Science

Curriculum Overview

Vision

At Moorside Primary School, our curriculum lies at the heart of everything we do. It reflects our Mission Statement, Aims, and our school motto: **"Learn, Achieve, Succeed, Together... for a LASTing education at Moorside!"**

We are committed to offering every child a broad, balanced, and knowledge-rich curriculum that inspires curiosity, nurtures individual strengths, and supports all learners to thrive. Whether pupils have specific talents, additional needs, or unique interests, we tailor learning experiences to ensure they are supported and challenged appropriately.

We recognise that every child is different—with their own experiences, skills, and aspirations. That's why we make it a priority to understand each pupil as an individual. By doing so, we can create meaningful learning opportunities that encourage progress, celebrate success, and promote a lifelong love of learning.

Through our inclusive and ambitious curriculum, we ensure that every child at Moorside has the opportunity to **learn, achieve, and succeed—together!**

The School Curriculum

At Moorside Primary School, our curriculum is thoughtfully designed to ensure that all pupils access the highest quality content. This approach lays a strong foundation for future learning as children progress through school and into Key Stage 3 and beyond. Our curriculum is ambitious and exceeds the expectations set out in the national curriculum.

We place a strong emphasis on understanding the needs of our pupils, ensuring that every child is given the opportunity to achieve their full potential. While academic success is a key priority, we also place equal importance on nurturing pupils' spiritual, moral, social, and cultural development. Our goal is to ensure that every child leaves Moorside as a confident, independent, and successful lifelong learner, ready to make a positive contribution to society.

At Moorside, we've thoughtfully designed our Early Years curriculum to give children the best possible start in their learning. We follow national guidance, including *Birth to 5 Matters*, to make sure every child is well prepared for the next stage of their education, especially the important move into Year 1. Our curriculum supports all areas of development, covering both the **prime areas** (communication and language, physical development, and personal, social and emotional development) and the **specific areas** (literacy, maths, understanding the world, and expressive arts and design). Through a balance of play and more structured activities, we help children build the knowledge, skills, and attitudes they need to grow in confidence and thrive, not just in school, but in life.

In Key Stage 1 and 2, our curriculum aims to provide rich and meaningful learning experiences—both within and beyond the classroom—offering pupils opportunities they may not otherwise encounter. These wider experiences are carefully planned across each key stage.

To support the delivery of a broad and balanced curriculum, we use a range of accredited curriculums to help structure and sequence our **Core** and **Foundation subjects**. This ensures a well-organised, coherent progression of knowledge and skills from year to year, and across

subjects such as English, Reading, History, Geography, Art, Design & Technology, Science, and PSHE.

At the heart of the Moorside curriculum is knowledge. We aim to build a strong foundation of vocabulary and a deep understanding of the world. Our approach to teaching is informed by the latest research into how memory works, helping children retain knowledge over time. For us, progress means learning more and remembering more—pupils make progress as they grow their understanding of the curriculum.

To support this, we use **knowledge organisers** that clearly set out the key information children are expected to learn in each subject. These organisers are shared with families each half term, alongside guidance on the weekly knowledge pupils should commit to memory. Parents are encouraged to support learning through regular quizzing and discussion at home.

Ultimately, our curriculum is designed to help children know and remember more, build strong webs of knowledge, and develop a lasting love of learning.

The National Curriculum

Aims

The national curriculum for science aims to ensure that all pupils:

- develop **scientific knowledge** and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the **nature, processes and methods of science** through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the **uses and implications** of science, today and for the future.

Early Years

The national curriculum for science in the Early Years, through the Understanding the World area of learning, aims to develop children's curiosity and knowledge of the natural world. It supports them to explore, observe, and talk about what they see, to ask questions, and to begin making sense of their experiences, providing a secure foundation for future scientific understanding.

Key Stage 1

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

‘Working scientifically’ is described separately in the programme of study, but must always be taught through and clearly related to the teaching of substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Lower Key Stage 2

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

‘Working scientifically’ is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

Upper Key Stage 2

The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

‘Working and thinking scientifically’ is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read, spell and pronounce scientific vocabulary correctly.

At Moorside, we are... **Scientists**

EARLY YEARS

- Animal Adventures
- Changing Seasons
- I Am A Scientist
- Our Beautiful Planet

E

YEAR 1

- Forces and Space -Seasonal Changes
- Materials - Everyday Materials
- Animals Including Humans - Sensitive Bodies
- Animals Including Humans - Comparing Animals
- Plants - Introduction To Plants
- Making Connections - Investigating Science Through Stories

1

YEAR 2

- Living Things And Their Habitats - Habitats
- Living Things And Their Habitats - Microhabitats
- Materials - Uses Of Everyday Materials
- Animals, Including Humans - Life Cycles And Health
- Plants - Plant Growth
- Making Connections - Plant-based Materials

2

YEAR 3

- Animals Including Humans - Movement and Nutrition
- Forces And Space - Forces And Magnets
- Materials - Rocks And Soil
- Energy - Light And Shadows
- Plants - Plant Reproduction
- Making Connections - Does Hand Span Affect Grip Strength?

3

YEAR 4

- Animals Including Humans - Digestion And Food
- Energy - Electricity And Circuits
- Materials - States Of Matter
- Energy - Sounds And Vibrations
- Living Things And Their Habitats - Classification And Changing Habitats
- Making Connections - How Does The Flow Of Liquids Compare?

4

YEAR 5

- What is life like in the Alps?
- Why do oceans matter?
- Would you like to live in the desert?

5

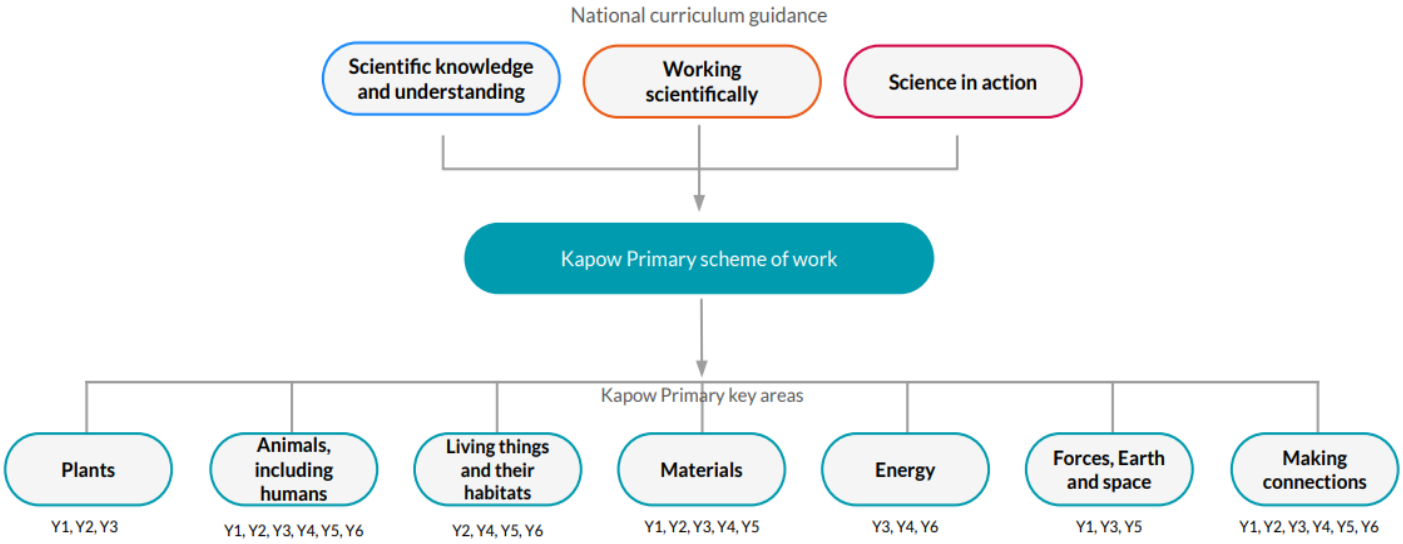
YEAR 6

- Why does population change?
- Where does our energy come from?
- Can I carry out an independent fieldwork enquiry?

6

Curriculum Organisation

How is the Science scheme of work organised?



Types of Knowledge

"'Pupils need to develop an extensive and connected knowledge-base. When pupils learn new knowledge it should be integrated with the knowledge they already have. This ensures that learning is meaningful'. (Ofsted research review series: Science, 2021)"

Substantive Knowledge	Disciplinary Knowledge
Referred to as Scientific knowledge and conceptual understanding in the National curriculum and Scientific knowledge and understanding in our scheme of work, this is knowledge of the products of science: concepts, laws, theories and models. Through our scheme, children will build their substantive knowledge by: • Knowing more facts. • Giving further examples of the same concept. • Understanding and using a wider range of vocabulary. • Using models or concepts that cannot be seen to explain ideas. • Making and explaining links across areas of science. Over time, that knowledge will become increasingly organised and connected. Recaps and recalls will help activate their prior knowledge and encourage them to make connections between units.	Working scientifically specifies the understanding of the nature, processes and methods of science for each year group and is covered alongside our Scientific knowledge and understanding strand in each and every unit, never in isolation. We have broken down the Working scientifically statements from the National curriculum further to ensure gradual progression and focused teaching of the working scientifically skills. This also allows teaching to focus on the component disciplinary knowledge required to enable pupils to carry out the skills competently.

Key Areas of Learning

Key areas in Science

Pupils will develop Scientific knowledge and understanding in seven key areas. The learning in each area is summarised below:

Animals, including humans

Identifying animals, their basic structure and their eating habits, as well as their basic needs for survival. Children learn about the life cycles of animals and their place in food chains.

Naming parts of the human body and recognising the function of skeletons, muscles, teeth and the digestive and circulatory systems. Learning about the importance of hygiene and of the right type and amount of nutrition. Children learn about the impact of diet, drugs and exercise on the body and study the life cycles of humans.

This key area covers the Year 1, Year 2, Year 3, Year 4, Year 5 and Year 6 subject content titled 'Animals, including humans' from the National curriculum.

Living things and their habitats

Identifying something as living and how it is grouped based on its characteristics, similarities and differences.

Naming different types of habitats, learning what they provide for life and the impact of habitats changing. Children learn about the life cycles and reproduction of animals and plants, and how this affects the variation of living things around us, past and present.

This key area covers the Year 2, Year 4, Year 5 and Year 6 subject content titled 'Living things and their habitats' and 'Evolution and inheritance' from the National curriculum.

Plants

Identifying different plants and their key structures, growing seeds and plants and understanding their requirements for growth. Recognising the function of different plant structures and understanding how plants reproduce.

This key area covers the Year 1, Year 2 and Year 3 subject content titled 'Plants' from the National curriculum.

Materials

Naming materials, describing their properties and understanding why materials have specific uses. Identifying how materials may change and the factors that may contribute to this, including changes of state within the water cycle. Children learn about different mixtures and how they can be separated based on their properties.

Identifying different types of rocks and their physical properties, and understanding how fossils and soil are formed.

This key area covers the Year 1, Year 2, Year 3, Year 4 and Year 5 subject content titled 'Everyday materials', 'Uses of everyday materials', 'Rocks', 'States of matter' and 'Properties and changes of materials' from the National curriculum.

Energy

Learning about light and its properties, how it enables us to see and how shadows are formed. Identifying the relationship between sounds, volume, pitch and vibrations, and how sound travels to the ear.

Recognising electrical appliances and the components that make up different circuits. Building electrical circuits and identifying factors that affect the output.

This key area covers the Year 3, Year 4 and Year 6 subject content titled 'Light', 'Electricity' and 'Sound' from the National curriculum.

Forces, Earth and space

Identifying changes across the seasons, and the weather and day length associated with each.

Recognising different types of forces and understanding their effect on objects, including the role of pulleys, levers and gears. Children learn about magnetic materials and that magnets attract and repel.

Learning about the movements of planets and moons within the solar system and how this relates to our day and night.

This key area covers the Year 1, Year 3 and Year 5 subject content titled 'Seasonal changes', 'Forces and magnets', 'Earth and space' and 'Forces' from the National curriculum.

Making connections

Finding the optimum: the science subject report (Ofsted, 2023) states that schools should ensure that teachers

'regularly connect new learning to what pupils have already learned. This includes showing pupils how knowledge from different areas of the curriculum connects.'

One of the ways in which we do this is through our Making connections units, which give pupils opportunities, beyond the National curriculum programme of study, to make connections between their science learning.

Working Scientifically

National curriculum

The National curriculum states that working scientifically should be 'embedded within the content of biology, chemistry and physics' incorporating a range of scientific enquiries that look at the nature, processes and methods of science.

These types of scientific enquiry should include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources.

Ofsted research review

The review states that there are four main content areas for disciplinary knowledge:

1. **Knowledge of methods that scientists use to answer questions.** use of models, classification, description and the identification of correlations (pattern-seeking) have played important roles, alongside experimentation, in establishing scientific knowledge.
2. **Knowledge of apparatus and techniques, including measurement.**
3. **Knowledge of data analysis.**
4. **Knowledge of how science uses evidence to develop explanations.**

Kapow Primary scheme

Working scientifically forms one of the strands in our curriculum, meaning that it is interwoven into each and every unit alongside scientific knowledge and understanding. We have created a Working scientifically - enquiry cycle which incorporates all the elements of working scientifically mentioned above in an easy-to understand model that also helps pupils to understand the steps involved in a complete scientific enquiry.

Oracy

‘Oracy is the ability to speak eloquently, to articulate ideas and thoughts, to influence through talking, to collaborate with peers and to express views confidently and appropriately. Oracy refers both to the development of speaking and listening skills, and the effective use of spoken language in teaching and learning. It is to speech what literacy is to reading and writing, and numeracy is to Maths.’

Speak for Change: Final report and recommendations from the Oracy All-Party Parliamentary Group Inquiry

Learning through talk

At Moorside Primary, we know that talking is a powerful way for children to learn. By thinking aloud, asking questions, and discussing ideas together, pupils can explore their thinking and deepen their understanding.

Learning to talk

Just as importantly, we support pupils to develop their oracy skills so they can communicate confidently in different situations — from classroom conversations to speaking in public, debating, or attending interviews.

Through our Science curriculum, pupils are supported to develop their oracy skills in a variety of ways, including:

- Using precise scientific vocabulary when answering questions.
- Exploring scientific ideas through both structured and improvisational drama activities.
- Working collaboratively in groups, taking on and negotiating specific roles.
- Learning how to frame a testable scientific question and recognising how phrasing influences its effectiveness.
- Listening to and valuing the contributions of others, while considering alternative viewpoints.
- Taking part in peer review by offering both positive feedback and constructive suggestions.
- Using songs and poetry to reinforce and deepen scientific understanding.
- Sharing their work by presenting findings and summarising key observations.

Intent for Science

At Moorside Primary, our Science curriculum, delivered through the Kapow Primary programme, is designed to inspire curiosity, foster critical thinking, and provide pupils with a secure understanding of the world around them. Science is a core part of our curriculum because it encourages pupils to ask questions, investigate ideas, and develop the knowledge and skills needed to make sense of both the natural and physical world.

Our approach to Science is firmly rooted in our school's values and ethos of curiosity, respect, and ambition. Through engaging, hands-on lessons and enquiry-based learning, we aim to nurture confident learners who are equipped to explore scientific ideas, work collaboratively, and communicate their findings clearly.

The key objectives of our Science teaching are to:

- Develop secure scientific knowledge and conceptual understanding across biology, chemistry, and physics.
- Encourage curiosity, questioning, and problem-solving through practical enquiry and investigation.
- Build pupils' ability to think critically, analyse evidence, and draw conclusions so that pupils can challenge misconceptions and demystifying truths.
- Provide opportunities for teamwork, discussion, and communication to enhance personal and social development.
- Develop the use of scientific literacy using wide-ranging, specialist vocabulary.

Our Science curriculum supports pupils' overall development by promoting resilience, independent thinking, and a love of discovery. It shapes their perception of the natural and physical world by linking new learning to real-life contexts, helping them to understand the relevance of Science in everyday life and the wider world.

Carefully sequenced lessons within Kapow ensure progression and continuity across the key stages. Learning builds on prior knowledge, enabling pupils to revisit and deepen their understanding over time. Foundational skills such as observing, predicting, recording, and evaluating are developed systematically, ensuring pupils are well-prepared for future learning and confident in making transitions between key stages.

Inclusivity is central to our Science curriculum. We ensure equal access for all pupils, regardless of background or ability, and use a range of strategies to support diverse learning needs. Differentiation, scaffolding, and practical learning opportunities ensure every pupil is able to participate, achieve, and succeed in Science.

At Moorside, Science is taught as a discrete subject in order that the development of knowledge, vocabulary and scientific enquiry skills are taught both meaningfully and explicitly. Naturally, our Science curriculum also supports wider learning by linking with other subjects, particularly within STEM. Pupils have opportunities to apply mathematical skills, use computing for research and data presentation, and connect learning through problem-solving and innovation.

Ultimately, our intent is that pupils leave Moorside Primary School with a strong foundation of scientific knowledge, curiosity, and skills that prepare them not only for the next stage of their education but also for understanding and engaging with an ever-changing world

Implementation

At Moorside Primary School, our Science curriculum is designed to meet the aims of the National Curriculum and reflects the findings of the *Ofsted Research Review: Science (2021)*. It is built upon three key strands:

- **Scientific Knowledge and Understanding**
    - *Biology*: living organisms and vital processes
    - *Chemistry*: matter and its properties
    - *Physics*: how the world we live in 'works'
- **Working Scientifically**: developing processes and methods of science to answer questions about the world around us
- **Science in Action**: exploring the uses and implications of science in the past, present, and future

A Spiral Curriculum

Moorside Primary School follows the Kapow Primary Science scheme, which is designed as a spiral curriculum. Knowledge and skills are revisited with increasing complexity, enabling pupils to build on prior learning and deepen their understanding over time.

Frequent recall activities support long-term retention and ensure pupils approach new learning with confidence. The 'Science in Action' strand runs throughout the scheme, helping pupils to see the relevance of scientific concepts to their lives, communities, and the wider world. Cross-curricular links, especially within STEM subjects, allow pupils to apply scientific skills across different areas of learning.

Curriculum Organisation

Science at Moorside is structured around the three key disciplines: biology, chemistry, and physics. To provide progression and clarity, National Curriculum content is grouped into six key areas of science:

- Plants
- Animals, including humans
- Living things and habitats
- Materials
- Energy
- Forces, Earth and space

Lessons develop knowledge, conceptual understanding, and specialist vocabulary, ensuring pupils gain both depth and breadth in their scientific learning.

Working Scientifically

In line with the *Ofsted Research Review*, Working Scientifically skills are taught alongside conceptual knowledge rather than discretely. Pupils develop enquiry skills—including observing, predicting, recording, and evaluating—through frequent and purposeful opportunities.

Practical activities are central to our approach, enabling pupils to progress in specific skills and engage in full scientific investigations that reflect the true nature of scientific enquiry.

Early Years Foundation Stage (EYFS)

In the EYFS, pupils at Moorside build the foundations for future scientific learning through hands-on exploration, observation, and play-based enquiry. Lessons spark curiosity and foster an appreciation for the natural environment.

The transition into Year 1 is carefully supported with a mixture of adult-led tasks, independent challenges, and continuous provision opportunities, helping pupils move smoothly into more structured scientific learning.

Extending Learning: Making Connections

Each year group benefits from an optional 'Making Connections' unit. These units allow pupils to consolidate prior knowledge, apply their skills in new contexts, and extend their learning beyond statutory requirements. They also provide an additional way to assess scientific attainment while building excitement and curiosity.

Teaching and Learning Approaches

At Moorside, Science lessons incorporate a wide range of teaching strategies to ensure engagement and inclusivity. These include:

- Independent tasks
- Paired and group work
- Practical and creative investigations
- Computer-based and collaborative projects

Lessons are planned to allow for adaptation and stretch, ensuring all pupils, including those with SEND, can access and succeed in Science. Knowledge organisers for each unit highlight key vocabulary and learning, supporting adaptive teaching and retrieval practice. Further details on **Adaptive Practise** and how pupils are supported at Moorside can be found below.

Supporting Teachers and Subject Knowledge

We recognise that strong subject knowledge underpins high-quality Science teaching. To support this, we use the Kapow scheme as it provides:

- Teacher videos and resources to strengthen subject expertise
- Guidance for addressing common misconceptions
- Troubleshooting advice for practical investigations
- Suggested questioning techniques to deepen pupil understanding
- Demonstrations of practical tasks for classroom use or reflection

This ensures all staff—specialist and non-specialist alike—can deliver Science with confidence, while also supporting their ongoing professional development.

Summary

At Moorside Primary School, our Science curriculum is carefully designed to ensure progression, inclusion, and engagement. By following Kapow's spiral curriculum and embedding *Working Scientifically* skills throughout, we provide pupils with the knowledge, skills, and curiosity needed to understand the world around them and prepare for future learning.

Adaptive Practise

SEND - Adaptive Teaching Strategies For Those Who Need Support and Scaffold

1. Adjusting the Level of Challenge
Adapt tasks so they are accessible but still stretching – e.g. provide sentence stems, scaffolds, or allow pupils to show learning in different ways such as mind maps or collaborative work.

2. Clarifying and Simplifying Instructions
Break tasks down into clear, manageable steps – e.g. use numbered instructions, visual cues (pictures, symbols, diagrams), or rephrase directions.

3. Highlighting Essential Content
Focus on the key ideas and concepts from the curriculum – e.g. bold or highlight essential knowledge, remove unnecessary detail to reduce overload.

4. Re-explaining and Reinforcing Concepts
Give multiple opportunities to revisit and reframe new learning – e.g. explain in different ways, link to real-life contexts, or use hands-on resources.

5. Using Examples and Models
Show pupils what success looks like – e.g. worked examples, sample answers, modelled writing or problem solving.

6. Collaborative and Peer Support
Build in opportunities for pupils to learn with and from one another – e.g. talk partners, group roles, peer tutoring, or structured team activities.

7. Scaffolding with Step-by-Step Guidance
Guide pupils through learning gradually – e.g. “I do, we do, you do”, sentence starters, checklists, or prompts for each stage of a task.

8. Improving Accessibility
Make content easier to access – e.g. sit pupils close to the teacher, ensure visibility of the board, provide child-friendly texts/media, or read aloud when needed.

9. Allowing Additional Processing Time
Give pupils more time to think, respond, or complete tasks – e.g. extended wait time for answers, chunked activities, or pausing to check understanding.

10. Teaching and Reinforcing Vocabulary
Introduce and revisit key vocabulary explicitly – e.g. word banks, visual images, repetition, or sentence stems to practise using words correctly.

11. Checking Understanding and Providing Feedback
Monitor learning regularly and provide immediate support – e.g. mini-plenaries, quick quizzes, targeted questioning, or verbal feedback.

12. Offering Multiple Ways to Record and Present Learning
Encourage pupils to show understanding in varied ways – e.g. oral responses, drawings, photos, digital recordings, mind maps, or written work.

13. Pre-teaching Key Knowledge and Vocabulary
Prepare pupils ahead of lessons to boost confidence – e.g. introduce new words, concepts, or background knowledge before whole-class teaching.

Those Who Need Further Challenge - Adaptive Teaching Strategies to Stretch and Support

1. Building on Prior Knowledge

More able pupils should be encouraged to share their existing knowledge with peers through peer modelling, presentations, or by tackling enquiry-based questions that extend their understanding.

2. Interest-Driven Extension

Teachers should build on pupils' interests by providing higher-level texts, suggesting independent reading, and assigning home learning projects that deepen engagement with the subject.

3. Deepening Conceptual Understanding

Pupils should be challenged to explore topics in greater depth, use more complex terminology, and make abstract connections to develop a richer understanding.

4. Higher-Order Questioning

Teachers should use open-ended questions that promote critical thinking, interpretation, and inference, encouraging pupils to analyse and evaluate ideas.

5. Challenging Learner Roles

More able pupils should be given roles that require leadership, debate, or tutoring, allowing them to contribute meaningfully and stretch their thinking.

6. Mastery and Enrichment Activities

Teachers should provide opportunities for mastery through intensive teaching, peer-assisted learning, and analytical tasks that require deeper engagement with content.

7. Flexible Task Design

Pupils should be offered a choice of tasks with varying levels of challenge, and success criteria should be adapted to stretch their capabilities.

8. Feedback for Growth

Feedback should be framed to encourage pupils to take responsibility for their learning, using open-ended questions to prompt reflection and improvement.

Impact

The impact of the Science curriculum at Moorside Primary School is continually monitored through a combination of formative and summative assessments. By using the Kapow Curriculum, each lesson provides clear guidance for teachers to assess pupils against learning objectives and relevant *Working Scientifically* skills. In addition, every unit includes a unit quiz and a knowledge and skills catcher, which is used to capture pupil knowledge at the end of a topic to measure progress and understanding. Pupils' ability to communicate using scientific vocabulary is also assessed as part of their ongoing development and reflection in Science.

Through our use of the Kapow Primary Science scheme, pupils leave Moorside equipped with the knowledge, skills, and curiosity needed to succeed at Key Stage 3 and beyond. They develop the ability to ask meaningful questions, explore and investigate with confidence, and think critically and analytically about the world around them. Pupils also gain an appreciation of the wider significance and impact of science on society, past, present, and future.

The expected impact of our Science curriculum is that pupils will:

- **Early Years Foundation Stage (EYFS):** Develop early scientific thinking skills through hands-on exploration, play, and sensory experiences in Reception.
- **Biology:** Acquire foundational knowledge in the National Curriculum areas of *Plants; Animals, including humans; Living things and habitats; and Evolution and inheritance*.
- **Chemistry:** Build secure knowledge of *Everyday materials; Uses of everyday materials; Properties and changes of materials; States of matter; and Rocks*.
- **Physics:** Develop understanding of *Seasonal changes; Forces and magnets; Sound; Light; Electricity; and Earth and space*.
- **Scientific Enquiry:** Understand and evaluate the methods used by real scientists to ask and answer questions about the world.
- **Practical Science Skills:** Use scientific equipment effectively to gather, measure, and record data accurately.
- **Data Handling:** Present data in a variety of ways, including charts and graphs, and analyse information to identify patterns, groupings, and classifications.
- **Critical Thinking:** Use evidence to develop explanations, draw conclusions, and challenge ideas.
- **Scientific Literacy:** Present concepts clearly and communicate ideas using appropriate scientific vocabulary.
- **Personal Development:** Demonstrate resilience and a growth mindset, particularly in response to challenges and enquiry-based learning.
- **Statutory Outcomes:** Achieve the end-of-key-stage expectations outlined in the National Curriculum for Science.

By the time pupils leave Moorside Primary School, they will not only have met statutory requirements but will also be **curious, reflective, and scientifically literate learners**, prepared for the challenges of secondary education and inspired to view science as a vital part of understanding the world.

Assessment

Assessment is an integral part of the Science curriculum at Moorside Primary School. At the end of each lesson, teachers assess pupils' learning against statements directly linked to the lesson objectives. This information is then logged on Insights, providing a clear and consistent record of progress.

Over the course of a unit, teachers, subject leaders, and senior leaders are able to monitor both whole-class and individual progress. This system also enables tracking over longer periods of time, supporting the identification of patterns in attainment and progress across year groups and key stages.

Teachers make use of assessment grids (via Insights) to identify gaps in prior knowledge. By referring to the structure of the Kapow curriculum, staff can identify which previous units are relevant and plan opportunities to revisit and reinforce key concepts, ensuring pupils are supported in securing their learning.

At the end of each unit, a knowledge catcher is used to assess pupils' overall understanding of the topic. In addition, unit quizzes are embedded into teaching to provide regular retrieval practice, strengthening long-term memory and consolidating prior learning.

This approach ensures that assessment is ongoing, purposeful, and used effectively to inform planning, support pupils, and drive improvement in Science teaching and learning across the school.

The Role of Subject Leaders

Science subject leaders at Moorside Primary make effective use of assessment data to monitor the quality and impact of Science across the school. Insights data, knowledge catchers, and assessment grids allow leaders to:

- Evaluate pupil progress and attainment across classes and year groups.
- Identify strengths and areas for development in teaching and learning.
- Monitor curriculum coverage and progression across key stages.
- Support teachers in addressing gaps and ensuring consistency in delivery.

This systematic use of assessment ensures that subject leadership is proactive and evidence-based, driving continuous improvement in Science teaching and learning.

Subject leaders are given dedicated time to monitor and evaluate their subject effectively. They have access to ongoing CPD to strengthen their subject knowledge and leadership skills. Each term, subject leaders produce a report that is shared with all staff, outlining the impact of the subject on pupil outcomes and identifying clear priorities for further development.

Overview of Content

	Autumn	Spring	Summer
EYFS	Animal adventures	I am a scientist	Our beautiful planet
	Changing seasons		

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Forces and space: Seasonal changes	Materials: Uses of everyday materials	Animals: Sensitive bodies	Animals: Comparing animals	Plants: Introduction to plants	Making connections: Investigating science through stories
Year 2	Living things: Habitats	Living things: Microhabitats	Materials: Uses of everyday materials	Forces and space: Seasonal changes	Plants: Plant growth	Making connections: Plant-based materials
Year 3	Animals: Movement and nutrition	Forces and space: Forces and magnets	Materials: Rocks and soil	Energy: Light and shadows	Plants: Plant reproduction	Making connections: Does hand span affect grip strength?
Year 4	Animals including humans: Digestion and food	Energy: Electricity and circuits	Materials: States of matter	Energy: Sound and vibrations	Living things: Classification and changing habitats	Making connections: How does the flow of liquids compare?
Year 5	Materials: Mixtures and separation	Materials: Properties and changes	Forces and space: Earth and space	Living things: Life cycles and reproduction	Forces and space: Unbalanced forces	Animals: Human timeline Making connections: Does the size of an asteroid affect the diameter of its crater?
Year 6	Living things: Classifying big and small	Energy: Light and reflection	Living things: Evolution and inheritance	Energy: Circuits, batteries and switches	Animals, including humans: Circulation and health	Making connections: Are some sunglasses safer than others?