MATHEMATICS STATEMENT OF INTENT

At St Ethelbert's R.C. Primary School, it is recognised that Mathematics helps children to make sense of the world around them through developing their ability to calculate, to reason and to solve problems whilst expressing their reasoning fluently. It enables children to understand and appreciate relationships and patterns in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics.

In conjunction with the National Curriculum, we aim to:

- develop a positive attitude to maths as an interesting and attractive subject in which all children gain some success and pleasure.
- encourage the effective use of maths as a tool in a wide range of activities within school and, subsequently, adult life.
- develop an ability in the children to express themselves fluently, to talk about the subject confidently, using correct mathematical language and vocabulary.
- develop an appreciation of relationships within maths.
- develop ability to think clearly and logically with independence of thought and flexibility of mind.
- use manipulatives to aid the development and learning of the children in mathematics.
- use CPA (Concrete, Pictorial and Abstract) approach to developing mathematical skills.
- develop an appreciation of creative aspects of maths and awareness of its aesthetic appeal.
- develop mathematical skills and knowledge and quick recall of basic facts in line with National Curriculum recommendations.

PREVIOUSLY COVERED IN EYFS

Early Learning Goal: Number

- Have a deep understanding of number to 10, including the composition of each number.
- Subitise (recognise quantities without counting) up to 5.
- Automatically recall (without reference to rhymes, counting and other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

Early Learning Goal: Number patterns

- Verbally count beyond 20, recognising the pattern of the counting system.
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Year 1

<table>
<tr><td colspan="5" align="center">Autumn Term</td></tr>
<tr><td colspan="2" align="center">Place Value (within 10)</td><td colspan="2" align="center">Addition & Subtraction within 10</td><td align="center">Shape</td></tr>
<tr>
<td colspan="2">
• sorting, counting, representing objects
• counting on
• 1 more / 1 less
• Using a number line to 10
• Comparing & ordering numbers to 10
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<td colspan="2">
• Part-whole model
• Number sentences
• Number bonds with / to 10
• Adding together
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<td>
Recognising and naming 2d & 3d shapes
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</table>

<table>
<tr><td colspan="5" align="center">Spring Term</td></tr>
<tr>
<td align="center">Place Value (within 20)</td>
<td align="center">Addition & Subtraction within 20</td>
<td align="center">Place Value within 50</td>
<td align="center">Measures
Length & Height</td>
<td align="center">Measures
Mass & Volume</td>
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<tr>
<td>
• Counting within 20
• Understanding numbers to 20
• 1 more & 1 less
• Using a number line to 20
• Comparing & ordering numbers to 20
</td>
<td>
• Adding by counting on within 20
• Add ones using number bonds
• Number bonds to 20
• Doubles
• Near doubles
• Subtracting ones using number bonds
• Subtraction – counting back
• Subtraction – finding the difference
• Related facts
• Missing number problems
</td>
<td>
• Counting from 20-50
• Counting by making groups of 10
• Partitioning into 10s & 1s
• Number lines to 50
• 1 more, 1 less
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<td>
• Comparing lengths & heights
• Measuring lengths & heights
• Measuring length in centimetres
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<td>
• Heavier & lighter
• Measuring & comparing mass
• Full & empty
• Comparing & measuring capacity
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<table>
<tr><td colspan="6" align="center">Summer Term</td></tr>
<tr>
<td align="center">Multiplication & Division</td>
<td align="center">Fractions</td>
<td align="center">Geometry
Position & Direction</td>
<td align="center">Place Value within 100</td>
<td align="center">Measures
Money</td>
<td align="center">Measures
Time</td>
</tr>
<tr>
<td>
• Counting in 2s
• Counting in 10s
• Counting in 5s
• Recognising equal group
• Adding equal groups
• Making arrays
• Making doubles
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<td>
• Recognising / finding a half of an object or a shape
• Recognising / finding a half of a quantity
• Recognising / finding a quarter of an object or a shape
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<td>
• Describing turns
• Describing position – left & right
• Describing position – forwards & backwards
• Describing position – above & below
• Ordinal numbers
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<td>
• Counting from 50 to 100
• Partitioning into 10s and 1s
• Number lines to 100
• 1 more, 1 less
• Comparing numbers
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<td>
• Unitising
• Recognising coins
• Recognising notes
• Counting in coins
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<td>
• Before & after
• Days of the week
• Months of the year
• Hours, minutes & seconds
• Telling the time to the hour
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	Recognising / finding a quarter of a quantity				

Year 2

Autumn Term		
Place Value	**Addition & Subtraction**	**Shape**
• counting objects to 100 • 10s & 1s • Partitioning numbers • Using number lines • Comparing numbers	• Bonds to 10/20/100 • Adding & subtracting 1s • Adding 3 1-digit numbers • Adding & subtracting across 10 • Adding & subtracting 10s • Adding 2 2-digit numbers (not across / across a 10) • Subtracting 2 2-digit numbers (not across / across a 10)	• Recognising and naming 2d & 3d shapes • Counting sides & vertices on 2-d shapes • Drawing 2d shapes • Lines of symmetry • Counting faces, edges & vertices on 3d shapes • Sorting shapes

Spring Term			
Measures **Money**	**Multiplication & Division**	**Measures** **Length & Height**	**Measures** **Mass capacity & Temperature**
• Counting money in pence & pounds (notes & coins) • Choosing notes & coins • Making the same amount	• Recognising &making equal groups • Adding equal groups • Multiplication symbol • Multiplication sentences • Using arrays • Grouping • Sharing • Times tables – 2s, 5s, 10s • Dividing by 2, 5, & 10	• Measuring in centimetres • Measuring in metres • Comparing lengths & heights • Ordering lengths & heights • Four operations with lengths & heights	• Comparing mass • Measuring in grams & kilograms • Four operations with mass • Comparing volume & capacity • Measuring in litres & millilitres • Four operations with volume & capacity • temperature

Summer Term			
Fractions	**Measures** **Time**	**Statistics**	**Geometry** **Position & Direction**
• equal & unequal parts • halves & quarters • thirds • unit / non-unit fractions • equivalence of half & two quarters	• o'clock & half past • quarter past & quarter to • telling time to / past the hour • telling the time to 5 minutes • minutes in an hour • hours in a day	• tally charts • tables • block diagrams • drawing & interpreting pictograms	• Language of position • Describing movement • Describing turns • Shape patterns with turns

• counting in fractions		

Year 3

<table>
<tr><td colspan="3" align="center">Autumn Term</td></tr>
<tr><td align="center">Place Value</td><td align="center">Addition & Subtraction</td><td align="center">Multiplication & Division</td></tr>
<tr>
<td>

- Representing numbers to 100
- Partitioning numbers to 100
- Representing numbers to 1000
- Partitioning numbers to 1000
- Hundreds, tens & ones
- Finding 1, 10 or 100 more or less
- Number lines to 1000
- Comparing / ordering numbers to 1000

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- Adding & subtracting 1s, 10s &100s
- Adding 1s across a 10
- Adding 10s across 100
- Subtracting 1s across a 10
- Subtracting 10s across a 100
- Adding two numbers (without / with exchange)
- Subtracting two numbers (without / with exchange)
- Adding 2-digit & 3-digit numbers
- Subtracting a 2-digit form a 3-digit number
- Complements to 100
- Inverse operations

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- Equal groups
- Using arrays
- Multiples of 2, 5 & 10
- 3, 4, 8 times tables
- Dividing by 3, 4 & 8

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<table>
<tr><td colspan="4" align="center">Spring Term</td></tr>
<tr><td align="center">Multiplication & Division</td><td align="center">Measures
Length & Perimeter</td><td align="center">Fractions</td><td align="center">Measures
Mass & Capacity</td></tr>
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<td>

- Multiples of 10
- Related calculations
- Reasoning
- Multiplying a 2-digit number by a 1-digit number – (no exchange/ with exchange)
- Dividing a 2-digit number by a 1-digit number – (no exchange/ with exchange)

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- Measuring in centimetres & meters
- Measuring in millimetres
- Equivalent lengths
- Comparing lengths
- Adding/subtracting lengths
- Measuring & calculating perimeter

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- Denominators in unit fractions
- Comparing & ordering unit fractions
- Numerators in non-unit fractions
- Comparing & ordering fractions
- Fractions on a number line
- Counting in fractions
- Equivalent fractions

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- Using scales
- Measuring mass in grams & kilograms
- Equivalent masses
- Comparing mass
- Adding & subtracting mass
- Measuring capacity & volume in litres & millilitres
- Equivalent capacity & volume
- Comparing capacity & volume
- Adding & subtracting capacity & volume

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<table>
<tr><td colspan="5" align="center">Summer Term</td></tr>
<tr><td align="center">Fractions</td><td align="center">Measures
Money</td><td align="center">Measures
Time</td><td align="center">Geometry
Shape</td><td align="center">Statistics</td></tr>
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<td>

- Adding fractions
- Subtracting fractions

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- Converting pounds & pence

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- Roman numerals to 12
- Telling the time to 5 minutes

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- Turns & angles
- Right angles
- Comparing angles

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- Interpreting / drawing pictograms

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</table>

• Unit fractions of a set of objects • Non-unit fractions of a set of objects • Fractions of an amount - reasoning	• Adding / subtracting money • Finding change	• Telling the time to 1 minute • Reading time on a digital clock	• Measuring & drawing • Horizontal & vertical • Parallel & perpendicular • 2d & 3d shapes • Drawing polygons	• Interpreting/ drawing bar charts • Collecting & representing data

Year 4

Autumn Term

Place Value	Addition & Subtraction	Measures Area	Multiplication & Division
• Representing numbers to 1000 • Partitioning numbers to 1000 • Representing numbers to 10,000 • Partitioning numbers to 10,000 • Finding 1, 10, 100, 1000 more or less • Number lines to 10,000 • Comparing & ordering numbers to 10,000 • Roman numerals	• Add & subtract 1s, 10s, 100s, 1000s • Adding 2 4-digit numbers (no exchange/with exchange) • Subtracting 2 4-digit numbers (no exchange/one exchange/ more than one exchange)	• Counting squares • Making shapes • Comparing areas	• Multiples of 3 • Multiplying & dividing by 6 & 9 • Multiplying & dividing by 7 • 11 & 12 times tables & division facts • Multiplying 3 numbers

Spring Term

Multiplication & Division	Measures Length & Perimeter	Fractions	Decimals
• Factor pairs • Multiplying by 10 / 100 • Dividing by 10/100 • Related facts • Multiplying / dividing a 2-digit number by a 1-digit number • Multiplying / dividing a 3-digit number by a 1-digit number	• Measuring in kilometres & metres • Equivalent lengths • Perimeter on a grid • Perimeter of a rectangle • Perimeter of rectilinear shapes • Finding missing lengths • Perimeter of polygons	• Partitioning a mixed number • Number lines with mixed numbers • Comparing & ordering mixed numbers • Improper fractions • Converting mixed number to improper fractions • Converting improper fractions to mixed numbers • Adding 2 or more fractions • Adding fractions & mixed numbers • Subtracting 2 fractions • Subtracting from mixed numbers	• Tenths as fractions & decimals • Tenths on a place value chart / number line • dividing a 1 or 2 digit number by 10 • Hundredths as fractions & decimals • Hundredths on a place value chart / number line

Summer Term					
Decimals	**Measures Money**	**Measures Time**	**Geometry Shape**	**Statistics**	**Geometry Position & Direction**
• Making a whole with tenths & hundredths • Partitioning decimals • Comparing decimals • Ordering decimals • Rounding to the nearest whole number • Halves & quarters as decimals	• Writing money using decimals • Converting between pounds & pence • Comparing amounts of money • Estimating with money • Calculating with money	• Years, months, weeks & days • Converting between analogue & digital times • Converting to the 24-hour clock • Converting from the 24-hour clock	• Identifying angles • Comparing & ordering angles • Triangles • Quadrilaterals • Polygons • Lines of symmetry	• Interpreting charts • Comparison, sum & difference • Interpreting line graphs • Drawing line graphs	• Describing position using coordinates • Plotting coordinates • Translation on a grid

Year 5

Autumn Term			
Place Value	**Addition & Subtraction**	**Multiplication & Division**	**Fractions**
• Roman numerals to 1000 • Numbers to 10000 • Numbers to 100000 • Numbers to 1000000 • Powers of 10 • 10, 100, 1000, 10000, 100000 more or less • Partitioning numbers to 1,000,000 • Comparing & ordering numbers to 100000 • Comparing & ordering numbers to 1,000,000 • Rounding to the nearest 10, 100, 1000 • Rounding within 100,000 • Rounding within 1,000,000	• Mental strategies • Adding whole numbers with more than 4 digits • Subtracting whole numbers with more than 4 digits • Inverse operations – addition & subtraction • Multi-step addition & subtraction problems • Finding missing numbers	• Multiples / common multiples • Factors / common factors • Prime numbers • Square numbers • Cube numbers • Multiplying / dividing by 10, 100, 1000 • Multiples of 10, 100, 1000	• Equivalent fractions • Converting improper fractions to mixed numbers • Converting mixed numbers to improper fractions • Comparing & ordering fractions • Adding & subtracting fractions with the same denominator • Adding mixed numbers

Spring Term				
Multiplication & Division	**Fractions**	**Decimals & Percentages**	**Perimeter & Area**	**Statistics**

• Multiplying a 4-digit number by a 1-digit number • Multiplying a 2-digit number by a 2-digit number • Multiplying a 3-digit number by a 2-digit number • Multiplying a 4-digit number by a 2-digit number • Short division • Dividing a 4-digit number by a 1-digit number • Problem-solving	• Multiplying a unit / non-unit fraction by an integer • Multiplying a mixed number by an integer • Calculating a fraction of a quantity / amount	• Decimals up to 2 decimal places • Equivalent fractions & decimals • Thousandths as a fraction & decimal • Ordering & compering decimals • Rounding to the nearest whole number • Rounding to 1 decimal place • percentages as fractions • Percentages as decimals • Equivalent fractions, decimals & percentages	• Perimeter of rectangles • Perimeter of rectilinear shapes • Perimeter of polygons • Area of rectangles • Area of compound shapes • Estimating area	• Drawing, reading & interpreting line graphs • Reading & interpreting tables

Summer Term					
Geometry Shape	**Geometry Position & Direction**	**Decimals**	**Negative Numbers**	**Measures Converting Units**	**Measures Volume**
• Classifying angles • Estimating angles • measuring angles up to 180˚ • calculating angles • lengths & angles in shapes • regular & irregular polygons • 3d shapes	• Reading & plotting coordinates • Translation • Lines of symmetry • Reflection in horizontal & vertical lines	• Using known facts to add & subtract decimals within 1 • Adding / subtracting decimals with the same number of decimal places • Adding / subtracting decimals with a different number of decimal places • Sequences • Multiplying / dividing by 10, 100 1000	• Counting through 0 in 1s • Counting through 0 in multiples • Comparing & ordering negative numbers • Finding the difference	• Kilograms & kilometres • Millimetres & millilitres • Converting units of length • Converting between metric & imperial units • Converting units of time • Using timetables	• Cubic centimetres • Comparing / estimating volume • Estimating capacity

Year 6

<table>
<tr><td colspan="5" align="center">**Autumn Term**</td></tr>
<tr>
<td align="center">**Place Value**</td>
<td align="center">**Addition & Subtraction Multiplication & Division**</td>
<td align="center">**Fractions**</td>
<td align="center">**Fractions**</td>
<td align="center">**Measures Converting Units**</td>
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- Numbers to 1,000,000
- Numbers to 10,000,000
- Powers of 10
- Number lines
- Comparing & ordering numbers
- Rounding
- negative numbers

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- adding & subtracting integers
- common factors
- common multiples
- rules of divisibility
- primes to 100
- square & cube numbers
- multiplying up to a 4-digit number by a 2-digit number
- problem-solving
- short division
- long division
- multi-step problems
- order of operations

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- equivalent fractions & simplifying
- comparing & ordering fractions
- adding & subtracting fractions
- adding & subtracting mixed numbers

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- multiplying fractions by an integer
- multiplying fractions by a fraction
- dividing fractions by an integer
- dividing fractions by a fraction
- fractions of an amount

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- converting metric measures
- calculating with metric measures
- miles & kilometres
- imperial measures

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<tr><td colspan="5" align="center">**Spring Term**</td></tr>
<tr>
<td align="center">**Ratio**</td>
<td align="center">**Algebra**</td>
<td align="center">**Decimals**</td>
<td align="center">**Fractions, Decimals & Percentages**</td>
<td align="center" colspan="2">**Measures Area, Perimeter & Volume** · **Statistics**</td>
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<td>

- Using ratio language
- Ratio symbol
- Ratios & fractions
- Scale drawing
- Using scale factors
- Ratio & proportion problems

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- 1-step function machines
- 2-step function machines
- Form expressions
- Substitution
- Formulae
- Solving 1-step & 2-step equations
- Solving problems with 2 unknowns

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- Place value – integers & decimals
- Rounding decimals
- Adding & subtracting decimals
- Multiplying by 10, 100, 1000
- Dividing by 10, 100, 1000
- Multiplying / dividing decimals by integers

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- Decimal & fraction equivalents
- Fractions to percentages
- Equivalent fractions, decimals & percentages
- Ordering fractions, decimals & percentages
- Percentage of an amount – one step; two step
- Missing values

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- Area & perimeter
- Area of a triangle – counting squares
- Area of a right-angled triangle
- Area of any triangle
- Area of a parallelogram
- volume - counting cubes
- volume of a cuboid

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- line graphs
- dual bar charts
- reading & interpreting pie charts
- pie charts & percentages
- drawing pie charts
- the mean

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<tr><td colspan="6" align="center">**Summer Term**</td></tr>
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Geometry Shape	Geometry Position & Direction	Bakery Project, Consolidation & Problem-solving
• measuring & classifying angles • calculating angles • vertically opposite angles • angles in a triangle • missing angles • angles in quadrilaterals • angles in polygons • circles • nets of 3d shapes	• the first quadrant • reading & plotting points in four quadrants • solving problems with coordinates • translation • reflection	• Best Value • Profit & Loss • Packaging • Cooking Problems