



Pool House Community Primary School



Science Policy

Aims

At Pool House 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.
- To ensure that all children's needs are recognised regarding the science curriculum and children are provided with relevant support and appropriate tasks and experience, whether it be enrichment or consolidation.
- To provide a teaching programme that builds upon experience, skills and concepts as children progress throughout the school.
- To foster and promote positive attitudes such as curiosity, perseverance, willingness to use and appraise evidence, willingness to challenge and accept uncertainty, critical reflection and enthusiasm.
- Teaching science in ways that are imaginative, purposeful, well managed and enjoyable.
- Giving clear and accurate teacher explanations and offering skilful questioning.
- Displaying a variety of scientific work to help to reinforce concepts.

Subject Content

EYFS

During the Early Years Foundation Stage, children are given the opportunity to work scientifically within three core areas: The World, Exploring and Using Media and Materials and Health and Self Care. In 'The World' the children are encouraged to observe their environment, know the properties and uses of a variety of everyday objects as well as becoming familiar with basic scientific vocabulary, such as floating, sinking and experimenting. The second area 'Exploring and Using Media and Materials' focuses primarily on encouraging the

children to discuss the textures of different materials, plan experiments and construct using building materials as well as making observations about what they and others have built. The final area 'Health and Self-Care' is an introduction to healthy living: how the children keep their body healthy through exercise, how to keep their body healthy through healthy eating, whilst beginning to explore the effect exercise has on our bodies. There are also many further opportunities to 'Work Scientifically' during EYFS and notes of the activities and experiments carried out will be noted throughout the year (for example, an experiment investigating ice and water and basic discoveries about Space).

Key Stage 1

As outlined in the National Curriculum, pupils should be taught about key scientific topics in certain year groups but should also be taught how to 'Work Scientifically' in each topic to ensure maximum curriculum coverage. At Pool House we have ensured that each area in the programme of study for Science has been covered.

At Pool House pupils are taught to 'Work Scientifically' by:

- Asking simple questions and recognising that they can be answered in different ways
- Observing closely, using simple equipment
- Performing simple tests
- Identifying and Classifying
- Using their observations and ideas to suggest answers to questions
- Gathering and recording data to help in answering questions.

Lower Key Stage 2

As outlined in the National Curriculum, pupils should be taught about key scientific topics in certain year groups but should also be taught how to 'Work Scientifically' in each topic to ensure maximum curriculum coverage. At Pool House we have ensured that each area in the programme of study for Science has been covered.

At Pool House pupils are taught to 'Work Scientifically' by:

- Setting up simple practical enquiries, comparative and fair tests
- Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers

- Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- Identifying differences, similarities or changes related to simple scientific ideas and processes
- Using straightforward scientific evidence to answer questions or to support their findings.

Upper Key Stage 2

As outlined in the National Curriculum, pupils should be taught about key scientific topics in certain year groups but should also be taught how to 'Work Scientifically' in each topic to ensure maximum curriculum coverage. At Pool House we have ensured that each area in the programme of study for Science has been covered.

At Pool House pupils are taught to 'Work Scientifically' by:

- Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- Using test results to make predictions to set up further comparative and fair tests
- Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- Identifying scientific evidence that has been used to support or refute ideas or arguments.

Further details about the topics covered in across EYFS, KS1 and KS2 can be found in the [Science Curriculum Overview document](#).

Equal Opportunities

We recognise the fact that in all classes there are children of widely different abilities in Science and we seek to provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this by:

- Setting common tasks which are open-ended and can have a variety of responses;
- Setting tasks of increasing difficulty. Not all children complete all tasks;
- Grouping children by ability in the room and setting different tasks for each ability group;
- Providing resources of different complexity depending on the ability of the child;
- Using teaching assistants to support children individually or in groups.

At Pool House Community School, we are committed to teaching a well-rounded curriculum to children of all abilities. Science forms part of the well-rounded curriculum and is essential in order to provide a broad and balanced education for all. The class teachers take the ability of children into account when planning and teaching lessons so that learning matches the individual needs of each child. Where a child may be accessing learning interventions, class teachers are careful to ensure that interventions do not interrupt the same lessons each week. This ensures that a child cannot miss a whole Science topic by carrying out interventions during this lesson at the exact time every week.

Curriculum Planning

At Pool House we use the National Curriculum in combination with the Lancashire KLIPS for Science, as the basis of our curriculum planning. This ensures that the appropriate objectives in the National Curriculum are covered.

The whole-school long-term overview maps out the topics studied in every term. This is created and distributed by the Science subject leader.

Our medium-term plans give details of each unit of work, including learning objectives, possible teaching activities, and learning outcomes. This is created and distributed by the Science subject leader, used by class teachers for assessment purposes and stored in the Assessment file in each class.

Our short-term plans are annotated with dates and teaching notes. These plans are kept by the class teachers but are to be available for the Science subject leader or a member of the SLT to access if needed.

Broader Curricular

We believe that developing scientific skills through the broader curriculum is crucial at Pool House Primary School. When undertaking an educational

scientific broader curriculum activity, we always ensure that the trip has close links to the curriculum and that all children understand the aims and purpose behind the trip. We further encourage discussion about the trips after the event and share images of broader curriculum activities on the Gallery page on the website. A full explanation of scientific trips, their aims, links to the curriculum and which year group they are carried out in can be found in the **Science Broader Curriculum document** formulated by the Science leader.

Cross Curricular Links

Science naturally contributes significantly to the teaching of English in our school by promoting the core skills of reading, writing, speaking and listening. In addition to this, many of the texts that we study throughout our English curriculum have deep rooted scientific links. Examples of these links include 'Blood' a text in year 6 that links extremely closely to the Scientific unit taught in the same year group: Exercise, Health and the Circulatory System. In year 2 the children read a key text that teaches them 'All About Orang-utans'. This text links to Science in year 2 as the children learn about the Orang-utan habitat and learn about their basic survival needs. There are also key scientific links within PSHCE in the Health and Wellbeing unit in most year groups. As part of their cross curricular learning in PSHCE they will build upon the uses of medicine within the world, learn about the importance of a balanced diet and exercise and then in year 6 they will learn about puberty and human reproduction. More detail about the examples given, plus further cross curricular links can be found in the **Science Cross Curricular Links** document formulated by the Science leader.

Assessment

Each class teacher assesses the children's work by making informal judgements during observations in each lesson. It is the responsibility of the class teacher to ensure that children's work is marked regularly, and that purposeful comments or further questions are implemented when appropriate. For each unit, the class teacher must record how many children have not yet achieved the level of attainment expected in the National Curriculum, how many children have achieved the expected level of attainment and those children who have exceeded the level expected. These judgements are used in order to show full curriculum coverage and as the basis for assessing the progress of each child. This information is kept in the class assessment and curriculum file and passed onto the next teacher at the end of each academic year. The teacher should also note other ways in which the class have worked scientifically during that unit, using the 'Working Scientifically' KLIPs grid for the year group which they are

teaching. These notes are to be made in brief in the Working Scientifically box at the end of each unit's assessment grid.

Resources

There are Science resource boxes in school for some of the areas of the curriculum covered across all key stages. The subject leader has also comprised a list of suggested online resources for each subject area that each class teacher may explore and use if wanted. In an annual Science audit, the Science subject lead always asks staff to request resources that they may need for the following year. The list of requested resources is then reviewed by the Science leader and Headteacher and acted on where they feel necessary.

Monitoring and Reviewing

It is the role of the Science subject leader to provide support for colleagues, to be informed of curriculum developments and for providing direction for Science in School. The subject leader is also tasked with ensuring that each area of the 2014 National Curriculum is covered within the topic areas covered within the school. The subject leader, Assessment leader or member of the Leadership Team will check the Curriculum coverage, assessment and accuracy of lesson taught once annually and feedback will be provided to the Headteacher at the end of each academic year, indicating key strengths and weaknesses in the subject within school and areas for development within the future.

Health and Safety

Here at Pool House Primary School we believe that the following Health and Safety issues must be taken into consideration during Science lessons:

- Children must always be fully supervised during practical lessons when using apparatus.
- All equipment must be returned and stored safely at the end of each lesson.
- Staff must demonstrate the correct procedures and techniques to children before using any tools e.g. scissors, knives, chisels etc.
- All liquids or objects spilt or dropped onto the floor must be cleared away immediately so as not to cause accidents. Hot water should be used with care.
- Glass should always be handled carefully and when possible plastic should be used instead.

- With naked flames e.g. lighted candles, children should be warned about long hair, ties and other bits of clothing not coming near the flame. Candles should be fixed in a holder.
- Lenses (e.g. Magnifying glasses) can focus light and heat, therefore special care should be taken that children do not look at a source of light through these lenses. The same principles must be applied to torches. Care should also be given when holding any object close to the eye.
- Tasting of things is not allowed, unless otherwise instructed by the teacher in charge. This may be the case when investigating teeth and dental care.

September 2021