



## Science Policy

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## MAYESPARK PRIMARY SCHOOL

### Science Policy

#### Introduction

At Mayespark Primary School we recognise the importance of science in every aspect of daily life. As one of the core subjects taught in primary schools, we give the teaching and learning of science the prominence it requires. Our aim is to equip our children with the key working scientifically skills, knowledge and vocabulary motivated by our core values of active learning, reflective thinking and engaging strategies.

We live in an increasingly scientific and technological age where children need to acquire the knowledge, skills and attitudes to prepare them for life. We, at Mayespark Primary School, believe that the teaching of science develops in children an interest and curiosity about the world in which they live, and fosters in them a respect for the environment.

#### Aims

Our science curriculum is shaped by the National Curriculum for Science, our school curriculum, our school values and the ethos. Our science curriculum aims to ensure that all children:

- develop **scientific knowledge and conceptual understanding** in the specific disciplines of biology, chemistry and physics, these are only explicitly referred to in Year 5 and 6.
- 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 skills** required to understand the **uses and implications** of science, today and for the future.
- develop through **practical work**, the skills of observation, prediction, investigation, interpretation, communication, questioning and hypothesizing, and increased use of precise measurement skills and IT.
- are enabled to develop their **skills of co-operation** through working with others, and to encourage where possible, ways for children to **explore** science in forms which are **relevant and meaningful to them**.
- are encouraged to treat the living and non-living environment with **respect and sensitivity**.

#### The Science Curriculum

Science is a systematic investigation of the physical, chemical and biological aspects of the world which relies on first hand experiences and on other sources of information. The investigative process and pupils' problem-solving activities will be used to deepen their understanding of the concepts involved.

The main aspects of science to be studied for Key Stages 1 and 2 are determined by the programmes of study of the National Curriculum 2014. At Mayespark Primary School, science is taught throughout the school year, allowing time for the incremental acquisition of skills and knowledge and time to address misconceptions.

Children in the Foundation Stage work towards achieving the Early Learning Goals in 'understanding the world' as determined by the EYFS Framework. Teachers plan specific topics, build upon and develop children's own interests and curiosity about the world they live in.

### **Teaching and Learning**

Breadth and balance is vital, therefore pupils will be involved in a variety of structured activities and in more open-ended investigative work to develop good observational and practical skills. We plan for the 'working scientifically' skills to be built-on and developed throughout the children's time at the school so that they can make connections in their learning and become reflective thinkers and investigators.

Through group work, carrying out experiments and research, we will provide opportunities for children to understand the power of collaborative working in the science community. We shall highlight how this has led to life changing breakthroughs in medicine and how scientists from a range of cultures have had a significant impact globally. We endeavour to ensure that the science curriculum we provide, will give children at Mayespark Primary School the confidence and motivation to continue to further their skills into the next stage of education and beyond.

### **Inclusion**

The study of science will be planned to give pupils a suitable range of differentiated activities appropriate to their age and abilities. Our intent is to deliver a science curriculum which is accessible to all, which will maximise the outcomes for every child so that they develop an enthusiasm and enjoyment of scientific learning and discovery. Tasks will be set which challenge all pupils. For pupils with SEND, tasks will be adjusted and some pupils may be given extra support. The grouping of pupils for practical activities will take account of their strengths and weaknesses and ensure that all take an active part in the task and gain in confidence.

Teachers at Mayespark Primary School are responsible for ensuring that all children, irrespective of gender, learning ability, physical disability, ethnicity and social circumstances, have access to the whole curriculum and make the greatest possible progress. More able pupils will be given suitably challenging activities. Gender and cultural differences will be reflected positively in the teaching materials used.

Teachers are aware that children bring to school different experiences, interests and strengths that will influence the way in which they learn science. Teachers will use a variety of teaching styles and strategies to meet the needs of all children in their science learning.

### **Cross-Curricular Links**

Science pervades every aspect of our lives and we will relate it to all areas of the curriculum. Therefore, it is important cross-curricular links are made where possible. Science has many strong links with other subjects and provides opportunities for children to reinforce basic skills. It

develops many of the skills used in literacy such as reading, writing, speaking and listening. Children enhance their mathematics skills by developing their ability to problem solve, measure, and represent and analyse information. Children use ICT whenever appropriate in science lessons. This includes using computers, tablets, cameras and data loggers. Science makes a significant contribution to PSHE as it raises matters of citizenship, welfare, environmentalism and provides opportunities for debates and discussions.

### **Recording in Science**

The way in which science is recorded will vary across the school depending on age and ability. Teachers should ensure that a range of appropriate methods are used.

These may include:

- Written accounts including: instructions, reports and explanations
- Diagrams, drawings and pictures
- Annotated diagrams
- Spreadsheets (data collection)
- Charts, graphs and tables
- Model making

Children are not required to record the entire process for every investigation but rather to have a different written focus for each, i.e. prediction, conclusion, findings, further questions raised. It is the teacher's responsibility to ensure that a range of investigations processes are recorded throughout the year.

### **Equipment and Resources**

At Mayespark Primary School, we are incredibly fortunate to have such an extensive resource bank that is kept in the science cupboards. In these cupboards are a range of general scientific equipment, including; thermometers, goggles, beakers, magnifying glasses etc. These resources are to be shared throughout the school and across year groups where appropriate. Furthermore, the cupboards house subject specific boxes, whereby resources, including books and equipment, are sorted into topic related areas by year group.

All staff members have a shared responsibility for collecting the relevant box and equipment at the beginning of each topic. These resources are to be used to aid the planning of investigations throughout each topic. It is then the responsibility for teachers to ensure resources are returned to the correct place and in an organised manner ensuring they are accessible for all staff.

### **Health and Safety**

Activities are planned with regard to our Health and Safety policy. Risk assessments are completed as appropriate. All staff are responsible for assessing and controlling risk in scientific activities. This should form a part of teachers' planning.

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

- about hazards, risks and risk control

- to recognise hazards, assess consequent risks and take steps to control 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 risks

In line with the school's Health and Safety Policy, some science investigations may require a separate risk assessment, for example when an open flame is used. Prior to such investigations, teaching staff must liaise with the school's Assistant Business Manager to ensure that all risks have been considered.

## **Science and SRE**

The science curriculum is linked with the sex and relationship education. These areas of the curriculum are compulsory and includes the following as outlined in the National Curriculum 2014: science programmes of study.

### Living things and their habitats (Year 5)

Pupils should be taught to describe the life process of reproduction in some plants and animals. This includes the concept of reproduction in mammals (including humans) being the biological process of a sperm cell fertilising an egg cell.

### Animals, including humans (Year 5)

Pupils should be taught to describe the changes as humans develop to old age. This includes the changes that happen to the human body throughout puberty.

- Male: growth spurts, changes to external genitals (penis, testes and scrotum), growth of pubic, body and facial hair, changes to voice
- Female: growth spurts, changes to body shape (hips), breast development, growth of pubic and body hair, periods

Children of both genders will be taught both aspects of puberty. However, this will be done in gender exclusive classrooms and by the gender appropriate teacher.