Thursfield Primary School

Science Policy

Science Vision

"Science knows no country because knowledge belongs to humanity and is the torch which illuminates the world." Louis Pasteur

Science is about developing and understanding of the world around us, testing ideas and evaluating evidence. At Thursfield, we will foster curiosity, a love for science and ensure children succeed in scientific literacy and critical problem-solving skills. We will do this through collaborative inquiries, investigations and high quality teaching which are relevant to our children's lives today.

Intent:

As part of the Creative Learning Partnership Trust, here at Thursfield we believe that a high quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes. Science at Thursfield is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation, as well as using and applying process skills. The staff ensure that all children are exposed to high quality teaching and learning experiences, which allow children to explore their outdoor environment and locality, thus developing their scientific enquiry and investigative skills. They are immersed in scientific vocabulary, which aids children's knowledge and understanding not only of the topic they are studying, but of the world around them. We intend to provide all children regardless of ethnic origin, gender, class, aptitude or disability, with a broad and balanced science curriculum. At Thursfield Primary School we embrace the 'Rosenshine Principles of Learning' for all pupils including our children with Special Educational Needs and Disabilities (SEND). The delivery of the Science curriculum involves the careful planning of lessons ensuring plenty of opportunities for the over learning of key facts and the mastery of key skills. We remove barriers to allow all pupils to achieve by producing 'Learning Passports' with our SEND children. These outline personal learning preferences and the reasonable adjustments which need to be made by school in order for each pupil to access the full Science curriculum and to achieve the high expectations which are set for them.

Implementation:

In ensuring high standards of teaching and learning in science, we implement a curriculum that is progressive throughout the whole school.
Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of, 'The National Curriculum programmes of study for Science 2014' and, 'Understanding the World' in the Early Years Foundation Stage. Science teaching involves adapting and extending the curriculum to match all pupils' needs. Where possible, Science is linked to class topics. Science is taught as discrete units and lessons where needed to ensure coverage. Due to one and half form year groups in our school, Science units are taught on a year rolling programme. This ensures progression between year groups and guarantees topics are covered. Teachers plan to suit their children's interests, current events, their own teaching style, the use of any support staff and the resources available.

We ensure that all children are provided with rich learning experiences that aim to:

- Prepare our children for life in an increasingly scientific and technological world today and in the future.
- Help our children acquire a growing understanding of the nature, processes and methods of scientific ideas.
- Help develop and extend our children's scientific concept of their world.
- Build on our children's natural curiosity and developing a scientific approach to problems.
- Encouraging open-mindedness, self-assessment, perseverance and developing the skills of 3 investigation – including: observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, explaining and evaluating.
- Develop the use of scientific language, recording and techniques.
- Develop the use of computing in investigating and recording.
- Make links between science and other subjects.
- Science is taught in a block and as a cross curriculum area of focus.

Within each scientific strand and block (every half term), there is a non-negotiable expectation at Thursfield to weave in working scientifically through investigations. This enables the children to embed working methodically, understanding the different types of scientific enquiry and completing fair/balanced investigations.

We also participate in whole school science days where the whole focus is to work scientifically and investigate, completing fair investigations. We also partner frequently with companies who offer scientific opportunities: JCB, Siemens, RAF Cosford.

Assessment of children's learning in Science is an ongoing monitoring of children's understanding, knowledge and skills by the class teacher, throughout lessons. Review sessions allow teachers to assess children's recall of scientific concepts previously taught. This assessment is then used to inform differentiation and to provide the necessary support and challenge required by the children.

Long Term Plan

The units that the children complete each year group have been carefully selected so that all National Curriculum Expectations are met by the end of each key stage.

These are as follows:

Science —Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	**Seasons** – autumn, winter		**Seasons** – winter, spring		**Seasons** – spring, summer	
	Animals & Insects – nocturnal, hibernating, woodland		**Animals & Insects** – animals from cold countries, herbivores, carnivores		**Animals & Insects** – insects, animals from hot countries	
	Plants & Trees – which plants/trees grow in our garden/local environment		**Plants & Trees** – planting seeds		**Plants & Trees** – how to take care of the plants/trees in our environment	
Year A Year 1/2	**Seasonal Change –** Autumn / Winter	**Biology** **Living Things and their Habitats,** Living, dead, never alive Habitats, microhabitats, food chains & sources	**Seasonal Change –** Winter / Spring	**Biology** **Plants** Identify, structure, growth, survival	**Seasonal Change –** Spring / Summer	**Biology** **Animals Including Humans** Body parts, senses, food & exercise
Year B Year 1/2	**Seasonal Change –** Autumn / Winter	**Chemistry** **Everyday Materials (Y1)** Identify, purpose **Materials (Y2)** Properties, change by force	**Seasonal Change –** Winter / Spring	**Biology** **Animals Inc. Humans** Identify animals inc. carnivores, herbivores & omnivores	**Seasonal Change –** Spring / Summer	**Biology** **Animals Including Humans** Offspring, life cycles (inc. humans), survival
Year A Year 3/4	**Chemistry** **Materials** Rocks, fossils, soil	**Physics** **Light** Light sources, lights effect on materials	**Biology** **Plants** Function, pollination, making food		**Physics** **Forces** Magnets	**Biology** **Animals Including Humans** Skeletons & movement, nutrition
Year B Year 3/4	**Chemistry** **Materials** States of matter	**Physics** **Sound** How sound is made, travel, pitch & volume	**Biology** **Living Things and their Habitats** Classification, Environmental Change		**Physics** **Electricity** Electrical circuits	**Biology** **Animals Including Humans** Teeth, digestion, food chains
Year A Year 5/6	**Chemistry** **Materials** Properties & changes	**Physics** **Earth & Space** Solar system, moon, earths rotation	**Biology** **Living Things and their Habitats** Life cycles, reproduction of plants/animals		**Physics** **Forces** Gravity, air/water resistance, friction	**Biology** **Animals Including Humans** Human Growth
Year B Year 5/6	**Biology** **Animals Including Humans** Circulatory system	**Physics** **Light** How light travels	**Biology** **Living Things and their Habitats** Classification, Variation, Adaptation		**Physics** **Electricity** Controlling electrical circuits	**Biology** **Animals Including Humans** Evolution

Impact:

The impact and measure of this is to ensure children not only acquire the appropriate age related knowledge linked to the science curriculum, but also skills which equip them to progress from their starting points, and within their everyday lives.

All children will have:

- A wide variety of skills linked to both scientific knowledge and understanding, and scientific enquiry/investigative skills.
- A richer vocabulary which will enable to articulate their understanding of taught concepts.
- High aspirations, which will see them through to further study, work and a successful adult life.

Monitoring and Review:

It is the responsibility of the science subject leader and Senior Management Team to monitor the standards of children's work and the quality of teaching in science. The science subject leader is also responsible for supporting colleagues in the teaching of science, for being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school. The science subject leader has specially-allocated time for fulfilling the vital task of reviewing samples of children's work and visiting classes to observe teaching in the subject. In addition, learning Walks, observations, pupil voice sessions and book monitoring will be carried out regularly.

Additional Provision:

In addition to all of the above, the school will also offer:

- Science embedded across the school day/ curriculum opportunities
- Creative Use of ICT
- Guest Speakers or Trips where possible

Ticket To Anywhere

Children are prepared with skills that are transferable into future work life. Our Science curriculum will ensure that all pupils in KS2 develop the key skills as set out in the national curriculum, as well as develop a love of STEM.

Date Reviewed: September 2024
Next Review Date: September 2026