Aston Rowant C†E Primary School

Science Policy

Vision: To be a community of courageous life-long learners, who are rooted in God, live out our Christian values and enjoy life in all its fullness. *(Col 2:1-7)*
Mission: Growing together, rooted in God and inspiring one another through our values and our broad enriched curriculum.
Strapline: Growing together, rooted in God, having fullness of life *(Col 2:1-7)*

Date of Policy: September 2025 | **Date of Policy review: September 2026**

Science Lead: Mr A Manning | Date: 20th September 2025

Science Governor: Miss Z Batt | Date: 20th September 2025

Linked Policies:

- Equal Opportunities Policy
- School Development Plan
- SEND Policy
- SEND Information Report
- Behaviour Policy

Science at Aston Rowant:
We are courageous, lifelong learners who approach Science with **wonder**, **resilience**, **curiosity**, **gratitude**, **outreach**, **trust** and **harmony**. We aim to develop pupils who can think scientifically, reason scientifically and *feel like scientists*.

1. INTENT

At Aston Rowant, our Science curriculum is designed to ensure that all pupils:

1.1 Develop secure scientific knowledge

Pupils develop a deep and connected understanding of the key scientific disciplines:

- **Biology**
- **Chemistry**
- **Physics**

Knowledge is sequenced progressively through our *mixed-age Kapow scheme (Cycle A & B)* to build conceptual understanding over time. Scientific vocabulary is explicitly taught and revisited so that children learn to think and talk like scientists.

1.2 Become skilled in Working Scientifically

Our pupils learn the disciplinary knowledge of science by developing the ability to:

- Ask thoughtful, testable questions
- Plan and carry out investigations
- Make accurate observations and measurements
- Gather, present and interpret data
- Evaluate evidence, notice patterns and draw conclusions
- Recognise how scientific ideas develop and change over time

1.3 Experience science that is meaningful, practical and exciting

Hands-on, real-life experiences foster awe and wonder. We want every child to:

- Explore natural phenomena
- Conduct purposeful practical work
- Engage in enquiry-based learning
- Make connections between science and everyday life

1.4 See science as achievable and relevant to their future

Through Science Enrichment Weeks, community partnerships, links to careers in STEM, and celebrating role models, pupils grow in aspiration and understand how science shapes the modern world.

1.5 Flourish as individuals within our Christian vision

Science helps pupils appreciate God's creation, understand stewardship, respect diversity, and develop moral and ethical understanding.

1.6 Ensure high ambition for all learners, including SEND

Our curriculum is adaptive and inclusive. Every child can access and succeed in science through carefully scaffolded teaching and high expectations.

2. IMPLEMENTATION

2.1 Curriculum structure

We use the Kapow Primary Mixed-Age Scheme, ensuring:

- Full National Curriculum coverage
- Balanced progression of substantive (knowledge) and disciplinary (working scientifically) learning
- A two-year rolling programme for Y1/2, Y3/4 and Y5/6
- A spiral curriculum where knowledge is revisited at increasing depth

Science is taught weekly and in enrichment blocks, maximising opportunities for investigation and cross-curricular links.

2.2 Teaching and Learning

Teachers use a consistent lesson structure that includes:

- Retrieval of prior knowledge ("sticky knowledge")
- Explicit vocabulary teaching
- Conceptual modelling
- Guided and independent enquiry
- Opportunities for reasoning, explanation and dialogue
- Use of representations, models, and diagrams

The **five enquiry types** are woven across all year groups:

1. Observing over time
2. Identifying and classifying
3. Pattern seeking
4. Comparative and fair testing
5. Research using secondary sources

2.3 Working Scientifically Progression

Skills develop progressively from EYFS to Year 6. Pupils learn:

- How scientific knowledge is generated
- How to plan, measure, record and evaluate with increasing accuracy
- How to analyse data using tables, diagrams and graphs (KS2)
- How to critique methods, justify conclusions, and recognise limitations

2.4 Inclusion and Adaptive Teaching

We ensure full access for SEND, EAL and disadvantaged pupils through:

- Pre-teaching and vocabulary scaffolds
- Carefully selected resources and practical support
- Chunked content and targeted adult guidance
- Alternative ways to record learning
- High expectations for thinking and reasoning

Children's needs and targets (EHCPs, Pupil Passports) inform planning.

2.5 Cross-Curricular Links

Science is strengthened through links to:

- Maths: data handling, graphs, measures, patterns
- English: explanation writing, reports, debates, vocabulary
- Computing: data logging, simulations, research
- Geography: habitats, sustainability, environmental impact
- PSHE/Safeguarding**:** healthy living, hygiene, drug education, puberty

2.6 Enrichment and Cultural Capital

Aston Rowant provides exceptional enrichment including:

- Annual Science Enrichment Week (themes: TIME, Change & Adapt, Curiosity/Space)
- Hands-on STEM workshops (e.g. Egg-Bots, soil testing, chromatography, Chladni plates, space coding, live lamb ultrasound)
- Visitors such as engineers, medics, palaeontologists
- Partnerships with Oxford University and STEM professional parents
- Outdoor learning, nature studies and ecological awareness
- Class projects such as bridge building, mixtures & materials workshops, engineering tasks

These experiences strengthen science identity and raise aspirations.

3. IMPACT

3.1 What successful science learning looks like

By the end of KS2, pupils will:

- Know and remember more of the scientific knowledge taught
- Use subject-specific vocabulary confidently
- Apply working scientifically skills with increasing independence

- Show curiosity, resilience and a willingness to investigate
- Make connections within and across scientific disciplines
- Explain concepts and provide evidence for their thinking

3.2 Assessment

Assessment is ongoing and purposeful, using:

- Observation of practical work and dialogue
- Marking of written evidence
- End-of-unit checks and low-stakes quizzes
- Pupil voice interviews
- Book looks and enquiry outcomes

Assessment informs next steps and ensures progression. No child is held back from full participation.

3.3 Monitoring

The Science Subject Leader systematically monitors:

- Planning
- Books and children's learning
- Pupil voice
- Learning environments
- Data trends
- Staff confidence and CPD needs

Findings inform an annual Science Action Plan.

3.4 Evidence of impact

Our pupils demonstrate:

- Enthusiasm and love for science
- Ability to talk confidently about learning
- Growth in resilience when working practically
- Clear understanding of why science matters in their lives and for the wider world
- Ambition to pursue STEM futures

Our school proudly holds the Primary Science Quality Mark (Gilt Level), evidencing the high quality of science leadership, teaching and learning across the school.

4. ROLES AND RESPONSIBILITIES

Subject Leader

- Lead curriculum design and development
- Support staff with planning, CPD and resources
- Monitor teaching and learning
- Maintain progression documentation
- Ensure alignment with school values and Christian ethos

Teachers

- Deliver high-quality science teaching
- Build on prior learning
- Foster curiosity and questioning
- Provide effective challenge and support
- Ensure adaptive provision for all learners

Headteacher & Governors

- Ensure statutory requirements are met
- Promote high expectations
- Support strategic development of science

5. HEALTH & SAFETY

Teachers follow CLEAPSS guidance and ensure:

- Safe use of equipment and materials
- Clear expectations and routines
- Adult supervision during practical activities
- Age-appropriate risk assessments

6. REVIEW

This policy will be reviewed every two years, or sooner if:

- National guidance updates
- Curriculum developments occur
- Ofsted or PSQM recommendations advise change