



DURANTS SCHOOL – POLICY DOCUMENT

Science

October 2022

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Next review date: October 2024

Durants School Science Policy

Overview

Durants School is a provision for children with Autism aged from 11-19. The school has a very diverse population of pupils with Autism who have varying educational needs. Therefore, providing a provision of the highest standard that delivers a wide range of suitable, motivating, well-pitched learning opportunities that aid pupils in overcoming any barriers to learning is of utmost importance.

Aims & Purpose

Science is defined as the systematic study of the physical and natural world through observation and experimentation. Therefore, it is our duty to deliver a science education that will provide our pupils with the opportunity to think, learn about, develop an interest in and nurture a curiosity of the world around them. Durants School's science curriculum aims to achieve this and is designed to offer pupils experiences in all aspects of Science through a variety of means, dependent on each pupil's learning preference and ability to access the subject content.

Pupils will be given opportunities to develop scientific skills at their own level through exploring, investigating, observing and experimenting different scientific mediums within the areas of 'Living Processes', 'Materials and their Properties' and 'Physical Processes'. Where suitable, pupils will be encouraged to develop the deeper skills encompassed within 'Scientific Enquiry' through complex teacher or pupil led practical experiments.

Curriculum Content

The Science curriculum at Durants School is based on a 3 year rolling cycle in our lower department and a 2 year rolling cycle in our middle department. Across these age ranges we cover a number of topics. Within the strand of Life Processes topics covered include 'Living Things and their Environments', 'Variation and Classification' or 'Animals including Humans', 'Green Plants', 'Human Reproduction' and 'Maintenance of Life' within Life Processes. Within Materials and their Properties topics covered include 'Separating Materials', 'Grouping & Changing Materials', 'Heating and Cooling' and 'Metals'. Finally, within Physical Processes, topics covered include 'Electricity & Magnetism', 'Forces & Motion', 'Light & Sound' and 'Earth & Beyond'. Durants School's upper department will develop scientific skills through their own AQA Curriculum.

The aims of the curriculum are to enable pupils to:

DURANTS SCHOOL – Science Policy

- Develop an awareness of and interest in, themselves, their immediate environment and the wider world.
- Join in practical activities that link to ideas.
- Use their senses to explore and investigate.
- Develop an understanding of cause and effect.
- Foster curiosity and develop an enquiring mind.

The knowledge and skills that Science teaching at Durants hopes to build include:

- The ability to use investigative skills – learning to observe, explore, predict, measure, experiment, record, communicate, interpret, explain and evaluate.
- The ability to use of scientific language.
- The ability to link scientific knowledge and understanding to everyday life.
- Understanding that personal actions have consequences (cause & effect).
- Increasing the breadth and depth of scientific experience, knowledge and understanding.

Scientific Enquiry

Scientific Enquiry at Durants School is taught across all strands and should focus on three main areas, planning, obtaining & presenting evidence and evaluating evidence.

Planning

Planning is concerned with the idea of anticipation and the concept that every action has a consequence (cause and effect). From the development of anticipation teachers can support pupils in developing the ability to:

- Answer scientific questions – what will happen? Why did it happen?
- Think and communicate what might happen, make predictions, try out theories.
- Consider what type of evidence they wish to collect (measurements, observation, information etc)

- Consider whether the test was fair.

Obtaining & Presenting

Obtaining evidence involves using skills such as exploring and observing. Pupils should be encouraged to attend, show an interest in, manipulate and explore a range of living things, materials and phenomena use all their senses (sight, hearing, touch, taste and smell). From the development of these skills teachers can support to develop the ability to:

- Follow simple instructions to keep themselves and others safe.
- Use a range of scientific equipment and materials for play and exploration.
- Make observations and measurements.
- Record what's happening during observations and explorations.
- Present evidence in a suitable mode of communication.

Evaluating

Evaluating evidence begins with experiences of consistent responses and making decisions based upon what has been experienced. From development of these skills teacher can support to develop the ability to:

- Use evidence for a purpose, for example, after trying a selection of clothes pick the warmer clothes if it's cold outside.
- Make simple comparisons and identify simple patterns.
- Communicate what happened during a scientific experience and provide a possible explanation.
- Compare what happened to original predictions.
- Draw conclusions from observations, measurements and other data.

Delivery of Science

Durants School is a very diverse population of pupils with varying levels of educational needs meaning that approaches to science education will vary across the school. Some pupils will need a more sensory approach

DURANTS SCHOOL – Science Policy

to science, where they focus on a more visual and practical lesson, exploring scientific phenomena and observing science in action with support, whereas, our more independent learners would be expected to progress on from observing and exploring scientific medium to developing key skills incorporated within scientific enquiry, such as, pupil lead experiments, predicting results, testing theories, recording their findings and evaluating their results. Teachers should always consider their pupils preferred method for communication and use suitable resources when delivering lessons.

Assessment & Objective Setting

The majority of pupils at Durants are working from P-Level to early stages of the National Curriculum with many of those pupils learning through a multi-sensory approach to access and respond to scientific activities. Individual pupil assessments completed on a regular basis through lesson evaluations, pupil's self-evaluations, marking and feedback, photographic evidence, assessment against academic targets and summative assessment. All progress is monitored against each pupil's own development stage and objectives should be taken from Durants School's curriculum or Schemes of Work as it directly links to our assessment tool.

Planning

Planning for Science should be taken from the Durants School Science schemes of work. This should be used as a starting point where objectives can be drawn. The schemes of work also offer ideas for possible activities, investigations and visits linked to the particular topic. The science curriculum taught should show coverage of the full range of science strands for each pupil across the year.

Resources

Durants School is well resourced for Science and can be found in the whole school resources room. The Science resources are currently organised into individual boxes for each topic located within the whole school resources room. Class Teachers are expected to produce class and pupil specific resources to enable all pupils to access particular topics or investigations alongside what's provided within each of the resource boxes. An ongoing audit of resources is overseen by the Science Co-ordinator to ensure that resources are appropriate for the topics being taught and the changing needs of our pupils. This will be assessed via liaison with teachers, reviews of the curriculum and specific audits.

Health & Safety

Durants School staff members need to be aware of the risks related to each activity or experiment and plan precautions accordingly to the dynamics of their individual class. Teaching staff have a care of duty to their pupils and should never engage in an activity or experiment that could be a serious risk their pupils or themselves. See Durants School's Health & Safety Policy for further information. Pupils should be taught to recognise hazards and dangers in their immediate environment, in the world around them and in investigations they will carry out. Where suitable pupils should be supported to assess and take action in reducing the risks to themselves and others.

Documents to Read Alongside this Policy

Teaching & Learning Policy

Marking & Feedback Policy

Assessment & Moderation Policy

Health & Safety Policy

Durants School Curriculum Document

References

QCA Science – Planning, Teaching and Assessing the Curriculum for Pupils with Learning Difficulties