Manor Drive Primary Academy
Maths Curriculum Overview
Year 5

	Block 1				
W1	5.1.1 & 5.1.2 Identify the different values represented by each digit in numbers up to 1,000,000	5.1.1 & 5.1.2 Identify the different values represented by each digit in numbers up to 1,000,000	5.1.3 Write numbers up to 1,000,000 in words and read them aloud	5.1.4 Compare and order numbers up to 1,000,000, including use of "greatest /largest/ most", "smallest/least", "more than", "less than" and "closest".	5.1.5 Round numbers up to 1,000,000 to the nearest 10, 100 and 1000
W2	5.1.6 Find the multiple of 10,000 and 100,000 above and below a given number	5.1.6 Find the midpoint between multiples of 10,000 and 100,000 and use this to round numbers to the nearest 10,000 and 100,000	5.1.7 & 5.1.8 Use rounding to find approximate answers to problems in real-life contexts	5.1.9 Count forwards and backwards in steps of 0.1 and 0.01	5.1.10 Count forwards and backwards in steps 10, 100 and 1,000
W3	5.1.10 Count forwards and backwards in steps of 10,000 and 100,000; recognise that 10,000 can be divided in 10 thousands and that 100,000 can be divided in 10 ten thousands	**5.1.12 Fill in missing negative and positive numbers on a number line between -50 and 50, including where intervals of 2, 5 and 10 are shown**	5.1.13 Count in whole numbers forwards and backwards through zero	5.1.14 Count forwards and backwards in multiples of 0.1 (e.g 0.3, 0.6, 0.9, etc) with positive numbers only	5.1.14 Count forwards and backwards through zero in multiples of 0.1 (e.g 0.3, 0.6, 0.9, etc)
W4	5.1.14 Count forwards and backwards through zero in fractions including halves and quarters (e.g. -1½, -1, -½, 0, ½, 1, etc)	5.1.11 Understand negative numbers in real life contexts and compare negative numbers with other negative numbers and positive numbers using inequalities (e.g. -5 < -2)	5.1.15 Understand individual Roman numerals up to 1000 and read numbers up to 3,000	5.1.17 Solve number problems relating to place value of numbers up to 1,000,000	5.1.18 Solve number problems involving negative numbers
W5	5.1.16 Appreciate that the base 10 place value system that we use is a choice and understand some of the history of number, including the difference between additive and place value systems	Consolidation of 5.1 Link to reasoning and problem-solving activities	Consolidation of 5.1 Link to reasoning and problem-solving activities	Consolidation of 5.1 Link to reasoning and problem-solving activities	5.2.1 & 5.2.2 Understand that angles represent an amount of turn, and identify acute angles, right angles, obtuse angles, angles around a point on a straight line (half a turn), reflex

					angles and whole turns
W6	5.2.3 and 5.2.4 Estimate the size of angles and compare angles without measuring	5.2.5 Draw acute and obtuse angles that are multiples of 10º	5.2.5 Draw acute and obtuse angles that are multiples of 1º	5.2.5 Draw reflex angles by finding the complementary acute or reflex angle and drawing it first	5.2.6 Measure acute and obtuse angles to that are multiples of 10º

Block 2

W1	5.2.6 Measure acute and obtuse angles that are multiples of 1º	5.2.6 Measure reflex angles by finding the complementary acute or obtuse angle and subtracting from 360º	5.2.7, 5.2.8, 5.2.9 & 5.2.10 Use compass bearings and describe the amounts of turn in fractions of turns (¼, ½, ¾) clockwise or anti-clockwise to move between different compass points	5.2.7, 5.2.8, 5.2.9 & 5.2.10 Use compass bearings and describe the amounts of turn in degrees clockwise or anti-clockwise to move between different compass points	Consolidation of 5.2 Link to reasoning and problem-solving activities
W2	5.3.4 Using dienes, visualise thousandths as one thousandth of a 1 and as one tenth of a hundredth; visualise numbers up to 3 decimal places using dienes	5.3.1 Relate the place value of tenths, hundredths and thousandths in numbers to their equivalent fractional parts (e.g. $4.583 \rightarrow 4 + {}^{5}/_{10} + {}^{8}/_{100} + {}^{3}/_{1000}$)	5.3.2 Using dienes, recognise that $^{1}/_{10}$ is equivalent to $^{10}/_{100}$ and that $^{1}/_{100}$ is equivalent to $^{10}/_{1000}$; write equivalent fractions for tenths and hundredths (e.g. $^{3}/_{10} = {}^{30}/_{100} = {}^{300}/_{1000}$)	5.3.2 Visualise decimals including ones, tenths, hundredths and thousandths using place value counters	5.3.2 Write decimals with up to 3 decimal places as single fractions (e.g. $0.34 = {}^{34}/_{100}$) and vice versa
W3	5.3.5 Compare numbers up to 3 decimal places , including use of "greatest/most/largest", "smallest/least", "greater than", "less than" and "closest to"	5.3.6 Order numbers up to 3 decimal places	5.3.7 Recognise the intervals (divided into ten) between ones are tenths, and add values to number lines using this knowledge; know that 10 lots of 0.1 equals 1; know that 1 can be divided into two, four, five and ten parts and the size of the parts in this case	5.3.7 Recognise the intervals (divided into ten) between tenths are hundredths, and add values to number lines using this knowledge; recognise the intervals (divided into ten) between hundredths are thousandths add values to number lines using this knowledge	5.3.8 Use knowledge of place value to multiply and divide whole numbers by 10, 100 and 1000
W4	5.3.9 Use knowledge of place value to multiply decimals by 10, 100 and 1000	5.3.10 Use knowledge of place value to divide decimals by 10, 100 and 1000 (without giving answers with ten thousandths)	5.3.11 & 5.3.12 Round decimals with 1 or 2 decimal places to the nearest whole number by finding the whole number above and below the decimal and the midpoint between the two	5.3.13 Round decimals with 2 decimal places to the nearest tenth by finding the tenth above and below the decimal and the midpoint between the two	5.3.14 Find smallest and greatest possible values a number could have been when given a total rounded to the nearest 10, 100 or 1000
W5	Consolidation of 5.3 Link to reasoning and problem-solving activities	Consolidation of 5.3 Link to reasoning and problem-solving activities	**5.4.1 Use known addition facts to derive others relating to multiples of 10, 100 and 1000 (e.g. 7+5=12 so 70+50=120) and use these to generate equivalent subtraction facts**	**5.4.2 Decide when it is more efficient use a counting back strategy (e.g. 902 - 4) or count forward/find the difference strategy (e.g. 902-898) for mental subtraction; recognise that sometimes the choice is not clear cut**	**5.4.3 Use 'friendly' numbers and compensation for mental addition (addend switching) and subtraction (constant difference) E.g. 452 + 297 → 449 + 300 = 749**

					375 - 296 → 379 - 300 = 79
W6	5.4.4 Use formal column addition with numbers up to 1,000,000	5.4.5 Use formal column subtraction with numbers up to 1,000,000	5.4.6 & 5.4.7 Find missing numbers in equations by considering whether the missing number is a 'part' (addend, subtrahend or difference) or the 'whole' (minuend or total)	5.4.8 Choose between mental and written methods for addition and subtraction problems, ensuring efficiency and accuracy	5.4.9 Solve multi-step word problems, using bar models where appropriate, relating to addition and subtraction and relating to all arithmetic structures.

Block 3

W1	5.4.10 Solve multi-step word problems, using bar models where appropriate, relating to addition and subtraction involving money relating to all arithmetic structures	5.4.12 Use a formal written method to add whole numbers and decimals with a mixed number of decimal places (e.g. 4.9+3.52)	5.4.13 Use a formal written method to subtract whole numbers and decimals with a mixed number of decimal places (e.g. 8-4.26)	5.4.14 Solve multi-step word problems with decimals, using bar models where appropriate, relating to addition and subtraction involving measures relating to all arithmetic structures	Consolidation of 5.4 Link to reasoning and problem-solving activities
W2	5.5.1 Identify lines of symmetry in pictures and shapes	5.5.2 Reflect shapes across horizontal, vertical and diagonal mirror lines where the original shape touches the mirror line and where it doesn't	5.5.3 Reflect shapes across horizontal, vertical and diagonal mirror lines on a coordinate grid (one quadrant), stating the new coordinates of the shape	5.5.4 & 5.5.5 Translate shapes based on given instructions, and describe the instructions for a given translation	5.5.6 Determine the new coordinates for a shape following a given translation, and describe a translation based on a given new set of coordinates
W3	Consolidation of 5.5 Link to reasoning and problem-solving activities	5.6.1 Recognise odd and even numbers; understand that odd numbers result in a remainder of 1 when divided and that even numbers divide by two to give a whole number (e.g. even numbers are multiples of 2)	5.6.2 Use known multiplication facts to determine whether a given number is a multiple of another; list the first multiples for a given number (e.g. the first five multiples of 7 are 7, 14, 21, 28, 35)	5.6.4 List the common multiples of two or three numbers, and find the lowest common multiple of two or three numbers (e.g. the lowest common multiple of 3, 4 and 5 is 60)	5.6.11 Understand square numbers using arrays and identify the square numbers up to 144
W4	5.6.12 Solve calculations involving square numbers, and know that squaring (as an example of indices) takes priority over other operations and is undertaken first after brackets are resolved	5.6.13 Understand cube numbers using multilink cubes (or other suitable manipulatives) and identify the cube numbers up to 125	5.6.14 Solve calculations involving cube numbers, and know that cubing (as an example of indices) takes priority over other operations and is undertaken first	5.6.3 Find all the factors of a number, including factors pairs	5.6.5 List the common factors of two or three numbers, and find the highest common factor of two or three numbers (e.g. the highest common factor of 12, 18 and 30 is 6)
W5	5.6.6 & 5.6.8 Understand that a prime number is a number with only two different factors - one and itself (e.g. 7 is a prime number with factors of 1 and 7) and that numbers	5.6.9 Establish whether any number between 0-100 is prime, and know all the prime numbers between 0-20.	5.6.7 Know that all numbers are products of prime factors and that a number can be decomposed (broken	Consolidation of 5.6 Link to reasoning and problem-solving activities	**5.7.1 Use known multiplication facts to carry out mental multiplication beyond 12x12, including multiplying multiples of 10 and 100 e.g. 7x500=3500);**

	with more than two factors are composite numbers		down) into prime factors (e.g. 24 → 2 x 2 x 2 x 3; 30 → 2 x 3 x 5)		**and using the distributive rule** e.g. 16x8 → (10+6)x8 → (10x8)+(6x8)
W6	5.7.2 Use known multiplication facts to carry out mental division beyond 12x12, including multiplying multiples of 10 and 100 e.g. 450÷5=90)	5.7.4 Use contracted written multiplication to multiply 2-digit numbers by 2-digit numbers	5.7.4 Use contracted written multiplication to multiply 2-digit numbers by 2-digit numbers	5.7.4 Use contracted written multiplication to multiply 3-digit numbers by 2-digit numbers	5.7.4 Use contracted written multiplication to multiply 4-digit numbers by 2-digit numbers

Block 4

W1	5.7.4 Choose between written and mental methods to solve multiplication calculations	Consolidation of 5.7 Link to reasoning and problem-solving activities	5.8.1 Use manipulatives to understand that dividing can leave remainders or that the remainder can also be divided to create a fraction, depending on the context	**5.8.2 Divide numbers using known multiplication facts, finding remainders**	5.8.2 Use formal short division to divide 2-digit numbers by single digit numbers (without a remainder)
W2	5.8.3 Use formal short division to divide 3-digit and 4-digit numbers by single digit numbers (without a remainder)	5.8.3 Use formal short division to divide 3-digit and 4-digit numbers by single digit numbers with remainders	5.8.4 From word problems, interpret whether the remainders from division calculations necessitate rounding up or down	5.8.8 & 5.8.10 Solve problems where different operations and combinations of operations need to be chosen	5.8.9 Solve missing number equations where both sides of the equation contain operations, and know that the equals sign shows equivalence not 'answer' e.g. 4+8=3x__
W3	**5.8.11 Find the value of multiple items from the value of one item and vice versa; use this to solve rate problems e.g. 4 cakes cost £2.00 How much would 1 cake cost? 7 cakes?**	**5.8.12 Use a given rate to find various amounts, and use this to solve problems e.g 250g of cheese costs £2. So… 50g costs 40p 100g costs 80p 1kg costs £8.00**	5.8.13 & 5.8.15 Round whole numbers in abstract and real contexts	5.8.14 & 5.8.15 Round decimals in abstract and real contexts	Consolidation of 5.8 Link to reasoning and problem-solving activities
W4	Consolidation of 5.8 Link to reasoning and problem-solving activities	5.9.1 & 5.9.2 Understand that line graphs show continuous information, most commonly the change in a continuous measure over time; understand changes over time from various line graphs and compare adjacent graphs	5.9.3 Interpret information from line graphs, including finding sums and differences (e.g. How much did the temperature increase between midday and 3pm?)	5.9.4 Construct a line graph based on gathered or given data over a continuous period of time	5.9.6 Read and interpret timetables, and solve problems relating to differences in time and planning ahead for a given arrival time
W5	5.9.6 Read and interpret timetables, and solve problems relating to differences in time and planning ahead for a given arrival time	5.9.7 Read and interpret information from two-way tables (Carroll diagrams), including those with numbers and	5.9.8 Read and interpret information from frequency tables, solving problems relating to sums and differences	Consolidation of 5.9 Link to reasoning and problem-solving activities	5.10.1 Convert between units of length or time, and solve problems that require conversion

		those with simple √ or x information			
W6	5.10.2 Convert between units of mass, and solve problems that require conversion	5.10.3 Convert between units of capacity, and solve problems that require conversion	5.10.4 & 5.10.11 Solve various problems that require conversion between metric units of length, time, mass and capacity	5.10.5 Convert between common imperial units of length (inches, feet and miles) and metric units using approximations: 1 inch = ~ 2.5 cm 1 foot = ~ 30 cm 1 mile = ~1600 m	5.10.6 Convert between common imperial units of mass (pounds and stone) and capacity (pints and gallons) and metric units using approximations: 1 pound = ~ 450 g 1 stone = ~ 6 kg 1 pint = ~ 550 mL 1 gallon = ~ 4.5 L

Block 5

W1	5.10.7 Solve problems that involve conversion between times represented on 12-hour and 24-hour clocks	5.10.8 Solve problems that involve conversion between seconds, minutes and hours	5.10.9 Solve word problems related to time, including finding time differences between events, and finding the start or end time of an event when one of these and the event duration is known	5.10.10 Solve word problems relating to length and area	5.10.12 Solve multi-step word problems relating to money, using bar models where appropriate
W2	Consolidation of 5.10 Link to reasoning and problem-solving activities	5.11.1 & 5.11.4 Use pictorial representations (e.g. bar models) to to compare unit fractions with different denominators (e.g. ¼ > ⅛) and to compare fractions with the same denominator but different numerators (e.g. ¾ > ¼)	5.11.2 Use diagrams including number lines to show that some fractions are equivalent; begin to understand that $^2/_2$, $^3/_3$, $^4/_4$, etc are equivalent to 1, and that multiplying by gives a number with the same value (e.g. ½ x $^3/_3$ = $^3/_6$)	5.11.5 Multiply fractions by fractions equivalent to 1 (e.g. $^2/_2$, $^3/_3$, $^4/_4$, etc) to generate various equivalent fractions	5.11.5 Use equivalent fractions to shade in shapes to show given fractions when the number of equal pieces of the shape exceeds denominator (e.g. shade ⅔ of a shape divided into 15 equal pieces)
W3	5.11.5 Recognise that dividing by 1 also leaves the value of a number unchanged; divide fractions by fractions equivalent to 1 (where possible) to find the fraction in its simplest form (e.g. $^8/_{12}$ ÷ $^4/_4$ = $^2/_3$)	5.11.5 Choose the correct fraction equivalent to 1 to multiply or divide by when trying to create an equivalent fraction with a specific numerator or denominator (e.g. Turn ¾ into $^?/_{20}$ → multiply ¾ by $^5/_5$ → $^{15}/_{20}$)	5.11.6 Convert fractions into tenths and hundredths (e.g. ½ → ½ x $^5/_5$ = $^5/_{10}$ → $^5/_{10}$ x $^{10}/_{10}$ = $^{50}/_{100}$)	**5.11.5 Fluently recognise and generate equivalent fractions and find fractions in their simplest form**	5.11.7 Convert decimals into tenths and hundredths and find these as a fraction in their simplest form (e.g. 0.6 = $^6/_{10}$ → $^6/_{10}$ ÷ $^2/_2$ = $^3/_5$)
W4	5.11.3 **Use understanding of equivalent fractions to compare fractions with different denominators**	5.11.12 Add and subtract fractions with the same denominator, recognising why the denominator stays the same from pictorial representations	5.11.13 Find equivalent fractions in preparation for adding and subtracting of fractions with different denominators where one fraction needs to be altered e.g. ½ + $^5/_6$ → $^3/_6$ + $^5/_6$	5.11.15 Add and subtract fractions with different denominators by finding equivalent fractions with the same denominators; recognise that some answers give improper fractions, and understand this term	5.11.15 Add and subtract fractions with different denominators by finding equivalent fractions with the same denominators, including examples where both fractions need to be converted into equivalent versions
W5	5.11.8 Use pictorial representations to	5.11.9 Convert mixed numbers into improper	**5.11.10 Convert improper fractions into**	5.11.16 Add and subtract mixed numbers by	5.11.17 Multiply proper fractions by whole

understand equivalence between improper fractions and mixed numbers	fractions by recognising fractions equivalent to 1 (e.g. $2\frac{3}{4} \rightarrow 1 + 1 + \frac{3}{4}$ $\rightarrow \frac{4}{4} + \frac{4}{4} + \frac{3}{4} = \frac{11}{4}$)	**mixed numbers by recognising fractions equivalent to 1 (e.g. $\frac{7}{3} \rightarrow \frac{3}{3} + \frac{3}{3} + \frac{1}{3}$ $\rightarrow 1 + 1 + \frac{1}{3}$ $= 2\frac{1}{3}$)**	converting into improper fractions	numbers by initially visualising multiplication as repeated addition
W6	5.11.18 Multiply proper fractions by whole numbers	**5.11.20 Multiply mixed numbers by whole numbers by first converting into improper fractions**	5.1.19 Recognise that 'of' is equivalent to multiply, and use pictorial representations to multiply proper fractions by other proper fractions	5.1.19 Add, subtract and multiply fractions and mixed numbers with different denominators	Consolidation of 5.11 Link to reasoning and problem-solving activities

Block 6

W1	Consolidation of 5.11 Link to reasoning and problem-solving activities	5.12.1 & 5.12.2 Find the perimeter of various polygons by measuring lengths of sides	5.12.3 Calculate the missing lengths of compound shapes from given lengths, and use these to calculate the perimeter of the shape	5.12.4 Solve problems relating to the perimeters of shapes, including connected shapes and using square roots	5.12.5 Find areas of complex shapes by counting squares including half squares and groups of squares
W2	5.12.6 Find the areas of compound shapes including C-shapes by dividing them into rectangles and by finding missing lengths from lengths given	5.12.7 Compare the areas of shapes by calculating or by counting squares	5.12.8 Estimate the area of irregular shapes by counting squares and parts of squares	5.12.9 Understand volume as a measurement of 3-dimensional space and visualise this using dienes or another suitable manipulative (e.g. multilink cubes)	5.12.10 Calculate the volumes of cuboids by multiplying the dimensions of height, length and depth; calculate missing lengths of cuboids where the volume and the length of two sides are known
W3	5.12.11 Read the volume of a liquid in a measuring cylinder or beaker, including those where undefined intervals need to be calculated	5.12.11 Solve problems where the difference between two volumes shown in measuring cylinders or the sum of multiples volumes shown in measuring cylinders needs to be calculated	Consolidation of 5.12 Link to reasoning and problem-solving activities	5.13.1 Understand that percentage is a way of denoting a fraction out of 100, and begin to convert between percentages and simple fractions (e.g. $\frac{1}{4}$ = 25%); recognise that 100% is equivalent to 1	**5.13.2 Express percentages as fractions and simplify these; begin to recognise the equivalent fractions for common percentages (e.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, etc)**
W4	5.13.3 Express decimals as percentages by first converting them into fractions (e.g. $0.7 \rightarrow \frac{7}{10} \rightarrow \frac{70}{100} \rightarrow$ 70%)	**5.13.4, 5.13.5 & 5.13.6 Convert between fractions, decimals and percentages for common fractions (i.e. halves, quarters, fifths, tenths) and recognise these on a number line**	**5.13.4, 5.13.5 & 5.13.6 Convert between fractions, decimals and percentages for common fractions (i.e. halves, quarters, fifths, tenths) and recognise these on a number line**	**5.13.6 Find percentages of amounts by considering percentages as a fraction and using bar models to visualise where appropriate**	5.13.6 Solve problems where fractions and percentages of amounts need to be found
W5	Consolidation of 5.13 Link to reasoning and problem-solving activities	5.14.1 Use the terms right angle, parallel and perpendicular to describe rectangles (including squares as a special case), rhombuses (including squares as a special case), parallelograms (including rhombuses, rectangles and squares as special cases), kites and trapezia	5.14.2 Use knowledge of parallelograms (including rectangles and rhombuses) to find the missing coordinate on a coordinate grid when the coordinates of three corners (vertices) are given	5.14.3 Recognise pentagons, hexagons, heptagons and octagons, and understand the difference between regular and irregular shapes, applying the term also to triangles and quadrilaterals	5.14.4 Solve problems relating to the perimeter and area of regular 2D shapes

W6	5.14.5 Recognise common 3D shapes in real contexts, including, spheres, hemispheres, cylinders, cubes, cuboids, pyramids with different bases and prisms with different bases	5.14.6 Recognise 3D shapes from different nets, and recognise which nets are valid and invalid for constructing a given shape	5.14.7 Draw cuboids and other simple 3D shapes using isometric paper	5.14.7 Visualise shapes from different angles given other views of the shape (e.g. given views from two sides, draw a view from above)	Consolidation of 5.14 Link to reasoning and problem-solving activities

Arithmetic

Fractions

Geometry

Measures & Time

Properties of number and place value

Statistics