ST AIDAN'S CURRICULUM OVERVIEW
Science Progression Map

Science skills should be taught when linked to projects where possible to ensure real world application.

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants	Know some names of plants. Begin to say how they are different from each other. Start to describe the features of plants. 30-50 months- Can talk about some of the things they have observed eg plants, natural and found objects.	Know some names of plants. Begin to say how they are different from each other. Start to describe the features of plants. ELG-Looks at similarities ,differences, pattern and change. Observe plants and explain why some things occur and talk about changes.	Identify and name a variety of common plants (including garden plants, wild plants and trees and those that are classified as deciduous and evergreen). Describe basic structure of common plants (including root, stem, leaves and flowers).	Observe and describe how seeds and bulbs grow into mature plants. Describe how plants need water, light, and suitable temp to grow and stay healthy.	Identify/describe the functions of different parts of flowering plants (inc. roots, stem/trunk, leaves and flower). Identify requirements of plants for life and growth and how they vary from plant to plant (air, light, water, nutrients from soil and room to grow). Investigate the way in which water is transported within plants. Explore the part that flowers play in the life cycle of flowering plants (inc. pollination, seed formation and seed dispersal).	N/A	N/A	N/A
Animals including humans	30-50 months Observe and describe features of animals and plants. Know that animals and plants are living Say how animals and plants are different.	Observe and describe features of animals and plants. Know that animals and plants are living Say how animals and plants are different. ELG-Can talk about similarities and differences in relation to living things and animals. Observe animals and talk about changes.	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)	Understand that animals, including humans, have offspring that grow into adults. Find out and describe the basic needs of animals for survival (water, food, air). Describe the importance of exercise, eating the right amounts of food and hygiene for humans.	Identify and describe how animals, including humans, need the right types and amounts of nutrients, that they cannot make their own food but that they get nutrients from what they eat. Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	Describe the simple functions of the basic parts of the digestive system in humans. Identify different types of teeth in humans and their simple functions. Construct and interpret a variety of food chains, identifying producers, predators, prey, herbivores, carnivores and omnivores. ***Explain how a feeding relationship occurs in a variety of habitats.***	Describe the changes as humans develop to old age.	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

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals including humans (contd)			Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense					
Living things and their habitats	30-50 months Talk about the features of their immediate environment Say how environments vary from one to another	ELG- Children know about similarities and differences in relation to places and living things. Observe and explain why some things occur and talk about changes.	N/A	Explore and compare the differences between things that are living, dead and things that have never been alive. Identify that most living things live in habitats that they are suited to. 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 (inc. microhabitats). Describe how animals get their food from plants and other animals (simple food chain). Identify and name different sources of food.	N/A	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 the local and wider environment. Recognise that environments can change and that this can sometimes pose dangers to living things.	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life processes of reproduction in some plants and animals.	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences (inc. micro-organisms, plants and animals).
Materials	30-50 months Begin to say similarities and differences between materials.	ELG- Begin to say similarities and differences between materials.	Distinguish between an object and the material from which it is 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.	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 quashing, bending, twisting and stretching.	**Rocks** 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 rock Recognise that soils are made from rocks and organic matter	**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 (°C)	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 Know that some materials will dissolve in liquid to form a solution, and describe how to	N/A

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Materials (contd)			Compare and group together a variety of everyday materials on the basis of their simple physical properties.			Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	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 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	
Light and sound	N/A	N/A	N/A	N/A	**Light** Understand that light is reflected from surfaces. Recognise that shadows are formed when the light from a light source is blocked by a solid object. Investigate and find patterns in the way the size of a shadow changes.	**Sound** Identify and name 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	N/A	**Light** 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 of from light sources to objects and then our eyes.

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Light and sound (contd)						vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increases.		Using the idea that light travels in straight lines, explain why shadows have the same shape as the object that cast them. **Explain that light can be broken into colours and different colours can be combined to appear as a new colour.**
Earth and Space	N/A	ELG- Talk about similarities and differences in relation to places. Talk about features of their own immediate environment and how environments might vary from one another eg Space.	N/A	N/A	N/A	N/A	Describe the movement of 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.	N/A
Forces and Magnets	N/A	N/A	N/A	N/A	Compare how things move on different surfaces Notice that some forces need contact between 2 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	N/A	Explain that unsupported objects fall towards the Earth because of the force of gravity (drag force). Identify the effect of gravity, air resistance, water resistance and friction that act between moving surfaces. Know how to measure the size of a force using Newtons. Recognise that some mechanisms (inc. levers, pulleys and gears) allow a smaller force to have a greater effect.	N/A

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Forces and Magnets (contd)					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			
Electricity	N/A	N/A	N/A	N/A		Identify common appliances that run on electricity. Construct a simple series circuit, identifying and naming its basic parts (inc. batteries, wires, bulbs, switches and buzzers). Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple circuit. Recognise that some common conductors and insulators and associate metals with being good conductors.		Associate the brightness of a lamp or the volume of a buzzer and the voltage of batteries (cells) used in the circuit. Compare and give reasons for variations in how components function (inc. the brightness of a bulb, loudness of buzzers and position of on/off switches). Use recognised symbols when representing a simple circuit diagram knowing the names of all components. Identify what causes a short circuit or a circuit to fuse.
Seasonal Changes	30-50 months. Comments and asks questions about aspects of their familiar world eg natural world/weather.	ELG- Talks about features of their own environment and how it might vary from one another.	Observe changes across the 4 seasons Observe and describe weather associated with the seasons and how day length varies.					

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Evolution and 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.

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working Scientifically *(to be delivered through teaching of subject content and not to be taught separately)*	N/A	Ask simple questions and recognising that they can be answered in different ways. Observe closely, using simple equipment. Perform simple tests. Identifying and classifying. Use observations and ideas to suggest answers to questions. Gather and record data to help in answering questions.	Ask simple questions and recognising that they can be answered in different ways. Observe closely using simple equipment. Perform simple tests and evaluate the findings. Identify and classify. Record findings: drawings, diagrams, photographs, simple prepared formats, such as tables and charts, tally charts and displays.	Observe closely using simple equipment. Perform simple tests, make predictions, measure and evaluate findings. Identify and classify. Record findings: drawings, diagrams, photographs, simple prepared formats, such as tables and charts, tally charts and displays.	Ask relevant questions using different types of scientific enquiries to answer. Set up simple practical enquiries, comparative and fair tests. Begin to make accurate measurements using standard units (inc. data loggers). Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables. Report findings from investigations including written explanations of results and conclusions, displays or presentations. Use results to draw simple conclusions and suggest improvements and predictions for setting up further tests. Look for similarities and differences or changes in data in order to draw conclusions. Use straightforward scientific language to answer questions or to support findings.	Ask relevant questions using different types of scientific enquiries to answer. Set up simple practical enquiries, comparative and fair tests using a range of equipment. Begin to make accurate measurements using standard units (inc. data loggers and thermometers). Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables. Report findings from investigations including oral and written explanations of results and conclusions, displays or presentations. Use results to draw simple conclusions, make predictions for new values and suggest improvements. Use straightforward scientific evidence to answer questions or to support findings (using secondary sources).	Plan different types of scientific enquiries to answer questions, including recognizing and controlling variables where necessary. Take measurements, using a range of equipment, with increasing accuracy, taking repeat readings when appropriate. Record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Use test results to make predictions to set up further comparative tests. Report and present findings from enquiries, including conclusions, causal relationships and explanations of degrees of trust in tests, in oral and written forms.	Plan different types of scientific enquiries to answer questions, including recognizing and controlling variables where necessary. Take measurements, using a range of equipment, with complete accuracy, taking repeat readings when appropriate. Record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Continue to use test results to make predictions to set up further comparative tests. Report and present findings from enquiries, including conclusions, causal relationships and explanations of degrees of trust in tests, in oral and written forms. Identify scientific evidence that has been used to support or refute ideas or arguments.