

St James' C of E Primary School



SAINT JAMES'
Church of England School



The St James' LEARN curriculum.

L	Love Jesus	
E	Equality for Everyone	
A	Attend every day	
R	Reach for the stars	
N	Never give up	

*We are walking hand in hand with Jesus
fulfilling the potential God has given us.*

'For with God nothing is impossible'

Luke 1:37

Science Policy 2024

Luke 1:37 "For with GOD nothing shall be impossible"

Our LEARN Curriculum Key Principles:

Our **LEARN** curriculum ensures that our children are successful in learning and in life, no matter what their starting points and barriers to learning may be by:

- Promoting positive partnerships to support the families of our school who speak 15 different languages and who come from many varied faiths and none. So that ALL our pupils are settled in school and ready to **LEARN**.
- Providing nurture, emotional, financial, and spiritual support to our pupils and All stakeholders. So that families and children are fully supported and are in the best place they can be and ready to **LEARN**.
- By understanding our community and thus providing learning opportunities in environments which promote reading, oracy, and the constant development of vocabulary. So that our pupils are equipped with the skills they need to flourish in life and **LEARN**.
- By providing dedicated nurture spaces to offer emotional and practical support to meet the needs of ALL of our pupils thus allowing them to **LEARN**.
- A curriculum which will be inclusive, aspirational, and relevant and respectful to the culture and customs of our children and families. So that our children want to come to school, are engaged with their individual needs met, and experience a full and varied range of opportunities to enrich their lives and **LEARN**ing experience.

Because we truly believe that '**For with God nothing is impossible**'

What is Science

Introduction

Introduction

Science is a body of knowledge, which is built up through experimental testing of ideas and first-hand experiences. Science is also a methodology, a practical way of finding reliable answers to questions we may ask about the world around us. It is a continuous process of the development of our understanding of the world we live in.

The main aspects of science to be studied will be determined by the programmes of study from the National Curriculum.

Aims of the 2014 National Curriculum are for our pupils to:

- 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.
- Equip themselves with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Intent

Our school vision is linked to the Christian Values of the school to support and challenge our children to aspire in everything that they do.

Our curriculum exposes our children to enriching experiences, immersing them in progressive knowledge and skills; equipping them with personal characteristics and aspirations required to succeed in life. The key principles behind the design of our curriculum are for our children to:

LEARN – Love Jesus, Equality for all, Attendance, Reach for the stars, Never give up!

We understand that if all children acquire the above, they will be ready for the challenges of the secondary school curriculum. Ultimately, we want all of our children, to be the best they can be, making a positive contribution to the world they live in.

The Science Curriculum at St James' C.E Primary enables children to learn a broad, rich and bespoke curriculum which encourages them to retain and develop interest and enjoyment within science as well as developing a natural sense of curiosity about the world around them. Our Science Curriculum aims to equip pupils with a set of attitudes which will promote the school values in line with scientific ways of thinking, including open-mindedness, perseverance, objectivity, and a recognition of the importance of teamwork. We aim to stimulate a thirst for further learning and knowledge by building up a body of scientific knowledge and understanding which will serve as a foundation for future enquiry and modern life in Britain. We encourage confident, caring, respectful and responsible citizens who are equipped as life-long learners.

The pupils at our school are taught to understand the nature of a scientific approach involving: observation, the making and testing of hypotheses, the design of fair and controlled investigations, the drawing of meaningful conclusions through critical reasoning and evaluation of evidence, facts and data. Through our science curriculum, we aim to provide teaching and learning which challenges their knowledge, vocabulary, and skills through engaging and exciting lessons.

Consolidation is key; therefore, we revisit National Curriculum objectives throughout the school curriculum map in order to extend and consolidate previous knowledge within science.

Implementation.

Planning is informed by and aligned with the national curriculum. Outcomes of work are regularly monitored to ensure that they reflect a sound understanding of the key identified knowledge. An important part of the Science curriculum is the ability to retain and re-use knowledge, vocabulary and skills in a progressive and developmental way throughout the journey through school. Retrieval practice takes place within each lesson.

The Early Years Foundation Stage (EYFS) follows the 'Development Matters' as the supporting guidance, however the Early Learning Goals are the end point for our children in EYFS. Children within the EYFS are exposed to science through the specific area of 'Understanding the World'.

In EYFS Science is taught through continuous provision. In KS1 and 2 Science is taught weekly. The objectives are taken directly from the national curriculum.

Each topic has a well-planned, medium-term plan with National curriculum objectives recorded. Teachers annotate their MTPs and refer to them from lesson to lesson. Specific annotation will include personalised adaptations for all SEN, a plan for the TA and their role. Each topic has:

- a knowledge organiser signposting key knowledge and key vocabulary (where appropriate)
- learning objectives – written as 'I can...' statements to link into teacher/peer/self-evaluation
- detailed knowledge and skills written into each lesson to ensure coverage
- an end of unit task

Pupils will learn Science using a variety of sources which may include artefacts, photographs, stories, TV programmes, PowerPoint presentations or books.

Our lessons are based around 5 sections – please see below:

RETRIEVAL: review and activate knowledge/skills/vocab from previous lesson; previous series of lessons; previous linking of units, place learning in a wider context

HOOK: set the scene, provide the 'big picture', share learning objectives

EXPLICIT TEACHING & MODELLING: pupils receive new information; instruction/exposition (teaching) breaking down learning into small steps/modelling/scaffolding/sharing success criteria

INDEPENDENT PRACTICE & APPLY: pupils make sense of information, processing, understanding (learning)

PLENARY review information/learning

Depending upon each individual lesson, these will be implemented in a variety of orders.

Some features of our Science Curriculum

In Years 1-6 the National Curriculum is being used as a basis for the delivery of science and the Developing Experts long term planning is followed by class teachers to ensure full curriculum coverage. By the end of each key stage, pupils are expected to know, apply, and understand the matters, skills and processes specified in the programme of study.

New Science units begin with a Learning / Mind Map to find out what they already know and questions that they would like to explore. This enables class teachers to assess the children's prior knowledge and support/challenge appropriately. We strongly believe that science investigations allow children to find things out for themselves and develop a wide variety of scientific skills and therefore teachers are expected to plan the following amount of investigations per year group:

The minimum frequency of full investigations is as follows:

Year Groups	Minimum number of investigations
Y1	6 per year
Y2	6 per year
Y3	8 per year
Y4	10 per year
Y5	10 per year
Y6	12 per year

Support for SEND

Weekly Science lessons are inclusive to pupils with special educational needs and disabilities. Within the weekly History lesson, teachers have a responsibility to not only provide support for children with SEND but also activities that provide sufficient challenge for children who are high achievers. It is the teachers' responsibility to ensure that all children are challenged at a level appropriate to their ability.

Where appropriate, support and challenge can be given in a variety of ways specific to Science. It is the teachers' responsibility to tailor resources to the needs of their children.

We support children with prior access of knowledge organisers to find key facts to use in their work. We provide opportunities to teach key vocabulary from the knowledge organiser to support the children's understanding of scientific vocabulary. To cater to the needs of all pupils, staff may provide differentiated support in lessons. This is

annotated onto the teacher's medium-term plans. It is important to extract relevant information from the knowledge organisers to support the achievement of the specific learning objective.

A pupil's English ability should not be a barrier to their science knowledge and understanding. Therefore, we feel that at times it is necessary for pupil to verbalise their responses, have their work scribed when appropriate.

Children who have been identified as having gaps or misconceptions in their learning, may be subject to additional intervention to bridge gaps.

Supporting SEND areas of need in Science



Cognition and Learning	Communication and Interaction
- Pre-teaching of subject vocabulary - Pupils encouraged to explain what they have to do to check understanding - Links to prior learning explicitly made - Key words and/or phoneme mats on desks - Diagrams and pictures to add meaning alongside text - Provide – and teach use of – range of writing frames to aid <u>investigation write up</u> - Occasional opportunities to work with a scribe – perhaps within a small group to produce a piece of <u>writing</u> - investigations	- Delivery of information slowed down with time given to allow processing - Pupils are encouraged – and shown – how to seek clarification - Ensure that preferred methods of communication (as well as level of eye-contact) known by all staff within school - TA's used effectively to explain and support pupils to ask and answer questions - Talking buddies or similar used to encourage responses
Social, Emotional and Mental Health (SEMH)	Physical and Sensory
- Take time to find pupil's strengths and praise these – ensure that the pupil has opportunities to demonstrate their skills to maintain self-confidence. - Provide lots of opportunities for kinaesthetic learning e.g. practical activities, experiential learning, multi-sensory resources - Communicate in a calm, clear manner - Transition from whole class work to independent or group work is taught, clearly signalled and actively managed - Ensure groupings provide positive role models	- Seating should allow pupil to rest both feet flat on the floor – check chair heights - Desk should be at elbow height - Encourage oral presentations as an alternative to some written work - Lined paper with spaces sufficiently wide to accommodate pupil's handwriting - Allow additional time to complete tasks - Give as many <u>first hand</u> 'real' multi-sensory experiences as possible

Impact

The teaching of Science at St James' will enable children to have a wider and deeper understanding of our world and why things happen. It will equip them with a knowledge science and give them the cultural capital to be confident in the wider community and beyond.

Assessment and Reporting

We assess children's work in Science by making informal judgements as we observe them during each science lesson.

Assessment for learning is continuous throughout the planning, teaching and learning cycle. Assessment is supported by use of the following strategies:

- Observing children at work, individually, in pairs, in a group and in class during whole class teaching
- Using differentiated, open-ended questions that require children to explain and unpick their understanding
- Teacher/pupil conversations about their ideas and understanding; facilitating and listening to discussions
- Providing effective feedback to engage children with their learning and to provide opportunities for self-assessment

- Book moderation and monitoring of outcomes of work, to evaluate the range and balance of work and to ensure that tasks meet the needs of different learners, with the acquisition of the pre-identified key knowledge of each topic being evidenced through the outcomes
- Analysing errors and picking up on misconceptions

At the end of the unit, teachers deliver an assessment task to give children the opportunity to share their knowledge from that topic. Assessment for SEND children is bespoke to each individual child's needs and therefore will differ from child to child.

Classroom Support

Teaching Assistants and helpers are used in Science to assist:

- In the classroom throughout the school by working with groups and individuals on task.
- In providing targeted and positive support to those pupils identified with difficulties.
- In providing other help, such as preparation of resources and display work.

Display

Teachers display the key vocabulary for their Science topic on their class working walls as part of their Science display. All classes have a 'Knowledge Organiser' displayed on the wall. Part of the working wall will include visual evidence of what the children will be learning – as part of ST James' school, our working walls are imperative for our children.

Monitoring

Monitoring of Science is completed by the subject lead half termly. This can be found in the LEARN curriculum monitoring file. Any feedback from monitoring is shared to staff through E mails and one to one discussions.