



Toddington St. George C of E School Curriculum Intent – Knowledge Builder

Science - Primary Curriculum.

Subject Intent Statement:

At Toddington St George we encourage children to be inquisitive throughout their time at the school and beyond. The Science curriculum fosters a healthy curiosity in children about our universe and promotes respect for the living and non-living things in their environment. We believe science encompasses the acquisition of knowledge, concepts, skills and positive attitudes. Throughout the programmes of study, the children will acquire and develop the key knowledge that has been identified within each unit and across each year group. The key knowledge identified by each year group is informed by the national curriculum and builds upon the skills learned in previous years. Key skills are also mapped for each year group and are progressive throughout the school. These too ensure systematic progression to identified skills end points which are in accordance with the Working Scientifically skills expectations of the national curriculum. The curriculum is designed to ensure that children are able to acquire key scientific knowledge through practical experiences; using equipment, conducting experiments, building arguments and explaining concepts confidently.

Year 1	Year 2	Year 3	Year 4
Skills Based Learning – Working Scientifically:	Skills Based Learning – Working Scientifically:	Skills Based Learning – Working Scientifically:	Skills Based Learning – Working Scientifically:
Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment. Performing simple tests. Identifying and classifying. Using their observations and ideas to suggest answers to questions.	Asking simple questions and recognising that they can be answered in different ways. Observing closely, using simple equipment. Performing simple tests. Identifying and classifying. Using their observations and ideas to suggest answers to questions.	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 and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	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 and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.

<p>Gathering and recording data to help in answering questions.</p>	<p>Gathering and recording data to help in answering questions.</p>	<p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p> <p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Using straightforward scientific evidence to answer questions or to support their findings.</p>	<p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p> <p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Using straightforward scientific evidence to answer questions or to support their findings.</p>
<p>Knowledge Based Learning:</p>	<p>Knowledge Based Learning:</p>	<p>Knowledge Based Learning:</p>	<p>Knowledge Based Learning:</p>
<p>Animals: Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p> <p>Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates.</p>	<p>Animals: Notice that animals including humans have offspring which grow into adults.</p> <p>Find out about the basic needs of animals, including humans, for survival (which are water, food and air).</p> <p>Describe the importance for humans of exercise and eating the right amounts of different types of food.</p>	<p>Animals, including Humans: Explain that animals, 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.</p> <p>Identify that humans and some animals have skeletons and muscles for support and movement.</p>	<p>Animals, including humans: Identify and name the basic parts of the digestive system in humans.</p> <p>Identify the simple functions of the teeth and different types of teeth in humans.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>

<p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p> <p>Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, and including pets) and describe how they are suited to their environment.</p>			
<p>Everyday materials:</p> <p>Distinguish between an object and the material from which it is made.</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.</p> <p>Describe the simple physical properties of a variety of everyday Materials.</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>	<p>Everyday Materials:</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.</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>Plants:</p> <p>Identify and name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen.</p> <p>Describe the basic structure of a variety of common plants including roots, stem, leaves and flowers.</p>	<p>Plants:</p> <p>Describe how seeds and bulbs grow into mature plants.</p> <p>Describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>	<p>Plants:</p> <p>Identify and describe the functions of different parts of plants: roots, stem, leaves and flowers.</p> <p>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.</p>	

		<p>Investigate the way in which water is transported within plants.</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>	
	<p>Living things:</p> <p>Explore and compare the differences between things that are living, dead, and things that have never been alive.</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>Identify and name a variety of plants and animals they study in a variety of habitats, including microhabitats.</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>Living things:</p> <p>Recognise that living things can be grouped in a variety of ways.</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p>
Learning Unique to Year 1:	Learning Unique to Year 2:	Learning Unique to Year 3:	Learning Unique to Year 4:
<p>Seasonal Changes:</p> <p>Observe changes across the seasons.</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>			
		Rocks:	

		<p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>Recognise that soils are made from rocks and organic matter.</p>	
		<p>Forces and Magnets:</p> <p>Compare how things move on different surfaces.</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others.</p> <p>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.</p>	<p>Electricity:</p> <p>Identify common appliances that run on electricity.</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <p>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.</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p>
		<p>Light:</p> <p>Recognise that they need light in order to see things and that dark is the absence of light.</p>	

		<p>Notice that light is reflected from surfaces.</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by a solid object.</p> <p>Find patterns in the way that the size of shadows change.</p>	
			<p>Sound:</p> <p>Identify how sounds are made, associating some of them with something vibrating.</p> <p>Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>Find patterns between the pitch of a sound and features of the object that produced it.</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</p>