EVERY CHILD MATTERS ACADEMY TRUST
WELLGATE PRIMARY SCHOOL
Science Policy

The terms Trust and School (and levels within e.g. governors and trustees) are interchangeable and apply to all schools within the Trust

1 Introduction

This policy is a statement of the aims, principles and strategies for the teaching and learning of science at Wellgate Primary School. Science promotes an awareness of the world around us, helping us to make sense of the world and contributes to children's knowledge and understanding of a highly technical and rapidly changing world. Children should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes. At Wellgate, we believe it is part of our responsibility to prepare our children to live in that world.

2 Aims

At Wellgate Primary School we believe that the teaching of science should ensure that all pupils;

- Enjoy scientific activities and foster a positive approach to science by developing lively, enquiring minds and the ability to question
- Increase their scientific skills, knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- Build on their natural curiosity enabling them to understand and care for the world in which they live
- Are provided with an environment where they can work in an investigative way and can communicate their findings in a variety of ways
- Develop the potential scientific links with all other areas of the curriculum
- Develop an understanding of the nature, processes and methods of science through different types of science enquiries such as observing, predicting, questioning, making inferences, concluding and evaluating, that help them to answer scientific questions about the world around them
- Understand the uses and implications of science, today and for the future.

3 Planning

The main aspects of science to be studied will be determined by the programmes of study of the National Curriculum 2014. The National Curriculum document for Science sets out a clear, full and statutory requirement for all children. It determines the content of what will be taught, and sets attainment targets for learning. The programmes of study set out what should be taught in Key Stage 1 and 2 and The Foundation Stage

programmes of study for Understanding of the World are set out in the EYFS.

Foundation Stage pupils investigate science as part of Understanding of the World. Children are encouraged to investigate through practical experience; teachers guide the children and plan opportunities that allow the children to experience and learn whilst experimenting for themselves. By careful planning, pupils' scientific skills and knowledge gained at Key Stage 1 will be consolidated and developed during Key Stage 2.

Teachers plan for science in year groups and regularly review their planning in light of assessments made about children's understanding and skills as topics develop. Medium term planning and examples of work produced by the children are monitored by the subject leader.

There is an emphasis on teachers planning and teaching science without the use of worksheets wherever possible. The following ways are used:

- Written reports
- Observational labelled drawings
- Tables and charts
- Graphs
- Presentations to others
- Photographs
- Discussions
- Speech bubbles to ask and answer questions

Although there are times when it is not appropriate to produce a written outcome, generally, we expect the children to record their work in a suitable manner.

4 Differentiation and Additional Educational Needs

At Wellgate Primary School all pupils have equal access to the curriculum as appropriate; tasks are modified or adapted to suit the individual child's needs or the needs of the group if appropriate, extra support is given. More able pupils will be given suitably challenging activities. Gender and cultural differences will be reflected positively in the teaching materials used.

The study of science will be planned to give pupils a suitable range of differentiated activities appropriate to their age and abilities. Tasks will be set which challenge all pupils, including the more able. For pupils with SEN the task will be adjusted or pupils may be given extra support. The grouping of pupils for practical activities will take account of their strengths and weaknesses to ensure that all take an active part in the task and gain in confidence.

5 Breadth and Balance

Pupils will be involved in a variety of structured activities and in open-ended

investigative work including;

- Activities to develop good observational skills
- Practical activities using measuring instruments which develop pupils' ability to read scales accurately
- Structured activities to develop understanding of a scientific concept
- Open ended investigations

6 Roles and Responsibilities

The Science leader is responsible for monitoring medium-term planning using the National Curriculum framework and maintaining resources.

Year group teams are responsible for agreeing the order in which activities will take place and planning learning opportunities. This should be recorded on their long and medium term planning grid.

7 Scientific Enquiry

Scientific investigation is a crucial element within the teaching of science and throughout each year all stages of a science investigation should be delivered while linked to the topic. The stages are: Questioning, Planning, Variables, Predicting, Recording, Presenting, Explaining and Evaluating. Teachers will initially make decisions regarding questions and planning while the children provide answers verbally. This will lead to children making more decisions regarding variables and how to record the data.

- Teacher decides questions and plans task
- Teacher makes it a fair test
- Children verbally predict
- Children record observations with pictures, labels and in tables and in writing
- Children use simple observations and measurements eg: length (non-standard and standard measures)
- Orally describe what happens, explain results and suggest improvements

leading to →

- Children decide question and plan own task
- Children design a fair test to control factors
- Use more difficult measurements eg temperature, volume
- Record as tables, graphs, charts and in written work
- Children predict in written format with reasoned arguments for those predictions
- Describe what happens, explain results and suggest improvements

The long term science plan incorporates the different types of scientific investigation to ensure skill development.

As practical work is the basis of our scientific enquiry, we believe it to be most effective when:

- The teacher has a clear idea of the intention, structure and
- The pupils understand the success criteria
- A clear set of safety rules are in place
- High quality appropriate resources are available
- It is relevant to real life

- Teacher knowledge is good
- Children are allowed to make mistakes and are confident to have a go
- Children are given a choice in how to approach an investigation
- Different ways of working are utilised e.g.: individual work, pairs, small group, whole class, mixed ability, ability groupings

8 Cross Curricular Approaches

We recognise that the key cross curricular skills in science are:

- Speaking and listening - through finding out about and communicating facts, ideas and opinions in a variety of contexts
- Math's through the application of numbers, collecting, considering and analyzing first and second hand data
- Computing capability through using a range of ICT tools
- PHSE through working with others, through carrying out scientific investigation
- Improving own learning and performance, through reflecting on what they have done and evaluating what they have achieved
- Problem solving, through finding ways to answer scientific questions with creative solutions
- Literacy through report writing and the recording of their investigations

9 Inclusion

We regard the achievement of every group of pupils to be of equal importance. This is reflected in the curriculum we teach. We value and reward the achievements of all pupils equally. We have high expectations of behavior for every group in school. We aim to involve parents from all backgrounds and believe this is a significant benefit to the school.

10 Resources

A wide range of science resources are currently stored in the shower block as well as a large array on the Shared network.

11 Health and Safety

The safe use of equipment is promoted at all times and the school's health and safety policy should be consulted where necessary. It is the teacher's responsibility to make sure that all helpers (teaching assistants, parents etc.) are aware of safety implications connected with any science activity they are undertaking. The safe use of equipment is promoted at all times and the school's health and safety policy should

be consulted where necessary.

When working with tools, equipment and materials in practical activities and different environments, pupils should be taught;

- About hazards, risks and risk control
- To recognise hazards, assess consequent risks and take steps to control the risks to themselves and others
- To use information to assess the immediate and cumulative risks
- To manage their environment to ensure the health and safety of themselves and others
- To explain the steps they take to control the risks

12 Assessment and Reporting

Teachers assess the pupils' responses to the tasks set in planned activities; also their responses in other lessons and across the school day. Formative assessment is ongoing and is used to adapt teaching to meet the needs of all children during the units.

Throughout the school, teachers will assess whether children are working at/above or below the expected level for their age based on their understanding and application of the content of the National Curriculum 2014. Progress and attainment is reported to parents through parents' evenings and end of year reports.

The science coordinator has a portfolio of children's work which shows the expected levels in each year group throughout school.

13 Monitoring and Review

The governor with responsibility for Science is primarily responsible for monitoring the implementation of this policy. This will be through annual discussion with the subject leader and consideration of the evidence included in the subject leader file and annual presentation. The work of the subject leader will also be subject to review by the head teacher as part of our performance management arrangements.

14 Consultation

This policy was updated by Joanne Binns-Alexander, Subject Leader for Science, in previous consultation with:

- Andrew Woodcock, Assessment Leader - January 2017
- Cathryn Egginton - Headteacher
- Governors – full governing body meeting, 2017

15 Other Documents and Appendices

The Science policy should be read in conjunction with our policies for Curriculum, Teaching and Learning, Assessment and Health and Safety.

Joanne Binns-Alexander
Science Co-coordinator