually produce a higher pitched sound.	
Throughout the year	Living Things & Their Habitats: 1) Know that drawing on a range of different clues will help you name and identify plants. * Pupils should therefore visit the same plants throughout the year gathering additional clues for identification. 2) Know that animals visible in a habitat will change depending on the weather on the day and the season. * In order to build up a full picture of the animals in a habitat, the habitat should be visited at different times throughout the year.					
Year 5						
Unit	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Living Things & Their Habitats 1) Know that animals reproduce sexually and there are two parents.	Animals including Humans 1) Know when babies are young they grow rapidly and are dependent on their parents.	Properties of Materials 1) Know that materials have different uses depending on their properties (hardness,	Changes of Materials 1) Know some materials will dissolve in a liquid and form a solution.	Forces 1) Know force causes an object to start moving, stop moving, speed up, slow down or change direction.	Earth & Space 1) Know the Sun is a star at the centre of the universe. 2) Know there are eight planets.

	2) Know some animals will produce live young. 3) Know some animals will produce eggs which hatch. 4) Know some animals undergo metamorphosis. 5) Know plants can reproduce sexually and asexually. 6) Know bulbs, tubers, runners and plantlets are examples of asexual reproduction. 7) Know sexual reproduction occurs through pollination.	2) Know during puberty, a child's body changes. 3) Know puberty allows an adult to reproduce. 4) Know that some changes affect boys and girls (sweat more, skin and hair become greasier, pubic hair starts to grow, feel more emotional and arms and legs grow legs). 5) Know that some changes only affect girls (breasts start to grow, hips widen and periods start). 6) Know that some changes only affect boys (voice changes and may grow facial hair) 7) Know where to get help and advice about growing and changing.	transparency, electrical and thermal conductivity and attraction to magnets. 2) Know materials have different uses depending on their state (solid, liquid, gas).	2) Know some materials are insoluble and form sediment. 3) Know mixtures can be separated by filtering, sieving and evaporating. 4) Know some changes are reversible (dissolving, mixing, change of state) 5) Know some changes are irreversible (burning wood, rusting, mixing vinegar with bicarbonate soda) and new materials are formed.	2) Know gravity is a force and it pulls everything to Earth. 3) Know air resistance is a contact force when something is moving through the air. 4) Know water resistance is a contact force when something is moving through liquid. 5) Know friction is a contact force when two solids move past each other. 6) Know a mechanism is a device that allows a small force to be increased to a bigger force. 7) Know pulleys, levers and gears are all mechanisms.	3) Know that the planets travel around the Sun in fixed orbits. 4) Know it takes 365 $\frac{1}{4}$ days for Earth to complete it's orbit. 5) Know it takes 24 hours for the Earth to rotate. 6) Know that the rotation of the Earth causes day and night. 7) Know that the Sun appears to move across the sky because of the Earth's rotation. 8) Know the Moon orbits the Earth and it takes 28 days. 9) Know the Earth, Sun and Moon are approximately spherical.
Year 6						
Unit	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2

	Evolution & Inheritance 1) Know all living things have offspring of the same kind as features are inherited from parents. 2) Know that plants and animals have characteristics that are suited to their environment. 3) Know that if an environment changes rapidly then some variations in species will not be suitable and will die. 4) Know that if an environment changes slowly, animals and plants with variations will survive, reproduce and pass their characteristics to offspring. 5) Know inherited characteristics can become dominant. 6) Know that evolution is when inherited characteristics are very different and therefore a new species has been created. 7) Know that fossils give us evidence to support the theory of evolution.	Living Things & Their Habitats 1) Know that living things can be formally grouped according to their characteristics. 2) Know micro-organisms (bacteria and yeast) do not fit into the animal or plant group. 3) Know that plants can make their own food whereas animals cannot. 4) Know animals can be divided into vertebrates and invertebrates. 5) Know that vertebrates can be divided into fish, amphibians, reptiles, birds and mammals and each group has common characteristics. 6) Know that invertebrates can be divided into groups e.g. insects, spiders, snails and worms. 7) Know that plants can be divided into flowering plants and non-flowering plants.	Electricity 1) Know that adding more cells to a complete circuit will make a bulb brighter, a motor faster or a buzzer louder. 2) Know that using a battery with a higher voltage will make a bulb brighter, a motor faster or a buzzer louder. 3) Know that adding more bulbs will make each bulb less bright. 4) Know that using more motors will make each motor slower. 5) Know that adding more buzzers will make each buzzer quieter. 6) Know that turning a switch off breaks the circuit so electricity cannot flow through. 7) Know circuit symbols and use them correctly.	Light 1) Know light travels in straight lines. 2) Know we see objects because light travels into our eyes. 3) Know light can come from light sources or it can be reflected into our eyes. 4) Know objects that are not transparent will block light and cause objects. 5) Know the shape of a shadow will be the same as the outline shape of the object.	Animals including Humans – circulatory system 1) Know the heart pumps blood in blood vessels around to the lungs and then the blood goes back to the heart and is pumped around the body. 2) Know oxygen goes into the blood and carbon dioxide is removed. 3) Know nutrients, water and oxygen are transported in the blood around the body. 4) Know carbon dioxide is carried back to the heart and then the lungs and then leaves the body. 5) Know this cycle is called the human circulatory system. 6) Know that diet, exercise, drugs and lifestyle have an impact on the way our bodies function. 7) Know that diet, exercise, drugs and lifestyle can affect how well our heart and lungs work, how likely we are to get	Human relationships and sex education – covered in HRSE policy
--	--	--	--	--	---	---

					health conditions (diabetes), how we think and how fit and well we are.	
--	--	--	--	--	--	--