Miss Manley's Set 2017/18

We follow the whole school plan for Year 6 in maths, but we change our curriculum in Spring 2. In the lead up to our SATS, we do arithmetic questions every day as a warm up and then focus on objectives that we need more support with. This changes each year, depending on our targets (see Spring 2 objectives).

Autumn Term 1		
Wk	**Strands**	**Weekly Summary**
1	Number and place value (NPV); Mental multiplication and division (MMD); Decimals, percentages and their equivalence to fractions (DPE); Fractions, ratio and proportion (FRP)	Read, write and compare 6-digit numbers and know what each digit represents; read, write and compare 1-, 2- and 3-place decimal numbers; multiply and divide by 10, 100 and 1000; round decimals to nearest tenth and whole number and place on a number line; convert decimals (up to 3 places) to fractions and vice-versa.
2	Mental addition and subtraction (MAS); Number and place value (NPV); Written addition and subtraction (WAS); Decimals, percentages and their equivalence to fractions (DPE); Problem solving, reasoning and algebra (PRA)	Use mental addition strategies to solve additions including decimal numbers; use column addition to add 5-digit numbers, decimal numbers and amounts of money; solve problems involving number up to 3 decimal places, choose an appropriate method to solve decimal addition.
3	Problem solving, reasoning and algebra (PRA); Mental addition and subtraction (MAS)	Express missing number problems algebraically and find pairs of numbers that satisfy equations involving two unknowns; find missing lengths and angles; understand how brackets can be used in calculation problems; use knowledge of the order of operations to carry out calculations involving the four operations, solve addition and subtraction multi-step problems using knowledge of the order of operations.
4	Measurement (MEA); Problem solving, reasoning and algebra (PRA); Number and place value (NPV)	Convert between grams and kilograms, millilitres and litres, millimetres and centimetres, centimetres and metres, metres and kilometres, and miles and kilometres; revise reading the 24-hour clock and convert 12-hour times to 24-hour; read and write Roman numerals; find time intervals using the 24-hour clock.
5	Mental addition and subtraction (MAS); Written addition and subtraction (WAS); Number and place value (NPV); Problem solving, reasoning and algebra (PRA)	Use mental addition, column subtraction and Counting up to solve subtractions of amounts of money and word problems; use mathematical reasoning to investigate.
6	Mental multiplication and division (MMD); Written multiplication and division (WMD); Mental addition and subtraction (MAS); Problem solving, reasoning and algebra (PRA); Number and place value (NPV)	Use mental multiplication strategies to multiply by numbers such as 4, 8, 5, 25, 19, 29 and 99; revise using short multiplication to multiply 4-digit numbers by 1-digit numbers and use this to multiply amounts of money; solve word problems involving multiplication including two-step problems and finding change; use long multiplication to multiply 3-digit and 4-digit numbers by teens numbers.

Autumn Term 2		
Wk	**Strands**	**Weekly Summary**
7	Number and place value (NPV); Problem solving, reasoning and algebra (PRA); Fractions, ratio and proportion (FRP)	Understand negative numbers; calculate small differences between negative numbers and negative and positive numbers; add and subtract negative numbers; compare fractions with unlike, but related, denominators; correctly use the terms fraction, denominator and numerator; understand what improper fractions and mixed numbers are and add fractions with the same denominator, writing the answer as a mixed number
8	Measurement (MEA); Geometry: properties of shapes (GPS)	Calculate the perimeter, area and volume of shapes, and know their units of measurement; understand that shapes can have the same perimeters but different areas and vice versa; calculate the area of a triangle using the formula $A = 1/2\ b \times h$; find the area of parallelograms using the formula $A =$

		b × *h* ; name and describe properties of 3D shapes; systematically find and compare nets for different 3D shapes.
9	Mental multiplication and division (MMD); Fractions, ratio and proportion (FRP); Written multiplication and division (WMD); Problem solving, reasoning and algebra (PRA)	Use mental strategies to divide by 2, 4, 8, 5, 20 and 25; find non-unit fractions of amounts; use short division to divide 3- and 4-digit numbers by 1-digit numbers, including those which leave a remainder; express a remainder as a fraction, simplifying where possible.
10	Fractions, ratio and proportion (FRP); Problem solving, reasoning and algebra (PRA); Decimals, percentages and their equivalence to fractions (DPE)	Add and subtract unit fractions with different denominators including mixed numbers; use mental strategies to find simple percentages of amounts, including money
11	Fractions, ratio and proportion (FRP)	Multiply fractions less than 1 by whole numbers, converting improper fractions to whole numbers; use commutativity to efficiently multiply fractions by whole numbers; divide unit and non-unit fractions by whole numbers; solve word problems involving fractions.

Spring Term 1		
Wk	**Strands**	**Weekly Summary**
12	Number and place value (NPV); Written addition and subtraction (WAS)	Read and write numbers with up to 7-digits, understanding what each digit represents; work systematically to find out how many numbers round to 5000000; solve subtraction of 5- and 6-digit numbers using written column method (decomposition).
13	Decimals, percentages and their equivalence to fractions (DPE); Fractions, ratio and proportion (FRP)	Multiply and divide by 10, 100 and 1000; compare and order numbers with up to three decimal places; know common fraction / decimal equivalents; multiply pairs of unit fractions and multiply unit fractions by non-unit fractions
14	Mental multiplication and division (MMD); Written multiplication and division (WMD); Problem solving, reasoning and algebra (PRA); Number and place value (NPV)	Use partitioning to mentally multiply 2-digit numbers with one decimal place by whole 1-digit numbers; multiply numbers with two decimal places; use short multiplication to multiply amounts of money; use estimation to check answers to calculations; use long multiplication to multiply 3-digit and 4-digit numbers by numbers between 10 and 30.
15	Geometry: properties of shapes (GPS); Problem solving, reasoning and algebra (PRA)	Name, classify and identify properties of quadrilaterals; explore how diagonal lines can bisect quadrilaterals; understand what an angle is and that it is measured in degrees; know what the angles of triangles, quadrilaterals, pentagons, hexagons and octagons add to and use these facts and mathematical reasoning to calculate missing angles; recognise and identify the properties of circles and name their parts; draw circles using pairs of compasses; draw polygons using a ruler and a protractor
16	Mental addition and subtraction (MAS); Number and place value (NPV); Written addition and subtraction (WAS); Problem solving, reasoning and algebra (PRA)	Add and subtract numbers using mental strategies; solve addition of 4- to 7-digit numbers using written column addition; identify patterns in the number of steps required to generate palindromic numbers; solve subtraction of 5-, 6- and 7-digit numbers using written column method (decomposition); solve additions and subtractions choosing mental strategies or written procedures as appropriate; read, understand and solve word problems
17	Written multiplication and division (WMD); Number and place value (NPV); Problem solving, reasoning and algebra (PRA)	Identity common factors and common multiples; understand that a prime number has exactly two factors and find prime numbers less than 100; understand what a composite (non-prime) number is; use long division to divide 3- and 4-digit numbers by 2-digit numbers, giving remainders as a fraction, simplifying where possible

Spring Term 2

Wk	Strands	Weekly Summary
18	Equivalent fractions	Understand what a fraction is and recap on knowledge so far. Learn how to change fractions so that they have the same denominator. We will do this through the use of practical resources and then move on to the written method for this.
19	Multiples, factors and prime numbers	This comes up on our basic skills tests weekly. Understand the definition of each term, what this means in a word problem and how to solve questions involving this terminology.
20	Addition and subtraction of money and finding change	Understand how to add decimal numbers. Know how to 'line up' decimal numbers, making sure the decimal points match. Understand how to add up to 3 decimal numbers and how to subtract decimal numbers. Apply this to knowledge to word problems. Looking at the 'counting on' method and column subtraction for finding change.
21	Data Handling – venn, carroll, line and scatter graphs	Understand how to rea and interpret data from a range of graphs. Answer questions based on this data and pose own questions.
22	Coordinates in all 4 quadrants	Plot coordinates in all 4 quadrants. Know how to reflect and translate shapes in all 4 quadrants. Spot patterns in how coordinates change when reflecting and subtracting and explain this in my own words.
	Finding percentages of a number	Find 10% of a number, by using knowledge of dividing by 10. Use this fact to find 5% and 1%. Apply this knowledge to find other percentages of numbers.

Summer Term 1

Wk	Strands	Weekly Summary
23	Number and place value (NPV); Decimals, percentages and their equivalence to fractions (DPE)	Revise reading, writing, comparing and ordering numbers with up to seven digits and decimal numbers with up to three decimal places; revise rounding decimal numbers to the nearest tenth and whole number; revise rounding big numbers to the nearest thousand, ten thousand, hundred thousand and million; revise locating a number on a number line marking numbers it lies between; revise comparing and ordering negative numbers including calculating differences between negative numbers and positive and negative numbers
24	Number and place value (NPV); Mental addition and subtraction (MAS); Written addition and subtraction (WAS); Decimals, percentages and their equivalence to fractions (DPE); Fractions, ratio and proportion (FRP); Problem solving, reasoning and algebra (PRA); Geometry: properties of shapes (GPS)	Revise adding and subtracting whole numbers and decimal numbers using mental and written methods; revise finding percentages of numbers, converting fractions, decimals and percentages and making comparisons using percentages; revise how brackets can be used in calculation problems, revise the order of operations for calculations involving the four operations; revise solving missing number problems using inverse operations; revise using trial and improvement to solve equations involving one or two unknowns, and find missing lengths and angles
25	Mental addition and subtraction (MAS); Fractions, ratio and proportion (FRP); Written multiplication and division (WMD); Mental multiplication and division (MMD); Problem solving, reasoning and algebra (PRA); Number and place value (NPV)	Revise scaling, using mental strategies for multiplying and dividing; revise solving problems involving rate; revise multiplying pairs of 2-digit numbers and finding factors of 2-digit numbers; multiply 3-digit and 4-digit numbers including decimals by whole 1-digit numbers and solve word problems involving multiplication of money and measures; use a systematic approach to solve problems involving multiplication and division, including long multiplication of 3-digit and 4-digit numbers and decimals
26	Written multiplication and division (WMD); Problem solving, reasoning and algebra (PRA); Number and	Revise using short division to find unit fractions of amounts, including decimals, and round answers to money problems according to the context; revise using long division to divide 4-digit by 2-digit numbers, giving remainders as a fraction, simplifying where possible; revise using long

	place value (NPV); Statistics (STA); Geometry: position and direction (GPD)	division to divide 3-digit and 4-digit numbers by numbers between 10 and 30, writing the fractional part of the answer as a decimal where equivalents are known; revise calculating the mean average; revise reading and marking coordinates in all four quadrants, draw simple polygons and find missing coordinates on a polygon or line

Summer Term 2		
Wk	**Strands**	**Weekly Summary**
27	Number and place value (NPV); Fractions, ratio and proportion (FRP); Measurement (MEA)	Revise equivalence simplifying fractions and changing improper fractions into mixed numbers and vice versa; revise adding and subtracting fractions with different denominators, including those which give answers greater than 1; revise multiplying pairs of fractions and multiplying and dividing fractions by whole numbers; solving problems involving ratios; read intermediate points off scales
28	Geometry: properties of shapes (GPS); Measurement (MEA); Statistics (STA)	Revise properties and classification of 2D shapes, drawing 2D shapes using ruler, protractor and compasses, parts of a circle and angles in polygons; revise calculating missing angles by knowing angle facts; use a protractor to measure and draw angles in degrees; identify and name acute, right, obtuse and reflex angles; understand perimeter, area and volume; find the perimeter of rectangles, find the area of rectangles, parallelograms and triangles, and find the volumes of cubes and cuboids; revise reading and interpreting different types of data display
29	Number and place value (NPV); Problem solving, reasoning and algebra (PRA); Geometry: position and direction (GPD); Written multiplication and division (WMD)	Use mathematical reasoning to investigate and solve problems, and to estimate and predict; solve problems using doubling, solve calculations with enormous numbers; find out about famous mathematicians including Brahmagupta and John Napier and use their different methods to multiply; use lattice multiplication to solve multiplications of 2-, 3- and 4-digit numbers; begin to compare historical multiplication methods
30	Number and place value (NPV); Problem solving, reasoning and algebra (PRA); Geometry: properties of shapes (GPS)	Explore binary numbers; solve mathematical puzzles; including using multiplication facts, find digital roots and look for patterns; explore Fibonacci sequences and Pythagoras' theorem