

<b>EYFS</b>	<b><i>Understanding the world: The world</i></b>	<b><i>Understanding the world: Technology</i></b>
<b>30-50 months</b>	<ul style="list-style-type: none"> <li>Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world.</li> <li>Can talk about some of the things they have observed such as plants, animals, natural and found object.</li> <li>Talks about why things happen and how things work.</li> <li>Developing an understanding of growth, decay and changes over time.</li> </ul> <p><i>Shows care and concern for living things and the environment</i></p>	<ul style="list-style-type: none"> <li>Shows an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones.</li> <li>Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.</li> <li>Knows that information can be retrieved from computers.</li> </ul>
<b>40-60 months</b>	<ul style="list-style-type: none"> <li>Looks closely at similarities, differences, patterns and change.</li> </ul>	<ul style="list-style-type: none"> <li>Uses ICT hardware to interact with age-appropriate computer software.</li> </ul>
<b>ELG</b>	<ul style="list-style-type: none"> <li>Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another</li> </ul>	<ul style="list-style-type: none"> <li>Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.</li> </ul>

***KS1 Progression***

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.



SAINT CHARLES CATHOLIC SCHOOL

Year  
1

	<b>Biology: animals including humans</b>	<b>Seasonal changes (physics): Autumn - Winter</b>	<b>Chemistry: everyday materials</b>	<b>Seasonal changes (physics): Spring - Summer</b>	<b>Biology: plants</b>
<p><i>-Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</i></p> <p><i>-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)</i></p> <p><i>-Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</i></p> <p><i>-Pupils should use the local environment throughout the year to explore and answer questions about animals in their habitat.</i></p> <p><i>-They should understand how to take care of animals taken from their</i></p>	<p><i>-Observe changes across the four seasons.</i></p> <p><i>-Observe and describe weather associated with the seasons and how day length varies</i></p> <p><i>-Pupils should observe and talk about changes in the weather and the seasons.</i></p> <p><i>-Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses.</i></p> <p><i>-Pupils might work scientifically by: making tables and charts about the weather; and making displays of what happens in the world around them, including day length, as the seasons change.</i></p>	<p><i>-Distinguish between an object and the material from which it is made.</i></p> <p><i>-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</i></p> <p><i>-Compare and group together a variety of everyday materials on the basis of their simple physical properties.</i></p> <p><i>-Pupils should explore, name, discuss and raise and answer questions about everyday materials so that they become familiar with the names of materials and properties such as: hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/transparent.</i></p> <p><i>-Pupils should explore and</i></p>	<p><i>-Revise prior knowledge of seasonal change.</i></p> <p><i>-Observe changes across the four seasons.</i></p> <p><i>-Observe and describe weather associated with the seasons and how day length varies</i></p> <p><i>-Pupils should observe and talk about changes in the weather and the seasons.</i></p> <p><i>-Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses.</i></p> <p><i>-Pupils might work scientifically by: making tables and charts about the weather; and making displays of what happens in the world around them, including day length, as the seasons change.</i></p>	<p><i>-Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</i></p> <p><i>-identify and describe the basic structure of a variety of common flowering plants, including trees.</i></p> <p><i>-Pupils should use the local environment throughout the year to explore and answer questions about plants growing in their habitat.</i></p> <p><i>-Where possible, they should observe the growth of flowers and vegetables that they have planted.</i></p> <p><i>-They should become familiar with common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem).</i></p>	



**local environment and the need to return them safely after study.**

-Pupils should become familiar with the common names of some fish, amphibians, reptiles, birds and mammals, including those that are kept as pets.

-Pupils should have plenty of opportunities to learn the names of the main body parts (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth) through games, actions, songs and rhymes.

-Pupils might work scientifically by: using their observations to compare and contrast animals at first hand or through videos and photographs, describing how they identify and group them; grouping animals according to what they eat; and using their senses to compare different textures, sounds and smells.

experiment with a wide variety of materials, not only those listed in the programme of study, but including for example: brick, paper, fabrics, elastic, foil.

-Pupils might work scientifically by: performing simple tests to explore questions, for example: 'What is the best material for an umbrella? ...for lining a dog basket? ...for curtains? ...for a bookshelf? ...for a gymnast's leotard?'

-Pupils might work scientifically by: observing closely, perhaps using magnifying glasses, and comparing and contrasting familiar plants; describing how they were able to identify and group them, and drawing diagrams showing the parts of different plants including trees.

-Pupils might keep records of how plants have changed over time, for example the leaves falling off trees and buds opening; and compare and contrast what they have found out about different plants.



	<b>Biology: animals including humans</b>	<b>Chemistry: the use of everyday materials</b>	<b>Biology: living things &amp; their habitats</b>	<b>Biology: plants</b>
Year 2	<p>-Revise prior knowledge of animals from Y1.</p> <p><b>-Notice that animals, including humans, have offspring which grow into adults</b></p> <p>-Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p><b>-Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</b></p> <p>-Pupils should be introduced to the basic needs of animals for survival, as well as the importance of exercise and nutrition for humans.</p> <p><b>-They should also be introduced to the processes of reproduction and growth in animals.</b></p> <p>-The focus at this stage should be on questions that help pupils to recognise growth; they should not be expected to understand how</p>	<p>-Revise prior knowledge of materials from Y1.</p> <p><b>-Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</b></p> <p>-Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p> <p><b>-Pupils should identify and discuss the uses of different everyday materials so that they become familiar with how some materials are used for more than one thing (metal can be used for coins, cans, cars and table legs; wood can be used for matches, floors, and telegraph poles) or different materials are</b></p>	<p>-Revise prior knowledge of plants and animals from Y1.</p> <p><b>-Explore and compare the differences between things that are living, dead, and things that have never been alive</b></p> <p>-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</p> <p><b>-Identify and name a variety of plants and animals in their habitats, including microhabitats</b></p> <p>-Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</p> <p><b>-Pupils should be introduced to the idea that all living things have certain characteristics that are essential for keeping them alive and healthy.</b></p> <p>-They should raise and answer questions that help them to become familiar with the life processes that are common to all living things.</p> <p><b>-Pupils should be introduced to the terms 'habitat' (a natural environment or home of a variety of plants and animals) and 'micro-habitat' (a very small habitat, for</b></p>	<p>-Revise prior knowledge of plants from Y1.</p> <p><b>-Observe and describe how seeds and bulbs grow into mature plants</b></p> <p>-Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p> <p><b>-Pupils should use the local environment throughout the year to observe how different plants grow.</b></p> <p>-Pupils should be introduced to the requirements of plants for germination, growth and survival, as well as to the processes of reproduction and growth in plants. Note: Seeds and bulbs need water to grow but most do not need light; seeds and bulbs have a store of food inside them.</p> <p><b>-Pupils might work scientifically by: observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy.</b></p>



reproduction occurs.

**-The following examples might be used: egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep. Growing into adults can include reference to baby, toddler, child, teenager, adult.**

-Pupils might work scientifically by: observing, through video or first-hand observation and measurement, how different animals, including humans, grow; asking questions about what things animals need for survival and what humans need to stay healthy; and suggesting ways to find answers to their questions.

**used for the same thing (spoons can be made from plastic, wood, metal, but not normally from glass).**

-They should think about the properties of materials that make them suitable or unsuitable for particular purposes and they should be encouraged to think about unusual and creative uses for everyday materials.

**-Pupils might find out about people who have developed useful new materials, for example John Dunlop, Charles Macintosh or John McAdam.** -Pupils might work scientifically by: comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); observing closely,

**example for woodlice under stones, logs or leaf litter).**

-They should raise and answer questions about the local environment that help them to identify and study a variety of plants and animals within their habitat and observe how living things depend on each other, for example, plants serving as a source of food and shelter for animals.

**-Pupils should compare animals in familiar habitats with animals found in less familiar habitats, for example, on the seashore, in woodland, in the ocean, in the rainforest.**

-Pupils might work scientifically by: sorting and classifying things according to whether they are living, dead or were never alive, and recording their findings using charts. **-They should describe how they decided where to place things, exploring questions for example: 'Is a flame alive? Is a deciduous tree dead in winter?' and talk about ways of answering their questions.**

-They could construct a simple food chain that includes humans (e.g. grass, cow, human).

**-They could describe the conditions in different habitats and micro-habitats (under log, on stony path, under bushes) and find out how the conditions affect the number and type(s) of plants and animals that live there.**



*identifying and classifying the uses of different materials, and recording their observations.*

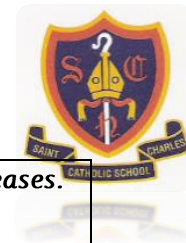
**KS2 Progression**

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

	<b>Biology: animals including humans</b>	<b>Biology: plants</b>	<b>Physics: forces &amp; magnets</b>	<b>Physics: light</b>	<b>Chemistry: rocks</b>
<b>Year 3</b>	<ul style="list-style-type: none"> <li>-Revise prior knowledge of animals from KS1.</li> <li><b>-Identify that all animals and humans need the right types and amounts of nutrients and that they cannot make their own food; they get nutrition from what they eat.</b></li> <li>-Identify that humans and some other animals have skeletons and muscles for support, protection and</li> </ul>	<ul style="list-style-type: none"> <li>-Revise prior knowledge of plants from KS1.</li> <li><b>-Identify and describe the functions of different parts of a flowering plant: roots, stem/trunk, leaves and flowers.</b></li> <li>-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</li> </ul>	<ul style="list-style-type: none"> <li>-Revise prior knowledge of the properties of materials from KS1.</li> <li><b>Compare how things move on different surfaces</b></li> <li>-Notice that some forces need contact between two objects, but magnetic forces can act at a distance</li> <li><b>-Observe how magnets attract or repel each other and attract some materials and not others.</b></li> </ul>	<ul style="list-style-type: none"> <li><b>-Recognise that they need light in order to see things and that dark is the absence of light</b></li> <li>-Notice that light is reflected from surfaces</li> <li><b>-Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</b></li> <li>-Recognise that shadows are formed when the light from a light source is blocked by a</li> </ul>	<ul style="list-style-type: none"> <li>-Revise prior knowledge of the properties of materials from KS1.</li> <li><b>-Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</b></li> <li>-Describe in simple terms how fossils are formed when things have lived are trapped within rock</li> <li><b>-Recognise that soils are</b></li> </ul>



	<p>movement.</p>	<p>plant. -Investigate the ways 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>	<p>-Compare and group together a variety or 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.</p>	<p>solid object -Find patterns in the way that the size of shadows change.</p>	<p>made from rock and other organic matter.</p>
<p>Year 4</p>	<p><b>Physics: electricity</b></p>	<p><b>Chemistry: states of matter</b></p>	<p><b>Biology: animals including humans</b></p>	<p><b>Biology: living things &amp; their habitats</b></p>	<p><b>Physics: sound</b></p>
	<p>-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</p>	<p>-Revise prior knowledge of types of material from KS1. -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</p>	<p>-Revise prior knowledge of nutrition, and the skeletal and muscular systems from Y3. -Describe the simple functions of the basic parts of the digestive systems 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. - Identify the organs in the digestive system and describe their function</p>	<p>-Revise prior knowledge of plants and animals from KS1. -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 environments. -Recognise that environments can change and that this can sometimes pose dangers to living things.</p>	<p>-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 feature 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</p>



	<p>not a lamp lights in a simple series circuit</p> <p><b>-Recognise some common conductors and insulators, and associate metals with being good conductors.</b></p>	<p><b>water cycle and associate the rate of evaporation with temperature.</b></p>	<p><b>- Describe the journey our food takes from entering the body to leaving it</b></p>		<p><b>the sound source increases.</b></p>
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The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

	<b>Biology: living things &amp; their habitats</b>	<b>Physics: forces</b>	<b>Changing Materials</b>	<b>Physics: Earth &amp; space</b>	<b>Biology: animals including humans</b>
<b>Year 5</b>	<p><b>-Revise prior knowledge of plants from Y3.</b></p> <p>-Relate changes in the local environment to the life-cycles of the living things in that habitat.</p> <p><b>-Explain asexual reproduction with reference to a plant such as ferns (spores), potato (tubers), daffodil (bulbs) or spider plant (plantlets).</b></p> <p>-Describe sexual reproduction through the meeting of two</p>	<p>-Revise prior knowledge of forces from Y3.</p> <p><b>-Explain that unsupported objects fall towards Earth because the force of gravity acting between the Earth and the falling object.</b></p> <p>-Identify the effects of air resistance, water resistance and friction that act between moving surfaces.</p> <p><b>-Recognise that some mechanisms, including</b></p>	<p>-Revise prior knowledge of the states of matter from Y4.</p> <p><b>-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.</b></p> <p>-Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a</p>	<p>-Revise prior knowledge of the Earth's spherical shape and its magnetic field from Y3.</p> <p><b>-Describe the movements of the Earth and other planets, relative to the Sun in the solar system.</b></p> <p>-Describe the movement of the Moon relative to Earth.</p> <p><b>-Describe the Sun, Earth and Moon as approximate spherical bodies.</b></p> <p>-Use the idea of the Earth's rotation to explain day and</p>	<p>-Revise prior knowledge of the human body from Y3 and Y4</p> <p>-Describe the life cycle of a human being.</p> <p><b>-Describe the change as a human develops from a baby, into adolescence and into old age.</b></p> <p>-Explain why the body changes as humans grow older.</p> <p><b>-Consider how this might change in the future.</b></p>





sex cells (male and female), using pollen and ovules as examples.  
**-Explain sexual reproduction with reference to a flowering plant.**  
 -Recognise that different species of living things use different processes for reproduction of offspring.  
**-Describe the difference in the life cycle of a mammal, an amphibian, an insect and a bird.**  
 -Describe the life process of reproduction in some plants and animals.

**levers, pulleys and gears, allow a smaller force to have a greater effect.**

solution.  
**-Use a 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 fair tests, for the particular use 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.

night and the apparent movement of the sun across the sky.

**Biology: animals including humans**

**Physics: electricity**

**Biology: living things & their habitats**

**Physics: light**

**Biology: evolution & inheritance**

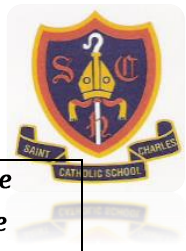
-Revise prior knowledge of the human body from Y3, Y4 and Y5.

-Revise prior knowledge of electricity from Y4.  
**-Associate the brightness**

-Revise prior knowledge of living things from Y3, Y4 and Y5.

-Revise prior knowledge of light from Y3.  
**-Recognise that light**

-Revise prior knowledge of fossilisation from Y3.  
**-Recognise that living things**



<p><b>Year 6</b></p>	<p><b>-Identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood.</b></p> <p>-Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p><b>-Describe the ways in which nutrients and water are transported within animals, including humans.</b></p>	<p><b>of a lamp or the volume of a buzzer with the number and voltage of cells used in a circuit.</b></p> <p>-Compare and give reasons for variations in how components function, including the brightness of a bulb, the loudness of buzzers and the on/off position of switches.</p> <p><b>-Use recognised symbols when representing a simple circuit in a diagram.</b></p>	<p><b>-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.</b></p> <p>-Give reasons for classifying plants and animals based on specific characteristics.</p>	<p><b>appears to travel in straight lines</b></p> <p>-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.</p> <p><b>-Explain that we see things because light travels from light sources to our eyes of from light sources to objects then to our eyes.</b></p> <p>-Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>	<p><b>have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</b></p> <p>-Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p> <p><b>-Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</b></p>
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