Kentmere Academy and Nursery

Science policy

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Mission statement

We are proud to be a happy, diverse and inclusive school where everybody matters.

School Aims

- **H**elping to challenge inspire and motivate each other.
- **A**iming high, achieving excellence.
- **P**romote and value excellent progress.
- **P**ositive contributions to the school and wider community.
- **Y**OU CREATE YOUR OWN FUTURE!

Through a positive caring environment, we provide the opportunity for every child to reach their full potential.
Science is a systematic investigation of the physical, chemical and biological aspects of the world which relies on first hand experiences and on other sources of information. The scientific process and pupils' problem-solving activities will be used to deepen their understanding of the concepts involved. The main aspects of science to be studied will be determined by the programmes of study of the National Curriculum 2014.

Through science pupils at Kentmere Academy and Nursery will continue to deepen their respect, care and appreciation for the natural world and all its phenomena.

Aims: The National Curriculum for Science aims to ensure that all pupils:

- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Breadth, balance, organisation and structure

Pupils will be involved in a variety of structured activities and in more open-ended investigative work:

• activities to develop good observational skills

• practical activities using measuring instruments which develop pupils' ability to read scales accurately

• structured activities to develop understanding of a scientific concept

• open ended investigations.

Each term teachers will plan at least three investigations which will take the form of a modelled, intermediate and independent investigation. (see appendix A).

Within classrooms teachers effectively utilise their investigation board (teaching display) and 'Ivor the investigating owl' to ensure all pupils use the same scientific vocabulary throughout the school. (see appendix C)

Often investigations will be carried out in mixed ability groups of approximately four pupils but this can be modified to ensure all pupils are suitably challenged. Differentiated investigation boards have been designed to move pupils on from a more structured approach to becoming confident and independent with the key headings. (see appendix B) Specialist Science teachers from within the trust are being used at our academy to enhance our science provision. If investigation boards are neatly presented they can be reduced and stuck in the boards as a record of the work carried out.

Relevance

Wherever possible science work will be related to the real world and everyday examples will be used.

Cross-curricular skills and links

Science pervades every aspect of our lives and we will relate it to all areas of the curriculum. We will also ensure that pupils realise the positive contribution of both men and women to science and the contribution from those of other cultures. We will not only emphasise the positive effects of science on the world but also include problems, which some human activities can produce.

Continuity and progression

Foundation Stage pupils investigate science as part of Understanding of the World. Children are encouraged to investigate through practical experience; teachers guide the children and plan opportunities that allow the children to experience and learn whilst experimenting for themselves.

During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- 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.

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking relevant questions and using different types of scientific enquiries to answer them
- 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.

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- 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.

Equality of Opportunity

All children have equal access to the science curriculum and its associated practical activities. The SLT, Class Teachers and TAs at Kentmere are responsible for ensuring that all children, irrespective of gender, learning ability, physical disability, ethnicity and social circumstances, have access to the whole curriculum and make the greatest possible progress. Where appropriate, work will be adapted to meet pupils' needs and, if appropriate, extra support given. More able pupils will be given suitably challenging activities. Gender and cultural differences will be reflected positively in the teaching materials used. All children have equal access to the Science Curriculum, its teaching and learning, throughout any one year. This is being monitored by analysing pupil performance throughout the school to ensure that there is no disparity between groups.

Health and safety

Pupils will be taught to use scientific equipment safely when using it during practical activities. Class Teachers and Teaching Assistants will check equipment regularly and report any damage, taking defective equipment out of action. A simple risk assessment will be carried out for all practical activities any perceived hazards will be reported to the Head who will determine the appropriateness of said activity.

Assessment for Learning, recording and reporting

Throughout the school teachers will assess whether children are working at/above or below the expected level for their age based on their understanding and application of the content of the National Curriculum 2014. Progress and attainment is reported to parents through parents' evenings and end of year reports.

Marking for Improvement (see policy)

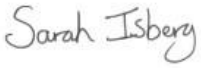
Much of the work done in science lessons is of a practical or oral nature and, as such, recording will take many varied forms thus making marking different. It is, however, important that written work is marked regularly and clearly, as an aid to progression and to celebrate achievement. When appropriate, pupils may be asked to self-assess or peer assess their own or other's work.
Marking for improvement comments in a child's book must be relevant to the learning objective to help children to better focus on future targets.

Role of the subject Leader

Science will be led by the whole staff and will be an annual focus for a staff meeting. Standards of teaching and learning will be adjudged using work sampling and data review. The policy will be reviewed every two years or sooner if deemed appropriate.

Resourcing

Specialist pieces of equipment and those posing a potential safety risk will be held centrally and staff access when required.

Signed: 

Sarah Isberg (headteacher) - Date: September 2017

Agreed by the Governing Body: 

Simon Day - -Chair of Governors Date: September 2017

Review September 2019