



Deighton Gates Primary School Curriculum Overview: Science



At Deighton Gates Primary School, we recognise the need for all pupils to develop the foundations for understanding the world through biology, chemistry and physics. A good knowledge and conceptual understanding allows pupils to work scientifically, make links to how science has changed our lives and how it is vital to future progression in the world.

Intent

At Deighton Gates Primary School, our intent is to deliver a high-quality Science curriculum that engages excitement and curiosity and teaches the essential aspects of the knowledge, methods, processes and uses of science. Thus, equipping pupils with the ability to explain, predict, analyse and question.

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.

In order to achieve these aims we have an ambitious curriculum that is coherently planned and sequenced and fulfils the requirements set out in the National Curriculum. We have identified the key 'Threshold Concepts' which set out the fundamentals of the subject. We use these threshold concepts to ensure that our curriculum offer in Science enables pupils to make progress within each discipline.

The **Threshold Concepts** in Science are:

Working scientifically

This concept involves learning the methodologies of the discipline of science.

Biology

Understand Plants

This concept involves becoming familiar with different types of plants, their structure and reproduction.

Understand Animals and Humans

This concept involves becoming familiar with different types of animals, humans and the life processes they share.



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Investigate living things

This concept involves becoming familiar with a wide range of living things, including insects and understanding life processes.

Understand evolution and inheritance

This concept involves understanding that organisms come into existence, adapt, change and evolve and become extinct.

Chemistry

Investigate materials

This concept involves becoming familiar with a range of materials, their properties, uses and how they may be altered or changed.

Physics

Understand movement, forces and magnets

This concept involves understanding what causes motion.

Understand light and seeing

This concept involves understanding how light and reflection affect sight.

Investigate sound and hearing

This concept involves understanding how sound is produced and how it travels and how it is heard.

Understand electrical circuits

This concept involves understanding circuits and their role in electrical applications.

Understand the Earth's movement in space

This concept involves understanding what causes seasonal changes, day and night.

Sequencing

The curriculum has been sequenced to ensure that children develop the knowledge and skills defined in each threshold concepts. Each concept is split into key milestones; and children work towards mastering these during different stages of their education.

Years 1 and 2: Milestone 1

Years 3 and 4: Milestone 2

Years 5 and 6: Milestone 3

This approach has been adopted to promote regular opportunities to revisit learning as well as supporting the acquisition of knowledge into long term memory.

Due to the prescriptive nature of disciplines taught in each year group for science – not all threshold concepts apply to all year groups and therefore progression builds throughout key stages.



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EYFS – address working scientifically aspects throughout The Natural World ELG to provide exposure and begin learning the vocabulary, knowledge and skills which will be developed throughout KS1 and 2.

The [science Long Term](#) Plan sets out the intended sequencing of the curriculum.

Implementation

The Science curriculum is implemented through the planning, teaching and assessment of the subject as a specific discipline in each year group. The teaching of Science is designed to make purposeful links between subjects where possible. The detailed Long Term Plan (see link above) sets out when, within the curriculum's design, each concept is taught, revisited and assessed.

During each teaching sequence or 'unit' of science, teachers collect evidence and make summative assessments of each child's progress and attainment against the defined milestones. This is also used to inform end of year assessments which are reported to governors and parents using FFT (outlined below).

Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers	80%	→	3	2	1	3	2
Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant	80%	→	3	2	1	2	2
Investigate the way in which water is transported within plants	80%	→	3	2	1	2	2

(This is an example of the year 3 assessment mark book. Codes used indicate a child's attainment and indicate where learning is yet to take place).

Teachers are required to make a judgement for each of the objectives related to the milestone area. This allows a clear picture of a child's understanding of each milestone area to be obtained and thus implementation can be addressed where necessary. This recording method also allows staff building on this topic throughout school to understand where specific weaknesses have occurred previously, those pupils with a specific talent and those with additional needs prior to covering new teaching.



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EYFS record their observations and evidence on Tapestry, this allows judgements to be made regarding whether a child has achieved the Early Learning Goal, in this case The Natural World.

Impact

Senior leaders, subject leads and teachers are able to use the evidence collected alongside the assessment information to monitor and track the implementation of the subject's curriculum to ensure that our intentions are achieved.

Annual reports are created and shared with governors to highlight the impact of the implemented curriculum, its strengths and areas for review.