Aston Rowant C†E Primary School

Calculation 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**

Headteacher: Mrs H France Date: 20th September 2025

Maths Lead: Mrs A Olsen Date: 20th September 2025

Purpose of This Calculation Policy
This policy sets out how children at Aston Rowant learn to calculate progressively and consistently from EYFS to Year 6.

It ensures:

- A shared approach across school
- Clear CPA (Concrete–Pictorial–Abstract) progression
- Secure foundations before formal methods
- High expectations for reasoning and explanation
- Inclusion for all pupils through adaptive teaching

It supports our aim that every child becomes a confident, fluent, resilient mathematician who can apply their skills in real-life contexts and talk confidently about their mathematical thinking.

Pedagogical Principles

1. Concrete → Pictorial → Abstract (CPA)
Children move from hands-on physical resources, to visual representations, to abstract formal written methods.

2. Mathematical Talk & Full Sentences
Teachers model precise vocabulary; children explain their strategies clearly.

3. Mastery Approach
All children access the same rich curriculum with appropriate scaffolds or challenges.

4. Growth Mindset & Resilience
Mistakes are valued; reasoning is central; pupils develop independence and confidence.

5. Manipulatives for EVERY Learner
Resources are not "only for SEND." They are used purposefully across all classes to expose structure.

Progressive Written Methods Overview

ADDITION

EYFS

- Combining sets in play
- Counting on using objects
- Early part–whole awareness

Concrete: counters, cubes, real objects
Pictorial: simple drawings, part-whole circles
Abstract: 3 + 2 =

Year 1

- Number bonds to 10 and 20
- Add by counting on
- Part–whole model
- Begin simple bar models

Methods:

- Number line jumps
- Tens frames
- Part–whole diagrams

Year 2

- Add 2-digit numbers (no exchange → with exchange)
- Partitioning into tens and ones
- Regrouping using dienes/base-10

Methods:

- Expanded addition
- Column addition introduced using base-10

Year 3

- Secure column addition with exchanges
- Reasoning about efficient methods

Methods:

- Formal column addition (2–3 digits)

Year 4

- Column addition with up to 4-digit numbers
- Problem-solving with money/measure

Year 5

- Column addition with decimals
- Multi-step problems

Year 6

- Column addition with large numbers & decimals
- Applying to multi-step, real-life contexts

SUBTRACTION

EYFS

- Taking away practically
- "How many left?" with real objects

Year 1

- Counting back on number lines
- Part–whole subtraction

Year 2

- Subtract 2-digit numbers
- Exchange using dienes

Methods:

- Number line jumps
- Introduce column subtraction (no exchange → exchange)

Year 3

- Secure column subtraction with exchange
- Link to addition (inverse)

Year 4

- Formal column subtraction (4-digits)
- Efficient method selection

Year 5

- Column subtraction with decimals
- Multi-step reasoning problems

Year 6

- Subtraction within large numbers and decimals
- Interpreting remainders in context

MULTIPLICATION

EYFS

- Equal groups in play (e.g., "2 each")
- Doubling in stories and outdoor play

Year 1

- Making and recognising equal groups
- Arrays using counters

Year 2

- 2×, 5×, 10× tables
- Repeated addition
- Arrays → early bar models

Year 3

- 3×, 4×, 8× tables
- 2-digit × 1-digit

Methods:

- Grid method using base-10
- Distributive law reasoning

Year 4

- All times tables to 12×12
- 2-digit × 1-digit secure

Year 5

- Introduce long multiplication
- 2-digit × 2-digit with clear layout

Year 6

- Long multiplication
- Larger multipliers
- Real-life problem contexts

DIVISION

EYFS

- Sharing equally
- Grouping in play

Year 1

- Sharing objects
- Simple grouping

Year 2

- ÷ linked to ×
- Arrays used for grouping

Year 3

- Divide 2-digit by 1-digit
- Quotients with remainders

Year 4

- Bus-stop (short division) introduced using place value counters

Year 5

- Short division
- Interpreting remainders in context

Year 6

- Long division
- Complex multi-step division problems

FRACTIONS, DECIMALS & PERCENTAGES (linked calculation methods)

- **Y1–2:** halves, quarters, thirds in concrete contexts
- **Y3–4:** fraction of amount using sharing/arrays, equivalent fractions
- **Y5:** add/subtract fractions with same denominator; decimals to 2dp
- **Y6:** multiply/divide fractions; complex FDP reasoning

Representations & Manipulatives Used Across School

- Tens frames
- Base-10 (dienes) & place value counters
- Numicon
- Bead strings and rekenreks
- Number lines
- Fraction strips & circles
- Bar models
- Cuisenaire rods
- Real-life objects (outdoor sticks, natural items, money)

Each class has a manipulative progression, ensuring children revisit tools and choose efficient ones independently.

How This Policy Supports Inclusion

All pupils — including SEND — access calculation through:

- CPA scaffolding
- Small-step modelling
- Pre-teaching and overlearning
- Visual supports
- Precise vocabulary

Tasks are adapted, not diluted.

How This Policy Supports Home–School Links

Parents benefit from:

- Consistent methods across school
- TTRockstars & Doodle Maths for fluency
- Clear vocabulary
- Example methods shared during workshops