

At Willington Primary School, we aim to provide a mathematics curriculum which enables our children to become strong and confident mathematicians in preparation for later life. We follow a mastery approach to mathematics, with three key areas developed within the children's daily lessons.

Arithmetic

The ability to carry out calculations involving the four calculation rules and develop an understanding of number.

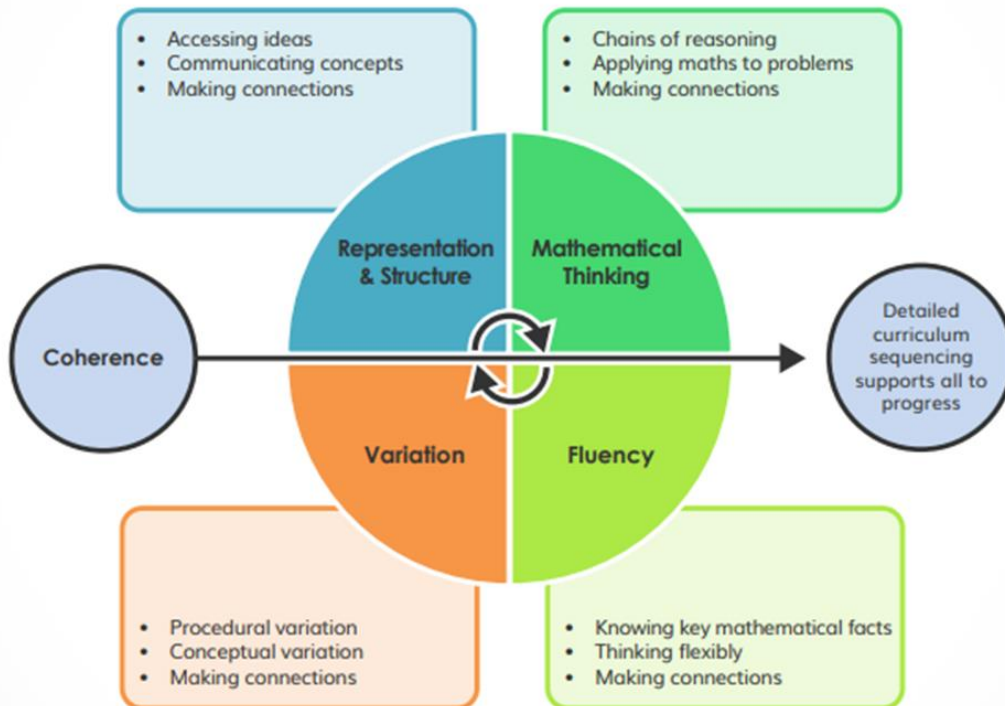
Problem Solving

The ability to use arithmetic skills to solve mathematical problems and puzzles.

Reasoning

The ability to explain, reason and predict when solving mathematical puzzles.

A Mastery Approach



Concrete-Pictorial-Abstract

Children follow a concrete, pictorial, abstract approach to learning in order to embed a deeper understanding into each concept.

Manipulatives

Many different manipulatives are used across all year groups. This is especially important in the EYFS/KS1. Manipulatives include: ten frames, rekenreks, place value counters, two-sided counters, Numicon, place value sliders, base ten blocks, number lines, bead strings and geoboards.

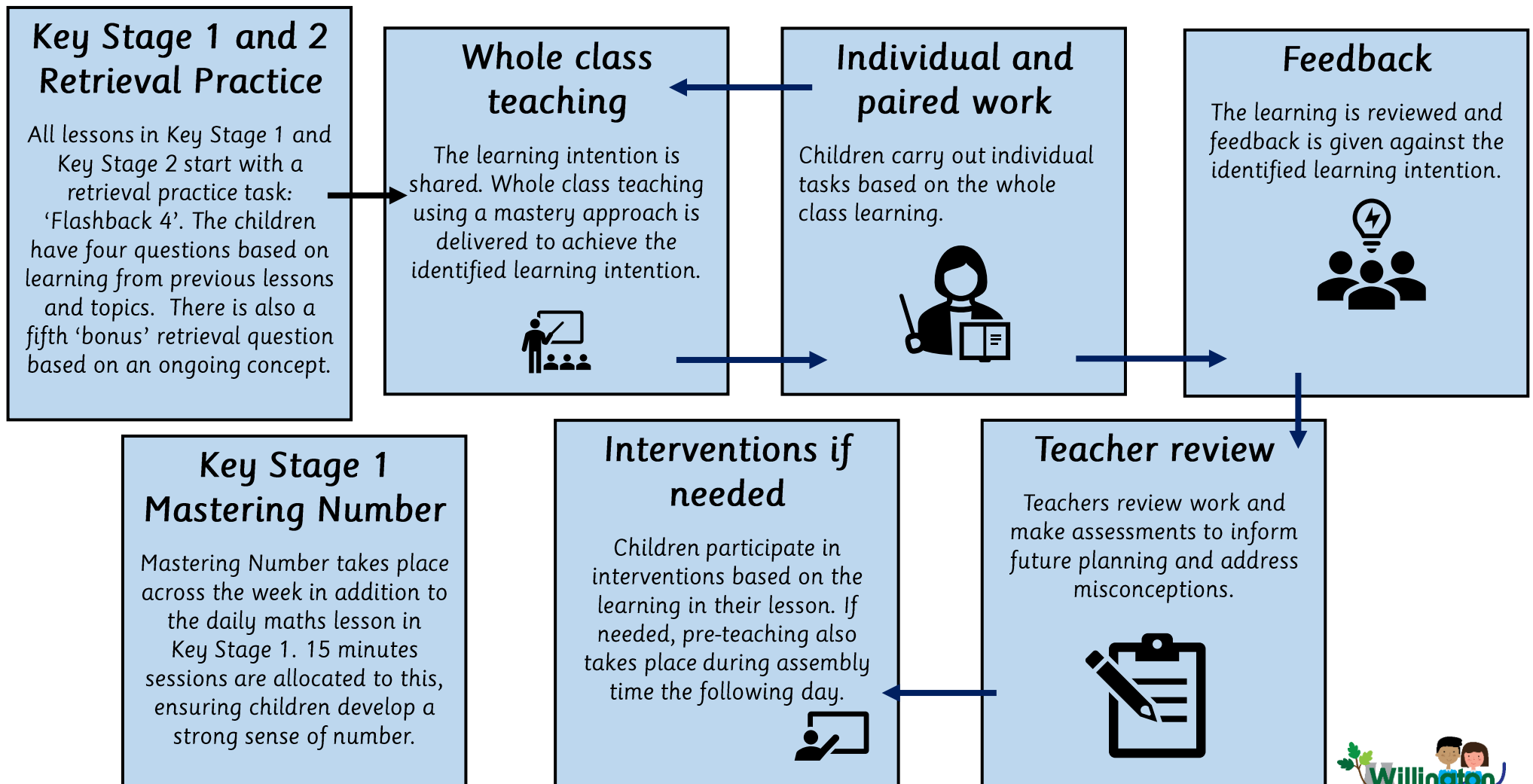


Variation

Children carry out tasks in a variety of different ways to deepen their understanding of a mathematical concept.

Our mathematics curriculum ensures coverage of the **National Curriculum**. We follow the White Rose Maths small steps which ensure progression and have been matched to the National Curriculum objectives.

All maths lessons follow a similar structure from Years 1 to 6.



Our School Values:

At Willington, we 'REACH' to be the best that we can be! We show:

Respect

Empathy

Aspiration

Collaboration

Honesty



SEND

Our SEND and disadvantaged pupils are given the necessary support in class to fully access the mathematics curriculum.

Learning is adapted, using different resources or adjusting the pace of instruction, to support SEND pupils and to give equal opportunities.

Following the mastery curriculum, all children take part in the same learning, except for pupils who are significantly lower than expected, where they follow their own curriculum objectives.

Quality first teaching strategies are used to support all learners.

The above areas are robustly and continuously monitored to ensure any gaps in learning are addressed.

Assessment

Retrieval tasks are completed at the start of each lesson to assess prior learning. These take the form of Flashback 4 in both in Key Stage 1 and 2.

The use of discussion and feedback during the lesson monitors learning and is used for **Assessment for Learning (AfL)**

Assessment trackers are completed every lesson to assess children's attainment. Trackers are passed up to the next teacher so that the areas for development are clearly identified and planning addresses previous misconceptions and consolidates learning.

End of block assessments are carried out between one and two weeks after each unit to assess the children's understanding.

Summative assessments take place each term in the form of NFER maths assessments for Years 3, 4 and 5. In Year 1, these begin from the spring term. Year 2 and 6 pupils regularly carry out past End of Key Stage papers.

Lesson learning walks, pupil interviews and staff CPD, ensure high expectations across the school for our maths curriculum.

Monitoring is completed by the Maths Leader / SLT to evaluate the learning and to maintain progression and standards of teaching and learning.



Early Years Foundation Stage

The maths curriculum in the Early Years Foundation Stage is broken down into the following areas of the Development Matters assessment criteria:

Number

Count objects, actions and sounds

Subitise

Link the numeral to its cardinal number value

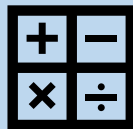
Count beyond ten

Compare numbers

Understand one more/one less between consecutive numbers

Composition of numbers to 10

Number bonds from 0-5 and up to 0-10



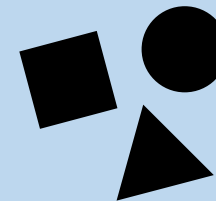
Shape

Select, rotate and manipulate shapes to develop spatial reasoning skills

Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can

Continue, copy and create repeating patterns

Compare length, weight and capacity



End of Early Years Foundation Stage

At the end of the year, the children are assessed against the mathematical statements of the Early Learning Goals.

Key Stage 1

The maths curriculum for Key Stage 1 is broken down to into the following areas:

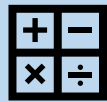
Number

Place Value

Addition and Subtraction

Multiplication and Division

Fractions



Measurement

Choose and use standard units of measure

Compare and order units of measure

Time

Money



Geometry

Recognise and name common 2D and 3D shapes

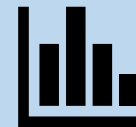
Position, direction and movement



Statistics (Y2)

Read and construct simple charts

Ask and answer simple questions about data



Lower Key Stage 2

The maths curriculum for Lower Key Stage 2 is broken down to into the following areas:

Number

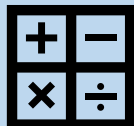
Place Value

Addition and Subtraction

Multiplication and Division

Multiplication check (Y4)

Fractions and decimals



Measurement

Choose and use standard units of measure

Compare and order units of measure

Time

Money



Geometry

Recognise and name common 2D and 3D shapes

Position, direction and movement

Co-ordinates

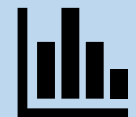
Translations



Statistics

Interpret discrete and continuous data

Solve problems involving charts, tables and other graphs



Upper Key Stage 2

The maths curriculum for Upper Key Stage 2 is broken down into the following areas:

Number

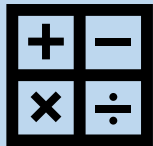
Place Value

Addition and Subtraction

Multiplication and Division

Fractions, decimals,
percentages, ratio
and proportion

Algebra



Measurement

Converting between units
of measure

Metric and imperial units

Perimeter and area of
shapes, including triangles
and parallelograms

Volume

Time

Money

Problems involving
measures



Geometry

Identifying 3D shapes from
2D representations

Circles

Angles

Reflection

Translation

Co-ordinates
(all 4 quadrants)



Statistics

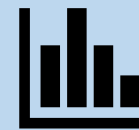
Line graphs

Pie charts

Timetables

Solve problems involving
tables

Mean average



At the end of Key Stage 2

At the end of the Key Stage, children are assessed on all of the lower and upper Key Stage 2 mathematical concepts through the End of Key Stage 2 SATs tests in May.



Progression of Times Tables



At Willington Primary School, we understand the importance of the children learning their times tables and associated division facts. Without a strong knowledge of these, children will find it more difficult to access the maths curriculum in Upper Key Stage 2 and beyond. At the end of Year 4, the children take part in a Multiplication Check which assesses their understanding and recall of their tables. The following progression of times tables is taught throughout school, with each subsequent year building on the learning from previous year groups.

Reception	Counting up and back in steps of 1.
Year 1	Count in multiples of 2s, 5s and 10s.
Year 2	Multiplication and division facts for the x2, x5, x10 tables.
Year 3	Multiplication and division facts for the x3, x4, x8 (and previous year group learning).
Year 4	All multiplication and division facts up to 12x12.
Year 5	All multiplication and division facts up to 12 x 12 and their related facts. E.G. $8 \times 6 = 48$ therefore $80 \times 6 = 480$; $480 \div 60 = 8$
Year 6	All multiplication and division facts up to 12x12, along with their related facts, including decimals. E.G. $5 \times 7 = 35$; $5 \times 0.7 = 3.5$

Ongoing Research and Pedagogy

At Willington Primary School, we understand the need for keeping abreast of current mathematical research and teaching methods. Children and staff are involved with the following groups who develop our teaching and learning opportunities in the subject:

East Midlands West Maths Hub – Early Years and Key Stage 1 Mastering Number Programme

University of Derby – INSET training on mastery maths and maths development meetings.

Early Excellence – Training for the EYFS

Local Authority and local cluster maths network meetings



Enrichment in Maths

At Willington Primary School, we recognise the importance of enrichment opportunities in maths. We aim to equip children with the skills needed to become lifelong citizens and have the maths knowledge to succeed in their future lives and jobs. Examples of recent enrichment opportunities include:

Times Table Rock Stars Day

Design Technology Cookery Sessions

Learning Log Homework Opportunities

Daily Mile

Weekly Times Table Rock Star and Numbots Certificates

National Numeracy Day

Christmas and Summer Fayre Enterprise Stalls

