Dallimore Primary and Nursery School

Science Policy

Introduction

At Dallimore, we aim to provide broad, rich, purposeful and well-sequenced science lessons. These will embed prior and new learning through finely focused teaching covering all science objectives from the National Curriculum. We intend to increase the science capital for all pupils; they are encouraged to learn new facts, have opportunities to generate questions, to research and to investigate. The combination of the knowledge and skills taught, will enable them to build their understanding of our technological world.
Our teaching will help them to recognise the potential for science in their future lives.

At Dallimore Science is **ACTIVE** as well as knowledge based.

Active – engage in practical activities with lots of discussion and questions.
Challenging – get us all wondering and thinking more deeply about the world.
Team Building – learn with our friends and family.
Investigative – find out what might happen if… and then develop methods to test ideas.
Vocal – make us want to talk about the knowledge or concepts we've learnt.
Exciting – fun, memorable & sometimes messy! Involve experts who come into school or visits to engage our children.

Aims

- To embed key concepts through a balance of substantive and disciplinary knowledge using strategies to help children memorise facts.
- To develop understanding of the nature, processes and methods of science through hands-on scientific enquiry, which progresses in its complexity through the year groups.
- To equip children with the composites and components of scientific knowledge required to understand the uses and implications of science today and for the future.
- To build up specialist vocabulary.
- To use initiative and perseverance when tackling problems, exploring new materials, objects and situations
- To give children an understanding that science has both beneficial and harmful effects on our society and that there are social and moral implications to science by nurturing a questioning atmosphere through discussion and debate.
- To develop in the children a caring and sensitive attitude towards living things and the environment: incorporate environmental issues sensitively as they arise in the news.
- To encourage children to work co-operatively, and to take an interest in and gain pleasure from scientific enquiry-based activities.

Coverage of the National Curriculum

Science is taught as a separate subject in both KS1 and KS2, but links to other subjects when possible. As we have some mixed age group classes, our topics are organised in a two-year cycle on our long-term plan, so that all national curriculum objectives can be covered. By carefully following the curriculum, we can ensure all objectives are taught as they are revisited and built-on in different year groups. (Progression documents highlight this.)
A science sequence of learning is split into 5–7 lessons depending on the number of NC objectives in the unit.
We do not use a specific science scheme; our lessons are carefully planned, using the guidance of the following documents which all link to the national curriculum:

- knowledge organisers
- composites and component documents
- progression documents

These are provided by the science coordinator.

Knowledge organisers are used to introduce the new topic and are used as a point of reference for information and definitions throughout.
Short term lesson plans start with WALT titles providing clear objectives. Retrieval practice takes place at the start of every lesson to ensure children remember the content from the previous lesson(s). Tier 2 & 3 vocabulary is then introduced where necessary, to ensure children can access the new learning for the current session.
New information is provided in a variety of forms such as text, video clips, teacher demonstrations or explanations/modelling. This learning is then reinforced with a range of tasks: basic, advancing and deep. Before the lesson ends, children complete a 'Make It Stick' activity which outlines the key knowledge and vocabulary children should have learned by the end of that specific lesson.

At the end of the unit, a quiz takes place, checking, and further strengthening, the learning for the entire topic.

Assessment

Formative assessment - we constantly check our pupils' learning by questioning, observing, discussing and marking (teacher/peer). Our short retrieval tasks and 'Make it Stick' slips every lesson show us that the children are remembering more.
Summative assessment – 'Make it Stick' slips also form part of our summative assessment, as well as our end of unit quizzes and Flashback Fridays. These assessments show us what the children have remembered at different stages from short term to long term.
We use iTrack to record assessments at the end of each unit. The 'Working scientifically' column will be updated every term. Any areas that are not secure will be retaught by the end of the year.

The foundation stage will study science in Understand of the World area from the Development Matters EYFS curriculum.

Teaching and learning skills

The aim of our teaching is to provide children with a balance of scientific knowledge and scientific skills.

We ensure that children know and remember more in science by providing detailed knowledge organisers, weekly retrieval tasks, regular vocabulary checks, new information, varied tasks, monthly Flashback Friday quizzes and end of unit quizzes.
We offer practical, hands-on experiences that promote curiosity, discussion and questioning through the five types of enquiry: observing over time, identifying and classifying, pattern seeking, research, comparative and fair testing.
Teachers provide clearly directed instructions and/or demonstrations for investigative work. Research tasks are meaningful and focused. Where appropriate, visits, workshops and visitors enrich their learning experiences.

Written work is recorded in the pupils' Science books using the Basic, Advancing and Deep sub-headings. For investigations, the following headings are used:
Question
Prediction
Fair testing
Method
Results
Conclusion (replaces 'Make it stick')

Safety in science

In order to avoid hazards which may occur during practical scientific tasks these steps are followed:

- Science is taught in a structured way
- Teachers make themselves aware of potential hazards by referring to the CLEAPSS website
- The attention of pupils drawn to potential hazards
- Pupils are instructed in ways of working safely
- Pupils are taught to act in a responsible manner

Resources

The science co-ordinator identifies needs in discussion with other staff.
All resources are regularly monitored by the science co-ordinator and stored in clearly labelled boxes in the KS2 corridor.

Science Capital

We realise at Dallimore that how a child engages with science is not only based on what they know but also on people they may know with a science interest plus experiences they have had which build their ideas, opinions and knowledge of science. We aim to build their Science Capital by providing experiences through visitors/workshops, visits, outdoor learning and topical discussions.

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