



Manchester
Communication
Primary
Academy

Manchester Communication Primary Academy

SCIENCE

Policy

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Aims

The teaching of science at MCPA aims to ensure that children develop an understanding of the nature, processes and methods of science through a broad range of science enquiries which help them to answer scientific questions about the world around them.

Rationale

We believe that science should be exciting, useful and relevant. It is a process of discovery which allows us to link isolated facts into a coherent and comprehensive understanding of the natural world. Science is a way of discovering what's in the universe and how those things work today, how they worked in the past, and how they are likely to work in the future. Through a challenging and creative curriculum, children should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes. We aim to create scientists who are continually expanding their knowledge of the universe and asking questions about the world we live in today. Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation, as well as using and applying process skills.

Curriculum Design

At MCPA, KS1 teachers teach science for a minimum of one and a half hours each week. KS2 teachers teach science for a minimum of two hours per week. This is in addition to science being linked to the overall learning 'themes' and texts which drive learning across a range of subjects each half-term. Scientific skills are embedded across the science lessons being taught each half term, ensuring that children are able to engage with a variety of practical investigations, making use of specialist equipment and facilities from MCA as required. The long term plan created by the science coordinator ensures progression between year groups and guarantees topics are revisited. Generally, one unit of work is taught in each half term. Some units may have been moved between years, or amalgamated, where appropriate. Some units may be taught in collaboration with outside agencies, including our partner secondary school.

Curriculum and Subject Content

Year	Transition Unit	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1
1	Scientific Skills	Seasonal Change	Everyday materials	senses	Plants	Animals including humans
2	Animals including humans	The human body	Living Things and their Habitats	Everyday Materials	Plants	Animals and their habitats
3	Scientific Skills	Animals including humans	Plants	Magnets and Forces	Light and Dark	Rocks and Soils

Year	Transition Unit	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1
4	Scientific Skills	States of matter	Living things	Electricity	Sound	Animals, including humans.
5	Scientific Skills	Living things and their habitats	Earth and Space	Properties and changes of materials	Forces	Animals, including humans.
6	Scientific Skills	Living things and their habitats	Animals including humans	Evolution and Inheritance	Light	Electricity

EYFS:

In EYFS science comes under ‘Understanding the world.’ The teaching of science is embedded in the cross-curricular approach to learning. The core of the learning comes from what the children already know and how staff can extend that knowledge through indoor and outdoor provisions and learning. Children are provided with the foundations to the KS1 science curriculum.

Working Scientifically within the Curriculum:

Class teachers must ensure that there are frequent opportunities for pupils to ‘work scientifically’ within the curriculum. ‘Working scientifically’ specifies the understanding of the nature, processes and methods of science. Pupils are required to work scientifically within all areas of the science curriculum. The following skills are covered in each year group:

Year 1:

Pupils should be taught to: Sort things into 2 groups based on one given criterion, follow some instructions to carry out a simple investigation, make simple observations which relate to everyday life such as the weather, ask simple scientific questions, use basic equipment to carry out investigations, identify and classify things using a Venn diagram, use simple results data to answer questions and to be able to research by using secondary sources.

Year 2:

Pupils should be: asking their own questions about what they notice, use different types of scientific enquiry to gather and record data, using simple equipment where appropriate, to answer questions including, observe changes over time, noticing similarities, differences and patterns, grouping and classifying things, carrying out simple comparative tests, finding things out using secondary sources of information, use appropriate scientific language from the national curriculum to communicate their ideas in a variety of ways, what they do and what they find out.

Year 3:

Pupils are taught to: make a prediction, ask relevant scientific questions, use observations and knowledge to answer scientific questions, set up a simple enquiry to explore a scientific question, set up a test to compare two things, set up a fair test and explain why it is fair, use diagrams, keys, bar charts and tables; using scientific language, make careful and accurate observations, including the use of standard units.

Year 4:

Pupils are taught to: use equipment, including thermometers and data loggers to make measurements, gather, record, classify and present data in different ways to answer scientific questions, use findings to report in different ways, including oral and written explanations/presentation, draw conclusions and suggest improvements, make a prediction with a reason, identify differences, similarities and changes related to an enquiry.

Year 5&6:

Pupils will plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary, taking measurements, using a range of scientific equipment, with increasing accuracy and precision, recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs, using test results to make predictions to set up further comparative and fair tests, reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations, identifying scientific evidence that has been used to support or refute ideas or arguments.

Planning and Links

Science is taught discretely in most cases but teachers are encouraged to make links across the curriculum wherever possible; planning details links to English and maths for each lesson.

In order to ensure that all children make good progress in science, teachers should ensure that their planning and teaching meet the needs of all learners, ensuring an appropriate level of challenge. To support this, all children are set challenging targets for the end of year outcomes.

Each half-term, classes in science will produce a written piece of work which is added to children's writing folders. This is to promote high levels of literacy across the curriculum whilst ensuring that children have the opportunity to develop their writing across a range of genres.

Long Term Planning:

The curriculum map (see above) outlines the units to be taught in each year group.

Medium Term Planning:

Teachers should complete a medium term plan for each unit of work so that they can plan for clear progression and differentiation. There is a specific planning format for staff to follow. There should be a maths or English link in every Science lesson.

Medium term plans will be shared with the subject leader to ensure there is progression between years. Medium term plans should provide an overview of each unit of study, breaking it down into individual lesson or 'chunks' of learning. The medium term plan should identify learning objectives, main learning activities and differentiation. It is recommended that teachers annotate their medium term plan after each lesson and after continual assessment for learning, ensuring fluidity between sessions.

Short Term Planning:

Short term planning is the responsibility of individual teachers who need to build on their me-

dium-term planning. These plans are solely for the benefit of the class teacher and do not need to be shared with the subject leader.

Safety

All staff will follow COSHH guidance 'Be Safe'. Teachers must plan safe activities for science and complete a risk assessment if necessary. Teachers and teaching assistants need to be aware of health and safety procedures when using equipment/food in science lessons. Pupils must be aware of the need for personal safety and the safety of others during science lessons.

Resources

Science resources are stored in plastic boxes in the storage cupboards. An inventory of resources is kept on the network and is updated when new resources are ordered. The subject leader must be informed of any changes regarding science resources i.e missing or broken resources and/or when new or replacement resources are required.