St Chad's CofE Nursery and Infant School - Science Progression Map

Aims

Aims The national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

	Nursery	Reception	Key Stage 1
Statutory Content (Early Years Framework / National Curriculum)	**Statutory ELG: The Natural World** Children at the expected level of development will: • Explore the natural world around them, making observations and drawing pictures of animals and plants; • Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.		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. 'Working scientifically' is described separately in the programme of study, but must always be taught through and clearly related to the teaching of substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

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Progression Criteria	Nursery Scientist	Reception Scientist	Year 1 Scientist	Year 2 Scientist
	• Be curious and interested to explore new and familiar experiences in nature: grass, mud, puddles, plants, animal life • Notice detailed features of objects in their environment. • Can talk about some of the things they have observed such as plants, animals, natural and found objects.	**Working scientifically** • Comment and ask questions • Talk about why things happen and how things work • Compare similarities and differences • Make observations and talk about changes	**Working scientifically** • Ask simple questions and recognise that they can be answered in different ways • Observe closely, use simple equipment • Perform simple tests • Identify and classify • Use observations and ideas to suggest answers to questions • Gather and record data to help answer questions	
		Plants • Develop an understanding of growth, decay and changes over time. • Show care and concern for living things in the environment. • Make observations of plants and explain why some things occur and talk about changes. •	**Plants** • 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.	**Plants** • Observe and describe how seeds and bulbs grow into mature plants f • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy
		Seasonal changes • Understand the processes and changes in the natural world including seasons. • Begin to understand the effect our behaviour can have on the environment.	**Seasonal changes** • Observe and know about the changes in the seasons. • Observe and describe weather associated with the seasons and how day length varies.	**Living things and their habitats** • 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 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 microhabitats. • 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.
		Animals • Make observations of animals and draw pictures.	**Animals, including humans** • 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.	**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 and air). • Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.

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		Everyday materials • Know about similarities and differences in relation to objects and materials. • Talk about why things happen and how things work.	**Everyday 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 compare and group together a variety of everyday materials on the basis of their simple physical properties.	**Uses 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 squashing, bending, twisting and stretching.
Core Vocabulary	Calm still quiet Listen look Sound smell Puddles trees grass concrete pebbles Recycle plant care Mound path wall weather Explore mix change Chimes streamers windmills bubbles (wind)	Freeze melt change grow dissolve float sink Hard soft bumpy hot cold spikey sticky furry soft Tree bark flower petal leaf shapes Scent colour shape of flowers Attracting bees Wormery Bird feeding high and low Microenvironment conditions Care look after Vegetable beds Plant fat long tall short Leaf stem petal flower seed herb Water light soil pot sun garden Vegetable fruit Sea animas farm animals arctic animals safari animals woodland animals **Working scientifically** Look listen watch same different because	Material wood plastic glass metal water rock paper shiny dull rough smooth bendy waterproof absorbent Spring Summer Autumn Winter day and night light and dark fish reptile mammal bird amphibian herbivore carnivore omnivore Leg knee arm elbow hand head ear mouth nose eye teeth hair face touch taste hear see smell Wings beak tail feathers fur scales skin Flowering plant, bush and tree, vegetable deciduous and evergreen leaf flower petal fruit blossom bud root bulb seed trunk branch stem **Working scientifically** question, find out or observe magnifying glass, (egg) timer sort and group test measure	Paper cardboard brick fabric (textiles) wool foil elastic rubber squash bend twist stretch waterproof absorbent transparent translucent opaque Seed bulb water light temperature germination Air food diet exercise hygiene Lifecycle fish reptile mammal bird amphibian living or dead food chain predator and prey, scavenger habitat- woodland, pond, desert, ocean (seashore) rainforest **Working scientifically** observe and compare identify and classify patterns time and temperature length, height, weight table or chart