



### Science Curriculum Overview

At Red Hall we are committed to offering a broad, balance and engaging curriculum. We will ensure that we have a holistic approach to school life which acknowledges links with parents, families and the wider community. This will help to develop well rounded and resilient children. At each stage, children will be equipped with the skills, knowledge and understanding to become active world citizens. Our curriculum is dynamic, engaging and immersed in rich learning opportunities.

Use of the big question at start of our units, enables children to recall previous learning and vocabulary and show their current level of understanding. It also helps to plan and address misconceptions.

#### Intent:

- We believe that pupils should be engaged as learners at many levels through linking ideas with practical experience which develops the skills of enquiry, observation, research, experimentation, use of apparatus, measuring and checking results, making comparisons and communicating results and findings.
- We aim to foster open minded thinking and encourage children to make links in their knowledge and understanding. This promotes discussion and allows children to express their reasoning to the rest of the class.
- In science, we aim to stimulate and excite pupils' curiosity about changes and events in the world, and to enable them to satisfy this curiosity with understanding. We want children to develop lifelong curiosity and interest in the sciences. We link pupils' understanding with scientific thought and allow them to develop a greater understanding of the world in which we live and their responsibility to ensure its sustainability.
- We aim to embed all of our school curriculum drivers within our Science Curriculum as well as making links between other curriculum areas.
- We aim to ensure progression of knowledge, vocabulary and skills from EYFS through to year 6 so this can be built on and developed each year as well as ensuring children can recall this even in years where they do not do units.

#### Implementation:

The acquisition of key scientific knowledge is an integral part of our science lessons. A cycle of lessons for each science topic is carefully planned, using a range of resources. The progression of skills for working scientifically are developed throughout the year and a range of scientific enquiries are used to develop these skills and children's scientific knowledge. This is developed with increasing depth and challenge as the children move through year groups. We use big questions to help find out what the children can recall from previous learning and give a clear starting point. It helps to form a focus on important and useful vocabulary that is used within units. This is one of our key drivers for our curriculum: language rich. Misconceptions are addressed through the use of concept cartoons and a range of activities such as 'odd one out' and children's understanding is assessed through just checks and their final response to their big question. Activities are effectively differentiated so that all children have an appropriate level of support and challenge. Science is taught throughout school for up to two hours per week. Recaps of units previously taught are now added in throughout the year to ensure that when a unit isn't taught for several years, the children can still recall it. Children



complete meaningful investigations and hands-on activities while gaining the scientific knowledge for each unit. Other opportunities are also taken advantage of, making links to other areas of our curriculum, science trips (Botanical Gardens) as well as our everyday lives.

### Impact:

- Children will become resilient, independent and curious scientists who ask questions and find things out for themselves.
- Children who feel confident in their science knowledge and enquiry skills will be excited about science, making links between what they learn in school to real-life situations and the importance of science in the real world.
- Children will be enthusiastic and motivated scientific learners.
- Children will have an awareness of the full range of scientific careers and pathways available to them and will be keen to pursue STEM subjects at secondary school and have high aspirations.
- Children will be able to build on previous learning and recall previously taught knowledge, skills and vocabulary.
- Children will leave for secondary school equipped with the scientific knowledge and skills needed to succeed in their further education.



Nursery						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit of work	Autumn - Seasonal activities , observing changes, looking at natural objects Life cycle of a butterfly Planting bulbs	Winter Season - talk about dressing Humpty Dumpty science Melting	Seasonal activities, observing change, new life Growing grass	Transport link: cars and ramps and how things move, how does changing the surface and angle make a difference	Summer - Seasonal activities, observing change Learning about animals and their habitats Animal life cycles Planting vegetables	Matching animals to footprints/tracks Mother and baby animals Shadows Floating and Sinking
Reception						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit of work	Hygiene and hand washing.  My Family - family tree and extended family	Ramps/forces  Seasons, ice, snow		Planting and growing in school garden  Teeth and dental hygiene  Sun safety	Seasons Explore the natural world with a focus on safari animals Natural processes- ice melting, vibrations, light travel, shadows, magnets, floating & sinking	Plants and Animals Senses outdoors



Year 1						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit of work	<u>Animals including humans</u>  How can we group animals? What makes us human?  Observe and record seasonal changes	Observe and record seasonal changes	<u>Materials</u>  Why do we use different materials for different things?		<u>Plants</u>  How can we identify different plants and trees?  Observe and record seasonal changes	
Year 2						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit of work	<u>Living things and their habitats</u>  How so we know something is alive?	<u>Materials</u>  How are materials chosen in design?  Observe and record seasonal changes			<u>Plants</u>  How do seeds and bulbs grow into healthy plants?  <u>Animals including humans</u>  Why do we need to keep healthy?	



Year 3						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit of work	<u>Animals including humans</u>  How do systems inside out body work to make a healthy human?		<u>Forces and magnets</u>  How do magnets work?		<u>Plants</u>  How does each part of a plant fulfil its function?	<u>Rocks</u>  How can we classify rocks?  <u>Light</u>  How does light travel?
Year 4						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit of work	<u>Living things and their habitats</u>  How can the environment affect different groups of animals?	<u>States of matter</u>  How does temperature affect different materials?	<u>Animals including humans</u>  How is energy transferred in loving things?		<u>Electricity</u>  How does electricity travel?	<u>Sound</u>  How does sound travel?



Year 5						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit of work	<u>Earth and Space</u> How does the Earth fit into our Solar System?	<u>Living things and their habitats</u> How do different living things reproduce?	<u>Forces</u> How can we observe forces?		<u>Properties and changes of materials</u> How do we separate materials?	<u>Animals including humans</u> How do we change as we grow older?
Year 6						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit of work	<u>Living things and their habitats</u> How can we classify living things into specific groups?	<u>Electricity</u> How can circuits vary?		<u>Animals including humans</u> How do an animal's living systems work together to maintain a healthy body?	<u>Evolution and inheritance</u> How have living things evolved over time?	<u>Light</u> How do our eyes work?

