



St. Joseph's Catholic Primary School  
Science Progression of Skills and Knowledge



|                          | Year 1/2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Year 3/4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Year 5/6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| Biology                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Animals Including Humans | <ul style="list-style-type: none"><li>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</li><li>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</li><li>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets).</li><li>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li><li>Notice that animals, including humans, have offspring which grow into adults.</li><li>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</li><li>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li></ul> | <ul style="list-style-type: none"><li>Identify that animal, 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.</li><li>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li><li>Describe the simple functions of the basic parts of the digestive system in humans.</li><li>Identify the different types of teeth in humans and their simple functions.</li><li>Construct and interpret a variety of food chains, identifying producers, predators and prey.</li></ul> | <ul style="list-style-type: none"><li>Describe the changes as humans develop to old age.</li><li>Describe the key stages in the growth and development of humans.</li><li>Recall some of the changes experienced in puberty.</li><li>Investigate the gestation periods of other animals in comparison to humans including the length and mass.</li><li>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</li><li>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</li><li>Describe the ways in which nutrients and water are transported within animals, including humans.</li></ul> |
| Plants                   | <ul style="list-style-type: none"><li>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</li><li>Identify and describe the basic structure of a variety of common flowering plants, including trees (recognise that flowering plants have roots, stems, leaves, and flowers and recognise that trees have roots, a trunk, branches, and leaves).</li><li>Observe and describe how seeds and bulbs grow into mature plants</li><li>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</li></ul>                                                                                                                                                                                                                                                                             | <ul style="list-style-type: none"><li>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</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 plant</li><li>Investigate the way in which water is transported within plants</li><li>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</li></ul>                                                                             | <ul style="list-style-type: none"><li></li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



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| Living Things and their Habitats | <ul style="list-style-type: none"><li>Identify the differences between things that are living, dead, and things that have never been alive, using some of the 7 life processes (movement, respiration, sensitivity, growth, reproduction, excretion, nutrition).</li><li>Identify most living things and their habitats to which they are suited</li><li>Describe how different habitat provide for the basic needs of different kinds of animals and plants, and how they depend on each other</li><li>Identify and name a variety of plants and animals in their habitats, including microhabitats</li><li>Describe how animals obtain their food from plants and other animals, using a simple food chain, and identify and name different sources of food.</li></ul> | <ul style="list-style-type: none"><li>Know the 7 life processes of living organisms.</li><li>Use the 7 life processes to determine if an organism is living.</li><li>Describe similarities and differences between examples of plants and animals.</li><li>Know the features of mammals, amphibians, fish, birds, reptiles (vertebrates) and invertebrates.</li><li>Group living things in a variety of ways using key characteristics.</li><li>Use classification keys to help group and identify a variety of living things in their local and wider environment.</li><li>Recognise that environments can change, and this can sometimes pose dangers to living things.</li><li>Understand that human actions can impact on the environment and suggest some solutions to the issues.</li></ul> | <ul style="list-style-type: none"><li>Describe the differences in the life cycles of a mammal, amphibian, insect and a bird.</li><li>Describe the life process of reproduction in some plants and animals</li><li>Use prior knowledge of parts of a flower to explain the stages involved in the reproduction process (pollination, fertilisation and germination).</li><li>Explain that sexual reproduction requires both male and female DNA (sex cells) and will produce offspring that are similar, but not identical to the parents.</li><li>Explain that asexual reproduction will produce offspring that is identical to the parent and only requires on parent e.g., bulbs, tubers and runners.</li><li>Explain the process of metamorphosis using frogs and butterflies as examples.</li><li>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</li><li>Give reasons for classifying plants and animals based on specific characteristics</li></ul> |
| Evolution and Inheritance        | n/a                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | n/a                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <ul style="list-style-type: none"><li>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li><li>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li><li>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |



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Physics

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| Earth and Space    | <ul style="list-style-type: none"><li>Name the 4 seasons and say when in the year they occur.</li><li><b>Observe changes across the 4 seasons.</b></li><li><b>Observe and describe weather associated with the seasons.</b></li><li>Can describe other features that change throughout the year that are caused by the change in weather e.g. numbers of mini beasts found outside, seed and plant growth, leaves on trees, clothes worn by people, hibernation and migration.</li><li>Explain how day light (from the sun rising to sun setting) length varies across the year (longer in summer, shorter in winter).</li></ul> | <ul style="list-style-type: none"><li><b>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</b></li><li><b>Describe in simple terms how fossils are formed when things that have lived are trapped within rock</b></li><li><b>Recognise that soils are made from rocks and organic matter</b></li></ul>                                                                                                                                                                                                                                                                                                                             | <ul style="list-style-type: none"><li><b>Describe the movement of the Earth around the sun in the solar system (a full orbit is 365 days, the Earth spins on its axis every 24 hours).</b></li><li><b>Describe the movement of the moon relative to the Earth (lunar cycles take 28 days, the lunar cycle and eclipses).</b></li><li><b>Describe the sun, Earth and moon as approximately spherical bodies</b></li><li><b>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</b></li><li>Name the planets of Our Solar System and understand Our place in Our universe</li><li>Describe what meteors are, and name other objects in space.</li></ul> |
| Electricity        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <ul style="list-style-type: none"><li><b>Identify common appliances that run on electricity</b></li><li><b>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</b></li><li><b>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</b></li><li><b>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</b></li><li><b>Recognise some common conductors and insulators, and associate metals with being good conductors</b></li></ul> | <ul style="list-style-type: none"><li><b>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</b></li><li><b>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</b></li><li><b>Use recognised symbols when representing a simple circuit in a diagram</b></li></ul>                                                                                                                                                                                                                                                                |
| Magnets and Forces | <ul style="list-style-type: none"><li>Observe and describe different ways of moving</li><li>Identify similarities and differences between movement of different objects</li><li>Make suggestions about how objects can be made to move</li><li>Explore contact forces (push and pull)</li><li>Explore how objects sink or float</li><li>Know that it is not only ourselves that make things move and ask questions about what is causing movement</li></ul>                                                                                                                                                                      | <ul style="list-style-type: none"><li><b>Compare how things move on different surfaces</b></li><li><b>Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance</b></li><li><b>Observe how magnets attract or repel each other and attract some materials and not others</b></li><li><b>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</b></li><li><b>Describe magnets as having 2 poles</b></li><li><b>Predict whether 2 magnets will attract or repel each other, depending on which poles are facing</b></li></ul>                               | <ul style="list-style-type: none"><li><b>Explain that unsupported objects fall towards the earth because of the force of gravity acting between the earth and the falling object</b></li><li><b>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</b></li><li><b>Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect</b></li></ul>                                                                                                                                                                                                                                                              |
| Light and Seeing   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <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><b>Notice that light is reflected from surfaces</b></li><li><b>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</b></li><li><b>Recognise that shadows are formed when the light from a light source is blocked by an opaque object</b></li><li><b>Find patterns in the way that the size of shadows change</b></li></ul>                                                                                                                                                                            | <ul style="list-style-type: none"><li><b>Recognise that light appears to travel in straight lines</b></li><li><b>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</b></li><li><b>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</b></li><li><b>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</b></li></ul>                                                                                                                                                |



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| Sound |  | <ul style="list-style-type: none"><li>• Identify how sounds are made, associating some of them with something vibrating</li><li>• Recognise that vibrations from sounds travel through a medium to the ear</li><li>• Find patterns between the pitch of a sound and features of the object that produced it</li><li>• Find patterns between the volume of a sound and the strength of the vibrations that produced it</li><li>• Recognise that sounds get fainter as the distance from the sound source increases</li></ul> |  |
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| Chemistry          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| Everyday Materials | <ul style="list-style-type: none"><li>• Correctly identify and name an object and the material from which it is made.</li><li>• Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.</li><li>• Describe the simple physical properties (see vocabulary appendix for examples) of a variety of everyday materials.</li><li>• Compare and group a variety of everyday materials based on their simple physical properties.</li><li>• Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for uses.</li><li>• Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</li></ul> | <p>States of Matter</p> <ul style="list-style-type: none"><li>• Compare and group materials together, according to whether they are solids, liquids or gases</li><li>• 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)</li><li>• identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li><li>•</li></ul> | <ul style="list-style-type: none"><li>• 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</li><li>• Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li><li>• Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li><li>• Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li><li>• Demonstrate that dissolving, mixing and changes of state are reversible changes</li><li>• 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</li></ul> |