

## Science Policy

### Our School vision:

At Holland Junior School we are a happy, friendly and caring school at the heart of our community. Hand in hand with our families, we have high expectations which nurture the successes, growth and happiness of every child. Children will leave our school with lasting memories and the skills to blossom in their future.

### Intent:

Science enquiry skills are embedded throughout the curriculum and we view pupil questions such as, *why? how? and what if...?* as opportunities to deepen understanding and engage the learner actively with their learning.

It is through this shared learning that we create inspiring science learning journeys. Building on pupil's previous knowledge, increasing their confidence and enthusiasm for their topics. Each lesson develops the pupils' scientific skills through practical activities focusing on observation, enquiry, planning and investigations, as well as encouraging ongoing pupil questions based on their scientific experiences.

Through this ongoing shared happy, safe learning, we motivate, encourage, challenge and inspire our pupils ready for lifelong learning.

### Implementation:

Teachers use the International Primary Curriculum with some reference to other schemes of work and the National Curriculum, to support planning a varied open approach to science teaching. Cross curricular opportunities are fully exploited. Teachers are aware of and plan for secure, targeted AfL in order to support pupil learning and to adapt lessons according to the needs of the pupils.

As part of the teachers planning cycle, teachers plan for the following:

- A front page which outlines knowledge; including the key vocabulary all children must master for that topic; (skills and topic pages on the inside front cover of pupil books)
- A cycle of lessons for each subject, which carefully plans for progression and greater depth understanding;
- Practical investigations that focus on the scientific skill and engages, supports the learners' ability to block learning and increase space in the working memory by having regular opportunities to explain their learning and understanding;
- Challenge or 'Big' questions for pupils to apply their learning in a philosophical/open manner;
- Planned for trips and visits from experts who will enhance the learning experience;

### Impact:

The Science Curriculum at Holland Junior School is well considered and is planned to demonstrate progression. Children who are able to demonstrate both scientific skills and knowledge are deemed to be making secure or good progress, with those able to explain, transfer those skills successfully to other subjects being deemed as making exceeding progress.

In addition, we measure the impact of our curriculum through the following methods:

- A reflection on standards achieved against the planned outcomes – knowledge and skills (Excel sheet);
- Tracking of knowledge through 'knowledge harvests' completed before and after the topic showing progression;

- Teacher observations of pupils during lessons and use of AfL questioning;
- Assessment when marking pupil books (Bubble questions);
- Pupil questionnaire / interviews regarding their experiences when learning their science topics;
- General pupil discussions about their learning;
- Pupil RAG rate their topics – in the front of their books.

### Legal framework

This policy has due regard to statutory legislation and guidance including, but not limited to, the following:

- DfE (2013) 'Science programmes of study: key stages 1 and 2'
- The Control of Substances Hazardous to Health Regulations (COSHH) 2002
- The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 2013

And in addition school policies on health and safety, accident procedures, curriculum, teaching and learning and assessment.

### Roles and responsibilities

The subject leader is responsible for:

- Preparing policy documents, curriculum plans and schemes of work for the subject.
- Reviewing changes to the national curriculum and advising on their implementation.
- Monitoring the learning and teaching of science, providing support for staff where necessary.
- Encouraging staff to provide effective learning opportunities for pupils.
- Helping to develop colleagues' expertise in the subject.
- Organising the deployment of resources and carrying out an annual audit of all science resources.
- Liaising with teachers across all phases.
- Communicating developments in the subject to all teaching staff.
- Leading staff meetings and providing staff members with the appropriate training.
- Organising, providing and monitoring CPD opportunities in the subject.
- Ensuring common standards are met for recording and assessment.
- Advising on the contribution of science to other curriculum areas, including cross-curricular and extra-curricular activities.
- Collating assessment data and setting new priorities for development of science in subsequent years.

The classroom teacher is responsible for:

- Acting in accordance with Holland Junior School Science Policy, ensuring that lessons are taught in line with the school's Health and Safety Policy at all times.
- Liaising with the science coordinator about key topics, resources and supporting individual pupils.
- Ensuring that all of the relevant statutory content is covered within the school year.
- Monitoring the progress of pupils in their class and reporting this on a half termly basis.
- Reporting any concerns regarding the teaching of the subject to the subject leader or a member of the senior leadership team (SLT).
- Undertaking any training that is necessary in order to effectively teach the subject.

## Curriculum

- From year 3 to year 6 Science is taught two hours a week.
- The schools scheme of work is set out in the National Curriculum form. The activities implemented, which the children undertake, are planned using guidance from the IPC.
- Where possible, children's Science topics are linked with their IPC topic to allow full immersion into the subject. **Appendix 1** shows how the programmes of study have been allocated to the year group and linked with their IPC topics. On some occasions a science unit may be taught independently of the IPC.
- Appendix 2 shows how learning in different science topics are sequenced across different year groups. These are shared with children so they understand what they are learning, what links they can make with previous learning and what they will learn in future years.

## Teaching and learning

Pupils will be taught to describe associated processes and key characteristics in common language, as well as understand and use technical terminology and specialist vocabulary. Each lesson taught includes two learning objectives, one focusing on the subject knowledge taught, the other on the skill developed. This ensures both scientific knowledge and skills are taught. Lessons will allow for a wide range of scientific enquiry, including the following:

- Questioning, predicting and interpreting
- Pattern seeking
- Practical experiences
- Collaborative work
- Carrying out investigations
- Carrying out time-controlled observations
- Classifying and grouping
- Undertaking comparative and fair testing
- Researching using secondary sources

Opportunities for outdoor learning will be provided wherever possible and at least one trip per year off site will be science based. The science coordinator is responsible for organising themed science days and weeks, where the whole school spend the day immersed into scientific topic and investigation. These days may be linked across other TPA schools.

## Assessment and reporting

Pupils will be assessed and their progression recorded in line with the school's Assessment Policy.

Pupils will be assessed continuously throughout the year and at the end of each science topic.

Throughout the year, teachers will plan on-going creative assessment opportunities in order to gauge whether pupils have achieved the key learning objectives.

Assessment in science is based upon scientific knowledge and understanding, rather than achievement in English or maths.

Assessment will be undertaken in various forms, including the following:

- Talking to pupils and asking questions
- Discussing pupils' work with them
- Marking work against the learning objective
- Specific assignments for individual pupils
- Observing practical tasks and activities

- Pupils' self-evaluation of their work which is recorded in the front of their books.

Formative assessment, which is carried out informally throughout the year, enables teachers to identify pupils' understanding of subjects and informs their immediate lesson planning.

In terms of summative assessments, the results of end of year assessments will be passed to relevant members of staff, such as the pupil's future teacher.

Parents will be provided with a written report about their child's progress during the summer term every year. These will include information on the pupil's attitude towards science, progress in understanding scientific methods, ability to investigate, and the knowledge levels they have achieved.

Verbal reports will be provided at parent evenings during the Autumn and Spring terms.

## **Equipment and resources**

The subject leader, in liaison with the facilities manager, is responsible for ensuring that all resources and equipment are sufficiently maintained.

Equipment will be checked prior to each use and any damages or defects must be reported to the subject leader immediately.

The subject leader is responsible for maintaining an inventory of resources.

Staff members must inform the subject leader of any changes regarding science resources, such as broken items or when new resources are required.

Any equipment or resources which are a cause of concern will be removed from the science cupboard immediately.

The subject leader will carry out an annual audit of the science resources, reordering any consumables when necessary.

Class teachers can discuss the need for new resources with the subject leader.

The subject leader is responsible for negotiating requests from staff members and ensuring resources are bought within the amount allocated in the annual budget.

## **Inclusion**

- At Holland Junior School we are committed to inclusion in all its aspects and ensure that all children regardless of ability, race, gender, culture, special educational need or disability, are given appropriate opportunities to access the curriculum.
- In order to achieve this, we provide a differentiated curriculum and, where possible, additional support.
- The philosophy of the IPC is to 'help children develop an international mind-set alongside their awareness of their own nationality' and this vision is instilled deep within our science teaching.

To be read in conjunction with:

Equal Opportunities/Inclusion Policy

Teaching for Learning Policy

Policy for Teaching and Learning of Children with Special Educational Needs

Policy for Teaching and Learning of Gifted and Talented Children

## **Health and safety**

Staff members will act in accordance with the school's Health and Safety Policy at all times.

Accidents and near-misses will be reported following the procedure outlined in the school's Accident Reporting Procedure Policy.

All staff members will be shown how to correctly use equipment as part of their induction training.

All pupils will be shown how to correctly use equipment and will be monitored by staff members whilst using equipment.

All pupils will be made aware of how they are expected to behave, ensuring that they show respect to other people and the environment.

Pupils are made aware of the personal safety protocols and equipment needed when using different equipment or carrying out different tasks.

Any 'new' experiments or activities which a teacher has not used in the classroom before will be trialled prior to being performed with pupils.

At the beginning of any experiment, the teacher will outline the purpose of the experiment to the class, and all hazards and safety precautions will be thoroughly outlined.

### **Monitoring and review**

This policy will be reviewed on a bi-annual basis by the science subject forum, in collaboration with science leads from the appropriate region. Individual schools will adapt to suit their needs e.g. the school intent statement.

The subject leader will monitor teaching and learning in science at Holland School, ensuring that the content of the national curriculum is covered.

Any changes made to this policy will be communicated to all teaching staff.