

Quadring Primary School Science Bi-Annual Overview

Specific Scientist to be focused on this term. Specific books to be focused on this term.

Specific Educational trips/visits in school this term. Specific experiments to take place this term.

KUW	Autumn Term 1	Autumn Term 2	Spring Term 3	Spring Term 4	Summer Term 5	Summer Term 6
Orchard (EYFS) Year A	Once Upon a Time & Settling in 4, 7, 8 Jack and the Beanstalk – Plants Three Little Pigs – Properties of Materials Bridge building challenge – Three Billy Goats Gruff Nature area walk – stick hunt for stick house Harvest Festival – Local environment/Job of the farmer	All About Me & Celebrations 1, 5, 6, 7, 9 Funnybones Halloween story – parts of the body Seasons investigation – Freezing & Melting Nature Area/Local environment visit – Seasonal change Nurse/Fire fighter visit in school STEM BLP Day	What is out there? 4, 6, 7, 8, 9 Tim Peake – Astronaut Planetarium in school Film cannister rocket experiment Balloon rocket experiment Big Schools Bird Watch	Growing and Changing 1, 3, 4, 5, 6, 7, 8, 9 Opticians visit in class/People Who Help Us visit in school Plant growing – vegetables in gardening area “The Tiny Seed,” “The growing Story,” “Watch Me Grow Series” – Plant growth stories British Science Week	On the farm with Peter Rabbit 2, 4, 7, 8, 9 Beatrix Potter – farmer as well as author The Tale of Jeremy Fisher – Life cycle of a frog. The tale of Mrs Tigglywinkle – Animal features Farm trip Plant growing continued – vegetables in gardening area	Our Beautiful World 1, 2, 3, 4, 5, 6, 7, 8, 9 “Handa’s Surprise” – Fruits grown in other countries. “Welcome to Our World” – Planet Earth Lifeboat Station/Aquarium trip Investigating map symbols Weather diary Grace Darling – Lighthouse Keepers Daughter
Orchard (EYFS) Year B	Fairy tales & Settling in 4, 7, 8 Harvest Festival – Local environment/Job of the farmer Nature Area/Local environment walk – Getting to know our environment “The Princess and the Pea” – Senses “The Frog Prince” – frog life cycle/adaptation Feely bag senses experiment Smell test senses experiment	People Who Help Us & Celebrations 1, 5, 6, 7, 9 Funnybones Halloween story – parts of the body Seasons investigation – Freezing & Melting Weather diary Nature Area/Local environment visit – Seasonal change Nurse/Fire fighter visit in school Florence Nightingale	Dinosaurs 2, 3, 4, 7, 8 Mary Anning – “Fossil hunter” Palaeontologist Mentos volcano eruption Dinosaur dig – digging in chalk to find fossils “Harry and the Dinosaurs” story series Big Schools Bird Watch “All About Dinosaurs” – Non-fiction dinosaur facts Dino Land/Dinosaur Adventure Trip	Plants & Mini-beasts 1, 3, 4, 5, 6, 7, 8, 9 “Jack and the Beanstalk” – Plants “The Hungry Caterpillar” – Life cycle of a caterpillar “The Enormous Turnip” – Vegetables Plant growing – vegetables in gardening area British Science Week Opticians visit in class (Always happens this time of year due to Opticians time scales)	Julia Donaldson 2, 4, 7, 8, 9 Plant growing continued – vegetables in gardening area Nature area walk – Stick hunt for Stickman “Superworm” – Animal features, Rubbish & Recycling “Stickman” – Life cycle of a tree. “A Squash and a Squeeze” – Farm animals	At the Seaside 1, 2, 3, 4, 5, 6, 7, 8, 9 Seaside/Aquarium trip “Tiddler” – Under the Seas habitat “Magic Grandad Holidays Past and Present” – Seaside holidays, how have they changed over time? Floating & Sinking experiment Grace Darling – Lighthouse Keepers Daughter

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				Plant walk around local environment	Balloon Broomstick experiment – Room on the Broom	
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Understanding the World

ELG: Past and Present

Children at the expected level of development will:

1. Talk about the lives of the people around them and their roles in society;
2. Know some similarities and differences between things in the past and now, drawing on their experiences and what has been read in class;
3. Understand the past through settings, characters and events encountered in books read in class and storytelling.

ELG: People, Culture and Communities

Children at the expected level of development will:

4. Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps;
5. Know some similarities and differences between different religious and cultural communities in this country, drawing on their experiences and what has been read in class;
6. Explain some similarities and differences between life in this country and life in other countries, drawing on knowledge from stories, non-fiction texts and – when appropriate – maps.

ELG: The Natural World

Children at the expected level of development will:

7. Explore the natural world around them, making observations and drawing pictures of animals and plants;
8. 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;
9. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

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<u>Robins (Y1/2)</u> Year A “A First Book of Nature” – used throughout the year for Seasons Season walk to Nature Area every change of season	Animals inc humans 1,3,6 Germs experiment – use of soap and temperature of water Shoe size and Height comparison – Is it always true that if you’re taller, you have bigger feet? “Six dots” – senses (touch) Louis Braille – senses Florence Nightingale – germs/humans Mary Seacole – medicine		Everyday Materials 1,3,4,5,6 Design and make our own toy – Using levers Sense of touch experiment – using adjectives “Magic Grandad Toys” – How have toys changed over time, electricity	Use of everyday materials 1,3,4,5,6 Build houses out of different materials – which works best? The Three Little Pigs – Properties of Materials Tyre investigation – how do materials affect the sue of a tyre John Boyd Dunlop – Inflatable rubber tyres	Plants 1,2,3,5,6 Joseph Banks Matthew Flinders Grow a bean in a bag experiment – stages of growth/parts of a plant Growing our own flowers/vegetables “The Global Garden” – gardens around the world/climate Belton House trip – Gardens	
<u>Robins (Y1/2)</u> Year B “A First Book of Nature” – used throughout the year for Seasons	Plants 1,2,3,5,6 Conditions of plant growth – light and dark/water and not watered (Bulb and seed – how do they differ) Cress growing experiment – measuring growth over time “All About Plants” – Plant growth David Attenborough		Living things & Habitats 1,2,3,4,5,6 Woodlouse hotel experiment – which habitat do most woodlice choose to live in? Local environment walk – investigating micro-habitats “The Ugly Five” – Animals/Food chains Steve Backshall – British Naturalist		Animals inc humans 1,3,6 Tommy the tortoise visit in school – Reptiles Wildlife park/Zoo trip “Wooly Bear Caterpillar” – Life-cycles “Supertato” – healthy foods Butterfly Garden – life cycle (growth of caterpillar to butterfly)	

Working scientifically strands:

1. asking simple questions and recognising that they can be answered in different ways
2. observing closely, using simple equipment
3. performing simple tests

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4. identifying and classifying
5. using their observations and ideas to suggest answers to questions
6. gathering and recording data to help in answering questions

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<u>Golden Eagles</u> (Y3/4) Year A	Light 1, 2, 8 Feely bag experiment (absence of light means we can't see it) Reflection – surfaces that do or do not reflect Design sunglasses experiment – the dangers of light Shadow experiment – toy and torch (blocking of light and size of shadow) "Escape from Pompeii"	Sound 1,2,4 Alexander Bell String telephone investigation Rice drum investigation Big boom investigation – Sound travel (timings of when we hear the sound) Elastic band guitars Ways to absorb sound investigation	Living things & habitats 1,2,3,4,5 Make a worm farm experiment Guide to local living things Persuasive letter (building on nature area) Nature area – classifying plants "The Wild Child" "The Wild Robot" Jane Goodall – Chimpanzees Quadring Village walk Bug hunt in Nature Area		States of matter 1,2,3,8,9 The water cycle in a bag experiment Water and ice experiment (temperature of melting) Rate of evaporation experiment Lord Kelvin – Temperature scale Magna class trip (Y4-6) – Solids, liquids, gases workshops "The Rhythm of the Rain"	
<u>Golden Eagles</u> (Y3/4) Year B	Rocks 1, 2, 4, 8 Plaster of Paris fossils Compare and group rocks Changes in rocks when rubbed together/put in water. Soil experiment. Classify different components of soil. "The Wild Way Home" "How to wash a woolly mammoth"	Electricity 1, 2, 4, 8 Thomas Edison - Creating a circuit experiment Different types of switches experiment Identify appliances that use electricity. Identify and sort materials into electrical and non-electrical conductors	Forces & Magnets 1, 3, 4, 7,9 Sir Isaac Newton - Cars on a ramp experiment (given experiment) Investigate pushes and pulls Magnets & paperclips experiment	Plants 1,3,4,5,6,8 Celery experiment – absorption of coloured water Best conditions for plant growth experiment (Light & Climate) Seed formation investigation Seed dispersal experiment "Pongo" – Rainforests Nature area investigation	Animals inc Humans 1,4,5,6,7,8,9 Charles Darwin Make a string puppet – experiment with how it moves Teeth investigation – how many and differences between teeth Digestive system investigations (tights) Food chains investigation. "The Lion and the Unicorn" "War Horse" Yorkshire Wildlife Park trip	

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	Poo experiment – Diet of Stone Age people Rock survey Gravestone and church walk (hand lens)	"Stone Age Boy" – Life without electricity			
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Working scientifically strands:

1. asking relevant questions and using different types of scientific enquiries to answer them
2. setting up simple practical enquiries, comparative and fair tests
3. making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
4. gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
5. recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
6. reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
7. using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
8. identifying differences, similarities or changes related to simple scientific ideas and processes
9. using straightforward scientific evidence to answer questions or to support their findings.

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Barn Owls (Y5/6) Year A	Properties and changes of materials (5) 1,2,3,4 Investigate and predict what makes ice melt fastest – ice hands. Investigate reversible and irreversible reactions Investigate how materials can act as solid or liquid dependent on how they are treated (non-Newtonian substances – ooblek) To investigate which material is the best insulator (different materials around Mrs Wood’s cup). To investigate how to separate mixtures by sieving, filtering and evaporating. Spencer Silver Natural History Museum, London – linked to (Japan, earthquakes and volcanoes topic)		Living things and their habitats (6) (Classification) 1,3,5,6 Chn sort out and classify vertebrate and invertebrates into further groups Investigation: Create a classification key to classify plants in the nature area Write an information sheet about an animal Investigation: at what temperature does yeast grow best? Describe the differences between life cycle of a bird, mammal, amphibian and insect Investigation – dissecting a flower and labelling the parts. Describe the life process of a plant Linnaeus ((Investigation: in which area of school do the most micro-organisms grow?) Alexander Fleming – Penicillin/antibiotics) Animalium		Forces (5) 1,2,4,5,6 Investigation – how objects fall to earth – comparing between different objects – gravity. Investigate how mechanisms, including levers, pulleys and gears allow a smaller force to have a greater effect (using K-nex) Investigating the effects of air resistance, water resistance (yacht in a pool) and friction (toy cars on different surfaces). Isaac Newton Animals inc humans (5) 1,3 Puberty - describe the changes as humans develop to old age	
Barn Owls (Y5/6) Year B	Earth and Space (5) 1,3,6 Investigate the relative sizes of planets using fruit. Investigate the phases of the moon using Oreo cookies. Create a mnemonic to remember the order of the planets. Investigate the movement of the Earth compared to the sun using shadows in the playground. And create a graph to show the length of the shadows. Understand how the sun affects the time zones of the world.		Evolution and inheritance (6) 6 Investigate fossils, understand what we can learn from them and understand how fossils form (layers of jelly investigation). Investigate how animals and plants adapt to their environment (label polar bear, camel, cactus) Create a creature and label its adaptations. Investigate and predict which ‘beak’ is best for each food type.	Animals including humans(6)(circulatory, transportations, diet/health) 1,2,3,4,5 Investigate how blood travels around the body – circulatory system (children act as red blood cells in the body) and label it. Label heart and describe function of heart, blood and blood vessels. Investigate how the lungs work (plastic bottle with balloon lung)	Light and Electricity (6) 1,2.3.4,5 To understand and investigate how light travels in straight lines using mirrors – make a periscope To investigate refraction (using a glass of water) To investigate what colours make up light (spinning colour wheel and looking at rainbows on bubbles) Identify and use symbols to draw electrical circuits. Investigate the brightness of a lamp and the loudness of a buzzer with the number of cells used in a circuit	

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	To create a newspaper report about the moon landings. Copernicus and Galileo National Space Centre	Investigate how offspring are not identical to their parents (humans and dogs eg cockerpool) Mary Anning Charles Darwin David Attenborough The Wonder Garden The Fossil Girl Darwin's Dragons Natural History Museum – Cambridge?	Investigate pulse rates of the class and create a bar graph and tally chart based on these. Plan and carry out an investigation into the impact of exercise on heart rate. Understand the impact of diet on the body (including functions of food groups) Kay's Anatomy	Investigate the effect of changing one component at a time in a circuit.
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Working scientifically strands:

1. Planning different types of scientific enquiries to answer questions, including recognising and controlling variable where necessary.
2. Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.
3. Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs.
4. Using test results to make predictions to set up further comparative and fair tests.
5. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results in oral and written forms such as displays and other presentations.
6. Identifying scientific evidence that has been used to support or refute ideas or arguments.