Ranelagh Primary School
Pauls Road Ipswich IP2 0AN
Telephone: (01473) 251608
Email: admin@ranelagh.suffolk.sch.uk

Headteacher: Mrs N Ling

Science Policy

Reviewed on: 20th May 2024

Next Review due: Summer 2026

Signed by:  Chair of Governors

Signed by:  Headteacher

This policy reflects the values and philosophy of Ranelagh Primary School in relation to the teaching and learning of science. It gives a framework within which teaching and support staff work and it gives guidance in planning, teaching and assessment.

Principles

At Ranelagh, the staff alongside the children came up with four principles that we aim to follow to ensure that the children get the best learning from science lessons. These principles are:

1. Adults and children are all engaged in the topic and clearly perceive that science is 'fun'.
2. Children are motivated and engaged in science through practical 'hands-on' activities.
3. Children are encouraged to become independent and creative learners through relevant activities.
4. Children are encouraged to ask questions.

These are used by the teachers to support their planning.

Objectives

We seek to meet our principles by:

- Providing a stimulating environment where children are encouraged to ask questions about the world around them, thus developing inquiring minds.
- Providing a range of practical and theoretical activities which will help children to develop the skills of scientific enquiry.
- Providing a wide range of learning opportunities and resources to develop knowledge and understanding about science.
- Using the school and wider environment to extend the children's opportunity to relate their scientific understanding to the everyday world.
- Encouraging the children to record their work in a variety of formats; by using a range of methods for recording, mind mapping, models and through the use of I.T. software.
- Encouraging links with outside agencies in order to foster a positive view of science related careers and to promote the relevance of science to the wider world.
- Encouraging and developing the correct use of scientific terminology and vocabulary to communicate and record in a systematic manner.
- Children being exposed to diverse and current scientists who use theories developed by historically famous scientists.

Spiritual, Moral, Social and Cultural development through science

Science provides opportunities to promote:

- Spiritual development — through pupils sensing the natural, material, physical world they live in, reflecting on their part in it, exploring questions such as where does life start and where does life come from?

- Moral development — through helping pupils see the need to draw conclusions using observations and evidence rather than preconception or prejudice, and 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.

Curriculum and Time Allocation

Science is a core subject. In order that children are able to develop good scientific inquiry skills, science should be taught as a separate timetabled subject at least once a week.

In addition, we are committed to linking our learning in science to other curriculum areas as appropriate. Oracy is a priority during scientific investigations. The children develop their writing skills with predictions, evaluations and recording data. Mathematical skills including measuring and data handling are an important part of lessons. Science work can be recorded in maths or English books when appropriate.

Planning, Class Organisation and Teaching Style

It is good if we are all aware of both where our children are coming from and where they are going to. The excerpt below sums up the progression in science that primary aged pupils need to make.

'To ensure pupils progress in science through key stages 1 and 2, teaching should provide opportunities for pupils to progress:

- From using everyday language to increasingly precise use of technical and scientific vocabulary, notation and symbols.
- From personal scientific knowledge in a few areas to understanding in a wider range of areas and of links between these areas.
- From describing events and phenomena to explaining events and phenomena.
- From explaining phenomena in terms of their own ideas to explaining phenomena in terms of accepted ideas or model.
- From participating in practical scientific activities to building increasingly abstract models of real situations.
- From unstructured exploration to more systematic investigation of a question.
- From using simple drawings, diagrams and charts to represent and communicate scientific information to using more conventional diagrams and graphs. '

Ref: http://curriculum.qca.org.uk

Organisation within the class is left to the individual teachers who will, throughout the year, have included the whole class, group and individual activities, both in like and mixed ability groupings.

Pupils will be encouraged to communicate their findings verbally, pictorially, graphically and in a variety of written forms in order to initiate discussions which lead to progress at all levels.

In order to promote the use of correct scientific vocabulary, each classroom should have a display of vocabulary related both to science enquiry and the current science topic.

Medium term plans should be completed to show the aims of the series of lessons and the vocabulary to be taught. The plans should include ways in which the teacher plans to teach the aims but they are flexible to allow for the children to lead the lessons and for plans to be reconsidered after initial assessment for learning.

Equal Opportunities I Special Educational Needs I Gifted and Talented

The school's equal opportunities policy clarifies the way in which we at Ranelagh strive to ensure the equal provision of all children regardless of their gender, race, religion, class or ability.

We achieve these goals in science by

- Involving all the children in oral work.
- Planning differentiated work to suit the ability of the children.
- Ensuring that the content of the lesson is relevant to all pupils.
- Having high expectations of every child.

Multicultural science

Topics should be taught with a global perspective and multicultural outlook. Achievement from around the world should be noted. Any resources and literature should be suitable for any race or culture to use. Any pictures should show a mix of people, lifestyles, and beliefs thus promoting positive images from around the world.

English as a Second Language

Scientific language may present extra difficulties to bilingual children. Teachers should be aware that questioning may need rephrasing and matching to the children's English speaking abilities. Some children may be able to demonstrate their understanding more through practical work rather than by verbal communication. Teachers have the opportunity to send children with EAL to pre-teach lessons and cover scientific language, when appropriate. Vocabulary should be accessible at all times in the classroom.

Assessment, Record Keeping and Reporting

As part of the teaching and learning process, ongoing formative assessment will be made by individual teachers for all children to monitor individual progress and to inform future planning.

These assessments may include:

- Individual/group discussions.
- Observation of specific investigations.
- Written assessments — at the end of each unit.
- Analysis of work over time.
- Self-assessment.

At the end of each topic a 'pop quiz' will be used to assess children's learning. This does not have to be written, for example, if naming parts of a flower in KS1, students may be given a real flower and labels to match up. This can be an opportunity for teachers to observe the skills students have picked up. It should aim to cover all the bullet points in the section of the National Curriculum covered in that half term. This will be used to inform the multi-tick record on Pupil Asset.

Every term, the teachers will make a summative assessment, which will then be recorded on Pupil Asset.

Each student will be given a knowledge organiser at the beginning of each unit to stick in their books. This will be a place where a summary of the upcoming term's learning will be displayed for the student to reference back to. In KS1, they may choose to do this as a display rather than in a book.

Assessment for Learning

This is our key method for assessing science at Ranelagh. We will start each unit with an assessment activity so that we do not teach children things they already know. We will also consider the data put on Pupil Asset to consider any gaps and to inform our planning. The assessment activity may include a KWL grid, a concept cartoon, an odd one out activity or another activity the teacher chooses. Then, throughout the unit continue AFL in order to check progress of key ideas/ skills. It is essential to clear up any misconceptions as you go and check that children are developing a wealth of scientific vocabulary which they can use appropriately to describe their thinking. It is really important that children can use and apply their scientific knowledge in a range of contexts. So, it is a good idea to create challenges within the topic which allow children to develop these skills. Challenges also provide good opportunities for gathering AFL information.

Safety

Science is a practical subject and can, therefore, pose a number of potential dangers. Suffolk Local authority advise primary schools to use the ASE publication BE SAFE. Also, our school is a member of CLEAPSS who will give health and safety guidance on all matters relating to science. www.cleapss.org.uk

Teachers are advised to check both of these for guidance and to risk assess any activity that they feel may pose a danger to either themselves or their pupils.

Children should be shown the correct and safe use of all equipment at their disposal, in accordance with the recommendations of Suffolk County Council / CLEAPSS.