St Benedict's Catholic Primary School
Progress in Skills: Science

With Jesus, we learn, love and laugh

	Autumn	Spring	Summer
Foundation	**Children will visit these skills throughout the foundation stage** Use all their senses to explore natural materials Understand the effect of the changing seasons on the natural world around them Make collections of materials and objects with similar properties Talk about things they observe Plant seeds and care for growing plants Understand some of the features of the life cycle of a plant/animal Begin to understand the need to care for the natural environment and living things Notice the differences between materials and changes they notice		
Year 1	**Seasonal Changes** Observe changes across the four seasons & associated weather and how day length varies *Key vocabulary: Summer, Spring, Autumn, Winter, sun, day, moon, night, light, dark* **Materials** • Identify, name, describe properties and group everyday materials based on their properties *Key vocabulary: Wood, metal, plastic, glass, paper, water, metal, hard, soft, bendy, rough, smooth*	**Seasonal changes** • Observe changes across the four seasons & weather • Look at how day length varies in different seasons	**Seasonal Changes** • Observe changes across the four seasons & associated weather & how day length varies **Humans & Animals** • Identify common types of animals, including fish, amphibians, reptiles birds and mammals • Identify & name carnivores, herbivores & omnivores • Describe & compare the structure of a variety of animals • Identify & label basic parts of the body and know which part is associated with each sense *Key vocabulary: Fish, reptiles, mammals, birds, amphibians, herbivore, omnivore, carnivore, leg, arm, elbow, head, ear, nose back, wings, beak* **Plants** • Identify & name a variety of common wild & garden plants, deciduous & evergreen trees • Identify & describe basic structure of common flowering plants, including trees. Key vocabulary: Deciduous, evergreen trees, leaves, flowers, blossom, petals, fruit, roots, bulb, seed, trunk, branches, stem
Working Scientifically	• Asking simple questions and recognising that they can be answered in different ways • Observing closely, using simple equipment and measurement • Performing simple tests		

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<tr><td>in Year 1 & 2</td><td colspan="3">

Identifying and classifying
Using their observations and ideas to suggest answers to questions
Gathering, recording and communicating data and findings to help in answering questions
Use scientific language and read & spell age –appropriate scientific vocabulary
Begin to notice patterns and relationships

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<tr><td>Year 2</td><td>
Living things & Habitats

Explore & compare the differences between living, dead and things that have never been alive
Identify that most living things live in habitats to which they are suited
Describe how different habitats provide for the basic needs of different animals and plants, and how they depend on each other
Identify & name a variety of plants & animals in their habitats, including micro-habitats
Describe how animals obtain their food from plants and other animals
Understand a simple food chain and identify and name different sources of food

Key vocabulary: Living, dead, habitat, energy, food chain, predator, prey, woodland, pond, desert
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Materials

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 changes by squashing, bending, twisting and stretching

Key vocabulary: hard, soft, stretchy, stiff, shiny ,dull, rough, smooth, bendy, waterproof, absorbent, opaque, transparent, brick, paper, fabrics, squashing, bending, twisting, stretching, elastic, foil

Plants

Observe & describe how seeds & bulbs grow into mature plants
Find out & describe how plants need water, light & suitable temperature to grow & stay healthy

Key vocabulary: seeds, bulbs, water, light, temperature, growth
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Animals including Humans

Notice that animals, including humans have offspring which grow into adults
Find out about and describe the basic needs of animals, including humans for survival (water, food & air)
Describe importance for humans of exercise, amounts & types of food , and hygiene

Key vocabulary: survival, water, air, food, adult, baby, offspring, kitten, calf, puppy, exercise, hygiene
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<tr><td>Year 3</td><td>
Rocks

Compare & group together different kinds of rocks on the basis of their appearance and simple physical properties
Describe in simple terms how fossils are formed when things that have lived are trapped within rock
Recognise that soils are made from rocks and organic matter

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Forces & Magnets

Compare how things move on different surfaces
Notice that some forces need contact between two objects, but magnetic forces can attract at a distance
Observe how magnets attract or repel each other and attract some materials and nor others

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Light

Recognise that they need light in order to see things and that dark is the absence of light
Notice that light is reflected from surfaces
Recognise that light from the sun can be dangerous and that there are ways to protect their eyes

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	(plant bulbs/seeds to observe throughout the seasons) *Key vocabulary: Fossils, soils, sandstone, granite, marble, pumice, crystals, absorbent*	• Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials • Describe magnets as having two poles • Predict whether two magnets will attract or repel each other, depending on which poles are facing *Key vocabulary: Magnetic, force, contact, attract, repel, friction, poles, push, pull* **Animals including humans (movement & nutrition)** • Identify that animals, including humans, need the right types and amounts of nutrition, and that they cannot make their own food; they get nutrition from what they eat. • Identify that humans and some animals have skeletons and muscles for support, protection and movement. *Key vocabulary: Movement, muscles, bones, skull, nutrition, skeletons*	• Recognise that shadows are formed when the light from a source is blocked by a solid object • Find patterns in the way that the size of the shadows change *Key vocabulary: Light, shadows, mirror, reflective, dark, reflection* **Plants** • Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers • Explore the requirements for 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 planta • Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation & seed dispersal. *Key vocabulary: Air, light, water, nutrients, soil, reproduction, transportation, dispersal, pollination, flower*
Working scientifically in Y3&4	• Making decisions, asking relevant questions and using different types of scientific enquiries to answer them • Setting up simple practical enquiries, comparative and fair tests • Making systematic and careful observations using notes and simple tables • Taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers • Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions • Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables • Reporting on findings from enquiries, using relevant scientific language, including oral and written explanations, displays or presenting of results and conclusions • Using results to draw simple conclusions, make predictions foe new values, suggest improvements and raise further questions • Identifying differences, patterns, similarities or changes related to simple scientific ideas and processes • Using straightforward scientific evidence to answer questions or to support their findings • Begin to look for naturally occurring patterns and relationships • Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations		

Year 4

Electricity

- Identify common appliances that run on electricity
- Construct a simple series circuit, identifying/naming its basic parts, including cell, wire, bulb, switch and buzzer
- Use their circuits to create simple devices
- Draw the circuit as a pictorial representation ,not necessarily using conventional circuit symbols)
- Learn about precautions for working safely with electricity
- Identify whether or not a lamp will light in a simple series circuit
- Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.
- Recognise some common conductors and insulators, and associate metals with being good conductors.

Key vocabulary: cells, wires, bulbs, switches, battery, circuit, series, conductors, insulators

Living Things & Habitats

- 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 danger to living things

Key vocabulary: vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, snails, slugs, worms, spiders, insects, environment, habitats

States of Matter

- Explore a variety of everyday materials and develop simple descriptions of the states of matter
- 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
- Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature

Key vocabulary: Solid, liquid, gas, evaporation, condensation, particles, temperature, freezing, heating

Sound

- 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 the strength of the vibrations 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

Key vocabulary: Volume, vibration, wave, pitch, tone, speaker

Animals including humans

- 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

Key Vocabulary: Mouth, tongue, teeth, oesophagus, stomach, small intestine, large intestine, herbivore, carnivore, canine, incisor, molar

Working scientifically in Y5 & 6

- Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- Taking measurements using a range of scientific equipment with increasing accuracy
- Recording data and results of increasing complexity using scientific diagrams, labels, classification keys, tables and graphs
- Using tests to make predictions to set up further comparative and fair tests
- Reporting and presenting findings from their enquiries, including conclusions, causal relationships and explanations of a degree in trust, in oral and written forms such as displays/presentations.

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<tr><td></td><td colspan="3">• Identifying scientific evidence that has been used to support or refute ideas or arguments</td></tr>
<tr><td>Year 5</td><td>Earth and Space
• Describe the movement of the earth, and other planets, relative to the sun in the solar system
• Describe the movement of the moon relative to the earth
• Describe the Sun, earth and Moon as approximately spherical bodies
• Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky
Key vocabulary: Earth, moon, sun, axis, rotation, day, night, phases of the moon, star, constellation</td><td>Properties & Changes of Materials
• Compare & group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical & thermal), and response to magnets
• Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution
• Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating
• Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including wood, metal & 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 bicarb
Key vocabulary: Hardness, solubility, transparency, conductivity, magnetic, filter, evaporation, dissolving, mixing

Forces and Magnets
• Explain that unsupported objects fall forwards towards the earth because of the force of gravity acting between the earth and the falling object
• Identify the effects of air resistance, water resistance and friction, that act between moving surfaces
• Recognise that some mechanisms, including levers, pulleys & gears, allow a smaller force to have a greater effect
Key vocabulary: Air resistance, water resistance, friction, gravity, Newton, gears, pulleys</td><td>Animals Including humans
• Describe the changes as humans develop to old age
Key vocabulary: foetus, embryo, womb, gestation, baby, toddler, teenager, elderly, growth, development, puberty

Living Things & Habitats
• Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird
• Describe the life process of reproduction in some plants and animals
Key vocabulary: Mammal, reproduction, insect, amphibian, bird, offspring</td></tr>
<tr><td>Year 6</td><td>Electricity</td><td>Light</td><td>Animals including humans</td></tr>
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	• Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells 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 *Key Vocabulary: Cells, wires, bulbs, switches, buzzers, battery, circuit, series, conductors, insulators, amps, volts, cell* **Evolution & Inheritance** • Recognise that living things have changed over time and that fossils provide information about living things that inhabited the earth millions of years ago. • Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution *Key Vocabulary: Fossils, adaptation, evolution, characteristics, reproduction, genetics*	• 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 object that casts them *Key vocabulary: Refraction, reflection, light, spectrum, rainbow, colour*	• Identify & 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 *Key vocabulary: Circulatory, heart, blood vessels, veins, arteries, oxygenated, deoxygenated, valve, exercise, respiration* **Living things & Habitats** • Describe how living things are classified into broad groups according to common observable characteristics, based on similarities and differences, including micro-organisms, plants & animals • Give reasons for classifying plants & animals based on specific characteristics *Key Vocabulary: Classification, vertebrates, invertebrates, micro-organisms, amphibians, reptiles, mammals, insects*