Longmoor Primary School

Science Policy

2024-2026

Adopted by Governors

Chair of Governors Signature: Jane Wright	Date: 27th March, 2024
Chair of Governors Signature: Jane Wright	Date: 29th September, 2021
Chair of Governors Signature: Jane Wright	Date: 25.9.20
Chair of Governors Signature: Linda Fitch	Date: Spring 2016

LONGMOOR PRIMARY

SCHOOL SCIENCE POLICY

Longmoor Primary School understands the need for all pupils to develop their scientific ability as an essential component of all subjects and as a subject in its own right. A good understanding of scientific knowledge, working scientifically and conceptual understanding helps to support pupils work across the curriculum.

Vision and Aims

At Longmoor Primary School, we believe that science is a body of knowledge built up through experimental testing of ideas. Our approach is to 'Recap and Build' on scientific learning as children progress year on year through our school; from Nursery to year 6. Science is also a practical way of finding reliable answers to questions we may ask about the world around us. Science in our school aims to stimulate a child's excitement and curiosity in finding out why things happen in the way they do. We aim to foster children's capability to work in a scientific manner in order to ask these scientific questions. Through methods of enquiry and experiments, which stimulate creative thought, they will gain the ability to investigate and answer their questions, which allows them to discover for themselves.

Our aims in teaching science:

- Preparing our children for life in an increasingly scientific and technological world today and in the future;
- Be curious about the world around them and ask/answer scientific questions;
- 'Recap and Build': Children will recap on what they have learnt before in previous year groups and build on this knowledge within the year groups National Curriculum's requirements, which will prepare them for the next stage of their learning journey.
- Plan and carry out scientific investigations using a range of types of enquiry;
- Know how to develop a fair test including all the different variables that need to be taken into account;
- Use equipment (including ICT) appropriately and correctly to answer a question;
- Evaluate, evidence, and present their conclusions clearly and accurately;
- Know and understand the life processes of living things;
- Know and understand the physical processes of materials, electricity, light, sound, and natural forces;
- Know about the nature of the solar system, including the Earth;
- Increase awareness and inspiration for further study and careers in science;
- Use and apply their learning to understand the uses and implications of science, today and for the future.

Science in the Curriculum: Statutory Requirements

Statutory requirements for the teaching and learning of science from years 1 to 6 are laid out as Programmes of Study within The National Curriculum in England Framework Document for Teaching, September 2014.

The Statutory framework requirements for the Early Years Foundation Stage – 'The natural world ELG' - September 2021 are followed in FS2. In FS1, 'Development Matters 2021 – Understanding the World: Three and Four Year Olds' is followed which leads on to 'The natural world ELG'.

How we plan Science

Science is taught in dedicated, standalone lessons but cross-curricular links are made where possible. 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 'The natural world ELG:' in the Early Years Foundation Stage. We approach the planning of science with a 'Recap and Build' philosophy as detailed in the **Progression of Science at Longmoor** section of this policy.

To ensure that all children understand what science is and, for younger children particularly, when science learning is taking place, the character: 'Dr Suzie Science' introduces the learning sequence for every science lesson. The identifiable character defines what science is and what the key steps of an investigation is (differentiated across KS1, lower KS2 and upper KS2) before moving on to share the learning journey for that Programme of Study so that children know where their learning is headed and how that particular lessons fits into the Programme of Study. In order for children to create an emotional attachment to the subject and to help develop 'sticky learning', all teachers wear a 'lab coat' which helps them get into character when delivering the lessons.

At Longmoor, we teach science through practical lessons and encourage **active learning**. Through a range of teaching strategies, the children have the opportunity to explore, discover and learn for themselves, which helps the child to develop metacognitive skills, as well as the scientific subject knowledge and working scientifically skills as laid out within the National Curriculum.

Fostering a love of reading through science

At Longmoor, we strive to promote cross-curricular links. Therefore, we follow the Challenge Curriculum Focus Education. Here, children's science learning is echoed within their literacy work if applicable and helps to promote their scientific vocabulary and allows them to view their science from a creative approach. We also promote a 'Metacognition' approach to science lessons that allows children to take a lead with their own learning and research in order to investigate and discover for themselves. We also strive to incorporate appropriate Numeracy and Design and Technology skills to lessons and, where possible, make links to Topic, PSHE and SRE lessons.

Foundation Stage

Pupils explore science topics through making predictions, using their senses and investigating materials and their properties. 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. 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 frameworks.

Understanding of the World
The Natural World

Longmoor Primary School

Birth to three years			3-4 years: Entry	Reception Autumn	Spring
• Closely observes what animals, people and vehicles do • Watches a toy being hidden and tries to find it • Becomes absorbed in combining things eg places objects in containers • Knows that things are used in different way e.g. a ball for throwing, rolling, a car for pushing	• Explores objects by linking together different approaches: shaking, hitting, feeling, looking, tasting, pulling, mouthing, turning and poking • Remembers where objects belong. • Matches parts of objects that fit together, e.g. puts a lid on teapot	• Enjoys playing with small world models such as farm, zoo, • Notices detailed features of objects in their environment	• Comments and asks questions about aspects of their familiar world such as place they live or natural world • Talks about some things that they have observed using their senses such as animals, plants and natural found objects • Talks about why things happen using a wider vocabulary eg leaves turning brown, why ice melts, different forces • Develops an understanding of growth, decay and changes over time • Understands the need to respect and care for the natural environment/living things	• Looks closely at patterns and change • Explores outside and comments by using some their senses • Begins to make observations of the natural world, plants and animals	• Looks closely at similarities, differences, patterns and change • Describe outside by using their senses • Makes observations of the natural world, plants and animals • Begins to talk about some important processes and changes in the natural world around them eg effects of changing seasons • Begins to identify some similarities and differences between the natural world around them and contrasting environments
(Summer) Early Learning Goal					
• Explore the natural world around them; making observations and drawing pictures of animals and plants • Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class • Understand some important processes and changes in the natural world around them; including seasons and changing states of matter					

Key Stage One

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. Children also begin to work scientifically by learning the various elements of investigations: making predictions, planning simple methods, looking at the results and making simple conclusions. 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 and the differentiated whole school investigation sheets.

Science coverage in Key Stage 1:

	AUTUMN 1 (8)	AUTUMN 2 (6)	SPRING 1 (6)	SPRING 2 (5)	SUMMER 1 (6)	SUMMER 2 (7+3 days)
YEAR 1	How are animals classified? (Classification of Animals)	How do seasons change? (Seasonal Change 1)	What are the materials that are around us called? (Materials and their everyday uses)	What are the different parts of plants called and which birds do you know? (Plants)	How do seasons change? (Seasonal Change 2)	What are our seen body parts called and what are the five senses? (Short Unit)
Area of Learning	Biology	Physics	Chemistry	Biology	Physics	Biology

	AUTUMN 1 / 2 (8) (6)	SPRING 1 / 2 (6) / (5)	SUMMER 1 (6)	SUMMER 2 (7+3 days)
YEAR 2	What do plants and trees need to grow healthily? (Plants 1 – Plant bulbs in Autumn)	How do we make the most of the materials around us? (Materials and their everyday uses)	Why is it important to keep our bodies healthy? (Humans – Healthy Living)	Why do animals choose the habitats they have? (Living things and their habitats)
Area of Learning	Biology	Chemistry	Biology	Biology

Key Stage Two

Throughout Key Stage Two, 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 in more detail and independently by only changing one variable to make it a fair test.

Science coverage in Lower Key Stage 2:

	AUTUMN 1 (8)	AUTUMN (6)	SPRING 1 / 2 (6) / (5)	SUMMER 1 (6)	SUMMER 2 (7+3 days)
YEAR 3	Why do humans have skeletons and muscles? (Skeletons and muscles)	What are the main types of rocks on our Earth? (Rocks and soils)	What do we mean by a force? (Forces and magnets.)	What part do different parts of plants play in helping them grow healthily? (Plants)	Why do we have light and dark and what is its impact on our everyday life? (Light and Dark)
Area of Learning	Biology	Chemistry	Physics	Biology	Physics

	AUTUMN 1 (8)	AUTUMN (6)	SPRING 1 (6)	SPRING 2 (5)	SUMMER 1 (6)	SUMMER 2 (7+3 days)
YEAR 4	What is electricity and why is it so important in our lives? (Electricity)	What happens to the food we eat? (Digestive system and teeth)	How do some solids, liquids and gases change state? (States of matter)	How are living things grouped? (Classification of animals)	How is sound created and how does it travel? (Sound)	
Area of Learning	Physics	Biology	Chemistry	Biology	Physics	

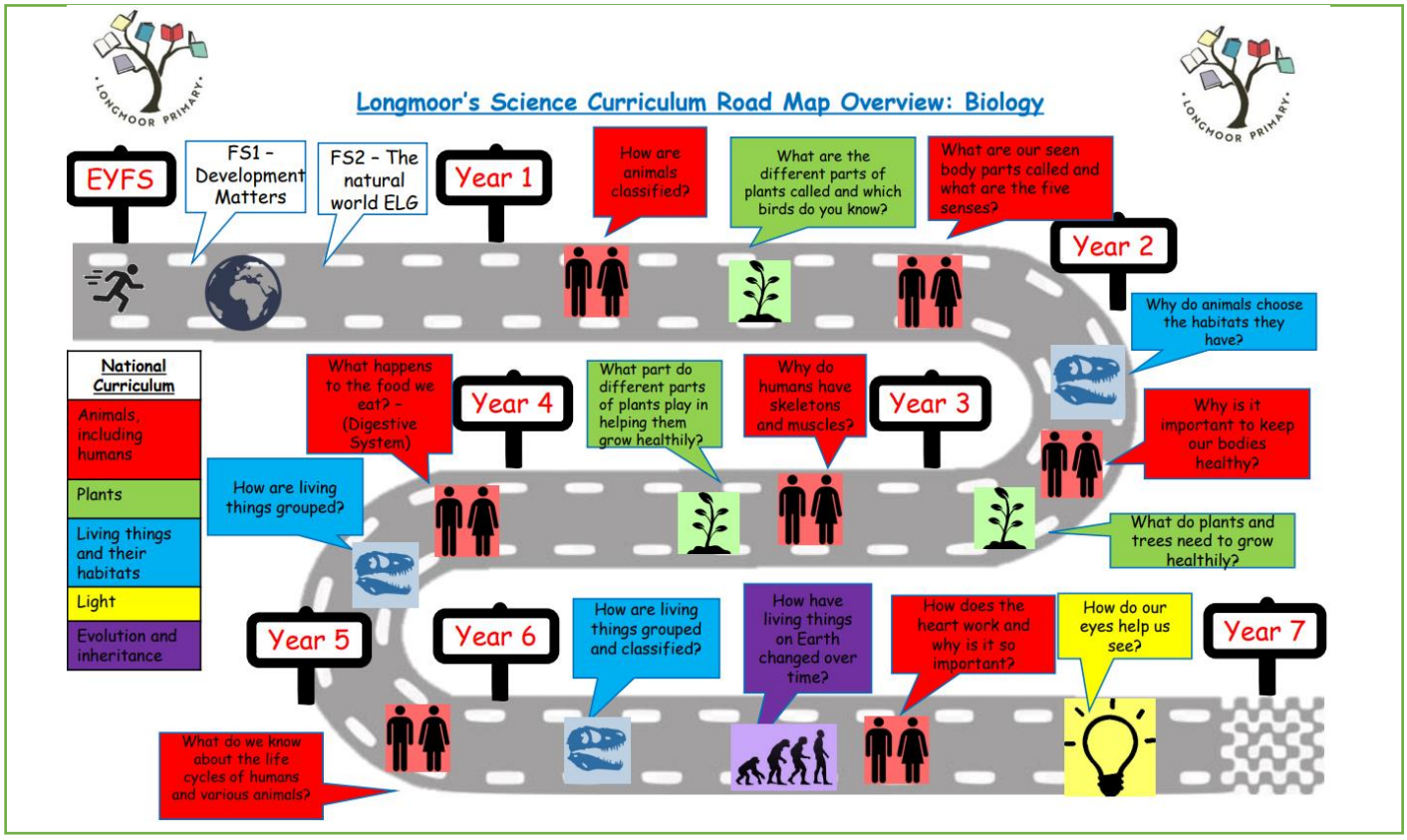
Science coverage in upper Key Stage 2:

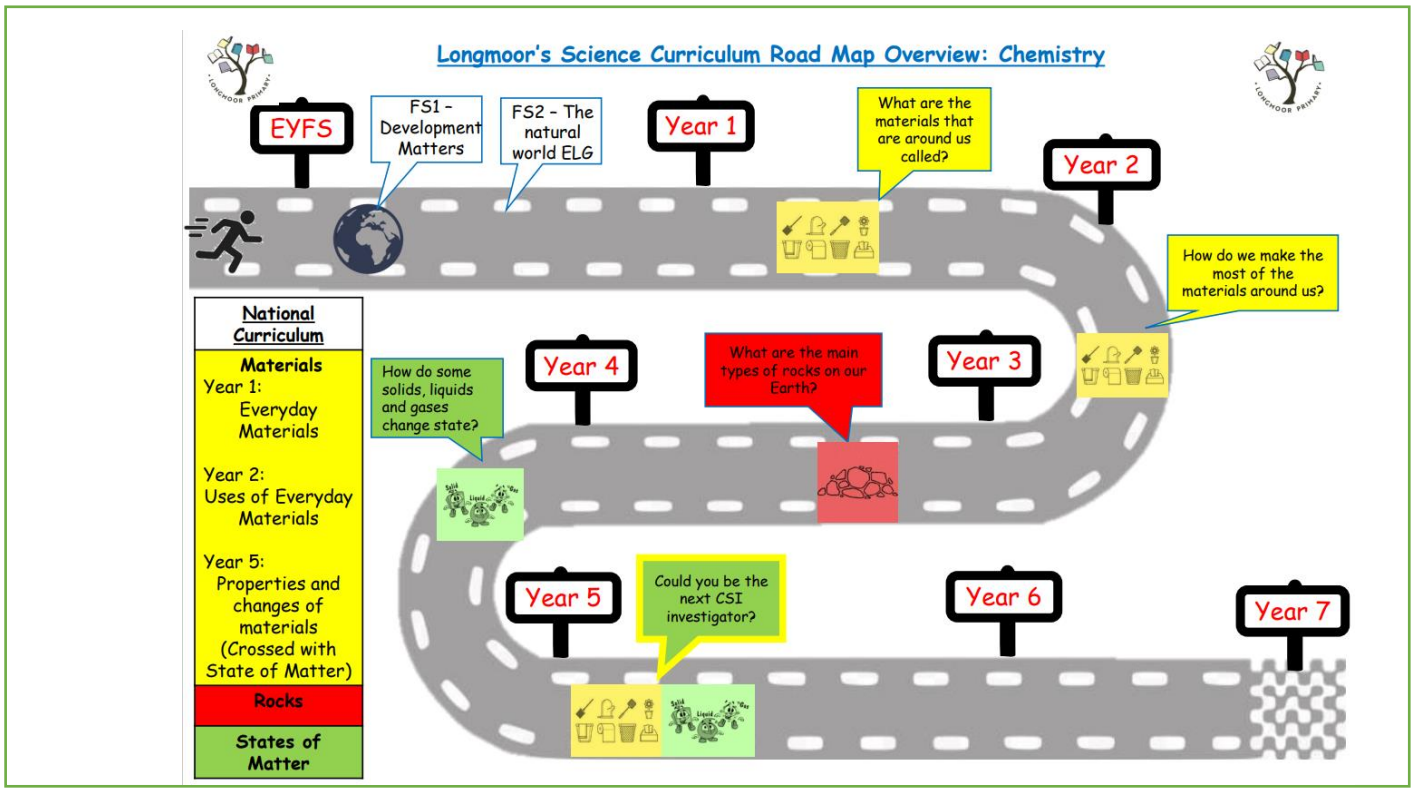
	AUTUMN 1 / 2 (8) / (6)	SPRING 1 (6)	SPRING 2 (5)	SUMMER 1 (6)	SUMMER 2 (7+3 days)
YEAR 5	Which materials can or cannot be changed back to their original form? (Reversible and irreversible changes)	What do we know about the Sun, Earth, Moon and the Planets? (Earth and Space)	What is a force and how does it impact on the way things move? (Forces)	What do we know about the life cycles of humans and various animals? (Life cycles of plants and animals)	What do we know about the life cycles of humans and various animals? (Human Life-cycles)
Area of Learning	Chemistry	Physics	Physics	Biology	Biology

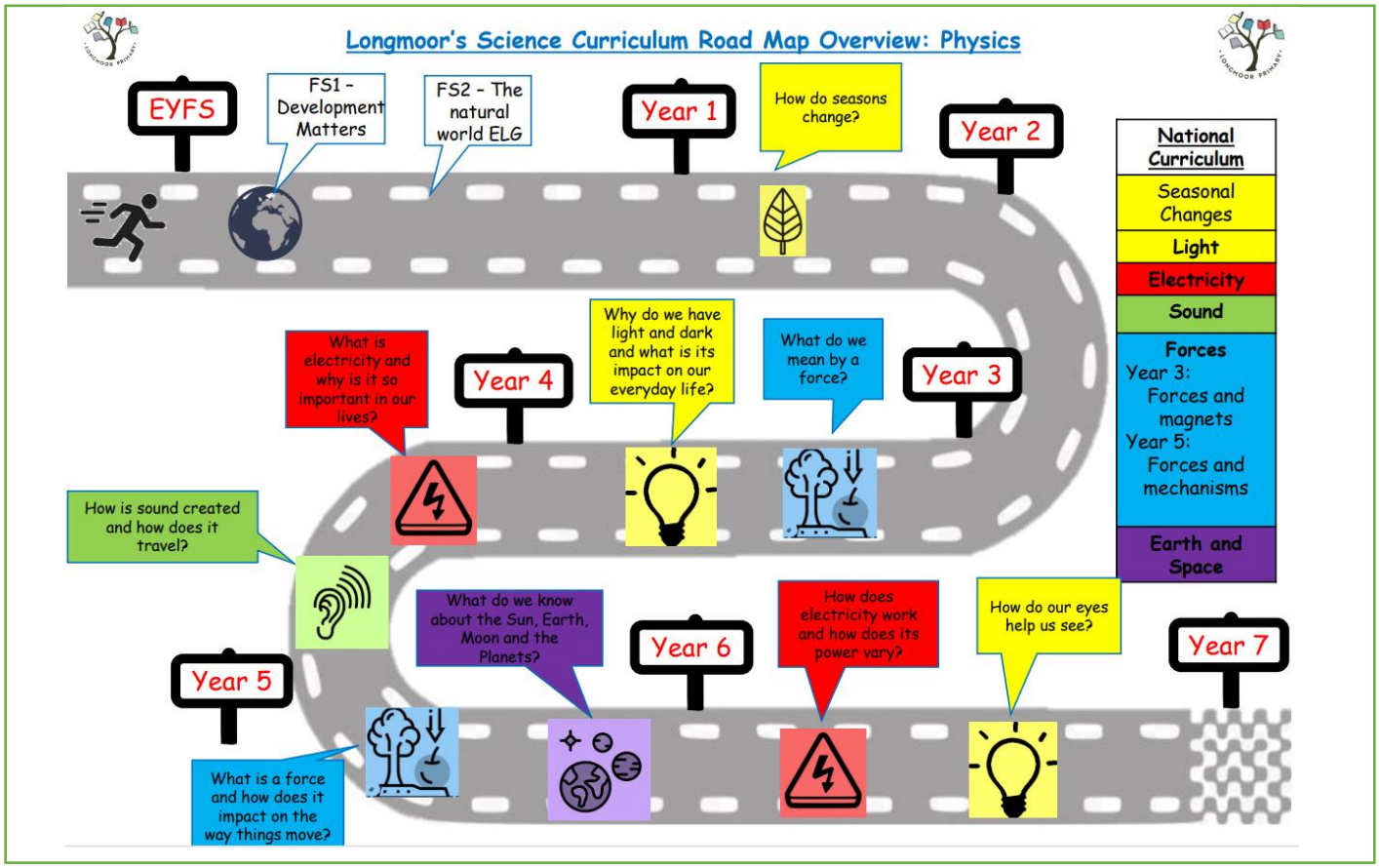
	AUTUMN 1 (8)	AUTUMN 2 (6)	SPRING 1 / SPRING 2 (6) / (5)	SUMMER 1 (6)	SUMMER 2 (7+3 days)
YEAR 6	How are living things grouped and classified? (Classification of all living things)	How have living things on Earth changed over time? (Evolution and inheritance)	How does electricity work and how does its power vary? (Electricity)	How does the heart work and why is it so important? (Heart and the circulatory system)	How do our eyes help us see? (Light)
Area of Learning	Biology	Biology	Physics	Biology	Biology

Progression of Science at Longmoor

At Longmoor, we strive to extend children's scientific skills, knowledge and understanding. Therefore, we approach the planning of each Programme of Study with a 'Recap and Build' philosophy. Each strand of Science (Biology, Physics and Chemistry) has been broken down into their separate Programmes of Study, linked with our school Learning Questions and placed visually on to 'Longmoor's Progression Road Maps'. The road maps provide teachers, parents, governors and pupils with a visual image to see exactly where each year group's programme of study fits into the bigger picture of the children's scientific learning journey.







When planning science lessons, teachers are aware of the following points:

- The requirements expected to be taught in their year group.
- The requirements expected to be taught in previous year groups, and what will be taught after their year group to ensure that repetition of learning does not occur.
- How they will 'Recap and Build' on prior learning.
- Identifying opportunities for the development of scientific skills.
- Where possible, plan activities where science is used as a tool to help achieve a curriculum objective for another subject.
- Ensuring there are opportunities for pupils to work individually and/or collaboratively in pairs or small groups.
- How activities can be modified to give access to pupils with special needs or pupils who need extension activities.
- Ensuring the necessary time or support is available to enable the pupils to carry out the activity.

The science subject leader's monitoring will ensure that the long term planning ensures full coverage and progression in each of the Programmes of Study without repetition of learning. The science subject leader will consult with each teacher to ensure that the medium term planning for the Programme of Study can be delivered, and, if required, provide the necessary training.

The Use of Computing

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 on a daily basis 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 (see Computing policy).

Recording, Assessment and Reporting

Teachers regularly assess capability through observations and marking completed work. Key components to be assessed are taken from the *Challenge Curriculum Focus Education.* Assessing science is an integral part of teaching and learning and central to good practice. Teachers will mark science work in line with the Marking Policy. Teachers will assess children's attainment at the end of each unit of work by scoring each objective with a 1, 2 or 3. A '1' shows a child is working towards the objective, a '2' indicates that the child has met the objective and a '3' is where the child is exceeding the objective. These assessment grids are included on the pre/post learning task.

Assessment can be broken down into;

- **Formative assessments** are carried out during and following short focused tasks and activities. They provide pupils and teaching staff the opportunity to reflect on their learning in the context of the agreed success criteria. This feeds into planning for the next lesson or activity.
- **Summative assessment** will be assessed using independent tasks where children have opportunities to demonstrate capability in relation to the Programme of Study's work. There should be an opportunity for pupil review and identification of next steps. Summative assessment should be recorded for all pupils (as stated above) – showing whether the pupils are working towards, met or exceeded the learning objectives. At the end of each term, teachers make a summary judgement of the whole terms attainment using the above mentioned process to help inform the teachers judgements. We record the results in assessment tables to provide the basis for assessing the progress of the child and to pass information on to the next teacher at the end of the year.

Inclusion

All children should have equal access to science lessons in order to develop their personal attainment. We ensure activities are fully inclusive for all children regardless of gender, disability, ethnicity, social class or educational need by;

- Careful planning of groups to ensure that hands-on experience is equitable.
- Teachers will liaise with the SENCO to improve SEN children's involvement in the curriculum.

- Using external specialist support to assess a child's specific needs.
- Ensuring good roles models amongst staff and peers.
- Ensuring there is a balance in the activities provided to encourage collaborative work as well as competitive activities to suit different learning styles.

Roles and Responsibilities

The Head teacher, Governors and SLT will be responsible for ensuring that:

- The school has an up to date science action plan which is used to plan the development of science in school over a period of years.
- The science action plan is incorporated into the school development plan to ensure the necessary resources are available for its implementation.
- Ensuring the provision of teaching support for Science.
- Ensuring opportunities for staff to receive necessary training.
- Monitoring the delivery of science at Longmoor.

The science subject leader will be responsible for:

- The monitoring of long term and medium term planning.
- Monitor learning, coverage and expectation through a selection of book looks, pupil voice, work sampling and leaning walks.
- Supporting the delivery of science in the National Curriculum.
- Managing the budget for science and the provision of resources and consumables.
- Ensuring that resources are maintained and repaired as needed.
- Preparation and implementation of the science action plan (with support from SLT)
- Identifying the training needs of staff and delivery of some training or support in school.

The class teacher will be responsible for:

- Planning and delivering lessons that take into account individual children's abilities.
- Recap on prior learning and build with knew learning within the parameters of their year group's Programme of Study's requirements.
- Ensuring children receive equal opportunities to develop their science knowledge.
- Assessing and recording children's abilities and capabilities according to the assessment criteria set out in the National Curriculum 2014 programmes of study.
- Identifying the science progress and effort of each child within their annual school report.

The support staff will be responsible for (where applicable):

- Obtaining planning from teachers/being briefed on the lesson.
- Supporting the pupils with their learning, discussing the activities with them.

- Reporting back to teachers on pupil's progress and where the activity did not meet the needs of pupils.
- Recording the progress of any pupils as required.

Health and Safety

The school has a health and safety policy, which is available in a separate policy.

Monitoring and Review

There will be an annual review of this policy by the science subject leader during the spring term of 2026.