CEDAR
Children's Academy

SCIENCE POLICY

JULY 2024

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Vision

A high-quality Science curriculum can help children make sense of the wider world around them. Through building on knowledge and concepts, science enables pupils to explore and develop a sense of curiosity. At Cedar, we believe science is a way of working that allows children, through practical first-hand experiences and secondary sources, to develop their knowledge and understanding of the world in which they live. These experiences should enable children to observe, question, investigate, communicate ideas and evaluate their findings. We provide stimulating, interesting and challenging experience to help pupils solidify scientific concepts and enquiry skills and become more critical thinkers.

We encourage children to:

- Develop a questioning and reflective mind by providing a range of exciting, interesting and memorable activities.
- Develop a systematic and logical way of working.
- Apply their skills and knowledge to investigative work.
- Develop a deepening understanding of scientific concepts.
- Work safely and carefully.

We believe these opportunities will help develop children who are confident, life-long learners who will explore the world around them.

Procedures and Principles

<u>Teaching and Learning</u>

Pupils at Cedar learn to use a variety of approaches to answer relevant scientific questions by collecting, analysing and presenting their findings. Children will: explore, observe over time, notice pattern, identify, group and classify and plan, carry out and evaluate fair-tests. Through this approach, we aim to develop the following skills: observing, raising questions, predicting, hypothesising, planning, controlling factors (fair testing), measuring, collecting and interpreting data, constructing tables and graphs, explaining, communicating and evaluating findings, researching information. Overall, working scientifically will be clearly related to the programme of study, but can be taught simply and discretely first to support pupils' understanding and be mindful of their cognitive load.

Our School provides regular Science lessons taught through 90 minutes at least once a week. Teachers will base their lessons on the programme of study for the applicable year groups and choose a teaching strategy to best suit the purpose of that lesson. There is a variety of ways that learning maybe effective; at Cedar we aim to encourage teaching through investigation with emphasis on experiential learning for our pupils, allowing them to construct their understanding of the world, whilst being carefully monitored by adults. At Cedar, lessons include retrieval activities;

reference to the knowledge banks; discussion as a whole class activity, group work or individual learning; practical and investigative tasks; recording and communicating ideas.

Early Years

During this foundational period for pupils, science is embedded in topic learning. At this stage, pupils will be taught at least one hour per week of "Understanding the World" during their structured time. Children will explore and investigate how and why things work and to test out their ideas of what will happen if they do a particular thing. Cross-curricular links will be made to other subjects to help develop connections and make sense of the world around them.

Key Stage One

The focus in Key Stage One will be for pupils to experience science around them. Pupils will be expected to ask and answer sensible questions to develop curiosity and use many different areas of scientific enquiry including; asking simple questions, observing patterns, performing simple tests, identifying and classifying and recording simple data. Pupils should read, spell and pronounce scientific vocabulary correctly consistent with their reading and spelling knowledge. Presentation of written work is in line with our school's teaching and learning policy.

Lower Key Stage Two

In Lower Key Stage Two, pupils will begin to broaden their understanding of scientific concepts and lines of enquiry. Pupils will be expected to ask relevant questions, answer questions based on findings, begin to conduct fair tests, make careful observations, sort and classify more accurately, draw simple conclusions and begin to use secondary sources. Pupils should read, spell and pronounce scientific vocabulary correctly in line with their growing reading and spelling knowledge. Presentation of written work is in line with our school's teaching and learning policy.

Upper Key Stage Two

In Upper Key Stage Two, pupils will begin to deepen their scientific concepts and develop their confidence with accuracy with different lines of scientific enquiry. Pupils will encounter ideas that are more abstract, recognise how these ideas can help them to predict and give more meaning to the world around them. Pupils will be expected to; plan different types of scientific enquiries, take measurements with increasing accuracy, record data and results of increasing complexity, use test results to make predictions, present findings from enquiries and identify scientific evidence that has been used to support scientific ideas. Pupils should read, spell and pronounce scientific vocabulary correctly. Presentation of written work is in line with our school's teaching and learning policy.

Equal Opportunities

Cedar children have the right to access equal opportunities in the Science in our school, regardless of their background, religion, race, gender, physical or intellectual ability.

Monitoring and Assessment

A range of assessment tools are used to assess Cedar pupils in Science. Class teachers will use ongoing informal assessment in lessons to assess the ongoing progress of the pupils. These include (but are not limited to); the pre-assessment task, quizzes, concept cartoons, observations of pupils and questioning to ascertain understanding. Class teachers will also update parents on pupil's progress in Science within the school reports each year.

Pupils will be assessed formally at the end of each big term by the class teacher; the subject leader will collect this progress and attainment data three times per year. This will allow the subject leader to see progress in Science across the school. This information will be used to assist teachers in planning for next steps in learning and provide subject leaders with an overview of the strengths and areas for development within their subject. Monitoring by Subject Leader may take several forms, including (but not limited to); book scrutiny, planning scrutiny, lesson observations, pupil conferencing and analysis of data.

Role of the Subject Leader

The Science Subject Leader is responsible for the development and monitoring of the Science curriculum. They are responsible for:

- Updating the School's Policy and ensuring other relevant policies reflect the aims and objectives of the Science policy
- Providing support and training for staff in-house, including the planning, teaching, assessing, and evaluating of the Science curriculum
- Liaising with any named Governor to keep the Governors informed about developments within the subject
- Ensuring the Science curriculum resources that are available to teachers are of a good standard and quantity
- Promoting Science and STEM involvement across the school, encouraging children's participation and celebrating both involvement and success
- Organising Science Day(s) annually

Resources

The science equipment is stored safely in the KS2 resources room. A permanent member of staff is present during school hours and the room can only be accessed by adults. Staff are advised to inform the subject leader of broken, damaged or lost equipment so that replacements can be ordered.

Health and Safety

Everyone has a duty under health & safety guidelines to ensure scientific activities are carried out with due regard to the safety of staff and pupils in line with school, Thinking Schools Academy Trust and Health & Safety Policies. Advice can be sought from the staff members responsible for Health & Safety and the school's risk assessments.

- All pupils are entitled to access the Science curriculum at a level appropriate to their needs arising from race, gender, ability or disability. Blenheim have added extra information onto this in some subject areas so take a look at this for your subject