Askwith Primary School

Mathematics Rationale

"The curriculum should identify and sequence, in small steps, declarative, procedural and conditional knowledge… A well-sequenced curriculum and systematic teaching help pupils to become proficient in mathematics." — **Ofsted, Mathematics Research Review (2021)**

Intent

Mathematics at Askwith Primary School aims to develop confident, fluent and resilient problem-solvers who can reason mathematically, apply knowledge flexibly and make sense of the world. Our curriculum is designed to foster curiosity, enjoyment and deep conceptual understanding, enabling every pupil—including those with SEND, EAL and disadvantaged backgrounds—to build secure foundations and experience success.

Our mathematics curriculum is intentionally sequenced from EYFS to Year 6, aligned with the EYFS Framework and reflecting the school's ambition for pupils to know more, remember more and do more.

- **Substantive knowledge**: the declarative and procedural knowledge pupils must acquire, including number facts, relationships, structures, calculation strategies, geometry, measures, statistics, fractions and algebra.
- **Disciplinary thinking in mathematics (working mathematically)**: the habits of mathematical thought—reasoning, conjecturing, pattern-spotting, problem-solving, justifying, and choosing efficient strategies.

Each mathematical unit builds on secure prior learning, with clear endpoints defining what pupils should know and be able to do. The curriculum is ambitious for all and provides equity of access through precision teaching, vocabulary development and targeted support.

Implementation

The long-term plan maps progression systematically across number, calculation, fractions, geometry, measures, statistics and (in Year 6) ratio, proportion and algebra. Sequencing ensures pupils encounter concepts in small, connected steps, enabling knowledge to build cumulatively.

- EYFS lays strong foundations through hands-on exploration, spatial reasoning, subitising, number composition and comparison.
- From Year 1 onwards, units are taught discretely following the White Rose Maths sequence, adapted to meet the needs of pupils at Askwith.

- Number and place value is taught each September, as secure understanding of the number system underpins the entire mathematics curriculum.

Teachers use:

- Explicit instruction, modelling and guided practice
- Retrieval routines embedded through daily diet to strengthen long term memory
- Dialogic teaching, enabling pupils to justify and reason using precise mathematical vocabulary
- Concrete–pictorial–abstract (CPA) models to build conceptual understanding before abstraction
- Deliberate practice to build fluency and efficiency
- Structured procedural and conceptual variation to deepen understanding of underlying mathematical structures

Tasks are carefully designed to distinguish between fluency practice, method-based problems, and open-ended reasoning challenges, enabling all pupils to access content and then move towards mastery.

Lesson materials include manipulatives, number lines, part-whole models, bar modelling, stem sentences, worked examples, reverse modelling and displays that highlight connected knowledge.

Impact

Impact is measured through:

- **Formative assessment**: daily questioning, observation, retrieval checks, oral rehearsal, and mini quizzes
- Spaced knowledge checks at approximately 2, 6 and 12 weeks, ensuring secure retention and preventing learning loss
- Summative checks at the start of each unit to assess readiness and address gaps
- End of unit work demonstrating secure fluency, reasoning and problem-solving

Pupil work evidences increasing accuracy, deeper conceptual understanding and the ability to apply knowledge across new contexts. Assessment information informs targeted, immediate interventions so that all pupils keep up, not catch up.

Inclusion

Mathematics teaching at Askwith Primary School is inclusive by design. Planning and delivery are adapted so every pupil engages meaningfully with the curriculum. Support includes:

- Scaffolded tasks
- Visuals and manipulatives

- Carefully selected vocabulary
- Modelled reasoning structures
- Additional adult guidance where needed

Teachers work closely with the lowest 20% of mathematicians to prevent gaps widening. Adaptations remove barriers without reducing challenge, maintaining high expectations for all.

Personal Development & SMSC

Mathematics contributes meaningfully to pupils' personal development and SMSC.

- **Spiritual**: pupils explore pattern, beauty and the wonder of mathematics in nature and culture.
- **Moral**: real-life problems encourage logical decision-making and responsible reasoning.
- **Social**: pupils collaborate, share strategies and articulate thinking clearly.
- **Cultural**: pupils encounter mathematics across ancient civilisations, global contexts and diverse contributions to the field.

Mathematics builds resilience, confidence and self-belief, helping pupils see themselves as capable problem-solvers.

Leadership & Professional Development

Subject leadership ensures a coherently sequenced curriculum from EYFS to Year 6 and checks that teaching reflects curriculum intent through:

- Learning walks
- Book scrutiny
- Pupil voice
- Monitoring of assessment outcomes

Staff receive high-quality CPD focusing on:

- Fluency and foundational knowledge
- Mathematical dialogue and vocabulary
- Manipulative use
- Reasoning structures
- Multiplication fluency
- Inclusive practice

The subject leader also engages with national developments to maintain strong pedagogical practice.

Enhancements

A planned programme of enrichment broadens pupils' mathematical experiences, including:

- STEM visitors and workshops
- Real-life application tasks
- Activities designed to challenge gender stereotypes in mathematics-related fields
- Opportunities to learn from mathematicians and professionals who use mathematics in their careers

These experiences strengthen cultural capital, aspiration and understanding of mathematics beyond the classroom.

Mathematics Improvement Priorities (2025–2026)

- Deepening pupils' ability to make **connections across domains**
- Targeted focus on **SEND, disadvantaged and the lowest 20%**
- Continued refinement of retrieval and spaced practice
- Reinforcing conceptual understanding through CPA and structured variation

Reviewed: September 2025