



## SCIENCE Statement of Practice

### 1. Aims and objectives

**1.1** A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

**1.2** The aims of science in our school are:

- 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

### 2 Teaching and learning style

**2.1** At Haslam Park Primary School we use a variety of teaching and learning styles in science lessons. The principal aim is to develop children's knowledge, skills and understanding in this area. Teachers ensure that the children apply their knowledge and understanding when exploring and developing ideas, planning and carrying out investigations. We do this through a mixture of whole-class teaching and individual/group activities. Within lessons, we give children the opportunity both to work on their own and to collaborate with others, listening to other children's ideas and treating these with respect. They have the opportunity to use a wide range of materials and resources, including ICT.

**2.2** There are children of widely different abilities in all classes so suitable learning opportunities are provided for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies:

- setting common tasks that are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty (not all children complete all tasks);
- grouping children by ability and setting different tasks for each group;
- providing resources of different complexity depending on the ability of the child;
- using additional adults to support the work of individual children or small groups.

### 3. Science curriculum planning

**3.1** We use the national curriculum and Focus Education scheme of work as the basis for our curriculum planning in science. We ensure that there are opportunities for children of all abilities to develop their

skills and knowledge in each unit and we build in planned progression into the scheme of work so that the children are increasingly challenged as they move up through the school.

**3.2** We carry out curriculum planning in science in three phases (long-term, medium-term and short-term). The long-term plan maps the science units studied in each term, in each key stage during a two year cycle and the children study science units in conjunction with other subjects through a themed curriculum. Some topics have a particular scientific focus.

**3.3** As the basis for our medium-term plans, the national curriculum and the Focus Education scheme of work. The science subject leader reviews these plans on a regular basis. Because we have mixed-age classes, we carry out the medium-term planning on a two-year rotation cycle. By so doing, we ensure that children have complete coverage of the National Curriculum, but do not have to repeat topics.

**3.4** The class teacher writes a learning challenge for each science lesson (short-term plans). These list the specific learning objectives of each lesson.

**3.5** We plan the topics in science so that they build upon prior learning. Children of all abilities have the opportunity to develop their skills and knowledge in each unit and, through planned progression built into the scheme of work, we offer them an increasing challenge as they move up the school.

## **4. Foundation Stage**

**4.1** We teach science in reception classes as an integral part of the topic work covered during the year. As the reception class is part of the Foundation Stage of the National Curriculum, we relate the science side of the children's work to the objectives set out in the Early Learning Goals (ELGs) which underpin the curriculum planning for children aged three to five. Science makes a significant contribution to the ELG objectives of developing a child's knowledge and understanding of the world through activities such as exploring the world around them.

## **5. The contribution of science to other subjects**

### **5.1 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 we use in the Literacy are scientific in nature. Children develop oracy through discussing scientific questions or presenting their findings to the rest of the class. The national curriculum for science reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely. They must be assisted in making their thinking clear, both to themselves and others, and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

### **5.2 Information and communication technology (ICT)**

We use ICT in science teaching where appropriate. Children use ICT in science to enhance their skills in data handling and in presenting written work, and they research information using the world wide web, VLEs and a variety of software. Children have the opportunity to use the digital camera to record and use photographic images and they communicate with other children in other schools and countries by using e-mail.

### **5.3 Personal, social and health education (PSHE) and citizenship**

Science contributes significantly to the teaching of personal, social, citizenship and health education. Children develop self-confidence by having opportunities to explain their views on a number of social questions. There is a separate SRE policy covering sex and relationship education.

## **5.4 Spiritual, moral, social and cultural development**

The teaching of science offers opportunities to support the social development of our children through the way we expect them to work with each other in lessons. Groupings allow children to work together, giving them the chance to discuss their ideas and feelings about their ideas. Through their collaborative and co-operative work across a range of activities and experiences in science, the children develop respect for the abilities of other children and a better understanding of themselves. They also develop a respect for the environment, for their own health and safety and for that of others. They develop their cultural awareness and understanding, and they learn to appreciate the value of differences and similarities. A variety of experiences teaches them to appreciate that all people are equally important, and that the needs of individuals are not the same as the needs of groups.

## **6. Teaching science to children with special educational needs**

**6.1** At Haslam Park Primary School we teach science to all children, whatever their ability. Science forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our science teaching we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels.

**6.2** When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, differentiation – so that we can take some additional or different action to enable the child to learn more effectively. This ensures that our teaching is matched to the child's needs.

**6.3** Intervention through School Action and School Action Plus will lead to the creation of an Individual Education Plan (IEP) for children with special educational needs. The IEP targets are taken into account when planning and teaching science.

**6.4** We enable pupils to have access to the full range of activities involved in learning science. Where children are to participate in activities outside the classroom, for example, a visit to the Zoo or museum we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

## **7. Assessment and recording**

**7.1** We assess children's work in science by making informal judgements as we observe them during each science lesson. On completion of a piece of work, the teacher marks the work and comments as necessary. At the end of a unit of work, the teacher makes a summary judgement about the work of each pupil if they have yet to obtain, met or exceeded the unit objectives. We use this as a basis for assessing the progress of the child at the end of the year.

**7.2** The science subject leader keeps samples of children's work in a portfolio. These demonstrate what the expected level of achievement is in science for each age group in the school.

## **8. Resources**

**8.1** There are sufficient resources for all science teaching units in the school. We keep most resources in a central store.

## **9. Monitoring and review**

**9.1** Monitoring of the standards of children's work and of the quality of teaching in science is the responsibility of the science subject leader. The work of the science subject leader also involves supporting colleagues in the teaching of science, being informed about current developments in the

subject, and providing a strategic lead and direction for the subject in the school. The science subject leader gives the headteacher an annual action plan in which s/he evaluates the strengths and weaknesses in the subject and indicates areas for further improvement. The science subject leader has specially-allocated time in which to fulfil this role by reviewing samples of children's work and visiting classes to observe teaching in the subject.