



KS3 Mathematics & Numeracy Curriculum

Detailed Curriculum Document

1 CURRICULUM INTENT



Mathematics is central to confidence, independence and participation in everyday life. Many learners in alternative provision arrive with gaps in number fluency, low confidence, interrupted learning, SEND needs or anxiety about maths. Our KS3 mathematics and numeracy curriculum is ambitious, flexible and responsive, ensuring every learner receives the right level of support and challenge to build secure mathematical understanding, problem-solving skills and confidence.

2 CURRICULUM DESIGN PRINCIPLES



- ✓ ambitious for all learners
- ✓ adaptive and responsive to need
- ✓ number-rich and vocabulary-rich
- ✓ structured small-group teaching
- ✓ explicit modelling and worked examples
- ✓ mathematical talk and confidence-building
- ✓ assessment-led planning
- ✓ real-life application
- ✓ inclusive and trauma-informed practice

3 INITIAL ASSESSMENT AND PATHWAY PLACEMENT



During the first two weeks, each student completes:

- ✓ baseline assessment for number, calculation and reasoning
- ✓ arithmetic fluency check
- ✓ problem-solving and mathematical language task
- ✓ review of prior data, SEND information, EHCP outcomes and school reports
- ✓ learner voice and attitudes to maths discussion
- ✓ confidence or anxiety discussion and practical numeracy check

4 PLACEMENT GUIDE



Pathway 1 Foundations Numeracy

Significant gaps in number sense, calculation, place value and confidence. Requires highly scaffolded teaching and targeted intervention.

Pathway 2 Developing Numeracy and Mathematics

Secure basic numeracy but below age-related expectations. Needs support with reasoning, application, fractions, algebra and independence.

Pathway 3 KS3 Mathematics and KS4 Readiness

Broadly able to access KS3 mathematics. Needs ambitious small-group teaching that builds fluency, reasoning, problem solving and readiness for KS4.

5 MOVEMENT BETWEEN PATHWAYS



Placement is reviewed at least half-terminly using fluency, reasoning, problem solving, confidence and engagement. Learners may move between pathways when a different level of support or challenge is needed.

6 THREE PATHWAYS AT A GLANCE



★ PATHWAY 1 Foundations Numeracy

Focus: number sense, place value, basic calculation, practical numeracy and confidence.

★ PATHWAY 2: Developing Numeracy and Mathematics

Focus: fractions, reasoning, algebra foundations, geometry and problem solving.

★ PATHWAY 3: KS3 Mathematics and KS4 Readiness

Focus: fluency, algebra, geometry, statistics, reasoning and KS4 readiness.



KS3 Mathematics & Numeracy Curriculum

Detailed Pathway Guidance

1 PATHWAY 1: FOUNDATIONS NUMERACY



LEARNER PROFILE

- Students with significant gaps in number sense, place value, calculation and confidence.
- Learners may have poor prior attendance, SEND needs, maths anxiety or negative experiences of mathematics.



CURRICULUM GOALS

- Secure the foundations of numeracy and mathematical thinking.
- Develop confidence and willingness to attempt tasks.
- Improve fluency with number facts and basic operations.
- Build independence in practical maths.



NUMBER FOCUS

- Place value and ordering.
- Addition, subtraction, multiplication and division.
- Times tables and number bonds.
- Fractions as part-whole and simple equivalence.
- Measure, money and time.



PROBLEM-SOLVING FOCUS

- Choosing an operation.
- One-step and supported two-step problems.
- Use of concrete and visual models.
- Reasoning with everyday contexts.



MATHEMATICAL LANGUAGE FOCUS

- Confidence in discussing methods.
- Understanding key vocabulary.
- Explaining how an answer was found.



INDICATIVE TOPICS AND RESOURCES

- Number lines, counters and base ten.
- Practical money, time and measure tasks.
- Fluency games and tables practice.
- Shape, pattern and simple data activities.
- Adapted task booklets and visual models.



TEACHING APPROACHES

- Small-step teaching and explicit modelling.
- Repetition and guided practice.
- Concrete, pictorial and visual scaffolds.
- Frequent review and retrieval.



SUCCESS INDICATORS

- Improved number accuracy.
- Greater fluency and confidence.
- Secure basic calculations.
- Increased independence in practical numeracy.
- Readiness to move towards Pathway 2.

2 PATHWAY 2: DEVELOPING NUMERACY AND MATHEMATICS



LEARNER PROFILE

- Students with secure basic numeracy but below age-related expectations.
- Learners can access content with support but need to strengthen reasoning, fractions, algebra and independence.



CURRICULUM GOALS

- Close gaps while accessing a broad KS3 maths experience.
- Strengthen independence and resilience.
- Improve multi-step problem solving.
- Develop confidence across number, algebra and geometry.



NUMBER FOCUS

- Fractions, decimals and percentages.
- Ratio and proportion foundations.
- Negative numbers and standard arithmetic methods.
- Estimation and checking.



PROBLEM-SOLVING FOCUS

- Multi-step word problems.
- Mathematical reasoning and explanation.
- Algebraic thinking and pattern spotting.
- Interpreting data and measures.



MATHEMATICAL LANGUAGE FOCUS

- Explaining methods and reasoning.
- Using key vocabulary accurately.
- Discussing different strategies.



INDICATIVE TOPICS AND RESOURCES

- Fractions and percentage tasks.
- Algebra patterns and sequences.
- Geometry and measure investigations.
- Statistics and probability activities.
- Problem-solving booklets and exam-style questions.



TEACHING APPROACHES

- Small-group teaching and scaffolded KS3 tasks.
- Modelled methods and worked examples.
- Feedback, improvement and correction.
- Targeted vocabulary instruction and intervention.



SUCCESS INDICATORS

- Clearer methods and more efficient calculation.
- Stronger reasoning and vocabulary.
- Improved independence.
- Readiness to access broader KS3 maths and progress towards Pathway 3.



KS3 Mathematics & Numeracy Curriculum

Pathway 3 and One-Year Rolling Sequence

1 PATHWAY 3: KS3 MATHEMATICS AND KS4 READINESS



LEARNER PROFILE

Students broadly able to access KS3 mathematics who need a personalised, ambitious small-group route towards KS4; may still need support due to disrupted learning, anxiety, SEND or low confidence.



CURRICULUM GOALS

Build fluency, reasoning, problem solving and confidence in mathematical communication, preparing learners for KS4 mathematics.



NUMBER AND ALGEBRA FOCUS

Fractions, decimals, percentages, ratio, proportion, algebraic expressions, sequences, equations and graphs.



GEOMETRY, MEASURE AND STATISTICS FOCUS

Angle facts, shape properties, perimeter, area, volume, coordinates, transformations, averages, charts and probability.



MATHEMATICAL LANGUAGE FOCUS

Explaining strategies, justifying answers, comparing methods and interpreting mathematical information.



INDICATIVE TOPICS AND RESOURCES

Challenging KS3 tasks, reasoning questions, algebra investigations, geometry problems, statistics activities and exam-style practice.



TEACHING APPROACHES

Ambitious task design, explicit modelling, discussion, guided reasoning, independent practice, redrafting of methods and regular feedback.



SUCCESS INDICATORS

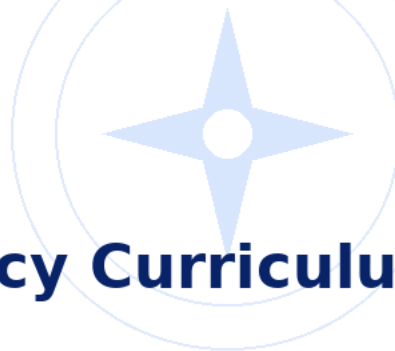
Confident fluency, stronger reasoning, sustained problem solving, increasing independence and smooth progression towards KS4 mathematics.

2 ONE-YEAR ROLLING SEQUENCE AND MATHEMATICAL OUTCOMES

Content is adapted by pathway. Pathway 1 uses highly supported and practical numeracy content.

Pathway 2 uses accessible KS3 content with scaffolds. Pathway 3 accesses fuller and more challenging mathematical content.

Half term	Core content	Main mathematical outcomes
 Autumn 1: Number Sense and Place Value	place value, integers, number lines, four operations, mental strategies	secure number sense, accurate calculation, estimation and checking
 Autumn 2: Calculation and Proportional Thinking	multiplication and division, factors and multiples, fractions foundations, ratio, proportion, money and measure	fluency in multiplicative reasoning and practical application
 Spring 1: Fractions, Decimals and Percentages	equivalence, ordering, operations, percentage of amounts, FDP links	convert and compare FDP and solve percentage problems
 Spring 2: Algebra and Patterns	sequences, expressions, substitution, equations, graphs	recognise patterns, form expressions, solve simple equations and interpret graphs
 Summer 1: Geometry, Measure and Space	angle facts, polygons, perimeter, area, volume, coordinates, transformations	measure accurately and apply geometric reasoning
 Summer 2: Data, Probability and Problem Solving	charts, tables, averages, probability, real-life investigations	interpret data, calculate averages, describe probability and solve multi-step problems



KS3 Mathematics & Numeracy Curriculum

Assessment, Review and Implementation

1 ASSESSMENT AND REVIEW CYCLE



1. BASELINE ASSESSMENT ON ENTRY

Number, calculation, reasoning, practical numeracy, confidence and learner voice.



2. ONGOING FORMATIVE ASSESSMENT

Classwork, fluency checks, problem-solving tasks, mathematical discussion and teacher observation.



3. HALF-TERMLY REVIEW

Review progress in fluency, reasoning, confidence, attendance, engagement and pathway suitability.



4. TERMLY REPORTING

Summary of strengths, barriers, progress made, next steps and recommendations for school and family.

2 EVIDENCE OF PROGRESS

- ✓ improved fluency and accuracy
- ✓ stronger reasoning and mathematical communication
- ✓ increased recall of key facts and methods
- ✓ greater independence in problem solving
- ✓ improved confidence and willingness to attempt tasks
- ✓ improved attendance and engagement
- ✓ progress against SEND or EHCP outcomes where relevant

3 WHOLE-PROVISION NUMERACY APPROACH

- ✓ all staff model positive attitudes to maths
- ✓ pre-teach and revisit key mathematical vocabulary
- ✓ build opportunities for practical numeracy across the curriculum
- ✓ use visual models and scaffolds
- ✓ encourage estimation, checking and discussion
- ✓ link maths to real-life contexts and employability

4 INTERVENTION AND SUPPORT

- ✓ targeted number fluency intervention
- ✓ times table and arithmetic practice
- ✓ pre-teaching and overlearning of key concepts
- ✓ 1:1 or small-group numeracy support
- ✓ adapted resources and assistive technology where needed
- ✓ close liaison with families and commissioning schools

5 INTENDED END POINTS FOR KS3 LEARNERS

- ✓ improved confidence as mathematicians
- ✓ stronger numeracy and mathematical foundations
- ✓ ability to access an appropriately challenging maths curriculum
- ✓ readiness to progress to KS4 or reintegrate successfully
- ✓ better understanding of how maths supports daily life



CURRICULUM IMPACT

Our KS3 Mathematics and Numeracy curriculum is designed to help learners re-engage with education, rebuild their confidence and strengthen essential mathematical understanding in a supportive, ambitious environment.

Through tailored pathways, targeted teaching and consistent review, we aim to make progress in numeracy visible, meaningful and transferable.

By the end of KS3, learners are equipped with stronger skills, greater resilience and a renewed belief in their ability to succeed, enabling them to move forward with confidence and readiness for the next stage.