St Jude's C of E Primary School's Subject Stories
Science

Intent

The National Curriculum for Science states:
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 lessons at St. Jude's are ingrained within our creative curriculum, children are given a wide variety of resources to support their understanding and many creative outlets to express their knowledge of topics. We aim to supplement the children's understanding and excitement for a topic through opportunities in our local community at Brockwell Park and the greenhouses. We provide a mixture of knowledge and skills within our lessons so that children have a strong initial understanding of topics that they can then build upon through scientific enquiry.

Implementation

It is important in our science lessons that we give children the opportunity to explore their understanding and children work hard to make their own predictions and hypothesis prior to conducting different investigations and exploring outcomes. Children are able to use the knowledge and skills they have gained throughout their previous learning to make accurate predictions and build upon their prior knowledge whilst maintaining the use of key vocabulary made available to them. In EYFS children are extending their understanding by exploring textures, sounds and the natural world in simple games and activities. In KS1 and KS2 there is a more formal approach and pupils are expected to plan and conduct experiments, record evidence and findings as well as making conclusions and predictions. Children explore the key aspects of a topic before embarking upon investigations so that they can use their understanding to aid their conclusions. The role of science within the whole school setting is celebrated with events including 'Science Week' and 'Clean Air Day'. Children are excited by the subject and have the opportunity to learn in different contexts through our links with the local community and extracurricular activities.

Impact

- ✓ **Children perform highly at the end of their key stages for science (Early Learning Goal – knowledge and understanding of the world), KS1 and KS2 outcomes for science 2019-2020**
  - ➢ **EYFS Knowledge and Understanding of the World: 89% Expected 23.1% Greater Depth**
  - ➢ **KS1 and KS2 progress: 95.3% Made 3+ steps progress with 33.3% making 4+steps progress**
- ✓ **Children will become confident in posing scientific questions, planning investigations and drawing conclusions by interpreting data.**
- ✓ **They will have participated in a wide range of Science events and worked to contribute to a whole school awareness of science through family learning projects, science trips and workshops, members of the local community visiting and science celebration events.**
- ✓ **Studying science will enable them to ask questions about the world around them and encourage them to develop a greater curiosity in the natural world.**

St Jude's C of E Primary School's Subject Stories
Science

If you were to walk into science lessons at St Jude's, you would see:

- **A wide range of scientific enquiry being used to engage children and provide greater depth and understanding to a topic –** Each year group has access to a wide range of scientific resources to help engage and deepen children's understandings. The science lessons draw upon a combination of knowledge and skills so pupils can use their prior understanding to aid them when conducting experiments. We aim to incorporate our St. Jude's value of being prepared and helpful into scientific investigation so that the children are able to handle equipment safely and sensibly.
- **Relevant trips to extend and engage children within their learning –** Children take part in exciting scientific trips in our local community these include the Outdoor Learning Projects in Brockwell Park, exciting partnerships within our Windmill Cluster to Brockwell Greenhouses and preparing children for future learning with key stage 2 taking part in science enquiry sessions led by local secondary schools linked to a range of national curriculum science statements.
- **The use of key vocabulary throughout the school and children taking ownership of their learning –** Children have vocabulary made available to them through knowledge organisers, displays, word mats and slideshows. We encourage the children to refer back to the key terminology and become increasingly independent in using the correct vocabulary to demonstrate their understanding.

Pupil Voice

Year 2 child "I like that when we learn about things like materials we get to use lots of different types of materials and test them for different things like being waterproof, it's fun!"

Year 4 child "I enjoy when we do experiments and we get to test things out for ourselves, we usually learn about it first and then get to have a go at experimenting and it's great."

Year 6 child "This year in science I have enjoyed making our own questions and then testing them for the answers and writing about different science in different ways like diary entries."

An example of skill progression within our science curriculum

Science aspect: Working scientifically (observing and recording data)						
Reception:	**Year 1:**	**Year 2:**	**Year 3:**	**Year 4:**	**Year 5:**	**Year 6:**
Looks closely at similarities, differences, patterns and change. →	Observing closely using simple equipment. →	Using their observations to suggest answers to questions. →	Gathering, recording, classifying and presenting data in a variety of ways. →	Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. →	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs. →	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms.

St Jude's C of E Primary School's Subject Stories
Science

Our Diverse Curriculum

As a school, we are passionate that our children receive a broad, balanced, inclusive and diverse curriculum. We have developed anti-racist commitments, and endeavor to fulfill these in every curriculum area, including science. Within this subject, we will ensure:

- Diverse texts about STEM (Science, Technology, Engineering and Mathematics) are present in our class and virtual libraries, especially those which celebrate key figures of different ethnic backgrounds
- Areas of study explore the role of scientists within the key learning where appropriate. These lessons will include a diverse range of people, including different ethnicities, genders and cultural backgrounds. These figures are explored during Science Week and provide meaningful links within learning.
- Other opportunities are utilised to explore, promote and celebrate diverse figures, such as Family Learning Projects, Home Learning activities, newsletter items, Twitter posts, World Book Day, Science Week, and local community events.

Outstanding examples of learning

KS1 Outdoor Learning Project

Year 5 working with secondary school students

World Book Day Science Theme!

Remote Learning

Whilst children are learning remotely, the following approaches are taken to ensure science teaching and learning is consistent and of a high quality:

- Science lessons are planned weekly and uploaded to the Google Classroom
- Resources are planned and designed carefully to support the learning objective each week
- Lessons include a 'Do it Now' task at the beginning of each lesson to review prior learning
- Children upload their work at least once a half term to receive feedback.
- Key vocabulary and sentence stems are used to ensure high quality explanations of different ideas
- Videos are included to support with scientific concepts and reviewed once a half term in google meets sessions

Successes in 2019- 2020

- ☺ British Science Week – Each year group was able to take part in an educational visit linked to their science learning. We were able to hold an exhibition inviting parents and carers into the school to showcase our hard work throughout science week. We received an information assembly at the start of the week from Climate Education.
- ☺ Outdoor Learning Project – Key stage 1 children were able to take part in outdoor learning projects in our local community. The children worked with other schools in our Windmill Cluster to take part in a range of activities including learning about different minibeasts and helping to create habitats in our local area.
- ☺ Curriculum Steering Group – Our curriculum steering group focused upon the role of science this year, they were able to visit the Science Museum and feedback on key links to their learning and discuss opportunities to explore science within our school.
- ☺ Science extra-curricular activities – Science activities were available for all year groups and helped to create awe and wonder in science learning. Throughout the year, we had clubs across key stage 1 and 2 including gardening, natural thinkers and mad science.

St Jude's C of E Primary School's Subject Stories
Science

Priorities for 2020 - 2021

- ✓ Regular monitoring and review of children's learning and identifying gaps in understanding – termly Pupil Progress meetings with teachers
- ✓ Outdoor learning opportunities – The school is working closely with members of the local community to involve the children in preparing the Nature Garden for greater use of outdoor learning.
- ✓ Use of key scientists to help provide links with learning – different scientific topics have been mapped to involve the use of diverse range of scientists to help inspire children in their scientific learning.