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**Totley All Saints  
Church of England Primary School**

# **Science**

# **Policy**



*“I have come that they may have life,  
and have it to the full.”*

**John 10:10**

**Subject Leader: Tracy Soar**

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Approved by Governors: Summer 2020

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# Science Policy

## Introduction:

At Totley All Saints, we aim to provide a caring environment where every child can thrive and is supported to achieve their unique & amazing potential as a child of God. As such, this means that we will equip all of our children with a love of learning and an enquiring mind. Through our teaching of science, we hope to develop in children an understanding of natural phenomena and to stimulate curiosity in finding out why things happen in the way they do.

## Aims

Our science curriculum is designed to teach methods of enquiry and investigation in order to simulate creative thought. Children learn to ask scientific questions and begin to appreciate the way science will affect their future on a personal, national and global level.

It is our aim that children will:

- ask and answer scientific questions;
- plan and carry out scientific investigations, using equipment, including computers correctly;
- know and understand the life processes of living things
- know and understand the physical processes of materials, electricity, light, sound and natural forces;
- know about the nature of the solar system, including the earth;
- evaluate evidence and present their conclusions clearly and accurately.

## Teaching and Learning

We use a variety of teaching and learning styles in science lessons. Our principal aim is to develop the child's knowledge, skills and understanding. Sometimes we do this through whole-class teaching, while at other times we engage the children in an enquiry-based research activity working in groups, pairs or alone. We encourage the children to ask, as well as answer,

scientific questions. They have the opportunity to use a variety of data, such as statistics, graphs, pictures and photographs. They use ICT in science lessons where it enhances learning; take part in role-play and discussions and present reports to the rest of the class. They engage in a wide variety of problem-solving activities. Wherever possible, we involve the pupils in 'real' scientific activities, for example, researching a local environmental problem or carrying out a practical experiment and analysing the results. We make links to other areas of the curriculum and aim to maintain a high profile for science through the use of after-school clubs, visitors or out-of-school visits, links to Eco-Schools and Woodland Workshop activities, access to continuous provision and self-initiated exploration, as well as other enrichment activities, such as Science Week.

We recognise that there are children of different scientific abilities in all classes and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways by:

- setting common tasks which are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty, with opportunities for creative thought;
- grouping children by ability and setting different tasks for each ability group;
- providing resources of different complexity, matched to the ability of the child;
- using classroom assistants to support the work of individual children or groups of children;
- using targeted questions to challenge children at an appropriate level.

### **School Curriculum**

We plan using the newly revised National Curriculum's programmes of study for science which are mapped out for each year group, within parallel year group stages.

Our planning covers long-term, medium-term and short-term considerations. Our long-term plan maps out the scientific topics studied in each term in each year group across school. This can form the theme around which other work is linked, combining scientific study where possible, with learning in other subject areas, through cross-curricular, thematic-based teaching. In this way, children are more able to transfer their skills, make links to other areas of learning and to increase their sense of purpose for investigative work. At other times, children may study science as a discrete subject. An overview of the school curriculum for science is available to view online on our website. Progression is mapped clearly to ensure that children recap what has been previously taught before moving on.

Our planning details the skills and objectives for the half term's study, which are shared with parents. Our Science subject leader oversees and monitors these. Our learning themes in

science are designed to build upon prior learning, ensuring opportunities for children of all abilities to develop their skills and knowledge in each unit, and progress across units through increasing the level of challenge as they move up through school. Knowledge planners are used to help children make links to prior learning.

## **Equality**

We believe strongly at TASS that all children's needs should be catered for within a science lesson, from children with physical disability or special educational needs, to the more able, gifted and talented. Children's needs may be accommodated by providing additional activities according to ability, or by varying the complexity of problems to be worked through or the amount of support given. In some cases, children may work on content from a previous or subsequent year group in order to ensure progress at an appropriate level.

## **Assessment**

Children's understanding and application of science is assessed regularly within lessons, weeks, units and across terms, years and key stages. Assessment makes use of informal observations and both formative and summative judgements. Summative judgements are made against developmental ages and stages, and the early learning goals in foundation stage 2 as well as against national curriculum year group expectations.

Children use science targets for each learning theme to assess their own understanding in science within each topic. These objectives are taken from the new National Curriculum with a strong focus on scientific enquiry. After each unit, and for the working scientifically targets, children assign a learning score, traffic light or similar, to show they have been achieved. Teachers then assess these in line with our school marking scheme. At the end of the year, these are transferred to a class proforma, and used to inform parents as part of the child's annual report. In every lesson, children write a child friendly learning objective or WALT on their work. They are encouraged to reflect on their understanding and indicate to the teacher whether they feel they have mastered the skill, or need further practice or support, using learning scores and/or traffic lights.

## **Marking**

Recorded work may take the format of drawings, photographs, matching activities, pattern finding, graphs, tables, photocopied whiteboards and informal or formal written work. All recorded work is marked against the lesson's learning objective, in accordance with the school's

marking policy. Marking comments and feedback aim to be positive and constructive in order to recognise children's efforts and guide their next steps.

### **Homework**

Our termly curriculum newsletter informs parents of the science topic and coverage for each half term or term. When home learning is set in Key Stage 2, there may be optional activities for pursuing science learning at home. Recommended time limits and outcomes are also shared with home-learning activities. Children are given the opportunity to show what they have produced at home and are rewarded with a certificate to acknowledge their efforts.

### **Resources**

Resources for the teaching of science are regularly audited, maintained and sourced, in order to ensure that we have the very best tools for teaching and learning about science and scientific ideas. We have a well-stocked library with reference books, as well as sets of iPads to be used for research purposes.

### **Computing and DT**

Calculators, timers, cameras, laptops and netbooks, digital microscopes and weather monitors are used to support pupil's exploration of scientific phenomena and scientific enquiry. The use of torches, thermometers, periscopes and other products are used and appreciated in science lessons, and children are encouraged to reflect upon the design and use of scientific objects and skills in the real world.

### **English and Mathematics**

English and maths are closely related to science work, and good links are made with these where possible through researching, report writing and evaluating, and data collecting and presenting. The use of correct scientific terminology is promoted, together with sharing scientific ideas on paper, screen, in pairs, small groups or with the whole class.

### **Monitoring and Review**

This policy was written in accordance with the new National Curriculum and should be monitored/ reviewed on a bi-annual basis.