

St Joseph's Catholic Primary School

Gipsy Lane, Bracknell, Berkshire, RG12 9AP

Tel: (01344) 425246 Fax (01344) 305463



SCIENCE POLICY

Name: Nicola Philpott
Position: Acting Headteacher
Date Adopted by Acting Headteacher: 27.02.2025

Signed: 

Review Date: Spring 2028
Responsibility: Headteacher

Reviewed by Miss Cooper
Policy to be reviewed every three years.
Policy to be approved by Headteacher.

'Growing together with Jesus in our hearts, heads and hands.'

SCIENCE POLICY

MISSION STATEMENT

Growing together with Jesus in our hearts, heads and hands.

POLICY STATEMENT

At St Joseph's Catholic Primary School, we recognise that all subjects can be taught through the lens of our mission statement and charism– hearts, heads and hands (love, wisdom & action) as all three together play a significant part when learning. We therefore aim to provide an education that provides opportunities for pupils to experience:

- God's love: through this love, understand that we are empowered to love others, his creation and learning.
- God's wisdom: wisdom is a real-life process of cognitive integrations embodied in action which has a positive effect for oneself and others.
- God's workings and actions: our learning and lives are committed to the principles of [Catholic Social Teaching](#).

Science provides opportunities to promote the following:

- **Hearts:**
 - Through a positive, caring environment, we will nurture confidence in the subject and a love of science.
- **Heads:**
 - We understand the importance of providing memorable science experiences so that more abstract and difficult scientific knowledge can be embedded into long term memory so that children are becoming learners for life. This philosophy ensures that the science curriculum is accessible to all of our pupils, regardless of their ability or background.
- **Hands:**
 - Our children are living in a highly scientific and technological world, it is essential that we ensure that they acquire and develop the scientific skills, attitude, knowledge and understanding that they need in order to understand the world around them.

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INTENT

Our intent in Science is to develop and **foster pupils' curiosity and excitement** about the material world as well as natural phenomena.

The Science scheme used by the school (Twinkl 'Stepping into Science') provides detailed plans for engaging, exciting, lessons that align with the National Curriculum. With Twinkl and Science at St Joseph's, 'experienceology' is at the heart of our curriculum: children have the opportunity to learn through varied systematic, hands on investigations, encouraging them to ask, test and answer scientific questions about the world around them.

Our intent is to:

- ✓ Inspire children with an exciting, rich, relevant and challenging Science curriculum with built in unforgettable experiences to promote deep learning and understanding.
- ✓ Inspire curiosity and develop capability to question material and natural phenomenon around us in order to understand the world that we live in.
- ✓ To build confidence and skills to use scientific equipment in order to fairly test theories in order to find answers to scientific questions.
- ✓ Cultivate a 'can do' approach to problem solving and critical thinking.
- ✓ Teach pupils to be responsible and respectful to the natural resources and environment that we have in order to sustain and promote the natural beauty and wildlife on Earth.
- ✓ Provide children with an insight to how key scientific skills and knowledge is used in various different STEM careers.
- ✓ The teaching of Science allows pupils to transfer key knowledge to their long-term memory to ensure breadth, balance, continuity and progression. Our Science curriculum develops new skills and knowledge based upon what has been taught before, allowing all pupils to work towards clearly defined end points.

IMPLEMENTATION

- ✓ At St. Joseph's Catholic Primary School, it is integral to our curriculum that both **scientific knowledge** and **enquiry skills** are **taught side by side throughout each unit** of study. Children need to understand that it is through *working scientifically*, we have obtained the scientific knowledge we know and understand today.
- ✓ In both Key Stage 1 and 2, Science is taught for two hours per week. These lessons consist of teacher demonstrations, videos and/ppt to support with learning of key concepts as well as hands on, investigative enquires led by the pupils.
- ✓ Twinkl 'Stepping into Science' provide schemes of work, lesson plans and materials that **more than adequately meet the requirements of the National Curriculum**. It provides highly engaging activities, strong cross-curricular links and lots and lots of 'wow' moments.
- ✓ The school's Science curriculum provides a coherently planned and sequenced scheme which cover all three scientific disciplines: Physics, Biology and Chemistry. Entwined throughout these lessons are carefully planned opportunities to build the key 'working scientifically skills: Planning, Data collection and handling and Evaluation.
- ✓ At the beginning of each unit, **knowledge organisers** are stuck into books, offering a reference point for children to **consolidate key concepts** and **reinforce key vocabulary** as well as a learning journey that can be used by both the pupil and teacher to **assess and track progress**.
- ✓ Each lesson will have a **clear focus** and **learning objectives** (both knowledge and enquiry) will be evident for children to see on the stickers provided.
- ✓ **Experienceology** is central to Science lessons at St Joseph's. Wherever possible, children will be given the opportunity to work in groups to conduct hands-on experiments, use new scientific equipment and test science theories.

- ✓ 'Science Flashbacks' have been developed to revisit prior learning, especially those areas impacted most due to the pandemic and subsequent period of remote learning.
- ✓ In the event of further lockdowns, PPG pupils will be provided with science kits, with all necessary equipment to ensure the same level of access and engagement is possible.
- ✓ The subject leader/ specialist teacher is accountable for their subject.
- ✓ The subject leader has responsibilities for their curriculum resources; however, these resources are shared as required.
- ✓ Class teachers have a responsibility to support the learning that takes place with the specialist teacher.

Early Years

- ✓ The EYFS curriculum provides our pupils with a broad, play-based experience of Science in a range of contexts. We believe the following:
- ✓ Early Years learning environments should feature scientific concepts based on experience in the real world, such as in roleplay.
- ✓ Pupils gain confidence, control and language skills through opportunities to play with various toys as well as exploring the natural environment around them.

End of Key Stage 1 Outcomes

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.

Plants:

- 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.

Animals, including humans:

- 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.

Everyday materials:

- 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.

Seasonal Changes:

- observe changes across the four seasons.
- observe and describe weather associated with the seasons and how day length varies.

End of Key Stage 2 Outcomes

Working scientifically:

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- 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
- identifying scientific evidence that has been used to support or refute ideas or arguments

Living things and their habitats:

- 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
- give reasons for classifying plants and animals based on specific characteristics

Animals including humans:

- 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

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
- identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

Light:

- 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.

Electricity:

- 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.

IMPACT

- ✓ At St Joseph's, pupils achieve highly across the Science curriculum.
- ✓ Pupils use the knowledge and skills learnt to meet the challenges of the next part of their educational journey (secondary school) and to do so with confidence and concentration.
- ✓ Science is monitored by the class teachers and subject leader. At the beginning of each topic a baseline assessment measures existing knowledge and at the end, another assessment will measure progress and knowledge gained. In addition, knowledge organisers are used to track progress through each unit.
- ✓ Impact will also be gauged through book scrutiny, pupil interviews, lesson observations and discussions with colleagues.

Assessment

- ✓ Science will be assessed continuously and summative at the end unit. The Science teacher will assess the child's achievement against the overall main learning outcomes for each unit through the use of reasoning questions at the end of each lesson.
- ✓ The Science teacher will also have the opportunity to comment in the pupil's end of Year Summer Report. For the end of year assessment, the Science teacher will assess every child as **working towards**, **at expected level**, or **greater depth**. This description indicates the child's performance against the learning expectations being taught in that year.

EQUALITY

At St. Joseph's School, we aim to enable all children to achieve to their full potential. This includes children of all abilities, social and cultural backgrounds, those with disabilities, EAL speakers and SEN pupils.

We place particular emphasis on the flexibility technology brings to allowing pupils to access learning opportunities, particularly pupils with SEN and disabilities. With this in mind, we will ensure additional access to technology is provided throughout the school day and in some cases beyond the school day.

Equitable Delivery:

- ✓ Science is taught as a whole class lesson
- ✓ Active participation is encouraged speaking, listening and writing.
- ✓ Children are encouraged to communicate their findings in a variety of ways.
- ✓ The implementation of this Science policy is the responsibility of all staff engaged in the learning and teaching of Science.

Equal Opportunities

- ✓ In the study of Science, equal emphasis and opportunity is given to all members within a community.
- ✓ Pupils with special educational needs and disability (SEND) are given support in computing lessons and work is scaffolded appropriately with a varied choice of pedagogy enabling all children to achieve their full potential.