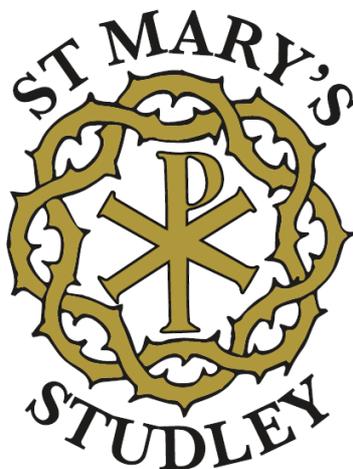


ST MARY'S CATHOLIC PRIMARY SCHOOL



Science Policy

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St. Mary's Catholic Primary School, Studley

Science Policy

1. Science Policy

At St Mary's the study of science is an essential part of the school curriculum. Through the science curriculum, children's entitlement to participate fully in science is realised and they will develop skills to explore and understand the world in which they live.

- We should involve the children in learning experiences which require their involvement in both practical and intellectual activities.
- All children have the potential to progress scientifically. We recognise that they arrive with different levels of language and experience. Our aim is to provide appropriate experiences and support to enable them to develop scientifically.
- Good science in the Primary school should be firmly based on children's first hand experiences and the sorting and classifying of these experiences in a responsive and logical way.
- Science in the classroom must start from the views which children hold and give them the opportunities to change their views and ultimately their understanding.

2. Purpose and Aims

- To deliver the National Curriculum Science orders in ways that are imaginative, purposeful, controlled and disciplined but also enjoyable.
- To help in developing and extending the children's scientific concept of their world.
- To encourage the development of investigation, exploration, collaboration, observation, evaluation and inspiration.
- To carry out planned, safe, practical activities.
- To develop the use of scientific language, recording and techniques.
- To enable children to become effective communicators of scientific ideas, facts and data.
- To incorporate science activities with other areas of the curriculum.
- To build upon children's scientific skills, knowledge and experiences so that their knowledge and understanding is deepened and enriched as they progress through the school.
- To encourage the development of positive attitudes to science.

3. Management

Science education throughout the school is managed by the science subject manager. This entails writing and updating and monitoring school resources and giving support to colleagues as appropriate.

The Science subject manager leads meetings and their discussions related to science issues, e.g. formation of schemes of work etc.

- Monitoring of lessons and work scrutiny according to St Mary's monitoring plan.

4. Equal Opportunities

Strategies are adopted to ensure that all children have the opportunity to become scientific regardless of gender, race, class, physical or intellectual ability. We ensure that expectations do not limit pupils' achievements and the assessments do not involve any cultural, social, and linguistic or gender bias.

Such as:

- Work produced by girls and boys is equally valued.
- Care is taken to make sure that girls do not take on a passive role in-group situations.
- Staff present good role models and are able to use the relevant equipment.
- Children are encouraged to talk about their scientific investigations.
- We recognise the different levels of experience and language of children arriving at school and to provide them with appropriate experiences and means of expression.
- Access is provided to all activities and we recognise that some may have to be adapted. Physically less able children are encouraged to participate and integrate in scientific activities in the classroom.
- Appropriate support is given for those on the SEN register.
- Support is provided to ensure access for those children experiencing difficulties and to extend and stimulate those who need to develop further.
- Gifted and talented children are extended through more challenging tasks.

5. Planning

Planning in science is a process in which all teachers are involved- teachers plan for the medium term and short term, ensuring progression for all pupils.

- Cross curricular links are made where appropriate. ICT is incorporated into lessons whenever appropriate.
- In KS2 a minimum of 50% lessons are taught in conjunction with AT1 (Investigation).

- In KS1 one lesson in each term should be related to AT1 (Investigation).
- In Reception, references are made to the Foundation Stage objectives.

6. Good Science Learning

Evidence of the following are found in our classrooms.

- An active learning environment.
- Children working from first-hand experience.
- Children encouraged to ask questions and teacher questioning extends learning.
- Children actively involved in exploration and investigation.
- Children working co-operatively.
- Children discussing with each other and adults.
- Children devising and conducting their own investigations.
- Children choosing their own materials and equipment.
- Children recording their findings in a variety of ways.
- Children drawing conclusions from their findings.
- Children showing enjoyment in the activities they are undertaking.

We encourage children to work in these ways, so that they will ultimately gain confidence to ask their own questions and devise investigations to answer them.

7. Differentiation in Science

Differentiation is the provision of work at different levels which meet a wide range of individual needs and will keep pace with developing abilities.

8. Differentiation by task

- By grouping the children according to ability and setting tasks accordingly.
- By giving a variety of tasks related to a curriculum theme: providing more concrete experience and discussion for children who are slower to understand, while giving extension activities for those who succeed quickly.

9. Differentiation by expectation

- By setting a task which is virtually the same for the class, but providing greater support for the less able and giving more responsibility and challenge to the more able.
- By using mixed ability groups and asking children to plan and carry out practical work cooperatively, then for each child to record the work on their own, this provides opportunities for the teacher to assess what each child has learned. Different approaches will be needed for different classes, ages and activities.

10. Delivery

In the Reception class reference will be made to the Foundation Stage, Early Learning Goals. In Key Stages One and Two, the children follow QCA science and National Curriculum for science.

11. Levels/Standards in Science

The different Levels at the school are following:

- Reception children should be working towards level 1 but some children may be working at level 1 in Summer Term.
- Year 1/2 working at Levels 1 and 2.
- Year 3/4 working at Level 3 and with revision of Level 2 and also introducing, where appropriate, elements of Level 4.
- Year 5/6 working at Level 4 with revision of Level 2 and 3 and introducing elements of Level 5 at AT 1, but some will work confidently at level 5 in AT 2-4..

12. Resources

A4 sized books are used to record all science.

- Teachers need to plan which resources are needed and speak to the Science subject manager about resources which need to be ordered for a specific topic e.g. .batteries.
- Resources are stored in the science resource cupboards for each key stage.

13. Marking

Pupils' work should be marked properly as per the requirements of the School's Marking Policy.

- Positive comments should be used for pupils' work and appropriate targets set where necessary

14. Record Keeping

Science records of attainment are kept for each child/class on an electronic recording sheet. As topics are concluded samples of work should be photocopied, one each for average, below average and above average attainment and forwarded to the subject manager.

15. Assessment

Two types of Assessment in Science are carried out: **FORMATIVE** and **SUMMATIVE**.

- **FORMATIVE** assessment is used to guide the progress of individual pupils in science. It involves identifying each child's progress in each area of the Science Curriculum, determining what each child has learned and what, therefore, should be the next stage in his or her learning. Formative assessment is mostly carried out informally by teachers in the course of their teaching, but informs future teaching and learning.

- **SUMMATIVE** assessments - end of topic assessments which are recorded for each child in the class on the electronic spreadsheet. These are to be forwarded to the subject manager at the end of each term..

A minimum of two science investigations per year should be assessed for National Curriculum AT1 and that this should be based on the HDERIC formula.

H hypothesising and Predicting

D Designing and Planning

E Carrying out Exploration

R Recording Data

I Interpreting, Inferring, Drawing Conclusions

C Communicating Results

- It is not necessary to assess on all the points each time, but all the areas should be covered throughout the year.

- Year group teachers and the subject manager will liaise on any areas not covered and devise suitable assessment criteria and tasks.

19. Reporting

Reporting to parents is done on a termly basis, through parents' evenings and a written report that will include:

- Attitudes to science.

- Progress and the ability to investigate scientifically and in the understanding of the nature of 'scientific method'.

20. Review Date:

This Science Policy to be reviewed annually.

21. Health and Safety

- Teachers are clear as to the purpose of the work and ensure that any testing that needs to be carried out complies with Health and Safety procedures and has been practised prior to the lesson.
- Safety hazards are pointed out to the children, at the beginning of any work.
- Reference has been made to 'Be Safe' available in the Science cupboard.

22. The Role of the Teacher

The children are taught the use and limitations of the equipment available.
Teachers make clear what role they are to play i.e. helper, observer, assessor.

Appendix – 1

Guidelines for Science Recording KS1 and KS2

Investigations and Experiments

Hypothesis

What are you trying to find out?

Prediction

What do you think the result of your experiment would be?

Resources

What equipment did you use?

Method

Draw and label a diagram.

How did you carry the experiment out?

How did you make it a fair test?

Which factor did you vary?

Results

Copy your table of results

Can you draw a graph?

What did your result show?

Was your prediction right?

Can you explain your results?

Were there any patterns in what you measured or observed?

If there were, can you make a general rule what you observed?

Was your test as fair as you could have made it?

If not, how could it have been made a better fair test?

Has the test made you change your ideas at all?

If so, how have they have changed?

Conclusion

What did you find out?

Why do think this happened?