Year 6 Mathematics Curriculum Map For St. Antony's Catholic School 2017-2018

Mastery Principles (Reasoning, Fluency and Problem Solving) to be taught across all areas, every term.
- Teachers reinforce an expectation that all pupils are capable of achieving high standards in mathematics.
- The large majority of pupils progress through the curriculum content at the same pace. Differentiation is achieved by emphasising deep knowledge and through individual support and intervention
- Teaching is supported by resources to foster deep conceptual and procedural knowledge.
- Practice and consolidation play a central role.
- Teachers use precise questioning in class to test conceptual and procedural knowledge and assess pupils regularly to identify those requiring additional support to catch up.

Expectations
- Use negative numbers in context and calculate intervals across zero.
- Compare and order numbers up to 10000000.
- Recall and apply multiplication facts and associated division facts up to 12 x 12.
- Use tests of divisibility.
- Identify common factors, common multiples and prime numbers.
- Round any whole number to a required degree of accuracy.
- Identify the value of each digit to 3 decimal places.
- Use knowledge of order of operations to carry out calculations involving four operations.
- Multiply 4-digit by 2-digit.
- Divide 4-digit by 2-digit.
- Understand and apply long division.
- Compare and order fractions greater than 1.
- Add and subtract fractions with different denominators and mixed numbers.
- Multiply simple pairs of proper fractions, writing the answer in the simplest form.
- Divide proper fractions by whole numbers.
- Calculate % of whole number.
- Find the radius, diameter and circumference of a circle.

Rapid recall **Children should be able to recall rapidly:**	**Mental strategies** **Children should be able to use the following strategies, as appropriate, for mental calculations**	**Mental calculations**
• squares of all integers from 1 to 10	• Consolidate all strategies from previous years • Use knowledge of number facts and place value to add or subtract pairs of three-digit multiples of 10 and two-digit numbers with one decimal place • Add or subtract the nearest multiple of 10, 100 or 1000, then adjust • Continue to use the relationship between addition and subtraction • Use factors • Partition to carry out multiplication • Use doubling and halving	• Multiply any two-digit number by a single-digit, e.g. 34 x 6 • Multiply any two-digit number by 50 or 25 e.g. 23 x 50, 47 x 25 • Multiply or divide any whole number by 10 or 100, giving any remainder as a decimal e.g. 47÷10=4.7, 1763÷100=17.63 • Find squares of multiples of 10 to 100 • Find any multiple of 10% of a whole number or quantity e.g. 70% of £20, 50% of 5kg, 20% of 2metres.

	• Use closely related facts to carry out multiplication and division • Use the relationship between multiplication and division • Use knowledge of number facts and place value to multiply or divide.	

Autumn (weeks 1-13)	**Spring (weeks 14-26)**	**Summer (weeks 27-39)**
Place Value • to 10000000 • decimal place value • rounding up and down significant decimals places **Written Methods** • estimating • addition using grid/partitioning/column method • subtraction using grid/partitioning/decomposition/column method • Addition and subtraction of decimals • Multiplication of 4-digit by 2-digit using grid/partitioning/column method • Division of 4-digit by 2-digit using chunking/short division/long division **Money** • addition and subtraction • multiplication and division **Number Sequences** • positive and negative numbers • missing digits • factors and multiples • prime numbers **Fractions, Decimals and Percentages** • simplest form • conversion tables • using and applying • addition and subtraction • multiplication and division of fractions **Ratio and Proportion** **Geometry** • identify properties of 2D and 3D shapes • nets • symmetry • reflection • lines	**Written Methods** • addition • subtraction • multiplication • division • including decimal numbers and money **Fractions, Decimals and Percentages** • use and apply • adding and subtracting fractions including those with different denominators • mixed numbers • multiply fractions • divide fractions • calculate percentages of amounts **Ratio and Proportion** **Statistics** • read and interpret • graphs and charts • mean, median, mode and range **Geometry** • time • mass/weight • volume • distance • rotation • position • translation **Algebra** • BODMAS • nth term • generate and describe linear equations	**Key Stage 2 SATs** **Transition Maths** • Research • Projects • Investigations • Planning and mapping to scale • Money management **Maths linked to cross-curricular topic work** **Calculator skills** **Probability**

- triangles - area and perimeter of regular/irregular/complex shapes - calculate volume of 3D shapes - identify/classify/define/construct/measure angles - coordinates using 1-4 quadrants - radius, diameter and circumference of a circle - schedules and timetables **Algebra** - BODMAS - nth term - generate and describe linear equations		

All Objectives must be stated as **"I CAN"** Statements which are measurable and linked to the **Mathematics Skills, Approaches and Strategies being taught:**

Examples of   Objectives: I can **read** and **write** whole numbers to 1,000,000   I can **Identify, read and write decimal** numbers to three decimal places
I can **find the perimete**r of quadrilaterals   I can **derive prime factors/factors/multiples** of given numbers
I can **plot co-ordinates** in a four quadrant grid   I can **calculate the area of 2D shapes** using standard formulae
I can **solve complex addition problems** using the column method   I can **use a protractor** to correctly measure angles
I can use the **grid method/partitioning/the empty number line** to solve addition/subtraction/multiplication problems
I can **use short/long division method** to solve   I can **use the chunking method** to solve division problems
I can **use BODMAS** to solve problems   I can **order negative and positive** numbers
I can **classify /define the properties** of polygons/simple/complex/2D/3D shapes

Suggested Maths Skills and Operations for formulating objectives when planning:
Read, Write, Identify, Define, Sort, Classify, Order, Find, Derive, Work out, Calculate, Explain, Justify, Add, Multiply, Divide, Use and Apply, Choose and Use, Plot, Draw, Measure, Estimate, Double, Halve, Investigate, Reduce, Increase, Convert, Sequence, Tally, Use relevant maths vocabulary correctly

Solve (simple, complex, one/two/multiple step)Word Problems, Extract Data, Represent Data using a :line graph, block graph, histogram, bar/pie/tally chart, pictogram/pictograph, scatter graph,