

### Intent

Science is the study of the natural world and at Hasland Infant and Nursery School we believe that this is best learned through experiments and observation. Our intention is to progressively develop the scientific ability of all of our learners. As children move through school, they are taught to extend their knowledge and vocabulary to aid their scientific thinking. As scientists, the children are encouraged to develop their investigation skills based on the learning of a wide range of topics. Children are given the means to question the world around them and to plan their own inquiries. By the time children leave our school they should be able to observe and compare, and to group and classify. They should also be able to raise their own scientific questions and have the confidence to research these. They will explore, inquire and be encouraged to notice patterns. It is our aim that they approach scientific experimentation logically by predicting, investigating, recording results and making conclusions. Exploration and investigation are embedded into every topic and the ultimate goal of our science curriculum is to nurture a thirst for knowledge. As responsible scientists we also ask each child to take on the title of Global Guardian. This is to develop their understanding of reduce, re-use and recycle. We want our children to understand that they have an important role to play in looking after our Earth's resources.

### Implementation

Our expectations for each year group can be found [in our progression of skills document](#). This highlights the key skills which each year group is expected to be taught and shows how these are built upon throughout their time at our school. These skills are taught within specific areas of science which include observation and research, questioning and predicting and investigation. Measuring and reporting are also key areas, as are interpreting and evaluating results. Children's key knowledge is revisited and built on as they advance through school.

### Nursery

In Nursery, teachers plan opportunities to ensure that children gain first-hand experiences of science. The provision of science-based activities, inside and outside allows children to start to investigate, make observations and discover knowledge about their world. For example, a floating and sinking activity where children can discover, for themselves, which objects float best or how many pebbles it takes to make a boat sink. Mini experiments are also carried out, by teachers, with groups of children to look at other wonders of science. An example of this would be to show how food dye is carried through a plant and how this changes the colour of the petals. Adults ask carefully planned questions and encourage the children to talk about what they can see. They develop the children's vocabulary and knowledge and help them to understand what is happening in the scientific world around them.

### Reception

During Reception the children continue to be able to access science-based provision. An area of the classroom is dedicated to Knowledge and Understanding of the World where children can explore concepts within science such as different materials or how magnets work. Whole class teaching continues to develop knowledge and children can take part in class experiments such as growing plants from seeds or find out how candles give light and heat. The environment garden is used by the children and field-skills are developed. The children continue to question, and research and they begin to predict more specifically what might happen. Results are recorded and non-standard measurement used. Vocabulary from Nursery is built upon and extended. [This is detailed within our progression in skills document](#).

### Key Stage One

Through whole class teaching and group investigation children develop their scientific key skills and build upon these. Investigation stages are formalised and children are encouraged to develop a logical scientific approach. Some topics of learning are specific to Year One or Year Two but many are the same so that Year One knowledge can be built on in Year Two. This is shown in our progression in skills document. Teachers are clear about prior learning and vocabulary so objectives and success criteria are progressive. Children are encouraged to raise their own questions and standard measurements are used. Data is shown in many differing ways and children are given the opportunity to decide which they think is the most effective. Field work in the environment garden is built into the curriculum and first-hand investigation underpins Key Stage One science, as it does in Nursery and Reception.

### Inclusion and SEND

We are an inclusive school where we focus on the wellbeing and progress of every child. All of our children share an entitlement to high quality science curriculum which is delivered in a vibrant and creative way. We recognise the fact that we have children of differing special educational needs, disabilities, special gifts and talents, and of those learning English as an additional language in all our classes, and so we provide learning opportunities for all children by matching the challenge of the task to the ability of the child. Children are more closely supported while they investigate and are helped with research. Any child can be a curious and successful scientist and our staff ensure any individual needs are met. We want all of our children to be excited and engaged in science.

## Science Co-ordinator

The role of the Science Coordinator is to:

- Provide the overview of science across the school.
- Aid the planning of science to ensure the provision of an engaging science curriculum.
- Give advice about the latest research developments and support teachers with their own science CPD needs.
- Keep staff informed about the national picture of science and any changes to the subject.
- Ensure the provision of high-quality science resources and replenish or update these as needed.
- Help the teachers to differentiate science.
- Monitor the standard of children's work and the quality of teaching.
- Collate assessment data.
- Plan and implement any special science events.
- Update science information on the school website.
- Help each class to elect a Chief Global Guardian and hold monthly meetings with these representatives.
- Deliver whole school assemblies to inform children about science developments and Global Guardian news.
- Review developments for science identified on the School Improvement Plan.
- Evaluate strengths and opportunities in the subject, and indicate areas for further improvement.

## Links with the Community

To show the community about the teaching of science at Hasland Infant and Nursery School the school website is kept up to date with science-related photographs and examples of learning. It also shows how we use our Environment Garden to aid the teaching of science. Members of the community are encouraged to help with the upkeep of the garden. Relevant outside specialists are used wherever possible to enhance science teaching and this has included environment experts and university lecturers. The community also help with our science focus weeks. These are held at specific times in the year and previous events have included a Healthy Lunchbox Day at Casa Hotel. This was attended by children, parents, governors and many other members of the public including local shopkeepers, police and representatives from Derbyshire County Council. Our Chief Global Guardians also work with the community, holding meetings with invited guests, writing letters and sharing information about the positive impact of our Global Guardian work.

## Impact

Our approach to the science curriculum provides a fun, engaging, high-quality education, that provides children with skills and knowledge to help with their understanding of the world. Each classroom has a relevant science area with a display that is changed regularly to show current vocabulary. Science lessons are well-structured and quality resources are provided. All science lessons have clear learning objectives and success criteria which are shared with the children. Our use of the outside environment, including the Environment Garden ensures that children learn by first-hand experience. A variety of strategies, including questioning, discussion and marking, are used to assess progress and this information is used to identify what is taught next. Children receive oral feedback from their teachers. At the end of Key Stage one children are awarded a final level which is shared with parents. During focus weeks and interaction with experts, children can understand that science has changed our lives and that it is vital to the future. Science is promoted as extremely valuable to everyone's lives and it is hoped that the children can see possibilities for careers in science for themselves. Their work as Global Guardians shows them that they can make a difference within school, our community and therefore the wider world. Children at our school really enjoy being scientists and this results in motivated learners with sound scientific understanding.