Micklands Primary School

Science Curriculum Syllabus

Our Intent

At Micklands, we believe science should inspire awe and curiosity about the world. Our science curriculum encourages children to observe, explore, question and explain. It provides purposeful opportunities for children to develop a secure understanding of key scientific knowledge and concepts, while building their skills in enquiry, reasoning and communication.

From the early years through to Year 6, our science curriculum promotes investigation, creativity, and discovery. We prioritise hands-on, practical experiences that allow children to work scientifically, understand how science impacts everyday life, and make meaningful connections to their environment and wider world.

Science at Micklands is lively, engaging and accessible. Children learn how to think like scientists—asking questions, testing ideas, recording results and drawing conclusions. We ensure children are confident to explore the natural and material world, prepared for the scientific learning of Key Stage 3 and inspired to be the scientists and problem-solvers of the future.

Look out for:

- Working scientifically and thinking like a scientist
- Practical investigations, testing and data collection
- Outdoor learning, planting and seasonal change
- Science storytelling, role-play and scientific drawing
- Purposeful links with geography, DT and PSHE
- Climate and sustainability themes woven through each year group

Content and Structure

Science at Micklands is taught through structured units in every year group from EYFS to Year 6. Each unit builds disciplinary and substantive knowledge by focusing on:

- **Knowledge of biology, chemistry and physics**
- **Scientific enquiry and investigation**
- **Observation and questioning**
- **Measurement, recording and drawing conclusions**

We use clear learning objectives, consistent success criteria and engaging formative checks in each lesson. Lessons include practical enquiry, key vocabulary, group talk and opportunities to reason and explain.

Curriculum Progression

Year	Units	Key Learning and Skills
EYFS	• Continuous provision and themed topics	Explore the natural world through play; observe, name and sort materials, plants and animals; talk about seasonal change; ask simple questions and test ideas practically
Y1	• Seasonal Changes • Everyday materials • Sensitive bodies • Comparing animals • Introduction to Plants • Investigating Science Through Stories	Name body parts and senses; identify and describe materials and plants; explore seasonal change and plant growth; group animals and describe features; investigate using stories and role-play
Y2	• Habitats • Micro-Habitats • Use of Everyday Materials • Life Cycles and Health • Plant Growth • Plant-Based Materials	Compare habitats and explore life processes; explore how materials can change shape and be reused; observe plant growth; describe offspring and life cycles; explore how pushes and pulls affect movement
Y3	• Movement and Nutrition • Forces and Magnets • Rocks and Soil • Light and Shadow • Plant Reproduction • Does hand span affect grip strength?	Understand nutrition and bones; identify rocks and soils; explore magnetic and non-contact forces; investigate light, shadows and reflections; learn about plant functions and life cycles
Y4	• Digestion and food • Electricity and circuits • States of matter • Sound and vibrations • Classification and changing habitats • How does the flow of liquids compare?	Identify sound sources and pitch; understand digestion and teeth; classify living things and environmental change; observe solids, liquids and gases; build and test circuits with switches and bulbs
Y5	• Mixtures and separation • Properties and changes • Earth and space • Life cycles and reproduction • Unbalanced forces • Does the size of an asteroid affect its impact strength?	Model the solar system and moon phases; test materials for solubility, insulation and change; explore gravity, air and water resistance; compare life cycles and reproduction in plants and animals
Y6	• Classifying big and small • Light and reflection • Evolution and inheritance • Circuits, batteries and switches • Circulation and health • Are some sunglasses safer than others?	Understand the circulatory system and healthy choices; explore light behaviour; use classification keys and understand adaptation; build complex circuits; explore inheritance and fossil evidence

Link to Climate Change Education

Each year group in KS1 and 2 includes **explicit and implicit opportunities** to connect Science with environmental awareness:

Year	Unit Focus	Link to Climate Education
Y1	• Seasonal Changes • Everyday materials • Sensitive bodies • Comparing animals • Introduction to Plants • Investigating Science Through Stories	• Lays the foundation for understanding climate change as a long-term pattern. Children begin to think about caring for the planet and how seasonal weather may be changing. • Helps children begin to think about how materials are used and what happens to them when we throw them away. It supports early sustainable thinking by considering long-term impact of material choices. • Consider how caring for natural environments helps everyone, especially those who rely more on hearing, smell or touch. Clean air and safe spaces support health for all. • Helps children begin thinking about sustainability in daily life, including how pet ownership affects the environment and how small choices can make a difference. • Helps children connect early scientific knowledge of growth and gardening with environmental care, understanding how plants help clean the air and support life. • Encourages children to understand how human actions affect habitats and how they can help protect animal homes through positive environmental choices.
Y2	• Habitats • Micro-Habitats • Use of Everyday Materials • Life Cycles and Health • Plant Growth • Plant-Based Materials	• Encourages children to understand that human actions affect habitats and biodiversity, and introduces the idea that looking after habitats supports a healthy environment for all living things. • Supports understanding of the delicate balance of ecosystems and how small creatures are affected by changes in their environment. Encourages care for school grounds and wildlife. • Supports understanding that everyday choices impact the environment and empowers children to make decisions that reduce waste and promote sustainability. • Introduces the concept that some food choices can help reduce our carbon footprint and supports children to consider environmental impacts alongside health. • Introduces the idea that plants are vital for the environment and that small actions—like planting and caring for local greenery—help the planet. • Helps children understand how everyday material choices affect the environment and introduces the idea of resource sustainability.
Y3	• Movement and Nutrition • Forces and Magnets • Rocks and Soil • Light and Shadow • Plant Reproduction • Does hand span affect grip strength?	• Encourages children to think about how their food choices affect the environment and introduces sustainability through diet. • Shows how magnetism is key to innovations that help tackle climate change by reducing waste and generating clean energy. • Helps children understand soil as a living, important system that supports ecosystems and locks away carbon—vital for combating climate change. • Encourages children to see how managing light and energy use can help reduce carbon emissions and support sustainable building design. • Highlights the importance of plants in the Earth's carbon cycle and links seed dispersal to wider efforts in rewilding and biodiversity protection. • Encourages children to consider material sustainability and the impact of manufacturing choices on the environment.
Y4	• Digestion and food	• Helps children understand how fragile food chains can be disrupted by environmental changes, fostering awareness of biodiversity and ecological balance.

	• Electricity and circuits • States of matter • Sound and vibrations • Classification and changing habitats • How does the flow of liquids compare?	• Helps children make connections between electricity use and environmental impact. Encourages discussion of energy efficiency and reducing electricity consumption. • Deepens understanding of the global impact of rising temperatures, helping children see the link between everyday weather and long-term environmental changes. • Promotes the idea that material choice affects the environment. Encourages children to think about sustainable alternatives to plastics in practical applications. • Helps children see how human actions and climate change threaten ecosystems. Encourages empathy and responsibility for wildlife and habitats. • Reinforces the connection between materials, pollution and climate impact. Builds awareness of environmental responsibility and how science can be used to address real-world problems.
Y5	• Mixtures and separation • Properties and changes • Earth and space • Life cycles and reproduction • Unbalanced forces • Does the size of an asteroid affect its impact strength?	• Promotes understanding of the impact of rising temperatures on freshwater availability and introduces scientific solutions like desalination and sustainable water use. • Helps children see how choosing materials can impact energy use and the environment, supporting sustainable living choices. • Shows how space science supports understanding of climate change. Encourages scientific thinking about global problems and real-time monitoring. • Supports understanding of biodiversity and how climate change can disrupt delicate life cycle stages and ecosystems. • Reinforces understanding of sustainable energy and how forces can be harnessed to reduce fossil fuel reliance. • Builds understanding of long-term planetary change, cause and effect in environmental systems, and the importance of scientific evidence in understanding Earth's past and future.
Y6	• Classifying big and small • Light and reflection • Evolution and inheritance • Circuits, batteries and switches • Circulation and health • Are some sunglasses safer than others?	• Supports understanding of sustainability and the natural recycling of materials. Encourages appreciation of microscopic organisms' roles in ecosystems and how climate affects them. • Reinforces the importance of understanding light paths for using renewable energy effectively and designing sustainable solutions. • Builds understanding of adaptation under pressure and highlights the importance of biodiversity for resilience in a changing world. • Promotes understanding of energy efficiency, responsible use of electricity, and choosing sustainable solutions (e.g. solar chargers, low-energy bulbs). • Reinforces the link between human health and environmental conditions, promoting active travel, clean air, and sustainable choices. • Builds understanding of how climate change influences UV exposure and the importance of making protective and sustainable choices.

How We Teach Science

- **Exploration First:** Many lessons begin with observation, exploration or a simple question to spark curiosity.
- **Working Scientifically:** Each unit includes opportunities for predicting, testing, measuring and recording.
- **Talk for Science:** Children explain their thinking aloud, using vocabulary to reason and reflect.
- **Retrieval and Reasoning:** Weekly 1-Minute Checks reinforce learning and identify misconceptions.
- **Creative Outcomes:** End-of-unit assessments may include posters, presentations, models or practical investigations.
- **Outdoor and Cross-Curricular Links:** We connect science to geography, PSHE and DT where purposeful.

Science Assessment Summary for Parents

We assess science through observation, discussion, group tasks, recorded work and final outcomes. Children are supported to use scientific vocabulary, apply enquiry skills and communicate their ideas.

Below Expectations

Your child may:

- Find it difficult to recall facts or describe processes
- Struggle to ask or answer questions about what they observe
- Need support with recording or organising scientific work

At Expected Level

Your child is likely to:

- Recall key knowledge and vocabulary from the unit
- Observe carefully and ask questions
- Carry out practical enquiries with support
- Record and talk about what they have found out

Above Expectations

Your child may:

- Show deep curiosity and independence in enquiry
- Use vocabulary confidently to describe processes and explain ideas
- Make links between scientific concepts and real-life situations
- Evaluate results and suggest improvements or new questions

How You Can Support Science at Home

At Micklands, we encourage curiosity and questioning. You don't need to be a scientist to support science learning! Here are some simple ways to engage your child:

Explore Nature Together

- Go on walks and notice the world around you. Talk about trees, animals, seasons, weather, and materials you find.

Ask Questions Together

- Encourage your child to ask "why", "how", and "what if" questions. Wonder aloud with them. Follow their interests and curiosity.

Do Simple Investigations

- Try growing seeds, making boats from different materials, or melting ice cubes in different places. Let your child predict what will happen and talk about the results.

Use Science Words at Home

- When cooking, cleaning, gardening or playing, use words like "melting", "mixing", "freezing", "light", "shadow", or "living".

Visit Science Places

- Go to museums, nature parks, aquariums or gardens. Take photos or draw what you see. Ask your child to explain what they notice.

Read Together

- Share books about animals, space, the body or materials. Watch nature or science-themed programmes or videos together.

Talk About Caring for the Planet

- Discuss recycling, saving energy and water, walking instead of driving, and looking after animals and habitats. Small actions help children feel empowered.

Encourage Drawing and Recording

- Provide paper and clipboards for drawing plants, bugs, weather or experiments. Celebrate their scientific thinking.