

The Science Curriculum at John T Rice Infant and Nursery School

KS1 Progression





Our Science Curriculum Intent



At John T Rice Infant and Nursery School, we want our children to be brave and exciting scientists, who investigate and explore the world around them with a curious and imaginative eye. They will gain an understanding of scientific processes and the implications of science, today and in the future. It should help to provoke and provide answers to questions about the Scientific aspects of the world.

Our Curriculum Drivers.

As a school we have developed 5 curriculum drivers that shape our curriculum, bring out the aims and values of our school and respond to the needs of our school community.

Communication Skills	Mental Health and Resilience	The Wider World
	 	
Our children will be able to communicate effectively with adults and peers using a range of vocabulary and leave us being able to read, write and have a good mathematical knowledge.	Our children will understand how to lead a healthy lifestyle and be mindful of their mental well-being. They will grow as independent and resilient learners	Our children will understand about a range of multi-cultural and diverse communities to support them in becoming a global citizen.

A Scientist leaving John T Rice Infant and Nursery School will have an enquiring mind and a strong understanding of the world around them. They will have acquired the specific skills and knowledge to help them think scientifically and the confidence to explore and investigate for themselves.

Progression Document: SCIENCE

EYFS ELG: The Natural world	National Curriculum Subject Content	
EYFS	YEAR 1	YEAR 2
<p>Children at the expected level of development will:-</p> <ul style="list-style-type: none"> 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. 	<p><u>Working scientifically</u> During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> 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 gathering and recording data to help in answering questions 	<p><u>Working scientifically</u> During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> 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 gathering and recording data to help in answering questions
	<p><u>Plants</u> Pupils should be taught to:</p> <ul style="list-style-type: none"> 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. 	<p><u>Plants</u> Pupils should be taught to:</p> <ul style="list-style-type: none"> observe and describe how seeds and bulbs grow into mature plants find out and describe how plants need water, light and a suitable temperature to grow and to stay healthy.

	<p><u>Animals, including humans</u> Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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. 	<p><u>Animals, including humans</u> Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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
	<p><u>Everyday materials</u> Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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 	<p><u>Uses of everyday materials</u> Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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


	<p><u>Seasonal changes</u> Pupils should be taught to:</p> <ul style="list-style-type: none"> observe changes across the 4 seasons observe and describe weather associated with the seasons and how day length varies. 	<p><u>Living things and their habitats</u> Pupils should be taught to:</p> <ul style="list-style-type: none"> 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
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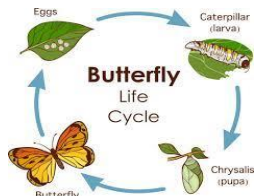


Science Themes over the year						
Cycle A and Cycle B						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Working Scientifically Seasonal changes					
Yr1	Animals including Humans	Everyday materials	Everyday materials	Plants	Living things and their habitats	Animal including humans

Science Themes over the year						
Cycle A and Cycle B						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Working Scientifically Seasonal changes					
Yr2	Animals including humans	Uses of everyday materials	Uses of everyday materials	Plants	Living things and their habitats	Animals including humans

Progression in Key Science Vocabulary		
	YEAR 1	YEAR 2
Working Scientifically	investigate, predict, question, observe, results, record, compare, test	Investigate, Scientific questioning, prediction, observe, results, measure, record, fair test, compare, identify, classify
Animals including humans	Humans, mammals, head, ears, eyes, nose, mouth, chin, neck, shoulder, chest, elbow, arm, hand, tummy, knee, leg, foot, senses, touch, taste, smell, sight, and hearing	Diet, food, drink, water, dehydrate, nutrition, food groups, carbohydrates, dairy and alternatives, proteins, fruit and vegetables, fats and oils energy, exercise, heart rate, muscles, bones, pulse, hygiene, germs, wash
Materials	Objects, materials, wood, plastic, glass, metal, water, rock, properties, hard, soft, shiny, rough, absorbent, waterproof,	Objects, materials, wood, plastic, glass, metal, water, rock, properties, hard, soft, transparent, opaque, stiff, bendy, shiny, rough, absorbent, waterproof, suitable, use, squash, bend, twist, stretch
Plants	Plant, flower, stem, leaf, roots, tulip, daffodil, rose, bluebells, foxglove, twigs, branches, roots, ash, beech, birch, maple, oak, deciduous, evergreen	Germination, warmth, air, oxygen, water, light, carbon dioxide, life cycle
Living Things and their habitats	Habitat, animals, plants, food, water, air, shelter	Habitat, animals, plants, survive, food, water, air, shelter, microhabitat, food chain, minibeast ocean, forest, river, pond, coast, desert, woodland
Seasonal changes	sun, rain, cloudy, partly cloudy, windy, snow, ice, seasons, spring, summer, autumn, winter, day, night, moon, shadow, daylight	

Skills and Knowledge progression

Breadth of Study	Year 1	Year 2
<p>Working Scientifically</p> 	<ul style="list-style-type: none"> To be able to talk about what they can see, touch, smell, hear or taste and use the senses to help them answer questions. To be able to begin to suggest how to find things out. To be able to use some scientific words to describe what they have seen. To be able to begin to record their findings as a class group. To be able to compare two things. To be able to carry out a simple test. To be able to begin to say whether things happened as they expected. To be able to use text and pictures to record their observations. To be able to measure using simple equipment. To be able to identify and classify things they observe. 	<ul style="list-style-type: none"> To be able to think of scientific questions to ask. To be able to suggest how to find things out. To be able to answer scientific questions. To be able to measure using mathematical equipment. To be able to explain what they have found out. To be able to record their findings using standard units. To be able to compare several things. To carry out a simple fair test and explain why it might not be fair to compare two things. To be able to say whether things happened as they expected. To be able to use text, diagrams, pictures, charts and tables to record their observations. To be able to identify and classify things they observe and be able to suggest more than one way of grouping animals and plants and explain their reasons
<p>Seasonal changes</p> 	<ul style="list-style-type: none"> To be able to observe changes across the 4 seasons. To know the names of the 4 seasons in order To be able to observe and describe weather associated with the seasons. To be able to observe and describe how day length varies 	

<p>Animals including Humans</p> 	<ul style="list-style-type: none"> To know the names of the parts of the body that they can see. To be able to draw and label the parts of the human body. To be able to identify the main parts of the human body and link them to their senses. To know the name and identify a variety of common animals – birds, amphibians, fish, reptiles, mammals. To be able to describe how an animal is suited to its environment. To know the name and identify a range of common animals that are carnivores, herbivores and omnivores. To be able to name the parts of an animal's body. To be able to compare and contrast animals. 	<ul style="list-style-type: none"> To be able to explain the basic needs of animals, including humans, for survival – water, air, food. To be able to describe why exercise, balanced diet and hygiene are important for humans. To know what animals need to survive. To be able to explain that animals grow and reproduce. To be able to explain why animals have offspring that grow into adults. To know the life cycle of some living things e.g., butterfly and frog
<p>Materials</p> 	<p>Everyday Materials</p> <ul style="list-style-type: none"> To be able to distinguish between an object and the material from which it is made. To be able to describe properties of materials using their senses. To know and explain what material an object is made from. To know the name of some everyday materials e.g., wood, plastic, metal, water and rock. To be able to sort materials into groups by a given criterion. 	<p>Uses of everyday materials</p> <ul style="list-style-type: none"> To know and understand and group natural and manmade materials. To know and understand how different materials can be used for a similar purpose and that a material can be used for different purposes. To be able to identify and compare the suitability of a variety of everyday materials including wood, paper, rock, brick, glass, metal and plastic. To be able to explore the properties of materials e.g., by squashing, bending, twisting and stretching.
<p>Plants</p> 	<ul style="list-style-type: none"> To know the names of the petals, stem, leaf, bulb, flower, seed, stem and root of a plant. To be able to describe the different parts of a plant. To be able to identify and name a range of common plants and trees. 	<ul style="list-style-type: none"> To know what plants, need to survive. To know how seeds and bulbs grow into mature plants. To be able to observe and explain how seeds and bulbs grow into mature plants. To find out how plants need water, light and a suitable temperature to grow and stay healthy. To know how plants need water, light and a suitable temperature to grow and stay healthy.
<p>Living things</p>	<ul style="list-style-type: none"> To know and understand that most living things live in a habitat. 	<p>Living things and their habitats</p>



- To begin to know how different habitats provide the basic needs of different kinds of animals and plants.
- To know and name plants and animals that live in habitats in their local environment.

- To be able to explore and compare differences between things that are living things, that are dead and that have never been alive.
- To 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.
- To identify and name a variety of plants and animals in their habitats, including micro-habitats.
- To know and 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.