



Stoke Row Church of England Primary School

Curriculum Statement for Science

Level Expected at the End of EYFS

The main Early Years Outcomes covered are:

- Explore the natural world around them, making observations and drawing pictures of animals and plants (UW)
- Know some of the similarities and differences between the natural world and contrasting environments, drawing on their experience and on what has been discussed in class (UW)
- Understand some important processes and changes in the natural world around them, including changing seasons and changing states of matter (UW)
- Offer explanations as to why things might happen, making use of recently introduced vocabulary from stories, poems and non-fiction texts (CL)
- Manage their own basic hygiene and personal needs (PSED)
- Understand the importance of healthy food choices (PSED)

Key Stage 1 National Curriculum Expectations	Key Stage 2 National Curriculum Expectations
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: 1. asking simple questions and recognising that they can be answered in different ways; 2. observing closely, using simple equipment; 3. performing simple tests; 4. identifying and classifying; 5. using their observations and ideas to suggest answers to questions	During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: 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 During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

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| | <ol style="list-style-type: none">1. planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary;2. taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate;3. recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, 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 and a degree of trust in results, in oral and written forms such as displays and other presentations |
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Intent

At Stoke Row School we recognise the importance of Science in everyday life and in cross curricular learning.

We aim to increase pupils' knowledge and understanding of our world and to develop the vital life skills associated with Science such as, questioning, observing, identifying, classifying, recording, presenting and concluding in order to ensure their **Bright Futures**

We aim to prepare our pupils for life in an increasingly scientific and technological world and to develop their understanding of how major scientific ideas have played a key role in society.

Implementation

Our curriculum provides a rich variety of topics that cover all the core scientific disciplines in contexts that children can relate to in their everyday lives. We aim to develop the key scientific skills through weekly high quality teaching that builds on understanding and knowledge as our children progress through the school.

We are passionate about cross curricular links and children are taught how their mathematical and calculation skills can be used to read analyse and draw conclusions from their scientific results. There are regular opportunities for children to develop their literacy through reading, writing and spelling key scientific vocabulary and science focused work within our literacy. We always look for relevant and absorbing links to our topic work and children are able to learn and revisit the importance of our world and how it should be treated in our PSHCE and RE study.

We make sure that science is a living, breathing, evolving subject by taking opportunities to engage in science visits to local and national scientific centres and by organising a bi-annual Science week to engage the children through a range of practical and fun science based activities. We use our well stocked resources whenever we can to ensure that children of all learning preferences can get the most from our science work. Our KS1 children benefit from Forest School from a trained Forest School professional which has a huge impact on their appreciation and understanding of the world around them as they grow.

We try to flex to the individual child's learning style in order to underpin their learning and to ensure that they are able to shine in their own individual way.

Impact

Our children will experience Science in a practical, fun and positive way enabling them to retain knowledge that is pertinent to Science in a real life context and will support them in their **Bright Futures**.

Children will reach age related expectation in Science and beyond and will be able to question ideas, reflect on knowledge and confidently explain their reasoning scientifically.

At Stoke Row we place great emphasis on the value of collaborative working and science is the perfect setting to develop these vital skills of co-operation and team work and to enable our children to show our school values through their developing understanding.

	Development of learning across the school			
	Bubble	Raindrop	River	Ocean
Plants	Explore the natural world around them, making observations and drawing pictures of animals and plants (UW)	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 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 stay healthy	identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers 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 investigate the way in which water is transported within plants explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	
	Development of learning across the school			
	Bubble	Raindrop	River	Ocean
Animals including humans	Explore the natural world around them, making observations and drawing pictures of animals and plants (UW)	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 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	identify 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 identify that humans and some other animals have skeletons and muscles for support, protection and movement describe the simple functions of the basic parts of the digestive system in humans identify the different types of teeth in humans and their simple functions construct and interpret a variety of food chains, identifying producers, predators and prey	describe the changes as humans develop to old age identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function describe the ways in which nutrients and water are transported within animals, including humans
	Development of learning across the school			
	Bubble	Raindrop	River	Ocean

	Development of learning across the school			
	Bubble	Raindrop	River	Ocean
Living things and their habitats	Explore the natural world around them, making observations and drawing pictures of animals and plants (UW) Know some of the similarities and differences between the natural world and contrasting environments, drawing on their experience and on what has been discussed in class (UW) Understand some important processes and changes in the natural world around them, including changing seasons and changing states of matter (UW)	observe changes across the 4 seasons observe and describe weather associated with the seasons and how day length varies 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	recognise that living things can be grouped in a variety of ways explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment recognise that environments can change and that this can sometimes pose dangers to living things	describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird describe the life process of reproduction in some plants and animals describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals give reasons for classifying plants and animals based on specific characteristics
	Development of learning across the school			
	Bubble	Raindrop	River	Ocean
Materials	Know some of the similarities and differences between the natural world and contrasting environments, drawing on their experience and on what has been discussed in class (UW) Understand some important processes and changes in the natural world around them, including changing seasons and changing states of matter (UW)	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 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	compare and group together different kinds of rocks on the basis of their appearance and simple physical properties describe in simple terms how fossils are formed when things that have lived are trapped within rock recognise that soils are made from rocks and organic matter compare and group materials together, according to whether they are solids, liquids or gases observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic demonstrate that dissolving, mixing and changes of state are reversible changes explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes

	Development of learning across the school			
	Bubble	Raindrop	River	Ocean
				associated with burning and the action of acid on bicarbonate of soda
	Development of learning across the school			
	Bubble	Raindrop	River	Ocean
Light and Sound			recognise that they need light in order to see things and that dark is the absence of light notice that light is reflected from surfaces recognise that light from the sun can be dangerous and that there are ways to protect their eyes recognise that shadows are formed when the light from a light source is blocked by an opaque object find patterns in the way that the size of shadows change identify how sounds are made, associating some of them with something vibrating recognise that vibrations from sounds travel through a medium to the ear find patterns between the pitch of a sound and features of the object that produced it find patterns between the volume of a sound and the strength of the vibrations that produced it recognise that sounds get fainter as the distance from the sound source increases	recognise that light appears to travel in straight lines use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them
	Development of learning across the school			
	Bubble	Raindrop	River	Ocean
Electricity			identify common appliances that run on electricity construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers 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 recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit	associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches use recognised symbols when representing a simple circuit in a diagram

	Development of learning across the school			
	Bubble	Raindrop	River	Ocean
			recognise some common conductors and insulators, and associate metals with being good conductors	
	Development of learning across the school			
	Bubble	Raindrop	River	Ocean
Forces			compare how things move on different surfaces notice that some forces need contact between 2 objects, but magnetic forces can act at a distance observe how magnets attract or repel each other and attract some materials and not others 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 describe magnets as having 2 poles predict whether 2 magnets will attract or repel each other, depending on which poles are facing	explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object identify the effects of air resistance, water resistance and friction, that act between moving surfaces recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect
	Development of learning across the school			
	Bubble	Raindrop	River	Ocean
Earth and Space				describe the movement of the Earth and other planets relative to the sun in the solar system describe the movement of the moon relative to the Earth describe the sun, Earth and moon as approximately spherical bodies use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky
	Development of learning across the school			
	Bubble	Raindrop	River	Ocean
Evolution and Inheritance				recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents

	Development of learning across the school			
	Bubble	Raindrop	River	Ocean
				identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution