Science Policy

2024-2025

INTENT

Rationale

At Lyng Primary School we aim for children to become curious the world around them and instill a lifelong passion for learning about science. Science is a systematic investigation of the physical, chemical and biological aspects of the world which relies on first hand experiences and on other sources of information. The scientific process and pupils' problem-solving activities will be used to deepen their understanding of the concepts involved.

Through science pupils at Lyng Primary School will continue to deepen their respect, care and appreciation for the natural world and all its phenomena.

Dolly our Science expert

Following the Chris Quigley curriculum enables teachers to recognise the key characteristics of scientists in their lessons. These are then presented through Lyng Learning Animals to allow the children to access these in a fun and engaging manner. As chosen by the School Council, Dolly the Fly is our expert scientist in school.

Our Science Curriculum is designed to allow pupils to develop the following key characteristics for a scientist:

KS1	KS2
 Dolly the Fly loves Science KS1 As a Lyng Scientist, I can... • Use Scientific vocabulary. • Plan investigations. • Perform simple tests and work in a practical context, including Forest School. • Use observations and ideas to suggest answers to questions. • Gather and record data to help in answering questions. • Identify and classify. • Share and discuss my findings. • Reflect and discuss changes I would make next time.	 Dolly the Fly loves Science KS2 As a Lyng Scientist, I can... • Use Scientific vocabulary. • Set up simple, practical enquires and comparative fair tests. • Make accurate measurements using standard units. • Identify differences, similarities or changes to scientific ideas and processes. • Gather, record and classify data. • Record findings, using oral and written explanations. • Use results to conclude and suggest improvements, new questions and predictions for setting up future tests. • Share and discuss my findings.

IMPLEMENTATION

Planning

Science planning is part of each topic's Medium Term Plan; teachers follow planning guidance from KAPOW as well the Chris Quigley milestones, which are taken from attainment targets from the science programme of study for KS1 and KS2 in the National Curriculum.

Teachers then select these milestones to create a sequence of science learning in that topic, these are recorded in the Medium Term Plan alongside a short description of the lesson and the success criteria for the Age Related children. Any cross-curricular Writing, Reading and Maths opportunities are signposted in colours (yellow for writing, blue for maths, purple for reading).

Regular LOTC (Learning outside the classroom) opportunities are planned for, alongside visits and visitors into school and these are identified on the Medium Term Plan and also the trip planner pro-forma.

Early Years Foundation Stage (EYFS)

Science is delivered in Reception as part of Understanding the World learning outcomes. It is an integral part of scientific work through child-initiated and adult led activities. The children are given the opportunity to find out about past and present events in their own lives, and those of their families and other people they know.

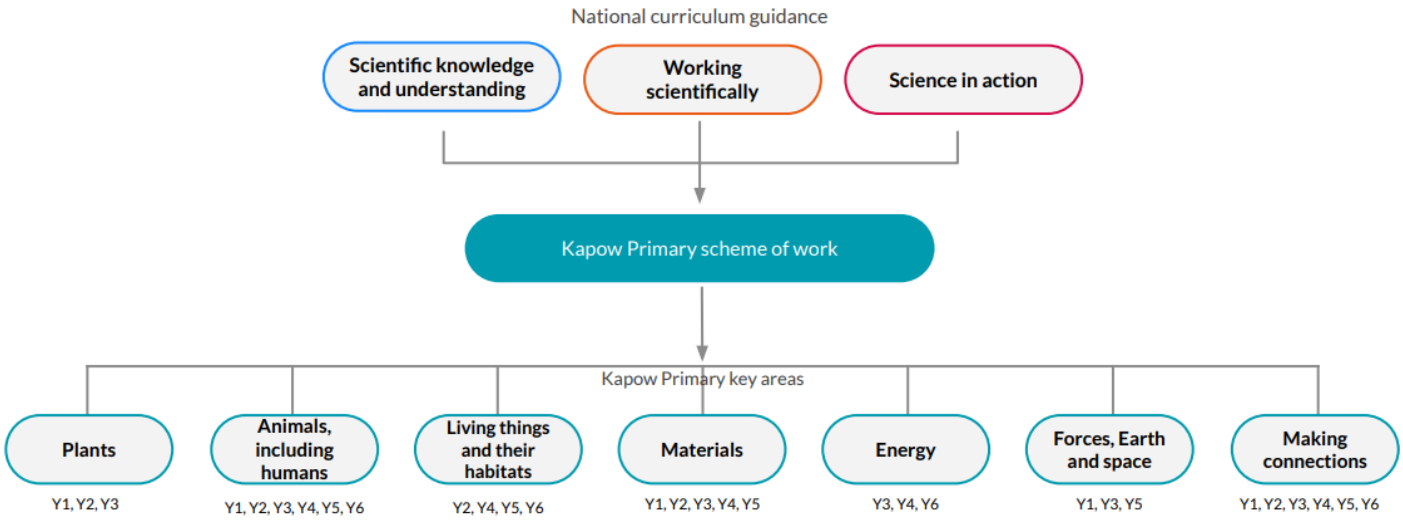
KS1

In KS1 Science is taught through key themes and topics. In Year 1 the children work scientifically and learn about Plants, Animals including humans, Everyday Materials and Seasonal Changes. In Year 2, the children work scientifically and learn about Living Things and their Habitats, Plants, Animals including Humans and Uses of Everyday Materials.

KS2

In Year 3, pupils work scientifically and study Living Things and their Habitats, Plants, Rocks, Light and Forces and Magnets. In Year 4, children work scientifically and study Living Things and their Habitats, Animals including humans, Sound and Electricity. In Year 5, the children work scientifically and study Living Things and their Habitats, Animals including humans, Properties and Changes of Materials and Earth and Space and Forces. Finally, in Year 6, the children work scientifically and study Living Things and their Habitats, Animals including humans, Evolution and Inheritance, Light and Electricity.

Wherever possible cross-curricular links to English, Maths and other foundation subjects are planned and taught in line with the Science topic/context being taught. Science pervades every aspect of our lives and we will relate it to all areas of the curriculum. We will also ensure that pupils realise the positive contribution of both men and women to science and the contribution from those of other cultures. We will not only emphasise the positive effects of science on the world but also include problems, which some human activities can produce.



Progression of skills

The Chris Quigley Essentials Curriculum which Lyng Primary School has adopted includes all National Curriculum subjects and through this approach the key scientific skills are grouped under four key concepts:

- Working Scientifically

Physics

- Understand plants,
- Understand animals and humans,
- Investigate living things,
- Understand evolution and inheritance.

Chemistry

- Investigate materials.

Physics

- Understand movement, forces and magnets,
- Understand light and seeing,
- Investigate sound and hearing,
- Understand electrical circuits,
- Understand the Earth's movements.

These are then broken down further into three milestones. Milestone 1 for Year 1 and Year 2, Milestone 2 for Year 3 and Year 4 and Milestone 3 for Year 5 and Year 6. In each milestone, pupils demonstrate their learning under 3 different cognitive domains which they are assessed against:

BASIC	ADVANCING	DEEP
Low-level cognitive demand. Involves following instructions.	Higher level of cognitive demand. Involves mental processing beyond recall. Requires some degree of decision making.	Cognitive demands are complex and abstract. Involves problems with multiple steps or more than one possible answer. Requires justification of answers.

Progression of knowledge and retention quizzes

As we revisit topics in school, retrieval quizzes are used in lessons to encourage the pupils' retention of information over time.

CPD

Where appropriate, members of staff, usually the coordinator, are sent on relevant courses. The content of these courses is then shared with the rest of the teaching staff. The impact of this training is then monitored and recorded through the subject leader's leadership log.

Marking and feedback

Science lessons are marked in accordance with the marking policy (see marking policy).

Resources

There are sufficient resources in school to enhance the teaching of science. We keep these resources in a central location for all staff to access. The school regularly purchases new supplies of topic books to inform class teacher's subject

Monitoring

Science is part of the foundation subject monitoring cycle, as part of this cycle, lessons and books are monitored.

SEND

At Lyng Primary we ensure that all pupils have access to a broad and balanced curriculum. SEND pupils may be supported through word mats or cloze proses as part of our Word Aware approach and through additional modelling visible on tables. Where possible, visits and trips are organised to provide pupils with hands on experiences of scientific processes.

G&T

Gifted and Talented pupils are identified and recorded by class teachers on the whole school template. The record include those who are considered Gifted and Talented with regard to their scientific knowledge and/or skills. These are the pupils who teachers regularly challenge through their teaching through becoming expert scientists in lessons and sharing their understanding with the class. They are also challenged through killer questions that include questions or activities that challenge the pupil's thinking.

IMPACT

Assessment and Moderation

Children's progress in Science is assessed through success criteria in lessons with the progress against these informing the marking of that child's work. In addition to this at the end of every term, the class teacher is expected to upload judgements of their progress and attainment to SIMs programme of study tracking. Progress and retention of knowledge is monitored through regular quizzing and revisiting vocabulary through the word wallets in every classroom. Children are assessed as one of the following:

Code	Meaning	Support
U	Unable to assess	Not sufficient evidence to make a judgement.
E	Emerging	Heavily scaffolded – accessing the objective with resources.
D	Developing	Uses age appropriate scaffolding.
S	Secure	Independent application.
M	Mastered	Application outside the lesson independently.

Moderation of Science work occurs on a termly basis. Children's work is moderated against the BAD grids as per the Chis Quigley approach. Chris Quigley geography companions were purchased in early 2020 and the proof of progress tasks are going to be used to further quality assure these judgements.

Impact is measured through the learning journey in books and by pupil voice. The journey in books should reflect both the progress in skills and knowledge.

The impact of the Science leader is monitored through the leadership log template which is shared with a senior leader on a half termly basis.

Teaching and learning practice is also shared with other local schools at the local Science Hub, which Lyng Primary School regularly hosts.