



St Anne's Catholic Primary School

Science Policy

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1 Introduction

- 1.1 We believe in the view of science outlined in the National Curriculum: "Science stimulates and excites pupils' curiosity about phenomena and events in the world around them. It also satisfies their curiosity with knowledge. Because science links direct practical experience with ideas, it can engage learners at many levels. Scientific method is about developing and evaluating explanations through experimental evidence and modelling. This is a spur to critical and creative thought. Through science, pupils understand how major scientific ideas contribute to technological change – impacting on industry, business and medicine and improving the quality of life. Pupils recognise the cultural significance of science and trace its world-wide development. They learn to question and discuss science-based issues that may affect their own lives, the direction of society and the future of the world."
- 1.2 At Foundation Stage and KS1 pupils observe, explore and ask questions about living things, materials and physical phenomena. They begin to work together to collect evidence to help them answer questions and to link this to simple scientific ideas. They begin to evaluate evidence and consider whether tests or comparisons are fair. They use reference materials to find out more about scientific ideas. They share ideas and communicate them using scientific language, drawings, charts and tables with the help of ICT if it is appropriate.
- 1.3 At KS2 pupils learn about a wider range of living things, materials and physical phenomena. They make links between ideas and explain things using simple models and theories. They apply their knowledge and understanding of scientific ideas to familiar phenomena, everyday things and their personal health. They think about the effects of scientific and technological developments on the environment and in other contexts. They carry out more systematic investigations, working on their own and with others. They use a range of reference sources in their work. They talk about their work and its significance, using a wide range of scientific language, conventional diagrams, charts, graphs and ICT to communicate their ideas.

2 Science Policy Aims

- 2.1 At St Anne's we acknowledge that science is a core subject of the school's curriculum. We aim:
 - to provide a rich and stimulating scientific environment that will foster a fascination and interest in science;

- to support a sense of scientific curiosity and the development of appropriate levels of knowledge and understanding;
- to encourage discussion of scientific ideas, and the ability to question and justify using appropriate scientific language;
- to encourage children to collect and collate information from various sources and to check and compare results/findings with others;
- to be able to evaluate and interpret data;
- to provide experiences, which will enable children to use and become familiar with the processes of science and make predictions based upon simple observations and experiments.

3 Promoting spiritual, moral, social and cultural development through science.

3.1 Science provides opportunities to promote:

- spiritual development through pupils sensing the natural, material and physical world they live in, reflecting on their part in it, and exploring questions such as when does life start and where does life come from;
- moral development through helping pupils see the need to draw conclusions from observation and evidence rather than preconceptions or prejudice, and through discussion of the implications of the uses of scientific knowledge, including the recognition that such uses can have both beneficial and harmful effects;
- social development through helping pupils recognise how the formation of opinion and the justification of decisions can be informed by experimental evidence, and drawing attention to how different interpretations of scientific evidence can be used in discussing social issues;
- cultural development through helping pupils recognise how scientific discoveries and ideas have affected the way people think, feel, create, behave and live, and drawing attention to how cultural differences can influence the extent to which scientific ideas are accepted, used and valued.

4 Promoting Key Skills through Science

4.1 Science provides opportunities for pupils to develop the key skills of:

- Communication, through finding out about and communicating facts, ideas and opinions in a variety of contexts;
- Application of number, through collecting, considering and analysing first-hand and secondary data;

- ICT, through using a wide range of ICT equipment and applications;
- Working with others, through carrying out scientific investigations;
- Improving own learning and performance, through reflecting on what they have done, and using the Assessment for Learning practices;
- Evaluating what they have achieved;
- Problem solving, through finding ways to answer scientific questions with creative solutions.

5 Planning

- 5.1 Planning at all levels ensures that the interests of all children are taken into account.
- 5.2 The pupils work individually, in pairs, as part of a small group and as a whole class each term. They use a variety of means for communicating and recording their work.
- 5.3 Support staff work as directed by the teacher. Where LSAs are assigned to pupils with special educational needs, they are well briefed beforehand.
- 5.4 All pupils, including those with special educational or language needs, undertake the full range of activities. Teacher assessment determines the depth to which individuals and groups go during each unit of work.
- 5.5 Annotated planning shows how activities have been adapted or extended for the needs of all pupils and, where appropriate, how they relate to Individual Education Programmes.

6 Medium Term Planning

- 6.1 We use the National Curriculum (NC) objectives for science, incorporating topics where possible into cross-curricular units, but recognising that the built-in progression and continuity of the knowledge and skills within the NC need to be maintained.
- 6.2 The whole school science curriculum map shows the units to be covered in each half term by each year group.

7 Weekly Planning

- 7.1 Using the NC objectives and guidance, the class teacher identifies the learning objective, skills, activities and resources appropriate to the unit.
- 7.2 The lesson plans are recorded on a planning format agreed by the Science Co-ordinator and SLT/ELT.

- 7.3 The lesson plan is a record of the learning intentions, the differentiated activities, resources and success criteria.
- 7.4 The class teacher keeps this record in the year planning file.

8 Assessment

- 8.1 We use a variety of assessments:
- weekly assessment through annotations and Next Steps on the weekly plan in the planning file;
 - marking, allowing for Rewind Time;
 - observation and discussion;
 - testing – including end of unit tests and investigation assessments;
 - self-assessment by child through Assessment for Learning;
 - homework (KS2);
 - beginning and end of unit assessment using “thought showers” or “mindmaps”;
 - photographs;
 - formal KS1 and KS2 Teacher Assessments;
 - end of year report

9 Procedure for assessment at the end of each unit

9.1 Foundation Stage

Teachers make termly assessments of each child, completing the Development Matters Grid for Understanding of the World.

9.2 Key Stages 1 & 2

At the end of each half termly unit, the class teacher:

- assesses each child using the NC objectives using a range of teacher assessment, end of topic test, and assessment activities.

At the end of each term, the class teacher:

- records each child's current level (based on objectives delivered up to that point) on the Science Assessment Grids in the Science Co-ordinators Portfolio File

9.2.1 At the end of each year, the ongoing assessment information will be made available for the following year's teacher to inform their planning and assessment.

10 Monitoring and evaluation of teaching and learning.

- 10.1 The co-ordinator will monitor the subject termly, collecting a sample of planning, children's work and also interviewing pupils.
- 10.2 For Y1 – Y6 the class teachers will provide a unit's planning, and books for 6 children, representing above average, average and below average for the class (2 of each).
- 10.3 For Early Years Foundation Stage, teachers will choose 3 children (+, =, -) and provide their Learning Stories. They should also provide plans since last monitoring, containing evidence of Understanding of the World (UW) activities, and the relevant Observation Checklists/iPad records.
- 10.4 The co-ordinator will also monitor coverage, progression and attainment through the completed assessment grids, observation of science lessons and analysis of test scores.

11 Resources

- 11.1 The resources are kept in the science cupboard in the music room and are audited updated termly. The Co-ordinator will support teachers with finding relevant resources.
- 11.2 Links to useful resources websites can be found in the SCIENCE FOLDER on the T Drive.

12 Safety in Science

- 12.1 When working with tools, equipment and materials, in practical activities and in different environments, including those that are unfamiliar, pupils should 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 use information to assess the immediate and cumulative risks;
 - to manage their environment to ensure the health and safety of themselves and others;

- to explain the steps they take to control risks.

13 Equal Opportunities in Science

13.1 We believe that as teachers we should set high expectations and provide opportunities for all pupils to achieve, including boys and girls, pupils with special educational needs, pupils with disabilities, pupils from all social and cultural backgrounds, pupils of different ethnic groups and those from diverse linguistic backgrounds. We take specific action to respond to pupils' diverse needs by:

- creating effective learning environments;
- securing their motivation and concentration;
- providing equality of opportunity through teaching approaches;
- using appropriate assessment approaches;
- setting targets for learning

14 Displays

14.1 We feel that displays are important for:

- use as an aid to teaching;
- developing scientific language;
- celebrating children's work;
- use as a resource for children to refer to.

14.2 All classrooms should have a science display accompanying a topic. This should include information referring to what the children are learning about (knowledge) and what they are learning to do (skills). The key vocabulary should also be displayed.

14.2 Display materials, including topic vocabulary can be found in the SCIENCE FOLDER on the T Drive, along with links to display resources websites.

15 Related policies

15.1 See also:

- Assessment;
- Classroom organisation and management;

- Equal Opportunities;
- EYFS;
- Health and Safety;
- Homework;
- Marking and Feedback;
- More Able and Talented;
- Principles of Learning;
- Teaching and Learning