

# St Margaret's CE Primary School



## Science Policy 2021

|                            |                |                    |            |
|----------------------------|----------------|--------------------|------------|
| <b>Written by:</b>         | Hilary Edwards |                    |            |
| <b>Review cycle:</b>       | Every 3 years  |                    |            |
| <b>Date of this policy</b> | March 2021     | <b>Review date</b> | March 2024 |

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## **Contents:**

### **1. INTENT**

#### Aims

Science, in the light of the National Curriculum, has a vital role to play in the curriculum of the primary school. It is a systematic investigation of the physical, chemical and biological aspects of the world which relies on first-hand experience and on other sources of information. Science has a distinctive nature of its own, relying more heavily on enquiry skills such as prediction, investigation and observation. Science is also involved in heightening perceptual awareness. Children are naturally curious and want to experiment and explore the real world. In science teaching this curiosity should be built upon and developed so that pupils carry out their own scientific research where appropriate. Through science, pupils will continue to deepen their respect, care and appreciation for the natural world and all its diverse environments.

#### Principles

1. To develop and retain the natural curiosity that children have of the world around them.
2. To help children develop the skills to make systematic enquiries which will promote scientific ways of thinking, including open-mindedness, perseverance, increasing attention to accuracy and recognising the importance of teamwork.
3. To provide a range of relevant experiences allowing pupils to acquire knowledge, skills and understanding in the key scientific biology, chemistry and physics strands and including working scientifically, through a variety of teaching and learning strategies.
4. To enable all children access to the science curriculum regardless of background, building on their prior learning, so that individual needs are met and encouragement is made to reach their full potential.
5. To help children become effective communicators of scientific ideas, facts and data and engender a sense of awe and wonder about science which will serve as a foundation for future enquiry.

### **2. IMPLEMENTATION**

#### Roles, Responsibilities and Resources

The subject leader, Hilary Edwards, oversees and manage science. She has an overview of how the science curriculum is taught across the school, advise and support staff with their understanding whilst ensuring that the subject is sufficiently resourced. She is responsible for monitoring standards in the subject, both with the children's learning and knowledge and how the subject is taught in the classroom, keeping up to date with both National and County priorities.

#### Organisation

Science lessons are taught in the most appropriate way for the age of the child.

Early Year's science teaching is based on the Early Years Learning Goals- Understanding the World and is an integral part of the topic work covered during the year and is therefore ongoing as part of their child-initiated, free flow learning.

In KS1 and KS2 science teaching is taught as a discrete subject in topic units and through careful planning establishes links with other curriculum areas as much as possible. Each year group is taught separately in science and teaching is adapted appropriately to suit personalised learning of each class.

In Year 1 and 2 – teaching is usually a lesson a week (approx. 1 hour) in the afternoon.

In year 3- 6- teaching is usually a double lesson (approx. 1.5 hours) a week, though this may be on a rolling timetable (ie. Fortnightly)

Teaching time is not always evenly distributed throughout the year as there may be intense teaching programmes such as a science week.

It is also recognised that there will be a need to continue with a revision programme for year 6 pre-SATs.

### Planning and content

Planning in EYFS - please refer to the EYFS policy for more detail on the curriculum. Teachers in Early Years use the Revised Statutory Framework for the Early Years Foundation Stage to plan a unique curriculum that covers all aspects of learning including opportunities to develop their skills in Understanding the world. The educational programmes in the framework set out the activities and experiences for children under this area. Teachers use the Development Matters non-statutory curriculum guidance to set out the pathways of children's development and provide checkpoints throughout the year to assess progress through these stages.

Medium term plans have been devised from the content of the biology, chemistry and physics strands of the science curriculum which have been allocated to each year group running alongside a 'working scientifically' strand throughout the key stages, which is based on a Plan, Do, Record, Review model. Teachers then plan topic lessons to include the content and investigative skills to build upon previous learning and skills at the appropriate level of their children. All teachers have access to previous and future year groups plans to build in consolidation and extension activities.

### Resources

There is a central store of scientific equipment which is up to date. All the school have access to a well-established environmental / Forest school area which provides opportunities for personal learning experience, together with an orchard.

### Links with other subjects

Science is able to be linked to different areas of the curriculum. The children's learning is linked to current topics, events and real-life situations, making lessons relevant and engaging for example, using mathematics skills of drawing line graphs to present findings; measuring (time and weight) in ensuring precision and fair testing whilst doing an investigation; identifying properties of different materials when den building in Forest School. In English this could take the form of recording simple observations (KS1) up to writing up part or all of an experiment, including conclusions and explanations of their findings (KS2).

### Knowledge and skills

The intent part of the EYS policy details the skills and knowledge at three checkpoints in the year e.g. by Autumn, Spring and Summer and this is what the children will be able to do in the area Understanding the world. By the end of the year, the children need to reach the Early Learning Goal for this area of learning.

In years one to six, we use a variety of teaching and learning styles to develop children's knowledge, skills and understanding. Children will;

- be sometimes taught through whole class teaching, while at other times the children will be engaged in an enquiry based research activity.
- be encouraged to ask, as well as answer, scientific questions.
- have the opportunity to use a variety of data, such as statistics, graphs, pictures and photographs.
- use ICT in science lesson where it enhances their learning.
- take part in discussions and engage in a wide variety of problem solving activities, using 'real life' scientific activities whenever possible.

### Wider opportunities

Science application and relevance is all around us so it is used frequently outside of the classroom environment. As part of our Forest Schools programme, children consolidate their scientific and environmental knowledge and skills whilst working outside in our nature / Forest School area. In food technology children become aware of where food comes from, how it grows and which parts we can harvest and eat.

Prior enrichment opportunities have included science weeks in all our locality schools, Murder Mystery day for year 6 from The Angmering School, GD day at The Angmering School prior to a Science Fair held after school for parents to attend for children in year 2, 4 and 6.

### Inclusion and Extension

Following observations and formative assessment tasks, teachers are able to plan work to challenge the children with their learning. Depending on the nature of the task, children will work in a variety of groups, with a partner or on their own.

We are able to use teacher expertise to provide classes and groups for extending more able children such as in year six where the children are divided into three classes.

### Homework

Science home learning is set where appropriate in KS1 and KS2. Children are actively encouraged to bring in artefacts and resources from home to support current learning.

### Health and Safety

Children will be encouraged to assess hazards and discuss the appropriate precautions. They will be taught to use scientific equipment safely when using it during practical activities. Class teachers and teaching assistants will check equipment regularly and report and damage.

Children will always be expected to behave in a considerate and responsible manner, showing respect for other people and the environment whilst on trips outside the classroom and off site.

## **3. IMPACT**

### Marking and assessment

A variety of means are used to assess children's prior knowledge before starting the topic. Children are assessed in science at the end of each unit in KS1 and KS2 including AFL and children will be encouraged to assess their own work where appropriate. As much of the work done in science lessons is of a practical or oral nature (particularly at KS1), recording will take many varied forms, so ongoing classroom observation is another important form of assessment. Assessment of the children will be ongoing during science lessons, and assessment tasks will be formulated when planning an area of science.

In EYFS- Tapestry is used, along with slippery wallets of photos and annotations.

In year 1 and 2- a class file is maintained with examples of children's work, photographs and quotes (pupil voice).

In KS2- pupils record their work in individual books which will be passed up to the next class with them.

Children in year six are required to take National Curriculum SATs in science with results available to the parents in the annual report. Teacher assessment in science is also required to be reported to parents in year 2.

In years 1 to 6, class teachers informally assess the children's attainment in science each half term/term as appropriate, looking at the objectives for the unit of work and noting those children who have exceeded with these or have not met them. This is recorded on a spreadsheet that can be used by teaching staff, subject leaders and SLT.

#### Monitoring and evaluation

The subject leaders, along with the SLT, are responsible for monitoring the standards of mathematics across the school by looking at planning, children's books, learning walks and observations of classroom practice. Results of the National Curriculum SATs are monitored and reviewed by the subject leaders and SLT.

#### Reporting to parents and governors

All teachers are required to discuss the children's progress in science with parents as part of the consultation evenings (twice a year) and through an annual report which outlines the children's effort and attainment in scientific enquiry and content knowledge

Subject leaders are required to feedback to the curriculum governors every year.