LEARNING TOGETHER TO BE OUR BEST

DOVER PARK

PRIMARY SCHOOL

Science Policy

Date agreed: November 2022

Review date: September 2024

Signed: _____

Chair Board of Governors

Dover Park Science Policy

Aims:

Throughout the school Science should:

- stimulate and excite pupils' curiosity to explore and investigate the world in which they live.
- develop and enable children to use communication skills and techniques involved in obtaining, presenting and responding to information.
- develop positive values and attitudes towards the world in which we live
- 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
- be equipped with the scientific knowledge required to understand the **uses and implications** of science, today and for the future.

In the **Early Years Foundation Stage** the aim is to enable children to **work scientifically** to:

- ask questions and recognise they can be answered in different ways.
- investigate a wide variety of objects and materials in the natural and made world using all senses as appropriate.
- learn about themselves and living things.
- look closely at similarities and differences, patterns and change.
- talk about their observations and sometimes record them.

At **KS1** children should **work scientifically** by:

- ask questions and recognise they can be answered in different ways.
- Observe closely using simple equipment
- Perform simple tests
- Identify and classify
- Use their observations and ideas to suggest answers
- Gather and record data to help answer questions

At **lower KS2** children should **work scientifically** by:

- 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.
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At **upper KS2** children should **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 a 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

https://www.gov.uk/government/publications/national-curriculum-in-england-science-programmes-of-study/national-curriculum-in-england-science-programmes-of-study

Objectives

To develop their knowledge and conceptual understanding, children should:

- be curious about things they observe and experience, and explore the world about them with all their senses.
- use this experience to develop their understanding of key scientific ideas and make links between different concepts and experiences.
- begin to think about models to represent things they cannot experience directly.
- try to make sense of concepts, seeking explanations and thinking critically about claims and ideas.

To develop the nature, processes and methods of science children should:

- acquire and develop the practical skills needed to investigate questions in a scientific way and with an awareness of safety.

- develop skills of predicting, asking questions, concluding and evaluating based on findings and understand how to apply these to their own investigations.
- apply mathematical skills, e.g. counting, ordering numbers, measuring using non-standard and standard units, drawing and interpreting charts and graphs in real contexts provided by investigational learning.

To develop language and communication skills, children should:

- develop language skills through talking about their work, explaining and making sense of scientific ideas and presenting their own ideas through pictorial representation and writing of different kinds.
- read non-fiction texts to extract information from sources such as reference books or the internet.

- work with others, listening to their ideas and treating these with respect.
- develop respect for evidence and evaluate critically ideas which may or may not fit the evidence available.

- develop a respect for the world around them and for the health and safety of their self and others.

To ensure progression in science, the school curriculum should provide opportunities for the children to:

- Develop from their personal experience of scientific ideas, a deeper understanding of a wider range of concepts and links between them.
- use everyday language to develop increasingly precise use of technical and scientific vocabulary, notation and symbols.
- progress from describing ideas to explaining them.
- progress from talking about scientific concepts in terms of their own ideas to explaining them in terms of accepted scientific ideas or models.
- progress from using simple drawings, diagrams and charts to representing and communicating scientific information in a wide range of formats.
- Regular retrieval of prior learning in all year groups.

Teaching and Learning

Planning and Organisation

Science is a core subject that is taught throughout the school on a regular basis, at a time when it can be supported by a teaching assistant. Wherever possible the local environment should be used to bring each topic to life, including that of a Longitudinal Study. The Programs of Study are followed as stated in the New National Curriculum, which are statutory.

Throughout the Early Years Foundation Stage, children are taught science as part of 'Knowledge and Understanding of the World', guided by the Early Learning Goals. Cross-curricular opportunities are planned with specific reference to areas of learning.

In KS1 and KS2, science is planned through a repeating rolling program and scientific learning journeys which is designed to revise and develop children's understanding of scientific ideas and enquiry skills as they move through the school.

Long Term Planning:

Set out in our whole school plan from the National Curriculum.

Medium Term Planning:

Found in Curriculum Overview for each year group.

Short Term Planning:

In our topic planning and weekly timetable.

Health and Safety

When working with tools, equipment and materials in practical activities and in different environments, including those that are unfamiliar, pupils should be taught:

- about hazards, risks and risk control.
- to recognise hazards, assess risks and take steps to control the risks to themselves and others.
- to manage their practical work to ensure the health and safety of themselves and others.
- to explain the steps, they can take to control risks.

- Any accidents need to be logged in the Accident Book (At First Aid Station) with a letter sent home.
- Any accident of a more severe nature involving burns or cuts needs to be completed as above but in addition needs to be recorded in the Accident Record (Kept in the Office) If more serious or hospitalised is required then we would record it on the LA online Accident reporting tool: Workrite and RIDDOR.

When considering planning, any relevant and important health and safety information should be recorded in the weekly plan.

Assessment and Record Keeping

Regular opportunities should be taken to assess what the children know, understand and can do. As a result, the teacher will plan the next stage of learning efficiently and can revisit and reinforce ideas as necessary.
Teachers will use the summative assessment booklets for the learning journeys to track progress throughout each learning journey topic.

An assessment task should be completed within the Assessment Cycle, where their summative results as well as knowledge gleaned from Assessment for Learning opportunities are used to decide whether they fall within Age Related Expectations. These summative assessments are recorded on the SIMS system, where pupil progress is tracked. This will be completed by the end of the school year once all units have been taught to inform each child's annual report.

AFL may take several forms, such as:

- teacher questioning
- eliciting children's ideas
- observations
- evidence gained during speaking and listening activities. These are noted within children's Discovery Learning books as part of their ongoing learning and/ or teachers notes in their file.
- Speech Bubbles which may be written by child or overheard/extracted from the child.
- Marking- using the school's marking policy
- Better in Blue comments, where the child has been directed to refine their answers/comments/level of response more fully/correctly.

Cross curricular:

As stated in our plan, we should be re-enforcing Math's and English Skills within Science.

In the Early Years Foundation Stage, scientific ideas are developed by child initiated activities. Where appropriate, the role play area may represent a relevant play experience to enhance learning. An area may also be developed by teacher led exploration.

Opportunities for incorporating IT applications are identified within science medium term planning. This may include the use of:

- Data loggers
- Cameras
- Video recorders
- Tablets
- Digital graphing software
- Word processing
- Internet
- IPads

Opportunities to apply mathematical skills are identified within science medium term planning. This may include:

- Counting and ordering numbers
- Measuring using standard and non-standard units of measurement
- Drawing and interpreting graphs

Children will have a range of opportunities to develop their literacy skills through recording and presenting their own ideas and the results of investigations.

SEND and WGD

- All children with special educational needs build on their own experiences and on the exploration and investigation opportunities provided.
- All children, regardless of their ability, are given the same access to science learning, with the less or more able receiving additional support as necessary.
- Pupils considered to be Gifted and Talented in science are identified on the Gifted and Talented register and are provided opportunities to develop their independent investigational skills as appropriate, including extra out of school activities too.
- Activities should be differentiated through questioning, support, task or outcome to accommodate the needs of children with SEN, as with pupils of all abilities.
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Equal Opportunities

Learning opportunities will ensure equal access for all children to the full science curriculum, regardless of gender, ethnicity or ability. A range of activities and modes of teaching, across the curriculum, ensure that all pupils have the opportunity to engage with science.

P.S.H.E and SMSC

At Dover Park Primary School, we encourage all children to take an active part in the life of their school and it's neighborhood. Children should understand when working together they should be respectful and understand that all children are entitled to have their own opinions.

Science can provide opportunities for children to gain the knowledge, skills and understanding they need to lead confident, healthy and independent lives and to become informed, active and responsible citizens. Through science, children learn:

- that people and other living things have needs and that they have a responsibility to meet them.
- what might improve or harm their local, natural and built up environments and some of the ways people look after these resources.
- how to make simple choices that improve their health, including healthy diet and exercise and sexual development.
- that medicines are helpful but can also be harmful if not used properly.
- to identify and respect differences and similarities between people.

Drug awareness and sex and relationship education are taught in accordance with the school's separate policies and guidelines issued by Hampshire and the IOW.

Links with the Community

Children will have opportunities to:

- participate in external educational visits to enhance their scientific learning and understanding
- experience visits within school from external services, e.g. the school nurse.

Monitoring and Evaluation

Policy and practice in Science are monitored and evaluated on a regular basis in accordance with the school development planning cycle.

- The provision of science throughout the school will be monitored by the science coordinator, in conjunction with the curriculum leader and the head teacher.
- Monitoring may take the form of lesson observations, pupil voice, planning and book scrutiny's.
- Feedback will be given to all staff, along with recommendations to inform future policy and planning.
- Personal development of the science coordinator will be maintained to ensure that new initiatives and curriculum updates are fed back to staff and incorporated into regular practice.
- All staff are involved in the review and development of the science policy.

Resources

Are all labeled and kept on the mezzanine.

Science Coordinator: Holly Newnham

Reviewed: November 2022

Next Review: November 2024