



Science Policy

| Policy Creation and Review | |
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Contents Page

| | Page |
|--------------------------------|-------------|
| 1. Purpose | 3 |
| 2. Aims | 3 |
| 3. Outcomes | 3 |
| 4. Statutory requirements | 4 |
| 5. Teaching & learning | 4 |
| 6. Monitoring & review | 5 |
| 7. Governing body | 6 |
| 8. Cross-curricular links | 6 |
| 9. Assessment & target setting | 6 |
| 10. Inclusion | 7 |
| 11. Equal opportunities | 7 |
| 12. SEN | 7 |
| 13. Health and safety | 7 |
| 14. Role of the subject leader | 8 |
| 15. Curriculum map | 9 |

1. Purpose (Intent)

At New City we want to develop enquiring minds and 21st century scientists of the future. We endeavour to provide the foundations for understanding the world through the specific disciplines of biology, chemistry and physics.

Through our curriculum all pupils should be equipped with essential aspects of knowledge, methods, processes and uses of science in the wider world. By building up a body of key foundational knowledge and concepts, pupils are encouraged to develop a sense of excitement and curiosity about natural phenomena.

2. Aims (Implementation)

- To ensure our pupils are equipped with the scientific skills and knowledge to prepare them for the implications and uses of science for the future.
- To develop understanding of the processes and methods of science through a range of scientific enquiry that support and encourage our pupils to ask and answer questions about the world around them.
- To develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.

3. Outcomes (Impact)

Children engage with their learning and are able to think scientifically. They are able to use technical terminology accurately and precisely, as well as describe scientific processes in context. Children have the knowledge, confidence and skills to demonstrate and lead scientific enquiry with a clear purpose. Through generated questioning and hypothesis they are able to practically explore and understand the application of Science in the wider world.

4. **Statutory Requirements**

Statutory requirements for the teaching and learning of Science are laid out in, The National Curriculum in England Framework Document for Teaching, September 2014 and the Statutory framework for the Early Years Foundation Stage, September 2021.

5. **Teaching & learning**

Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of, 'The National Curriculum programmes of study for Science 2014' and, 'Understanding the World' in the Early Years Foundation Stage. Science teaching at the New City Primary School involves adapting and extending the curriculum to match all pupils' needs. Where possible, Science will be linked to other areas of learning. Science is taught as discrete units and lessons to ensure coverage. This ensures progression between year groups and guarantees topics are covered. Teachers plan to suit their children's interests, current events, their own teaching style, the use of any support staff and the resources available. At the beginning of each term children from year 1 to year 6 learn about key scientists.

Foundation Stage (reception pupils): Pupils explore science topics through making predictions, using their senses and investigating materials and their properties. Science is taught through the strand of, 'Understanding the World'. Science teaching and learning is also linked to the other strands of The EYFS framework for learning, 2021. Teachers and teaching assistants support pupils to develop a solid understanding of things occurring around them in their day-to-day lives. Children are encouraged to be creative and inquisitive as they participate in activities. They are encouraged to ask scientific questions and then go about finding the answer to these questions. Pupils are encouraged to use their natural inquisitiveness, while taking part in exploratory play in specific scientific areas as well as areas that link across the EYFS framework.

Key Stage One (year one and two): During Key Stage one, pupils observe, explore and ask questions about living things, materials and the world around them. They begin to work together to collect evidence to help them answer

questions, find patterns, classify and group objects, research using a variety of sources and carry out fair testing. Pupils use reference materials to find out more about scientific ideas. They share their ideas and communicate them using scientific language, drawings, charts and tables. Science lessons in Key Stage one are either taught discretely or where possible connected to other curriculum areas. Pupils often use the outdoor areas in their science learning.

Key Stage Two (years three - six): Children are encouraged to extend the scientific questions that they ask and answer about the world around them. Pupils carry out a range of scientific enquiries including: observations over time, pattern seeking, classifying, grouping and researching using other sources (including computing resources). Children in Key Stage Two learn to plan science investigations by only changing one variable to make it a fair test. Pupils in Key Stage two extend their scientific learning using the outdoor areas.

6. **Monitoring and review**

The monitoring of the standards of children's work and of the quality of teaching in Science is the responsibility of SLT and the Science subject leader. The work of the 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.

Monitoring of Pupil progress is carried out each term and termly reports are produced by the Science Lead; findings and actions are shared with the whole school. The Science subject leader gives the head teacher an annual summary report in which s/he evaluates the strengths and weaknesses in the subject and indicates areas for further improvement. This is then used to help construct the following year's subject development plan.

7. **The Governing Body**

Regular feedback is provided to governors regarding the profile and provision of Science and the achievement and progress of pupils within this subject. Visits with our Science Governor are arranged to share current practice and discuss progress and impact within this subject. This policy will be reviewed annually or in the light of changes to legal requirements.

8. Cross-curricular Science Opportunities

Teachers will seek to take advantage of opportunities to make cross-curricular links, especially to Maths, where possible. They will plan for pupils to practise and apply the skills, knowledge and understanding acquired through Science lessons to other areas of the curriculum.

We recognise the important role computing skills have to play in the development of scientific skills. We also recognise the importance of being computer Literate. Computing skills are used wherever possible to enhance teaching and learning of science and to give all children the opportunity to use computing to research, collect, analyse and present scientific findings.

9. Assessment and Target Setting

Teachers assess children's learning in Science through teacher assessment. Regular opportunities are also provided for pupils' peer and self- assessment. They record the progress made by children against the learning objectives for their lessons. At the end of a unit of work, teachers assess children's learning and record this in according to the school Assessment Policy. Further to this assessment of working scientifically is recorded on SIMs at the end of a Term. This information is used to plan the future work of each child. These records also enable the teacher to make an annual assessment of progress for each child, as part of the child's annual report to parents. The teacher passes this information on to the next teacher at the end of each year.

10. Inclusion

We aim to provide for all children so that they achieve as highly as they can in Science according to their individual ability. We will identify which pupils or groups of pupils are underachieving and take steps to improve their attainment. Gifted children will be identified and suitable learning challenges provided.

11. Equal Opportunities

New City Primary School has universal ambitions for every child, whatever their background or circumstances. Children learn and thrive when they are healthy, safe and engaged. In order to engage all children: cultural diversity, home languages, gender and religious beliefs are all celebrated. Our curriculum

includes a wide range of texts and other resources which represent the diversity and backgrounds of all our children. The scientists studied are reflective of the community we live in.

12. **SEN:**

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 and variation - 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. The class teacher will work in conjunction with the SENCO, Science Co-ordinator and the support teacher/assistant to ensure that the lesson is appropriate to the needs of the child on the code of practice. The support teacher/assistant should be fully briefed beforehand and the objective of the lesson clearly identified.

13. **Health & safety:**

Teachers need to assess the class and their Health and Safety needs. For all other Health and Safety concerns, please refer to the ASE publication called 'Be Safe'.

14. **Role of Subject Leader:** The Subject Leader should be responsible for improving the standards of teaching and learning in Science through:

Monitoring and evaluating pupil progress;

Provision of Science;

The quality of the Learning Environment;

Taking the lead in policy development;

Auditing and supporting colleagues in their CPD;

Purchasing and organising resources;

Keeping up to date with changes in the subject

This policy will be reviewed annually or in the light of changes to legal requirements.

Please also refer to the following:

- Teaching and Learning policy
- PSHE policy
- Assessment policy
- Curriculum overviews and MTP plans.

| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
|--------|--|----------------------------------|---|--------------------------------|--|----------------------------------|
| Year 1 | Animals, including Humans (David Attenborough) | Materials | Everyday Materials (Charles Macintosh) | Plants | Light and Dark (Neil Armstrong) | Seasonal Changes |
| Year 2 | Electricity (Thomas Edison) | Animals including Humans | Uses of Materials (John McAdam) | Plants | Living Things (Charles Turner) | The Environment |
| Year 3 | Rocks and Fossils (Mary Anning) | Rocks and Volcanoes | Forces (Galileo Galilei) | Plants | Light (Ibn al-Haytham Alhazeen) | Animals including Humans |
| Year 4 | Animals including Humans (Jane Goodall) | Sound | Materials- States of Matter (Maria the Jewess) | Electricity | Living Things and their Habitats (Serian Sumner) | The Environment (Climate Change) |
| Year 5 | Earth and Space (Brian Cox, Maggie Aldrin Pocok) | Living Things and their Habitats | Animals including Humans (Florence Nightingale) | Materials and their Properties | States of Matter/ Forces (Sir Isaac Newton) | Forces |
| Year 6 | Evolution (Charles Darwin, Dr Nazneen Rahman) | Animals including Humans | Living Things and their Habitats (Carl Linnaeus, Edward Jenner) | Light | Electricity | Science of Sport |