Holy Trinity Primary School
A Church of England Academy

Policy for Science

Introduction

This document outlines the guiding principles by which we will implement the National Curriculum, giving all children a broad and balanced Science education, regardless of ethnic origins, gender, class, aptitude or disability. Science also contributes to the wider aims of primary education through cross-curricular activities.

Aims

In teaching science at KS1 we will:

- Encourage children to observe, explore and ask questions about living things, materials and phenomena.
- Help them to begin to work together to collect evidence which answer questions and link it to simple scientific ideas.
- Provide opportunities for evaluating evidence and considering whether tests or comparisons are fair.
- Teach them how to use reference materials to find out more about scientific ideas.
- Present them with situations in which they can share ideas and communicate them using scientific language, drawings, charts etc.

In teaching science in KS2 we will:

- Encourage children to learn above a wider range of living things, materials and phenomena using a range of reference sources.
- Provide opportunities for them to begin to make links between ideas and to explain things using simple models and theories.
- Help them to apply their knowledge and understanding of scientific ideas to familiar phenomena, everyday things and their personal health.
- Encourage them to think about the positive and negative effects of scientific and technological developments on the environment and in other contexts.
- Provide opportunities to carry out systematic investigations working on their own and with others, considering whether their tests and comparisons are fair, talking about their work and its significance and communicating ideas using a wide range of scientific language.

In both key stages we will encourage experimental and investigative science by providing the children with opportunities to carry out investigations which will allow them to

- use and develop their knowledge and understanding
- develop their curiosity and imagination by questioning and trying to explain things
- devise ways in finding things out for themselves
- become more proficient in using equipment
- use sources of information
- present and interpret information and data, making and justifying conclusions

Teaching & Learning Methods

Scientific Enquiry
Across both key stages our teaching will ensure that scientific enquiry is taught through contexts taken from the sections on life processes and living things, materials and their properties and physical processes.

At KS1 Pupils will be taught: **The importance of collecting evidence by making observations and measurements when answering questions**

- To plan – asking questions, collecting evidence, making predictions, making tests fair
- To obtain and present evidence – exploring using their senses, making/recording their observations and measurements – and communicating what happened in a variety of ways including ICT
- To consider evidence and evaluate it – making simple comparisons, identifying patterns, relating results and predictions and trying to explain them to others.

At KS2 Pupils will be taught:

- That science is about thinking creatively and deciding how to explain how things work, establishing links between causes and effects
- That testing ideas using evidence from observations and measurements is important
- To plan – asking questions that can be investigated scientifically; deciding how to find answers and considering what sources of information they can use; thinking about possible outcomes when deciding what evidence to collect and what equipment and materials to use; setting up fair test. To obtain and present evidence – using equipment and materials appropriately; taking action to control risks; making systematic observations and measurements by repeating them where appropriate; using a range of methods to communicate data in an appropriate manner
- To consider and evaluate evidence – making comparisons; identifying simple patterns and drawing conclusions from personal observations, measurements etc.; deciding whether conclusions agree with predictions made and/or whether they

engender further predictions; using scientific knowledge and understanding to explain observations, measurements or other data/conclusions; reviewing their work and that of others, being able to describe its significance and limitations.

Curriculum Organisation

For each topic QCA SoW are used as a foundation for planning, teaching and expectations. Planning demonstrates clear learning objectives, outcomes and expectations and ensures that knowledge, skills, understanding and breadth of study are taught through the units and across school.

In EYFS Science is taught as part of Understanding the World. In KS1 and KS2 children will be taught the four strands of science across each key stage through the topics planned in the long term planning.

Resources

The majority of the resources are stored and catalogued in store room 3, to provide a readily available range of materials and equipment. In addition teachers keep some resources which are used only within their year group in their classrooms. These resources include posters and big books. Audit of resources made yearly.

Years 1, 3, 4 and 5 have access to Snap Science. Teachers will use it to aid planning for the new curriculum. It is an online resource bank consisting of exemplar planning, interactive resources, videos and experiments linked to the new curriculum.

As of September 2015, Years 2 and 6 have access to snap science due to them joining the new curriculum.

Materials, including Brain Academy Science, to extend and challenge the more able are stored centrally and should be used with reference to the G and T register. More able challenge files for Science are held within each year group.

The library contains a selection of relevant texts which support the science activities in the classroom. The Central Library is used as a source of suitable texts for more extensive/intensive topic coverage.

Equal Opportunities

The science curriculum will be available for children of all abilities. Resources are provided which enable teachers to provided varied and differentiated activities.

Support and extension activities will be provided for SEN/MA pupils where appropriate.

This policy has been assessed for Equality Impact Assessment on 23.06.13 and has a low priority.

Links with other areas of the Curriculum

Science contributes to the wider aims of primary education. It allows children to develop key skills such as - communication, application of number, co-operation, working with others in pairs and small groups, problem solving and higher order thinking skills. Scientific links can be found in many areas of the curriculum, particularly Numeracy, ICT and Speaking and Listening and vocabulary/language development. Many scientific topics lend themselves to being taught outside the classroom allowing opportunities for experiencing the wider world.

Health and Safety

Children need to appreciate the health and safety aspects of their Science activities. They will be taught:-

- About hazards, risks and risk control
- To recognise hazards, assess consequent risks and take steps to control the risks to themselves and others
- To manage their environment to ensure the health and safety of themselves and others
- To use information to assess the immediate and cumulative risks
- To explain the steps they take to control risks.

Staff will be familiar with any updates in regards to aspects of safety in Science and Technology covering all aspects of the activities children and staff are likely to be involved in.

Our LEA maintain a subscription to the CLEAPSS School Science Service and additional guidance issued by them re safe practice is available to staff.

Assessment and Recording

It is the responsibility of each class teacher to assess pupils in their class. Assessment is a continuous process and teachers use a variety of forms of assessment to recognise achievements and inform future planning. Detailed planning will demonstrate opportunities within lessons for key questions and AfL. Evidence of children's marked work will be in Science books, saved in the children's user areas and

photographs/videos of investigations. Children will also be encouraged to assess their own learning at the beginning and end of a topic.

Rising Stars progress tests will be completed at the end of each unit and recorded in the performance trackers to support teachers assessment of pupils within that unit of work.

Each class completes a Science Investigation books detailing investigations which have been completed with photographic evidence.

Classroom monitor, a new software package, will be used to assess the children's science skills across the board. It contains a set of objectives from the new curriculum for each year group. The objects will be highlighted when a child has met them. Each child has their own individual recording section where the teacher will update the objectives when they are met.

Within each unit of science, each year group will undertake an investigation day to increase the interest of enquiry for pupils and to focus on the assessment of working scientifically. This day will also incorporate STEM subjects.

Professional Development & Subject Manager's Role

Opportunities for professional development will be undertaken in line with the school development plan. The subject manager will be responsible for –

- Policy development and review
- Monitoring the science curriculum, planning and assessments
- Supporting staff in the effective delivery of science
- Analysing data relating to children's attainment in science
- Resource management
- Reporting to staff and the governing body

Review and Evaluation

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Policy to be reviewed in September 2019

Policy agreed at the Governors meeting January 2018