

St Pauls Catholic School Science Topics Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception Topics and knowledge Understanding the World	<p><u>All about me -</u></p> <p>My 5 Senses CST</p> <ul style="list-style-type: none">Discuss the importance for humans of eating the right amounts of different types of foods.Discuss the importance of oral hygiene and learn how to brush teeth correctly using a model of teeth. <p>Seasonal Changes - Spring</p> <ul style="list-style-type: none">Observe changes in their surroundings through regular visits to the copse for half a day once a week.	<p><u>Celebrations</u></p> <p>Light and darkness (Diwali)</p> <ul style="list-style-type: none">Observe the difference between light and darkness through exploration in dark dens.Recognise that light helps us see.Explore shadows by blocking light to create shadow puppets on the story of Rama and Sita. <p>Seasonal Changes – Spring - Winter</p> <ul style="list-style-type: none">Observe changes in their surroundings through regular visits to the copse for half a day once a week.	<p><u>People who help us</u></p> <ul style="list-style-type: none">Begin to recognise the roles of scientists in society today through role play with a variety of costumes including doctors, nurses and laboratory workers. <p>Frozen or melted</p> <ul style="list-style-type: none">Observe the changes between water and ice through heating or cooling. Children investigate: How can we melt ice fast? <p>Seasonal Changes - Winter</p> <ul style="list-style-type: none">Observe changes in their surroundings through regular visits to the copse for half a day once a week.	<p><u>Ticket to ride</u></p> <p>Growing seeds CST</p> <ul style="list-style-type: none">Identify different types of habitats from around the world and compare similarities and differences.Observe the growth of cress seeds over a week. <p>Travel</p> <ul style="list-style-type: none">Investigate the best surfaces for a toy car to ride on. <p>Seasonal Changes – Winter - Spring</p> <ul style="list-style-type: none">Observe changes in their surroundings through regular visits to the copse for half a day once a week. <p>Rushell Farm Visit (<i>Spring 2 or Summer 1</i>) –</p> <ul style="list-style-type: none">Children enjoy workshops on the importance of bees, go pond dipping and see a variety of animals including lambs.	<p><u>Mini beasts and their microhabitats CST</u></p> <ul style="list-style-type: none">Begin to identify different types of micro habitats in the cops.Making observations of features of different types of minibeasts (e.g Does it crawl? Can it fly? Does it have legs?) <p>Seasonal Changes Spring - Summer</p> <ul style="list-style-type: none">Observe changes in their surroundings through regular visits to the copse for half a day once a week. <p>Rushell Farm Visit (<i>Spring 2 or summer 1</i>)</p> <ul style="list-style-type: none">Children enjoy workshops on the importance of bees, go pond dipping and see a variety of animals including lambs.	<p><u>Fun at the seaside</u></p> <p>Does it float or sink?</p> <ul style="list-style-type: none">Investigate materials in water and begin to organise items into those that sink and those that float.Design a boats to float on water. <p>Under the sea</p> <ul style="list-style-type: none">Children make observations of different sea creatures. How are they similar? How are they different? <p>Seasonal Changes - Summer</p> <ul style="list-style-type: none">Observe changes in their surroundings through regular visits to the copse for half a day once a week.
KS1 Skills	See Scientific Skills progression document					
Year 1 Cycle (2021-22 2023-24 2025-26)		<p>Life cycles(Yr2) Animals including humans CST</p> <p>Notice that animals, including humans, have offspring which grow into adults.</p> <ul style="list-style-type: none">Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). <p>Bucklebury Farm visit in Summer term</p>	<p>Plants (Year 2) CST</p> <ul style="list-style-type: none">Observe and describe how seeds and bulbs grow into mature plantsFind out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	<p>Seasonal changes Yr1</p> <ul style="list-style-type: none">Observe changes across the four seasonsObserve and describe weather associated with the seasons and how day length varies.	<p>Body Parts/Exercise/Keeping healthy (animals including humans) CST</p> <ul style="list-style-type: none">Describe the importance for humans of exercise, eating the right amounts of different types of foods, and hygiene.	<p>Revision of areas taught</p>
Year 2 Cycle	<p>Animals, including humans-senses (Yr1)</p> <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. <p>Bucklebury Farm visit in Summer term</p>	<p>Everyday materials Yr1</p> <ul style="list-style-type: none">Distinguish between an object and the material from which it’s 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.	<p>Revision of areas taught</p>	<p>Living things and their habitats Yr2 CST</p> <ul style="list-style-type: none">Explore and compare the differences between things that are living, dead, and things that have never been aliveIdentify 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 micro-habitats.Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.	<p>Revision of areas taught</p>	<p>Green plants, Variation and classification (Plants Yr1)</p> <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. <p>Investigation skills (Be a scientist – see above) To include wide range of science.</p> <p>Uses of everyday materials (Year 2)</p> <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.
LKS2 Skills	See Scientific Skills progression document					
Year 3 Cycle (2021-22 2023-24 2025-26)	<p>Light</p> <ul style="list-style-type: none">Recognise that they need light in order to see things and that dark is the absence of lightNotice 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 objectFind patterns in the way that the size of shadows change.	<p>Rocks</p> <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 rockRecognise that soils are made from rocks and organic matter.	<p>Animals including Humans CST</p> <p>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.</p> <ul style="list-style-type: none">Identify that humans and some other animals have skeletons and muscles for support, protection and movement. <p><i>Link To rainforests (Yr 4)</i></p> <ul style="list-style-type: none">Recognise that environments can change and that this can sometimes pose dangers to living things.	<p>Plants CST</p> <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	<p>Plants Continued CST</p> <ul style="list-style-type: none">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.	<p>Forces and Magnets</p> <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.

			Exotic Animals visit - A variety of exotic animals are brought into school with discussions linked to the diet and structure of the animals as well as their environment.	pollination, seed formation and seed dispersal.		<ul style="list-style-type: none">Describe magnets as having two poles . Predict whether two magnets will attract or repel each other, depending on which poles are facing.
Year 4 Cycle	States of Matter <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.Significant Scientists - Anders Celsius and Daniel Fahrenheit-Temperature	Animals including Humans <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.	Sound <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.	Electricity <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.	Electricity Continued <ul style="list-style-type: none">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 a lamp lights in a simple series circuit.Recognise some common conductors and insulators, and associate metals with being good conductors.	Living things and their habitats CST <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. Significant Scientists - David Attenborough and Greta Thunberg
UKS2 Skills	See Scientific Skills progression document					
Year 5 Cycle (2021-22 2023-24 2025-26)	Earth and Space <ul style="list-style-type: none">Describe the movement of the Earth, and other planets, relative to the Sun in the solar systemDescribe the movement of the Moon relative to the EarthDescribe the Sun, Earth and Moon as approximately spherical bodies Wider Curricular opportunities: Little Heath Space Day visit for Year 5s in July.	Earth and Space Continued <ul style="list-style-type: none">Use the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky.Significant Scientists - Armstrong, Gallileo, Coppernictus, Newton. Winchester Science Museum Visit for UKS2.	Properties and changes of materials <ul style="list-style-type: none">Compare and group together everyday materials based on 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 evaporatingGive reasons, based on evidence from comparative and fair tests, for the uses of everyday materials, including metals, wood and plasticDemonstrate 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.	Forces <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 objectIdentify the effects of air resistance, water resistance and friction, that act between moving surfacesRecognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.Significant Scientists – Einstein and Newton	Animals including Humans <ul style="list-style-type: none">Describe the changes as humans develop to old age.	Living things and their habitats <ul style="list-style-type: none">Describe the differences in the life cycles of a mammal, an amphibian, an insect and a birdDescribe the life process of reproduction in some plants and animals.
Year 6 Cycle	Evolution and Inheritance CST <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.	Evolution and Inheritance Continued CST <ul style="list-style-type: none">Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.Singificant Scientists - Mary Anning, Charles Darwin, Hetha Ayrton and Alfred Wallace	Electricity <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.Significant Scientists - Band, Bell, Jobs and Eddison.	Light <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 the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	Animals Including Humans CST <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.	Living things and their Habitats <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.Significant Scientists – Aristotle, Linneus and Whittaker.