



Science

The Subject Vision

At Fleetville, we want our children to be curious, analytical, and environmentally conscious scientists. Guided by the White Rose Science curriculum, our teaching fosters a deep curiosity about the natural world, equipping pupils with both the substantive knowledge (Biology, Chemistry, Physics, and Earth & Space) and the disciplinary 'working scientifically' skills needed to investigate, question, and understand the universe around them.

Our science curriculum is built upon three core pillars that ensure every child works as a scientist:

- **Substantive Knowledge:** A carefully structured sequence of scientific concepts across biology, chemistry, physics, and earth science that builds cumulatively year-on-year.
- **Disciplinary Knowledge** (Working scientifically): Explicitly teaching pupils how to ask questions, plan enquiries, observe closely, measure accurately, record data, present findings, draw conclusions, and evaluate results.
- **Real-World Application:** Connecting classroom theory to real-world contexts through hands-on outdoor learning, trips, and investigating environmental sustainability.

The Learning Journey

	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2
Year 3	Skeletons & nutrition and diet	Rocks, fossils and soils	Light	Plants	Plants	Forces and magnets
Year 4	Grouping living things	States of matter	Sound	Electricity	Digestive system	Food chains
Year 5	Forces	Space & global warming	Properties of materials	Life cycles	Reproduction	Types of change & Plastic Pollution
Year 6	Living things and their habitats	Electricity and renewable energy	Light and light pollution	Circulation system	Diet, drugs and lifestyle	Evolution and inheritance

Implementation

- Science is taught in weekly 90-minute blocks. Teachers deliver lessons using White Rose Science slide decks, maintaining consistent learning steps across year group teams while adapting flexibly for their classes.

- Lessons open with low-stakes retrieval slides (Flashback 4) to reactivate prior knowledge and address misconceptions. Core concepts are introduced through explicit teacher modelling, guided talk, and scientific vocabulary checks.
- Learning alternates between practical inquiry and written analytical work. Children engage with concrete resources to conduct fair tests, classify objects, and collect accurate data. Written tasks vary from structured recording tables and annotated diagrams to written scientific explanations and evaluations.
- Key scientist studies (Marie Curie, Thomas Edison, Katherine Johnson, Alan Turing) are woven into spring reading sessions to explore scientific context and historical impact.
- Outdoor learning blocks, such as shelter building (materials), fire craft (states of matter/forces), and living things, directly complement classroom scientific inquiry.

Support

We believe that every child can become a successful scientist, and we adapt our environment and tasks to remove barriers to learning:

- **Quality First Teaching for All:** Because our science curriculum is precise, teachers know exactly which core vocabulary and concepts to focus on. Every lesson heads toward a defined enquiry destination with built-in White Rose retrieval opportunities. This structure is beneficial for all children and vital for those who need extra support.
- **Flexible Ways to Show Success:** We value scientific inquiry, practical problem-solving, and spoken explanation over a perfectly written page. Children who have secure scientific understanding but find written output a barrier are encouraged to demonstrate what they know verbally and practically, which teachers celebrate and capture during our pupil book study sessions.
- **Practical Tools and Technology:** We use Widgeit software alongside pre-populated data grids, sentence stems for written explanations, and concrete manipulatives to make complex scientific processes visual and accessible. Children also utilize Chromebook technology, including the Read toolbar, to help them listen to, read, and simplify complex non-fiction scientific texts independently.

Impact

- **Ongoing Formative Assessment:** In-lesson checks, low-stakes retrieval quizzes, and observation during practical investigations allow teachers to identify and address scientific misconceptions immediately.
- **Summative Checks:** End-of-unit White Rose assessments evaluate substantive knowledge retention and disciplinary skill mastery.
- **Pupil Discussions & Book Studies:** Leaders conduct regular Pupil Book Studies to review dedicated science books, evaluating how well scientific vocabulary and concepts are held in long-term memory.
- **The Ultimate Test:** Fleetville children leave Key Stage 2 with a secure body of scientific knowledge, fluency in scientific vocabulary, and the practical inquiry skills needed to question, investigate, and explain the natural world confidently.