



Science



At Ryefield, we follow the National Curriculum for Science ensuring all pupils develop their scientific knowledge and conceptual understanding through specific disciplines of biology, chemistry and physics.

Science is hands on where possible; pupils are given the opportunities to experience science in the real world.

Having a conservation area on site is an invaluable resource available to all Year groups, ensuring they have a real world setting in which to base their investigations.

We have secured links with the secondary science department, using labs, teaching expertise and resources enhancing teaching and learning for our pupils in science. The school has introduced a dedicated space for the teaching of Science.



BIG IDEAS

The school augments its science curriculum with Lets Think Science. The lessons are designed using interesting starting stimuli, to catch the attention of all learners. This concrete preparation gives the relevant knowledge and understanding such that the learners can be drawn into more challenging and surprising problems. The teaching model involves the careful and strategic use of group work and whole-class teaching to stimulate the construction of new ideas. Teachers deliberately attempt to cause cognitive challenge so that children (and teachers) work in their 'discomfort' zone. This leads to an increased awareness and application of reasoning to prepare the mind for new learning.

CONTENT & SEQUENCING

	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2
1	My body	Plants	Seasons	Materials	Animals	Review
2	Materials	Habitats	Forces	Space	Growth	Mammals
3	Healthy Body	Light & Shadow	Rocks & Soil	Forces & Magnets	Roots & Shoots	Flowers & Fruits
4	Electricity	States of Matter	Sound	Living Things	Digestion & Nutrition	Environmental Changes
5	Earth & Space	Life Cycle: Human	Life Cycle: Plants	Forces	Materials	States of Matter
6	Body Systems	Light	Evolution & Inheritance	Electricity	Life processes	Micro-organisms



RETRIEVAL PRACTICE

Science books have been specifically designed to meet the needs of a changing curriculum, support subject-specific information and assist teachers in matching content to the needs of the cohort. The books are organised in the following order:

- a splash page and pre-unit assessment,
- a knowledge organiser,
- national curriculum statements,
- a mind map,
- an image to prompt boxed thinking,
- a post-unit assessment, and
- 'show what you know boxes': opportunities for pupils to individually recall information and transfer that learning to other topics and concepts.
- End of Year Assessment (trials in Y5 and Y6)



EXPLICIT & DIRECT INSTRUCTION

All pupils, when introduced to a key new concept, should have the opportunity to build competency. Pupils are encouraged to apply their knowledge and understanding via practical investigations.

Objects and pictures are used to demonstrate and visualise abstract ideas, alongside numbers and symbols.



SUPPORT

Quality first teaching seeks to ensure that the pupils receive the support and guidance needed in class. A positive mind-set is encouraged as children can underperform in Science because they think that they either 'can't do it', or are not naturally good at it.

Additional materials, such as knowledge organisers, knowledge markers, mind mapping and the use of cooperative learning strategies ensure that pupils are engaged in their learning.



PROGRESS

Formative assessment takes place during the lesson and feedback and next steps are provided either verbally or via written comments. Furthermore, pupils complete a pre and post unit assessment to inform teacher judgement. Through a combination of formative and summative assessment a holistic understanding of pupil achievement is formed.

Gaps in learning, which may be potential barriers to progress, are identified at both a pupil and class level. This is discussed at pupil progress meetings and interventions are put in place to improve outcomes. Platforms such as LBQ may also be used to consolidate pupil progress.