



# Chad Vale Primary Science Policy

At Chad Vale Primary School we follow:

- The policies and procedures from Birmingham City Council and Birmingham Safeguarding Children Board (BSCB) which includes the Government's Prevent strategy.

Policy Written by:	Louise Wood
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School's review date:	January 2024

## CHAD VALE RESPECTING RIGHTS

This policy is written with consideration to our schools commitment to the Rights of the Child (UNRC) and our achievement of becoming a Rights Respecting School. Although direct reference to this is not continuously made, the policy has been written with full awareness of our responsibility and commitment to this purpose.

As a school we have decided that the following rights link to this policy:

**Article 6: We have the right to life and to be healthy.**

**Article 24: We have the right to healthy food and water and to see a doctor if we are ill.**

**Article 33: We have the right to be protected from dangerous drugs.**

## SCIENCE POLICY STATEMENT

At Chad Vale Science is taught to develop an understanding of natural phenomena. It aims to stimulate a child's curiosity in finding out why things happen in the way they do. It teaches methods of enquiry and investigation to stimulate creative thought. Children learn to ask scientific questions and begin to appreciate the way science will affect their future on a personal, national and global level.

Through Science in our school we aim to:

- Encourage the development of positive attitudes to science
- Deliver the Science curriculum in ways that are imaginative, purposeful and enjoyable
- Help in developing and extending the children's scientific concept of their world and encouraging them to ask deeper questions about the world around them
- Deliver clear and accurate teacher explanations and use skilful questioning. Providing guidance however also allowing the freedom to explore and work independently.
- Make strong purposeful links to real-life applications

- Develop the use of scientific language and recording techniques.
- Enable children to become effective communicators of scientific ideas, thinking, facts and data and a secure understanding of how to analyse data that they collect.
- Develop skills of investigation including observation, measuring, predicting, hypothesising, experimenting, communicating and interpreting

## **THE NATIONAL CURRICULUM 2014**

The 2014 Programme of study for Science is set out year-by-year. It is structured in statutory 'blocks of knowledge and concepts' along with scientific methodology through 'working scientifically.' By the end of each key stage pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

In Reception, the Early Years framework sets out the requirements for learning and development in a variety of areas. For Science the link is through the specific area of Understanding the World. Understanding the World involves providing opportunities and guiding children to explore the natural world around them particularly the animals and plants in their local area. To be able to identify similarities and differences between environments. To understand the important processes and changes that occur in the natural world around them.

### **PLANNING**

Planning is undertaken at three levels.

*Long term* planning is based on the national curriculum and the subject study that is required to be undertaken in each year group following the curriculum coverage map devised for each year group. Terms in which this is taught may change to match needs/resources/planned trips etc.

*Medium term* planning is carried out half termly within each year group with a subject area of content covered following the curriculum coverage map for each year group. We ensure that the children of all abilities have the opportunity to develop their skills and knowledge in each strand and to undertake practical learning working scientifically.

*Short term* planning is the responsibility of the class teacher and is carried out weekly. This might be a written plan or a slideshow including learning objectives and success criteria

### **Early Years Foundation Stage**

We teach science in reception classes as an integral part of the planning approach following children's interest. As the reception class is part of the Early Years Foundation Stage Profile, we relate to the scientific aspects of the children's work to the objectives set out in the EYFS profile which underpin the curriculum planning for children aged three to five. Science

makes a significant contribution to the objectives in the EYFS of developing a child's understanding of the world, e.g. through investigative play.

### **CROSS-CURRICULAR LINKS**

**English** – Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. Some of the texts that the children study in their literacy sessions are of a scientific nature. The children develop oral skills in science lessons through discussions (for example of the environment) and through recounting their observations of scientific experiments. They develop their writing skills through writing reports and projects and by recording information.

**Mathematics** - Science contributes to the teaching of mathematics in a number of ways. The children use thermometers to record and measure temperature. Measure time, weight, capacity length. Through working on investigations they learn to estimate and predict. They develop skills of accurate observation and recording of events. They use number graphs in many of their answers and conclusions.

**Personal, Social and Health Education (PSHE), Citizenship and British Values** – Science makes a significant contribution to the teaching of personal, social and health education. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. For example, children may study the way people recycle material and how environments are changed for better or worse as a result of environmental factors. Secondly, children benefit from the nature of the subject in that it gives them opportunities to take part in debates and discussions and helps children to develop a more holistic view of their world. PSHE also supports science in terms of pupils making healthy life choices.

**Spiritual, Moral, Social and Cultural Development** – Science teaching offers children many opportunities to examine some of the fundamental questions in life, for example, the evolution of living things and how the world was created. Through many of the amazing processes that affect living things, children develop a sense of awe and wonder regarding the nature of our world. Science raises many social and moral questions. Through the teaching of science, children have the opportunity to discuss, for example, the effects of smoking and the moral questions involved in this issue. We give them the chance to reflect on the way people care for our planet and how science can contribute to the way we manage the earth's resources. Science teaches children about the reasons why people are different and, by developing the children's knowledge and understanding of physical and environmental factors it promotes respect for other people.

**Computing** – IT and computing enhances the teaching of science in school. It provides access to learning content which is not always possible with conventional methods such as animations of the digestive system, videos and real life images. Data Loggers may be used to assist in the collection of data and in producing tables and graphs. Children use IT/computing to record, present and interpret data to review, modify and evaluate their work. Children learn how to find, select and analyse information on the internet.

**Geography** – There are strong links between science and geography. Geography can give science a 'real' context (and vice versa). For example, the study of weather, habitats, the water cycle and the formation of mountains.

**Music** – Whilst studying sound, music is an integral part of science helping the to understand how sound is created and travels.



**Physical Education** – There are many areas in which the understanding of the science objective ‘Animals including humans’ and PE are linked. In KS1 children need to understand identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Through PE pupils are given the opportunity to learn the names of the main body parts through games, gymnastics and dance. PE helps children to link the need for exercise as part of an active lifestyle.

In KS2 they develop a deeper understanding of ‘Animals including humans’ and are required to describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. PE helps children to link this learning to the importance of nutrition and reinforces their understanding of how their skeletal and muscular systems work. It helps to put their learning into a practical context of how different parts of the body have special functions including a deeper understanding of their cardio vascular system.

### **TEACHING METHODS AND APPROACHES**

We use a variety of teaching and learning styles in Science lessons. Our principle aim is to develop children’s knowledge, skills and understanding. Sometimes we do this through whole-class teaching, while at other times we engage the children in an enquiry-based research activity. We encourage the children to ask, as well as answer, scientific questions. They have the opportunity to use a variety of data, such as statistics, graphs, pictures and photographs. They use ICT in science lessons where it enhances their learning. They take part in role-play and discussions and they present reports to the rest of the class. They engage in a wide variety of problem solving activities. Wherever possible, we involve the pupils in ‘real’ science, for example, researching a local environmental problem or carrying out a practical investigation, analysing the results and working scientifically.

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

- Scaffolding the learning to suit the learners ability.
- Setting tasks of increasing difficulty (we do not expect all children to complete all tasks);
- Grouping children by ability in the room and setting different tasks for each ability group;
- Providing resources of different complexity, matched to the ability of the child;
- Using classroom assistants to support the work of individual children or groups of children

### **ORGANISATION**

Science is taught as a discreet subject throughout the school with the exception of Reception classes where scientific study is integrated into the learning curriculum and approached as part of Understanding the World.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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Autumn 1	Working Scientifically	Working Scientifically	Working Scientifically	Working Scientifically	Working Scientifically	Evolution
Autumn 2	Our Bodies and Senses	Living things and Habitats	Forces and Magnets	Animals including Humans	Changes and Properties of Materials	Light
Spring 1	Animals	Animals including Humans	Rocks and Fossils	States of Matter	Earth in Space	Living Things Classification and Habitats
Spring 2	Everyday Materials	Characteristics of Materials	Animals	Sound	Forces	Animals including Humans
Summer 1	Plants	Plants	Plants	Living Things and Habitats	Living Things and Animals	Electricity
Summer 2	Seasonal Changes		Light	Electricity		

### **ASSESSMENT, RECORD – KEEPING AND REPORTING**

Teachers will assess a range of activities and work the children undertake through marking and observations and by making informal judgements during lessons via discussions, questioning and observation. On completion of a piece of work the teacher will assess the pupils work and use this information to plan for future learning. Written or verbal feedback is given to the child to help guide their progress. Self and peer assessment will be used to give pupils opportunity for self-reflection and evaluate their own progress, against success criteria.

Summative assessment of each child's achievement and progress, based on the age-related expectations stated by the national curriculum will be recorded at the end of each term.

### **MONITORING/ EVALUATION**

The leader will monitor the policy, planning and teaching and provide support where necessary. Continuous monitoring of provision takes place throughout the year. Lesson observations, learning scrutinies, team teaching and data analysis are all ways in which the leader monitors and evaluates provision in their curriculum area. A report on standards and progress against areas of development is written for Governors annually and data analysis completed termly.

The science leader will be;

- Responsible for the co-ordination and leadership of the science curriculum
- Ensure that policies, guidance, guidelines, resources and schemes of work are evaluated, monitored and updated on a regular basis
- Ensure the effective organisation, storage and distribution of resources
- Keep up to date with developments in the science curriculum
- Keep colleagues informed of relevant development materials



- Carry out monitoring and evaluation of science provision throughout school.
- Promote the development of good practice in relation to the science curriculum and support the implementation of policies, guidelines and schemes of work.

## **INCLUSION AND EQUAL OPPORTUNITIES**

We are committed to providing equal opportunities for everyone. We value the diversity of individuals within the school and beyond and do not discriminate. Learning to live and work together and respect for each other is actively encouraged throughout the school. We need to maintain an awareness of and provide for all of our children in science. We need to consider cultural background, race, gender, language and children with SEN, including the most able.

**Inclusion** – Science forms a part of the school curriculum policy to provide a broad and balanced education for all children. Through our science teaching we provide learning opportunities that enable all pupils to make good progress. We recognise that in all classes, children have a wide range of ability in science and we seek to provide suitable learning opportunities for all children through effective differentiation. Teachers should be flexible with any planned work and modify and extend it as necessary to ensure it is accessible for all children.

Policy agreed on: .....

Chair of Governors: .....