Science at St Monica's School

Science

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.
National curriculum 2014

During Foundation Stage at St Monica's School

Understanding the world involves guiding children to make sense of their physical world and their community through opportunities to explore, question, observe and find out about the world around them. They develop scientific knowledge through daily play-based activities.

Our discrete science curriculum in the foundation stage is taught through the main area of 'Understanding the world' and the strands 'Past and Present, People, Culture and Communities and The Natural World.'

During Key Stage 1 at St Monica's School

Our curriculum is based on the National Curriculum. In KS1 it provides pupils with hands on engaging lessons,covering both knowledge objectives and developing a range of 'working scientifically'skills. A range of resources are used to match pupil needs.

Every lesson has two learning objectives; a knowledge and a skill. The skills developed over the key stage are;

- observing changes over a period of time
- pattern seeking
- grouping and classifying
- carrying out simple tests
- asking and answering questions

During Key Stage 2 at St Monica's School

During key stage 2 the HEP curriculum provides opportunities to broaden pupils' scientific view of the world around them. They do this through exploring, discussing ideas and scientific investigation.
They develop ideas about everyday phenomena and the relationships between living things.
At upper key stage 2, they encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They also begin to recognise that scientific ideas change and develop over time.
Scientists who were/are experts in the field of scientific study are explicitly taught about.
Children are taught and encourages to ask their own questions about what they observe and make decisions about which types of scientific enquiry are likely to be the best ways of answering them, including; observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They draw conclusions based on findings and use scientific language to explain their findings.

Planning

- the school's curriculum map shows the units to be covered each term
- there is planning for each unit of work and teacher assessment is ongoing.
- plans are annotated and adapted to show how less able and those new to English will access the content
- more able children are planned for so that they can deepen knowledge and skills

Teaching

- flexible groupings are used during lessons e.g. ability and mixed ability groups, paired work, guided and independent work and whole class work
- opportunities to develop core literacy and numeracy skills are embedded throughout lessons as well as the learning of new vocabulary
- a range of resources are used to enhance learning such as pictures, watching videos and reading information texts and practical experiments

Marking and feedback

Work should be marked according to the school marking policy by using

- peer and self-assessment
- oral feedback
- written feedback

- relevant vocabulary is explicitly taught, evident in the classroom and used in discussion and reasoning.
- children receive science lesson every week and have a Science book to record work.
- each lesson should follow a four part structure- review,explore and enquire, challenge and reflect and review. This will be flexible dependent upon the scientific enquiry.

Assessment

Formative:

- AFL is used within each lesson to establish next steps for pupils
- mini 'quizzes' take place regularly to ensure content is being learnt

Summative:

- completed termly against year group objectives

EYFS:

- teachers, NNEBS and Teaching Assistants make observations regarding the pupils' development in this subject.

Resourcing and display

Working wall:

- display is kept up to date and relevant to class themes, displaying key vocabulary and concepts that are being taught in Science

Resources:

- resources are stored in the science cupboard.
- teachers are encouraged to add any new resources and store electronic copies of documents on the school staff shared area

Monitoring

Monitoring is undertaken by subject leader and SLT during the school year. This will include

- learning walks during Science lessons
- scrutiny of Science books
- discussions with pupils about what they have learnt