

WINGROVE PRIMARY SCHOOL



Policy Statement for Science

Subject leader: Mrs S Blashford

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Intent

The study of science is an essential part of the school curriculum, enabling children to develop an understanding of science to acquire scientific skills and foster positive attitudes towards science. We recognise the importance of developing children's scientific knowledge and skills through first hand practical activity (experiments) which are enjoyable and meaningful. Science must start from the views which children hold and give them opportunities to change their views and ultimately their understanding. Through the teaching of science children should develop skills to explore and understand the world in which they live. Our intention is:

- ◆ to develop scientific knowledge;
- ◆ to develop the scientific skills of investigating, observing, measuring, communicating, prediction, recording and interpreting;
- ◆ to encourage collaboration, co-operation and the sharing of ideas;
- ◆ to provide children with the opportunities to communicate their ideas and work;
- ◆ to extend the children's natural curiosity and wonder about the world;
- ◆ to encourage the development of positive attitudes to science;
- ◆ to develop the use of scientific language, recording and techniques.

We are continually aiming to raise the standards of achievement of all pupils in Wingrove School.

The National Curriculum

The National Curriculum describes what must be taught in Key Stages One and Two. Each teacher at Wingrove School follows this detailed guidance thus ensuring continuity and progression in the teaching and learning of science.

In the Foundation Stage (Nursery and Reception) the curriculum is guided by the Early Learning Goals for Understanding the World which lead directly into the National Curriculum. Characteristics of Effective Teaching and Learning are also taught and observed to ensure our children are confident and independent learners.

Implementation

Planning

Planning is undertaken at three levels:

Long term planning is based on the yearly teaching programmes set out in the National Curriculum. This is linked with other subjects, where appropriate to fit in with half termly topics.

Short term planning is carried out weekly in year group teams. These plans are incorporated into our school creative curriculum planning and include the learning objective, the activities chosen as the vehicle for achieving the objectives, differentiation, special resources and any key vocabulary or questions. Each lesson ends with a focussed plenary.

Planning is monitored by subject leader and the senior leadership team.

Cross Curricular Links

In order to create a cohesive and meaningful learning programme for our children, we try to identify links during the planning stage and give children the opportunity to use their subject knowledge and skills in real contexts. Knowledge organisers are created for the children at the beginning of each unit, which includes specific scientific vocabulary for that area of learning. The children then have this in their books to refer to during the unit.

Lessons follow a range of structures according to the abilities and needs of the children, subject matter being taught and context of the lesson. It is made clear to the children at the start of the lesson exactly what it is they will learn as the objectives are shared with them.

The teaching at Wingrove provides opportunities for:

- ◆ group work;
- ◆ paired work, including mixed ability and similar ability pairs;
- ◆ whole class teaching;
- ◆ individual work.

The pupils engage in:

- ◆ the development of mental skill and strategy;
- ◆ written recording;
- ◆ practical work;
- ◆ investigational work;
- ◆ problem solving;
- ◆ scientific-focussed discussion;
- ◆ consolidation of basic skills and routines.

At Wingrove School we recognise the importance of establishing a secure foundation in science and of teaching and using vocabulary appropriate to the task. We endeavour to set work that is challenging, motivating and which encourages the pupils to talk about what they have been doing.

Each child from Year 1 to Year 6 has a creative curriculum book where all work is recorded across each subject area. New scientific vocabulary is displayed in the classroom and recorded in their books, including the definition for the older children. This can be added to during each lesson or when new vocabulary is taught, it can be used to remind children of the terminology used in each lesson. Knowledge organisers are also stuck in the work books for the children to refer to, each lesson or when needed.

Organisation

Science in the nursery and reception classes (Understanding the World) is planned and delivered as a cross-curricular topic in line with the early learning goals.

In KS1 and KS2, science is mainly planned and taught in accordance with the National Curriculum, making links to topic themes where appropriate. Part of each National Curriculum unit is taught on a termly basis, progressing each term. This ensures our children have a secure understanding of each unit by the end of each academic year.

We recognise that differentiation involves adjusting teaching to meet the learning needs

of individual children. Differentiation should be taken into account when planning work, it is not possible to match every task to the ability of every child but there are certain strategies that can be adopted to ensure that most children are working at the right level.

Differentiation Techniques

- ◆ differentiation by outcome;
- ◆ differentiation by task;
- ◆ differentiation by teacher input.

Strategies to assist differentiation

- ◆ groupings by ability, setting targets at different levels;
- ◆ graded tasks;
- ◆ open ended investigations;
- ◆ mixed ability group, peer support;
- ◆ varied methods of recording;
- ◆ adapting mathematical demands on investigations;
- ◆ incorporating stretch and challenge into activities;
- ◆ promotion of independence enabling smaller guided groups;
- ◆ adaptation of resources;
- ◆ use of visual aid, prompts, language mats etc.

Display

We recognise the important role display has in informing, stimulating, motivating and celebrating the work of our pupils. Displays have an important role in helping to introduce new concepts or consolidate previously visited ones. They should include scientific vocabulary for each unit, be informative and interactive.

Impact

At Wingrove we are continually assessing our pupils and recording their progress. Assessment outcomes are used to inform the next cycle of planning thus ensuring a match of work to the needs of the pupils and ensuring progress.

Assessment for Learning is a key part of every lesson. Teachers assess understanding through observation, talking with children, questioning and feedback of work. The learning objectives for each lesson will be made clear to pupils and revisited during plenary sessions.

Assessment outcomes are analysed by subject leaders and provide the focus for development within the subject for the coming year. Detailed knowledge and skills grids are in place for science and used as a measure of attainment and achievement for all year groups following the National Curriculum.

Reporting

At the end of KS1 and KS2 each pupil's level of attainment and effort is recorded on their annual report. EYFS includes a summary of their child's progress in Understanding the World over the year. A copy of the child's annual report is given to the parent or carer. Standards are also reported at the end of each Key Stage, as one standard only, working at expected.

Resources

Resources for each unit are stored in phase areas in labelled unit boxes. Science information books are located in a section of the library. Materials are regularly reviewed for condition and relevance and then up-dated as appropriate. The subject leader orders materials and resources within the budget allocation as determined by the development plan and after consultation with colleagues.

Equal Opportunities

As a staff we endeavour to maintain an awareness of, and to provide for, equal opportunities for all pupils in science. We aim to take into account cultural background, gender and any special need, both in our teaching attitudes and in the published materials we use with our pupils.

Children with Specific Needs (English as an Additional Language or Special Educational Needs)

Wherever possible we aim to fully include all pupils with in all lessons so that they benefit from listening and participating with others in demonstration, discussion and explanation. Where necessary, teachers will, in consultation with the specialist Inclusion Manager, draw up an individual plan for the child. Where appropriate, children may work on an individualised programme with support or specialist staff. Children may also receive targeted support within the classroom.

Specific planning to meet the needs of such children is identified in the teachers' short term planning. This may take the form of simplified or modified tasks or the use of support staff.

Stretch and Challenge

All children will be taught within the appropriate peer group. Children will be taught key skills and will be assessed at greater depth in their application of the skills across all areas of the curriculum.

Homework

Science does not form a specific part of the school's homework policy, however teachers may wish to encourage children to further their own research along with completion of project-based homework.

STEM Learning Week

Each year, Wingrove takes part in STEAM week. In addition, the wider school embraces STEAM in a focused week of STEM learning. This includes specialist visitors delivering talks and workshops for the children. The aim is to raise the profile of STEM subjects for all children, giving them access to extra creative activities, investigations and experiments across the week. The sessions are organised in close collaboration with the Centre for Life and our Trust partners who work within the industry.

Science Club

As part of the West Trust, each school attends an after school science club at the Centre for Life each week. One year group attends each half term (Y1-Y6), focussing on their key areas of learning. This club provides opportunities for scientific learning using resources that are not always available in the school environment. The depth of learning and experiences provided is invaluable for the educational development of the children.

