



Subject Story

Science

At Morden we ensure that all children are provided with rich learning experiences that prepare our children for life in an increasingly scientific and technological world today and in the future. The children at Morden will be taught how Science supports the understanding of climate change. We help our children acquire a growing understanding of the nature, processes and methods of scientific ideas, within the 3 areas of Science: Biology, Physics and Chemistry. We build on our children's natural curiosity and developing a scientific approach to problems. We encourage open-mindedness, self-assessment, perseverance and developing the 5 scientific enquiry skills: observing over time; researching; pattern seeking; comparative and fair testing and identifying, grouping and classifying. We develop the use of scientific language, recording and techniques. We develop the use of computing in investigating and recording. We make links between science and other subjects.

The National Curriculum for Science states:

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

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.

If you were to walk into Science lessons at Morden, you would see:

- The use of key vocabulary and children taking ownership of their learning – Children are able to use vocabulary independently and present their findings from each half term in a format that allows them to be creative.
- Children working scientifically, where skills are built-on and developed throughout children's time in class so that they can apply their knowledge of science when using equipment, conducting experiments, building arguments and explaining concepts confidently and continue to ask questions and be curious about their surroundings.
- Reference back to the unit title page at the start of each lesson, focussing attention on the skills to be developed in the proceeding learning activities.
- Retrieval practice giving learners the chance to consolidate previous skills and knowledge.
- Inclusivity – learning that is accessible for all.

Pupil Voice

"We really enjoy Science."

"It's really fun."

"It's about making potions and things."

"It's about investigating and making things blast off."

"We can go on investigations using magnifying glasses."

"We can check out what's different I liked doing the smelling when we learned about the senses."

"We have learned about our 5 senses." – could explain what they were.

"I like the topic states of matter because we did lots of experiments."

"We can actually make our own telephones"

An example of skills and knowledge progression within our Science curriculum

SCIENCE SUBSTANTIVE KNOWLEDGE						
TOPICS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals inc. humans (Biology)	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</p> <p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p>	<p>Notice that animals, including humans, have offspring which grow into adults.</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p>	<p>Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>Describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Identify the different types of teeth -incisor, canine, pre-molar, molar) in humans and their simple functions.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p>Describe the changes as humans develop to old age.</p> <p><i>Non statutory</i> <i>Pupils should draw a timeline to indicate stages in the growth and development of humans. They should learn about the changes experienced in puberty.</i></p>	<p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</p>

Examples of learning

EYFS



Year 1 – looking at leaf shapes in our playground.

Year 2



Exploring habitats

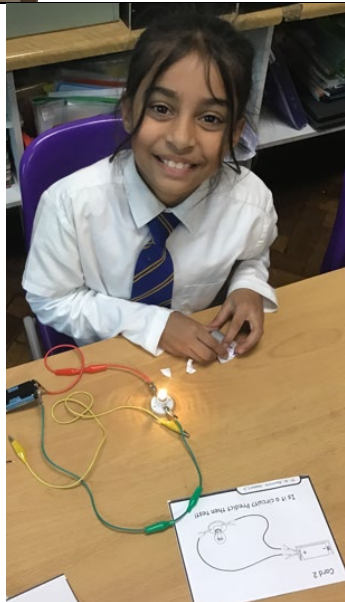


A trip to Morden Hall Park



Year 3 - Understanding composting – making soil

Year 4 –
Making circuits



Year 4 –
Being part of a Science webinar





Year 5 - Understanding the science of an autogyro



Year 6 – Understanding how a heart works



Year 6 – Classification – identifying different plants in our area.

Successes in 2023 - 2024

- Some year groups took more ownership of investigative work e.g. choosing equipment and how to show results. For example: Year 6 chose data parameters and exercise options to investigate the impact of exercise on heart rate.
- Children were able to complete end of unit assessments to track progression of skills and knowledge with confidence.
- Across all year groups, some children were able to discuss and record conclusions to investigations coherently.
- Children are more confident to identify and apply learning from science to other curriculum subjects.
- Webinar with a variety of Scientists from around the UK who answered questions from the children and spoke about how they became Scientist in their specific fields.
- Science Museum trips by years 4, 5 and 6
- Regular use of our outside spaces for science lessons.
- Years 1,2,4 and 6 using the New Kent Scheme of work.

Priorities for 2024-2025

- Children will be able to clearly identify enquiry skills they have developed.
- All children to have the opportunity to take more ownership of investigative work e.g., choosing equipment and how to show results.
- Children able to discuss and record conclusions to investigations coherently.
- Developing science in the wider community.
- Continuing to organise science events.

- Using key vocabulary as part of the ongoing assessment.
- All classes to use the The Education People scheme of work (New Kent Scheme).
- To adapt the unit title pages to be more user friendly to support learning across the unit.
- To raise awareness and develop the diversity of Scientists studied from the past and present.
- CPD training for new staff and subject lead, signposting good practice and training materials to all staff.
- For teachers to include fiction books about Science and concept cartoons.
- To apply a range of oracy strategies regularly during Science lessons.

Ambitions for Science at Morden Primary School

- For children to be confident in knowing which area of Science each topic is linked to.
- For children to be able to explain their findings of investigations with confidence, recalling key vocabulary with accuracy.
- For Science learning to be used as a focus for Literacy writing tasks.

Some websites you might find particularly interesting:

- http://www.bbc.co.uk/schools/websites/4_11/topic/science.shtml
- <http://www.primarygames.com/science.php>
- <https://www.topmarks.co.uk/Search.aspx?Subject=26>
- <http://www.bbc.co.uk/bitesize/ks2/science/>
- <http://www.primaryhomeworkhelp.co.uk/revision/Science/index.html>
- <http://www.childrensuniversity.manchester.ac.uk/>
- <https://www.reachoutcpd.com/>