



Science Policy

St Anne's Fulshaw CE Primary School **Science Policy**

Intent

The 2014 national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific skills required to understand the uses and implications of science, today and for the future. We understand that it is important for lessons to have a skills-based focus, and that the knowledge can be taught through this

At St Anne's Fulshaw, we encourage children to be inquisitive throughout their time at the school and beyond. Throughout the programmes of study, the children will acquire and develop the key knowledge that has been identified within each unit. To ensure coverage and progression of all units we run a 2 year rolling programme. The key knowledge identified by the unit is informed by the national curriculum and builds towards identified phase 'end points' in accordance with NC expectations. Key skills are also mapped for each unit 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. Our rolling programme 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. The school's approach to science takes account of the school's own context, ensuring access to people with specialist expertise and places of scientific interest as part of the school's commitment to learning outside the classroom. Children are encouraged to ask questions and be curious about their surroundings and a love of science is nurtured through a whole school ethos and a varied science curriculum.

Implementation

At St Anne's Fulshaw, to ensure high standards of teaching and learning in science, we implement a curriculum that is progressive throughout the school, ensuring full coverage of the 2014 NC programmes of study for Science and Understanding the World in the Early Years Foundation Stage. We operate a 2-year cycle in years 1&2, years 3&4 and in years 5&6. At the start of each topic, teachers take time to find out what our children already understand and what they want to find out. We include the use of technology, wherever appropriate, to aid teaching and learning.

We use the whole school science scheme of work from PlanBee but also supplement this with other resources if required to support our delivery of the national curriculum. Through teacher modelling and planned questioning, we want our children to wonder about, and be amazed and surprised by, the world around them. Key scientific language is explicitly taught throughout lessons, enabling children to be familiar with and use vocabulary accurately. We also aim to plan in trips and visitors to enhance our children's learning experience, where this is possible. Children are assessed

against the EYFS and NC statements. During our 2-year cycles, children will not cover all elements of the 2 year's teaching until the end of the 2-year cycle.

Impact

Our curriculum is designed so that children leave our school with an enquiring mind for the world around them and with a bank of scientific enquiry skills, alongside key elements of knowledge and understanding, in order to prepare them for their scientific journey at secondary school and beyond. Through various workshops, trips and interactions with experts, children have the understanding that science has changed our lives and that it is vital to the world's future prosperity. Children learn the possibilities for careers in science, as a result of our community links and connection with national agencies including the STEM association. They learn from and work with professionals, ensuring access to positive role models within the field of science from the immediate and wider local community. From this exposure to a range of different scientists from various backgrounds, all children feel they are scientists and capable of achieving.

Equal Opportunities

All pupils must have equal opportunities to reach their full potential across the curriculum, regardless of race, gender, cultural background, ability or any sensory or physical disability. Classrooms and activities are managed taking account of these issues, and curriculum materials which are not biased are used.

SEND

Early identification of children with SEND is essential to ensure these children maximise their potential across the curriculum. Classes contain children of mixed age and ability, so a wide range of activities are planned to accommodate different needs and abilities. Adaptations are made to accommodate specific needs of individual children as appropriate.

Planning and delivery

Science can be linked with literacy, maths and IT. It is imperative that clear independent learning objectives are identified where cross curricular delivery takes place.

In Reception, the children's learning is focused around doing, thinking and talking. An effective strategy to use to promote discussion and address any misconceptions is 'I see...', 'I notice...', 'I wonder...' Children will formulate questions and develop an understanding of different enquiry types through;

Knowing and talking about the different factors that support their overall health and wellbeing; exploring the natural world around them, making observations and drawing pictures of plants and animals; describing what they see, hear and feel while they are outside' recognising some environments that are different to the one in which they live and understanding the effect of changing seasons on the natural world around them.

Year 1-6 children have a two year rolling programme, which ensures equality of access for all pupils throughout their education at St Anne's Fulshaw. (See appendix)

We use the whole school science scheme of work from PlanBee but also supplement this with other resources if required to support our delivery of the national curriculum. Through teacher modelling and planned questioning, we want our children to wonder about, and be amazed and surprised by, the world around them. Key scientific language is explicitly taught throughout lessons, enabling children to be familiar with and use vocabulary accurately. We also aim to plan in trips and visitors to enhance our children's learning experience, where this is possible. During our 2-year cycles, children will not cover all elements of the 2 year's teaching until the end of the 2-year cycle.

Subject Development

It is the responsibility of the subject leader to keep up to date with developments and issues in the Science curriculum and beyond, and to advise and inform colleagues as necessary.

The subject leader will attend appropriate INSET and feed back to staff. They will also identify suitable CPD courses for other members of staff.

As appropriate, the subject leader will investigate and arrange activities and visits from specialists, in consultation with the head teacher, as well as trips out of school to support the delivery of the curriculum.

Monitoring

The subject leader is responsible for development and evaluation of the Science curriculum to ensure continuity and progression across the school.

This includes:

- helping teachers with planning
- reviewing and updating policy as necessary
- observation of lessons and feedback
- analysing results of assessments to identify whole school strengths and weaknesses

Samples of work are collected from each year group in all classes to give an overview of coverage, attainment and progression.

Assessment

Assessment for learning takes place routinely within the class setting. Children are aware of their areas for improvement through marking and feedback.

Progress is recorded on Insight, in whole class books where appropriate, and photographic evidence of progress is stored electronically.

Resources

The subject leader is responsible for the management of resources to support learning in Science, ensuring they are up to date, available and appropriate.

Health and Safety

Where special equipment is used, guidance is taken from Cleapps. Children are taught to use equipment correctly, store it safely and manage its use sensibly.

Reviewed 23.06.25

2 Year rolling programme, coverage and endpoints

| | | | | Endpoints |
|---------|---|---|--|---|
| Class 1 | <p>Communication and Language</p> <ul style="list-style-type: none"> • Learn new vocabulary. • Ask questions to find out more and to check what has been said to them. • Articulate their ideas and thoughts in well-formed sentences. • Describe events in some detail. • Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. • Use new vocabulary in different contexts. | <p>Personal, Social and Emotional Development</p> <ul style="list-style-type: none"> • Know and talk about the different factors that support their overall health and wellbeing: <ul style="list-style-type: none"> - regular physical activity - healthy eating - toothbrushing - sensible amounts of ‘screen time’ - having a good sleep routine - being a safe pedestrian | <p>Understanding the World</p> <ul style="list-style-type: none"> • Explore the natural world around them. • Describe what they see, hear and feel while they are outside. • Recognise some environments that are different to the one in which they live. • Understand the effect of changing seasons on the natural world around them. | <p><u>By the end of the year pupils should be able to (ELG):</u></p> <p>Make comments about what they have heard and ask questions to clarify their understanding</p> <p>Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.</p> <p>Explore the natural world around them, making observations and drawing pictures of animals and plants.</p> <p>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.</p> <p>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p> |

| | Year A | | | | | | |
|---------|---|---------------------|-----------------------|----------------------|-----------------------------|-----------|---|
| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 | Endpoints |
| Class 2 | Animals Including Humans (Identifying animals) Y1 | Seasonal Changes Y1 | Everyday Materials Y1 | Uses of Materials Y2 | Animals Including Humans Y2 | Plants Y2 | <p><u>By the end of the year pupils should be able to:</u></p> <p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</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 (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>Observe changes across the four seasons</p> <p>Observe and describe weather associated with the seasons and how day length varies</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>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</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>Notice that animals, including humans, have offspring which grow into adults</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p> <p>Observe and describe how seeds and bulbs grow into mature plants</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</p> <p>Working Scientifically:</p> <p>Asking simple questions and recognising that they can be answered in different ways</p> <p>Observing closely, using simple equipment</p> <p>Performing simple tests</p> <p>Identifying and classifying</p> <p>Using their observations and ideas to suggest answers to questions</p> <p>Gathering and recording data to help in answering questions</p> |

| Year B | | | | | | | Endpoints |
|---------|---|---------------------------------------|-------------------------------------|-----------------------------|-------------------------------|-----------|---|
| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 | |
| Class 2 | Animals Including Humans (Identifying animals) Y1 | Animals Including Humans (My body) Y1 | Living Things and their habitats Y2 | Animals Including Humans Y2 | Uses of Everyday Materials Y2 | Plants Y1 | <p><u>By the end of the year pupils should be able to:</u></p> <p>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 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 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 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> <p>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 Gathering and recording data to help in answering questions</p> |

| | Year A | | | | | | |
|---------|----------|----------|----------------|-----------------------------|-------------------------------------|-----------|---|
| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 | Endpoints |
| Class 3 | Rocks Y3 | Light Y3 | Electricity Y4 | Animals Including Humans Y4 | Living things and their habitats Y4 | Plants Y3 | <p>By the end of the year pupils should be able to:</p> <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>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 an opaque object</p> <p>Find patterns in the way that the size of shadows change</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>Describe the simple functions of the basic parts of the digestive system in humans</p> <p>Identify the different types of teeth in humans and their simple functions</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey</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> <p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, 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>Working Scientifically:</p> <p>Asking relevant questions and using different types of scientific enquiries to answer them</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>Identifying differences, similarities or changes related to simple scientific ideas and processes</p> <p>Setting up simple practical enquiries, comparative and fair tests</p> <p>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</p> <p>Using straightforward scientific evidence to answer questions or to support their findings</p> <p>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> |

| | Year B | | | | | | |
|---------|-----------------------------|-----------------------|----------|----------------|----------|---------------------|---|
| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 | Endpoints |
| Class 3 | Animals Including Humans Y3 | Forces and Magnets Y3 | Rocks Y3 | Electricity Y4 | Sound Y4 | States of Matter Y4 | <p><u>By the end of the year pupils should be able to:</u></p> <p>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</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement</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>Describe magnets as having two poles</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing</p> <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>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>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> <p>Recognise that sounds get fainter as the distance from the sound source increases</p> <p>Compare and group materials together, according to whether they are solids, liquids or gases</p> <p>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)</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</p> <p>Working Scientifically:</p> <p>Setting up simple practical enquiries, comparative and fair tests</p> <p>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> <p>Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</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>Using straightforward scientific evidence to answer questions or to support their findings</p> <p>Asking relevant questions and using different types of scientific enquiries to answer them</p> <p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <p>Asking relevant questions and using different types of scientific enquiries to answer them</p> <p>Identifying differences, similarities or changes related to simple scientific ideas and processes</p> |

| | Year A | | | | | | |
|-----------|--------------------|--|-------------------------------------|-----------------------------|----------------|----------|--|
| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 | Endpoints |
| Classes 4 | Earth and Space Y5 | Properties and Changes of materials Y5 | Living things and their habitats Y5 | Animals Including humans Y6 | Electricity Y6 | Light Y6 | <p>By the end of the year pupils should be able to:</p> <p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>Describe the movement of the Moon relative to the Earth</p> <p>Describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p> <p>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</p> <p>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda</p> <p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>Describe the life process of reproduction in some plants and animals</p> <p>Describe the changes as humans develop to old age</p> <p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans</p> <p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p> <p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>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</p> <p>Use recognised symbols when representing a simple circuit in a diagram</p> <p>Recognise that light appears to travel in straight lines</p> <p>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</p> <p>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</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</p> <p>Working Scientifically:</p> <p>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p> <p>Identifying scientific evidence that has been used to support or refute ideas or arguments</p> <p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Using test results to make predictions to set up further comparative and fair tests</p> |

| | Year B | | | | | | |
|---------|-----------------------------|-----------|--------------------|----------------|------------------------------|-------------------------------------|---|
| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 | Endpoints |
| Class 4 | Animals Including humans Y5 | Forces Y5 | Earth and Space Y5 | Electricity Y6 | Evolution and inheritance Y6 | Living things and their habitats Y6 | <p><u>By the end of the year pupils should be able to:</u></p> <p>Describe the changes as humans develop to old age</p> <p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect</p> <p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>Describe the movement of the Moon relative to the Earth</p> <p>Describe the Sun, Earth and Moon as approximately spherical bodies</p> <p>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p> <p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>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</p> <p>Use recognised symbols when representing a simple circuit in a diagram</p> <p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p> <p>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals</p> <p>Give reasons for classifying plants and animals based on specific characteristics</p> <p>Working Scientifically:</p> <p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <p>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</p> |