Askwith Primary School

Science Rationale 2026–2027

'Children are naturally curious. Science at primary school should nurture this curiosity and allow them to ask questions and develop the skills they need to answer those questions.' (Louise Stubberfield, Primary Science Programme Lead, Wellcome)

Our Vision

Science at Askwith Primary School nurtures curiosity and equips pupils to understand, explain and question the world. Pupils know more, remember more and can do more, developing as scientifically literate citizens who value science in everyday life. We are committed to ensuring that every pupil develops secure scientific knowledge, disciplinary expertise, curiosity and evidence-informed reasoning so that they can participate confidently in an increasingly scientific and technological world.

Curriculum Intent

Our science curriculum provides a coherent, cumulative and ambitious journey from EYFS to Year 6. Essential knowledge, working scientifically skills and scientific attitudes build systematically, enabling pupils to explain phenomena, investigate questions and apply their understanding with increasing independence to prepare them for further study and life in a diverse society.

Curriculum Principles

The curriculum is informed by the National Curriculum, the EYFS statutory framework, Ofsted's Science Research Review (2021), cognitive science, vocabulary acquisition research and evidence-informed primary science pedagogy. Learning is structured so that pupils know more, remember more and can do more over time.

Curriculum

The curriculum is built around three connected dimensions: substantive knowledge, disciplinary knowledge and scientific attitudes. These are systematically sequenced and revisited so pupils develop increasing accuracy, fluency and independence.

Attitudes in science are explicitly taught to encourage pupils to:

- challenge the idea that science provides absolute truth
- appreciate the importance and influence of science in everyday life and society
- engage positively with scientific developments while recognising their limitations
- develop critical, open-minded thinking and a readiness to ask questions and test ideas.

Progression and Sequencing

Knowledge is carefully mapped from EYFS to Year 6. Learning progresses from early observation, exploration and description to increasingly precise explanation, controlled enquiry, data analysis, evaluation and independent application.

Implementation

Teachers use explicit instruction of core ideas, modelling, guided practice, purposeful practice and structured enquiry. Practical work connects scientific concepts with observable phenomena. Pupils undertake practical activities when they have sufficient connected knowledge to interpret results, avoiding unfocused discovery tasks. New knowledge is connected explicitly to prior learning and revisited frequently.

Retrieval and Long-Term Memory

Regular low-stakes retrieval, daily diet tasks, cumulative review and deliberate revisiting of key concepts, vocabulary and enquiry approaches strengthen long-term memory, scientific oracy, automaticity and confidence.

Working Scientifically

Working scientifically is taught explicitly so pupils can ask and answer scientific questions using the full range of enquiry approaches: comparative and fair testing; pattern seeking; observing over time; identifying, classifying and grouping; and research using secondary sources.

Speaking, Listening, Reading and Writing

All four domains are taught explicitly with increasing challenge and independence across Key Stage 2.

Inclusion

The curriculum is ambitious for all learners. Adaptive teaching, modelling, visual supports, dual coding and structured rehearsal ensure meaningful access without narrowing scientific content or reducing expectations. High expectations are maintained for all learners.

Personal Development and Cultural Capital

Pupils develop cultural understanding, respect for evidence, intellectual humility and responsible attitudes towards scientific and technological developments. Careers information, visitors and virtual links to STEM professionals connect learning to real-world applications and future opportunities.

Assessment

Assessment includes questioning, observations, retrieval activities, quizzes, end-of-unit assessments and curriculum conversations. Findings inform future teaching, identify misconceptions and support curriculum refinement.

Leadership and Quality Assurance

Subject leadership uses lesson visits, work scrutiny, pupil voice, planning reviews and assessment information to evaluate curriculum effectiveness, drive improvement and inform CPD.

Impact

By the end of Key Stage 2, pupils demonstrate secure, connected substantive and disciplinary knowledge. Pupils are curious, scientifically literate and prepared for successful transition to secondary science. They recognise the relevance of science to everyday life, society and future study and careers.

Review Date: September 2026
Next Review: September 2027