



Science Policy

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Signed:

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Westdale Infant School Science Policy

Aims

Our policy outlines how Science is taught at Westdale Infants. It is our intention that the National Curriculum requirements are met within a broad and rich learning experience. We encourage children to take a careful look at their world, and to think and act as young scientists; carrying out experiments, inferring conclusions and understanding their discoveries. As a core subject, Science forms part of our weekly learning.

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
- can use equipment safely and sensibly
- foster concern and active care for our environment
- are provided with an environment where they can work in an investigative way and communicate their findings in a variety of ways

Curriculum Drivers

Our curriculum drivers are based on the needs of our children and are embedded into every topic and curriculum area including Science. Teachers make provision for our drivers through planning to ensure they are developed coherently throughout our school.



Creativity

Science is taught within creative and fun themes with imaginative cross curricular links to other areas of learning. Children are encouraged to explore and observe so that they can group objects and events and look for similarities and differences. They pick up clues about what they see, touch, smell, taste and hear in order to make sense of it all. Eventually children come to conclusions which they match up with all the experiences that they have had.



Communication

We encourage children to think and act as young scientists; carrying out their own experiments, inferring their own conclusions and understanding the relevance of their discoveries. By talking together, children can be encouraged to explore and observe so that they can group objects and events and look for similarities and differences. They will need to measure and record the things that they have found out in ways that make sense to them so that later they can discuss what they have discovered. They should be encouraged to understand how Science can be used to explain what is occurring, predict how things will behave, and analyse causes. Many cross curricular links are made whilst communicating their scientific experiences. For

example, children use reading skills for research, written skills to record their conclusions, mathematical skills to record, analyse and compare findings.

Teachers encourage the use of scientific vocabulary making careful links to the appropriate Programmes of Study in the National Curriculum. Key vocabulary is highlighted on the long term yearly overview in order that teachers can see a progression between years.



Celebrating Difference

We ensure that the delivery of our Science Curriculum meets the needs of all children and teachers continually adapt learning to meet the needs of all children. We facilitate opportunities for children to celebrate differences. Children learn about the achievements of scientists from the past and present using sources which avoid stereotypical images. We encourage children to develop a respect for each other, their local environment and the wider world. They show sensitivity and care to living creatures and develop an understanding of their habitats and the impact humans have on these. At all times we encourage reflection and aspiration. We celebrate the achievements of all children during class time and assemblies. Children's science learning is celebrated on class displays. End of term celebrations in year groups are also a chance to share learning experiences with parents.



Kindness to ourselves and others

We understand children are able to demonstrate their understanding of Science in many ways and we encourage children to communicate their understanding using different teaching styles. We encourage children in all year groups to explore and observe. They learn how to listen to others and ask questions about their learning. They develop resilience when mistakes are made and know this is part of learning. We share in celebrating scientific discoveries from the past and present. We learn about our bodies and ways to keep healthy. We learn about plants and creatures and the impact of human behaviour on their habitats.

Teaching and Learning

The National Curriculum for Science underpins our teaching and learning in this subject. We have developed a whole school, long term curriculum progression map showing Programmes of Study for each area, key learning opportunities, and key vocabulary.

Teachers in year groups follow medium term plans which highlight termly cross curricular themes, the coverage (PoS) of Science within these themes, activities linked to these and possible evidence for assessment. Short term weekly plans are adapted to suit the learning needs of the children in their class. Teachers continually adapt plans to match children's own interests and experiences, current events, and resources.

When planning Science sessions in year groups, teachers also include opportunities to revisit previous learning and consider strategies which enable children to hold scientific knowledge within **long term memory**. Using a variety of different strategies e.g home learning, personal research and quizzes, we seek to enable them to recall key facts that will provide a solid basis of learning for future study.

Throughout learning, scientific misconceptions are addressed and teaching and learning is adapted accordingly. With reference to our Learning Policy, we use the Metacognition Seven Step Model to ensure the teaching and learning of Science is as effective as possible.

Science is taught weekly in Y1 and 2. In Foundation 2 it is part of everyday learning within the Understanding the World element of the EYFS curriculum. In Key Stage 1, scientific investigations are planned each half term and highlighted on medium term maps. With all our curriculum plans, our curriculum drivers are at the heart of all we do in Science.

Teachers use a variety of teaching styles including whole class and group. We challenge, support and encourage all our children and have high expectations. Resources are used to enhance learning; these include specific scientific equipment to help children develop skills in investigation. Throughout learning, scientific misconceptions are addressed and teaching and learning is adapted accordingly.

National Curriculum requirements

Foundation Stage

In the Early Years, we foster a hands on curiosity for exploration of the world which feeds in to the children's skills for enquiry further on in the school. Children work to the Statutory Framework for the Early Years Foundation Stage (EYFS). The section 'Understanding the World' involves guiding children to make sense of their physical world and their community through opportunities to explore, observe and find out about people, places, technology and the environment. The EYFS aims to give the children knowledge and skills so they can begin the National Curriculum.

Programmes of Study

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

Year One

Plants:

Pupils should be taught to:

- identify and name a variety of common wild and garden plants, including deciduous and evergreen trees
- identify and describe the basic structure of a variety of common flowering plants, including trees

Animals including Humans

Pupils should be taught to:

- identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
- identify and name a variety of common animals that are carnivores, herbivores and omnivores
- describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)
- identify, name, draw and label parts of the human body and say which part of the body is associated with each sense

Everyday Materials

Pupils should be taught to:

- distinguish between an object and the material from which it is made
- identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock
- describe the simple physical properties of a variety of everyday materials
- compare and group together a variety of everyday materials on the basis of their simple physical properties

Seasonal Changes

Pupils should be taught to:

- observe changes across the 4 seasons
- observe and describe weather associated with the seasons and how day length varies

Year Two

Living Things and their Habitats

Pupils should be taught to:

- explore and compare the differences between things that are living, dead, and things that have never been alive
- identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
- identify and name a variety of plants and animals in their habitats, including micro-habitats
- describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food

Plants

Pupils should be taught to:

- observe and describe how seeds and bulbs grow into mature plants

- find out and describe how plants need water, light and a suitable temperature to grow and stay healthy

Animals, including humans

Pupils should be taught to:

- notice that animals, including humans, have offspring which grow into adults
- find out about and describe the basic needs of animals, including humans, for survival (water, food and air)
- describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene

Uses of everyday materials

Pupils should be taught to:

- identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
- find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching

Assessment and Record Keeping

Teachers will identify assessment opportunities in their planning. The assessment will be used to inform planning and will promote continuity and progression. Assessment will be based on observation, participation and written outcomes. It will form the basis of reporting to parents at the end of the year, in the 'topic' section of the child's report.

A record of the children's progress will be kept by the teacher e.g.

- Observations of children working
- Discussions with children – before, during and after work
- Marked work – in line with the schools marking policy
- Specific planned assessments

These records are kept in individual children's books with clearly labelled Science WALTs, as well as class floor books or learning journals with annotated pic collages.

Written and verbal feedback will be given to the children and teaching points will be emphasised. Children will be encouraged to review their own progress. Teachers use assessment to support, challenge and encourage all children to aspire to make the best progress possible.

Annually, data will be inputted in relation to age related expectations. This will be tracked using Eazmag and will be analysed annually by the Science lead and SLT identifying the % of children at age related expectations and the % in the groups such as boys, girls, PP, SEN & LAC.

Monitoring

Science teaching and learning is monitored as part of our school monitoring cycle. Records of coverage and levels are kept in each year group. Teachers continually monitor progress and achievement on a week by week basis and adapt teaching accordingly. The Science lead monitors progress and coverage through learning walks and book looks at least once a year. Year group teachers monitor progress throughout the learning of each Programme of Study and make adaptations where appropriate.

SEND

Staff will ensure that the delivery of the Science Curriculum meets the needs of all children. Notice will be taken of personal targets where appropriate. Children will be given the necessary support to access the curriculum and adaptations will be made where appropriate.

The Role of the Science Leader

In consultation with other staff, the Science-curriculum leader works to:

- Coordinate the implementation of the school Science policy.
- Review changes to the National Curriculum requirements and advise on their implementation.
- Attend relevant CPD courses as appropriate and in line with the School Development Plan.
- Ensure that planning takes into account the range of children at our school and is appropriate to their needs.
- Provide support for colleagues and give or arrange training and development of teacher's skills where appropriate.
- Develop assessment and recording techniques, and ensure the collection of examples of pupil work, both practical and written, to use as a basis for moderated assessment.
- Carry out an annual audit of resources to ensure that appropriate and well maintained resources are available for the teaching of Science.
- Liaise with the schools SENDCO regarding the progress of individual groups of children.
- Encourage the use of the school grounds and other outside resources.
- Keep updated on policy and practice and implement selected new ideas that are likely to improve teaching and learning in the school.
- Monitor the teaching and learning of Science throughout the school, knowing standards of attainment and progress for children.
- Monitor health and safety practice in Science throughout the school.
- Liaise other professionals and attend Primary Science Network meetings.
- Take a lead role in organising Science Events in school.
- Endeavour to involve parents/carers in their child's learning in Science.

Health and safety

Teachers are responsible for any health and safety issues themselves. The Science Coordinator has signposted staff with the CLEAPSS document – Health and Safety in Primary Science and Technology. Children should always be made aware of the potential hazards and safety procedures within lessons and be given the opportunity to reflect on health and safety issues themselves.

Resources

Resources are kept in clearly labelled boxes in a central storage area. Staff also have access to a list of current resources on the R drive. Teachers and support staff anticipate resource requirements when planning long and medium term and inform the Science lead who in turn will bid for resources. Teachers also make use of the school outdoor environment and local community when planning activities. Special Science themed visitors/ experiences also take place throughout the year.

IT

Both staff and children make full use of ICT to support work in Science. Staff use IT for planning, researching, recording and assessing, to produce appropriate worksheets and IWB resources when necessary.

EQUAL OPPORTUNITIES

As an inclusive school all children have access to the Science curriculum whatever their race, gender, social, disability, cultural and economic groupings. If children need adaptations to the curriculum we will make all reasonable adjustments.