



Ryelands Primary and Nursery School

Science Policy

This policy was developed as part of a consultation process involving pupils, staff, parents and Governors of the school, based on best practice advice (where available) from Lancashire County Council.

It will be presented to Governors in January 2018 for approval and will be monitored and reviewed as listed below:

Policy updated: January 2018

Policy Approved: 31st January 2018

The implementation of this policy will be monitored by the Senior Leadership Team and Governing Body.

This policy should be read in conjunction with the following documents:

- Teaching and Learning Policy
- Curriculum Policy
- E-Safety Policy
- Child Protection Policy
- Health and Safety Policy
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This policy will be reviewed as appropriate by the subject co-ordinator and members of the Senior Leadership Team.

Intended Policy Review Date: January 2021

1. Ryelands School – Our Ethos and Values

Our Mission Statement

Imagine, Believe, Achieve...

In our school community every individual is respected, valued and nurtured; we share a belief about every child's ability to exceed their dreams.

We teach children to love life, themselves and the world around them. Through learning we foster curiosity, perseverance and resilience.

We believe that our attributes are not fixed; that our abilities and intelligence can grow through engagement, effort and by embracing challenge.

2. Subject and Policy Aims

Our aims in teaching science include the following:

- Preparing our children for life in an increasingly scientific and technological world
- Fostering concern about, and active care for, our environment
- Helping our children acquire a growing understanding of scientific ideas
- Helping develop and extend our children's scientific concept of their world
- Developing our children's understanding of the international and collaborative nature of science

Attitudes

- Encouraging the development of positive attitudes to science
- Building on our children's natural curiosity and developing a scientific approach to problems
- Encouraging open-mindedness, self-assessment, perseverance and responsibility
- Building our children's self-confidence to enable them to work independently
- Developing our children's social skills to work cooperatively with others
- Providing our children with an enjoyable experience of science, so that they will develop a deep and lasting interest and may be motivated to study science further

Skills

- Giving our children an understanding of scientific processes
- Helping our children to acquire practical scientific skills
- Developing the skills of investigation - including observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, explaining and evaluating
- Developing the use of scientific language, recording and techniques
- Developing the use of ICT in investigating and recording
- Enabling our children to become effective communicators of scientific ideas, facts and data

It is the policy of this school to deliver to every child their entitlement to science using a skills-based thematic curriculum. This means that all children will be given the opportunity to study science using a cross-curricular methodology, thereby ensuring a holistic approach to science. The age and ability of the children will be taken into consideration. As a result, science will take its place as an integral part of the academic and social development of the children.

It is intended that the acquisition of skills such as observation, problem solving, prediction, hypothesis testing, experimental design, sample technique and data handling will run parallel to and complement the increasing factual and theoretical knowledge of the children as they progress through school.

3. Subject Statement

At Ryelands Primary School we teach across the age range, from Nursery to Year 6 and it is taught to children as part of the skills-based thematic school curriculum, in line with National Curriculum requirements.

The national curriculum for science aims to ensure that all pupils:

1. To develop each child's knowledge of basic scientific skills and techniques.
2. To encourage the safe and proper use of scientific equipment and materials.
3. To provide each child with the opportunity to build his or her factual knowledge in a logical and progressive fashion.
4. To develop the confidence to apply what they have learned to a variety of situations.
5. To stimulate enquiry into the nature of our environment awareness resulting in young people with respect of our planet.

4. Teaching and Learning including Planning and Organisation

The content of the curriculum is based on the Lancashire Key Learning documents and is then adapted appropriately to the ability of the children to suit learning outcomes.

We are using the Lancashire Science KLIPS and our whole school curriculum overview to inform our medium and short term planning. We achieve curriculum balance in science by organising differentiated activities and planning strategies to encourage investigation and experiments of science in everyday life. The whole school overview ensures that all areas of the science curriculum is taught with clear progression throughout the school. In teaching science, a range of teaching and learning experiences should take place with all learning styles considered. Medium term planning will take account of differentiation and progression to meet the needs of all children and the school. Learning outcomes will be in line with the programme of study. Work is enhanced by a range of strategies and resources to assist learning. Termly planning is based upon the yearly overview for each year group and each age range is given the opportunity to study the key skills and elements of science over a yearly cycle. Key skills are highlighted to show progression in each year group and the Curriculum Leader, alongside the science subject lead, have ensured coverage and progression. The yearly overview also provides planning opportunities for the inclusion of science investigations throughout the year. Each theme unit undertaken by each year group also has a specific science investigation, whether technological or a fair test, based on the current theme. Staff training has been given regarding science investigations and the introduction of the 'Post-it Note' based investigation recording document has been purchased and shared with staff. This has ensured that there is a clear progression in the recording of all science investigations and these new documents allow pupils to gain independence to plan and undertake their own investigations.

The introduction of 'Subject Ambassadors' is a new concept and one which encourages our pupils to become more involved in the planning and organisation of the science curriculum. Further details of this can be found in the Curriculum Policy.

5. Curriculum overview and Progression including visitors, trips and extra- curricular provision

Teachers will follow the Ryelands primary school curriculum progression grid based on the above objectives. This document specifies the learning objectives that teachers in each year group will teach with ideas for projects and resources. This will ensure that there is no repetition through the year groups in terms of the content being taught. The subject leader will periodically monitor the planning, teaching and science teaching to evaluate the impact and effectiveness of provision in school. The subject lead will

identify opportunities for pupils to go on trips or organise visits from specialists that will support the science curriculum. The subject lead will keep abreast of the latest developments as a means of making sure teachers are aware of the latest developments.

6. Assessment, Recording and Reporting

The principles for assessment for learning will underpin the assessment of science. We will aim to use a variety of methods to assess pupils including practitioner observations, summative and formative assessment that fully informs future planning. Through the introduction of the science KLIPS, there will be a CAP – Common Assessment Point. This will be when a theme with a science focus has been completed, a CAP will then be completed which will capture assessment information about individual children and their performance against the subject skills and breadth of study. This will inform next steps and additional coverage if needed.

Information is shared throughout the school through display, celebration events, newsletters, reports, and the school web-site. Children will also be encouraged to evaluate their own and others' work in a positive and supportive environment. The assessment arrangements for science will be in line with the school current assessment policy.

7. Inclusion including meeting the needs of SEN pupils and children entitled to PPG funding

All children are expected to engage in scientific learning regardless of age or ability. However, their difficulty and the amount of time allocated to completing them will be modified according to the needs of different children, including those with recognised special educational needs. Children may be offered additional support, modified tasks or resources (enlarged for example), or extra time in school with adult support to complete set tasks.

8. Resources

The Subject Leader has ensured that good, up-to-date resources are available across all Key Stages. Key Stage 2 have a wide variety of resources stored in the Resource Room and Key Stage 1's resources are held in 1W. Topic based resource boxes are stored in the resource cupboard/1W and listed under the relevant unit. The classroom itself should be a stimulating working environment, with displays that will promote quality, enjoyment, interest, enquiry and creativity in Science.

Plans and resources are available to every teacher and assistant.

A yearly inventory will be taken of all resources available and a staff questionnaire will assess the use of those resources throughout the year. The subject lead will keep abreast of the latest developments in educational resources and look to ensure the school has the best available resources to ensure effective delivery of the curriculum.

9. Professional development and training

The science subject lead will assess and address staff training needs as part of the annual action plan process or in response to individual needs and requests throughout the year. Individual teachers should attempt to continually develop their own skills and knowledge, identify their own needs and notify the coordinator. There have been a number of recent training sessions, covering areas including investigations, curriculum development and the introduction of a planning and recording format for all investigations.

10. Health and Safety

All staff will be aware of the importance of following the strict Health and Safety guidelines and our school follows the 'Be Safe' ASE. This document is kept with the science resources.

11. Roles and Responsibilities

Teachers will:

- a. Provide regular science sessions for pupils in line with the expectations outlined in this policy.
- b. Use computing as an opportunity to consolidate learning, develop creativity and prepare pupils for the next stage of their school career when appropriate, i.e. Year 6.
- c. Differentiate their planning to meet the needs of different individuals and groups of children in school.
- d. Provide the necessary resources, information and instructions for any extra-curricular learning to take place.

12. Monitoring and Evaluation

Regular monitoring of all aspects of science learning will inform the subject leader and school development plan/school evaluation form on a regular basis. The science lead will aim to use a variety of monitoring strategies including: discussion with children, observation of learning environments, aspects of teaching, planning and work samples on a formal and informal basis with the aim of ensuring adequate curriculum progression and skills. Class teachers are expected to keep records of work undertaken in science learning, in order to inform future planning and should be available on request. The science lead will liaise with the Curriculum lead to ensure progression of skills throughout all Key Stages and will monitor the whole school topic overview regularly to ensure the provision of a broad and balanced science curriculum.