



# Science Policy

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## Vision

We put children first, pioneering excellence and championing each and every child.

## The Pioneer Academy Expectations

### Safe:

- Schools are safe and secure
- Safeguarding is effective and robust
- Similarities and differences are celebrated; everyone thrives and flourishes

### Happy:

- Pupils and staff are positive and succeed in a supportive environment
- Wellbeing for all
- High standards of attendance and enjoyment are outcomes of an inclusive TPA school

### Learning:

- Learning is achieved by the successful sequencing of memorable experiences
- Learners are engaged, resilient and enthusiastic
- Learning outcomes are ambitious due to knowledgeable and effective teaching

## **Legal framework**

This policy has been created with regard to relevant legislation including, but not limited to:

- DfE (2014) National Curriculum in England

This policy should be read in conjunction with the following policies:

- Assessment Policy
- Marking and Feedback Policy
- Inclusion Policy
- Equality statement

## **Curriculum Intent**

The curriculum in TPA schools is designed to inspire and motivate children. Our aim is for every child to experience 'an extraordinary school day' every day. We place children at the heart of the learning process through a bespoke 'Teaching and Learning Model.' Wherever possible, the Science curriculum will provide opportunities to establish links with other curriculum areas.

## **Curriculum Implementation**

Teachers use the IPC scheme, 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 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;
- Planned for trips and visits from experts who will enhance the learning experience;

## **The Teaching and Learning Model**

The Pioneer Academy's Teaching and Learning Model, which is rooted firmly in research and analysis of effective learning and teaching, translates the Trust's Expectations into classroom practice. Our teaching and learning model is designed and implemented in such a way that it builds on prior knowledge and skills and lays the foundation for future learning. Lessons are designed to be engaging and challenging with learners actively involved. This Model has been developed and embedded to provide consistency and continuity for all children.

## **Extra-Curricular and enrichment opportunities**

The Pioneer Academy aims to ensure every child has the opportunity to engage in new experiences and visit new places beyond the school grounds, taking them to places that some children wouldn't have naturally gone to. School visits and inspiring visitors are an entitlement to every child who attends a school within The Pioneer Academy. The Pioneer Pupil Passport is part of each school's cultural capital commitment to provide a role broad and balanced curriculum that promotes spiritual,

moral, social, cultural, mental and physical development and prepares our pupils for the opportunities and experiences of adult life.

Each year, each school will arrange a number of activities that take place off the school site and/or out of school hours, which support the aim of providing opportunities that enrich the curriculum, enabling the children to have first-hand experience of a wide range of topics and activities.

## **Lesson Planning**

An IPC overview sets out which theme is taught in each year group in Year 3 to Year 6.

Learning Ladders show the progression of knowledge, skills, understanding and vocabulary that pupils are expected to master each year.

Threads of Learning show how a concept is developed over time from Year 3 to Year 6.

The activities implemented which the children undertake, are planned using guidance from the IPC scheme of work to ensure opportunities for investigation learning.

Learning Questions map out the learning sequence.

Knowledge organisers show the knowledge for each unit of learning which is covered within the school context. These are visible on tables during science lessons.

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 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.

All Learning activities are adapted and varied to support and challenge all groups of learners.

## **Resources**

Science resources for each unit are stored in the Science cupboard.

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 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.

## **Assessment**

Assessments are made in line with the Trust's assessment policy. Teachers and educational support staff use effective assessment for learning (AfL) to ensure planning is based on prior attainment and that pupils know what they need to do to achieve the next steps.

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.

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 using the schools marking policy
- Specific assignments for individual pupils,
- Observing practical tasks and activities
- Pupils' self-evaluation of their work using AFL dot/tick next to the Learning question.

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

## **Home learning**

Every unit that involves Science has a homework menu sent out to complete across the topic.

## **Equal opportunities**

At The Pioneer Academy, we are committed to ensuring equality of education and opportunity for all pupils, staff, parents and carers, irrespective of race, gender, disability, belief, religion or socio-economic background. We ensure that all children, regardless of ability, race, gender, culture or SEND, are given appropriate opportunities to access the Science curriculum. In order to achieve this, we provide learning activities that are adapted to support and challenge all groups of learners.

## **Monitoring and review**

The subject leader is responsible for:

- Monitoring curriculum plans and fidelity to agreed schemes of work for the subject;
- Monitoring the learning and teaching of the subject, providing support for staff where necessary;
- Monitoring and supporting the quality of the learning environment;
- Monitoring assessment in the subject, including reviewing any relevant data and setting ambitious targets for pupils;
- Auditing, purchasing and organising the deployment of resources;
- Organising, providing and monitoring CPD opportunities for staff in order to develop subject specific expertise;
- Updating stakeholders on relevant updates within the subject at a national and school level;
- Monitoring and supporting the organisation of any relevant cross-curricular and extra-curricular activities.

The classroom teacher is responsible for:

- Ensuring that all of the relevant content is covered within the school year as per agreed school curriculum plans;
- Providing a range of learning activities to inspire and motivate all learners;
- Monitoring the progress of pupils in their class and reporting this as agreed in the Trust's assessment policy;
- Undertaking any training that is necessary in order to effectively teach the subject.