Year 6 Long-Term maths Plan: 2021-22

This yearly overview gives a coverage guide – changes will be made to ensure children are understanding learning and being challenged. Reasoning is woven into learning throughout the week.

Autumn Term 1		
Date	**Strands**	**Weekly Summary**
1 week	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.
1 week	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) Decimals and their equivalence to fractions	Use a range of strategies to solve addition and subtractions including decimal numbers; use column addition and subtraction to add and subtract up to 5-digit numbers, decimal numbers and amounts of money; solve problems involving numbers up to 3 decimal places, choose an appropriate method to solve decimal addition. Convert fractions and decimals.
1 week	Mental subtraction (MS); Written subtraction (WS); Number and place value (NPV); Mental multiplication (MM); Written multiplication (WM)	Use mental addition, column subtraction and counting up to solve subtractions of amounts of money and word problems; use mathematical reasoning to investigate; solve addition and subtraction multi-step problems using knowledge of the order of operations; 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 teen numbers.
1 week	Number and place value (NPV); Mental multiplication and division (MMD); Written division (WD); Mental Problem solving, reasoning (PR) Number and place value (NPV)	Use multiplication and division strategies to divide by numbers such as 4, 8, 5, 25, 19, 29 and 99; revise using short division to divide 4-digit numbers by 1-digit numbers; solve word problems involving division including two-step problems use long multiplication to; using long division to divide by 2-digit numbers.
1 week	Problem solving, reasoning and algebra (PRA); Mental addition and subtraction (MAS)	Express missing number problems algebraically; 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
1 week	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;

Autumn Term 2		
Wk	**Strands**	**Weekly Summary**
1 week	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;
1 week	Measurement (MEA); Geometry: properties of shapes (GPS)	Calculate the perimeter, area of shapes, and know their units of measurement; understand that shapes can have the same perimeters but different areas and vice versa; find the area of parallelograms using the formula $A = b \times h$
1 week	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 $A = 1/2\ b \times h$
2 weeks	Measurement (MEA); Problem solving (P)	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.
1 week	Number and place value (NPV)	Understand negative numbers; calculate small differences between negative numbers and negative and positive numbers; add and subtract negative numbers

Spring Term 1		
Wk	**Strands**	**Weekly Summary**
1 week	Fractions, ratio and proportion (FRP)	Compare fractions with unlike, but related, denominators; correctly use the terms fraction, denominator and numerator; Add and subtract unit fractions with different denominators; understand what improper fractions and mixed numbers are
1 week	Fractions, ratio and proportion (FRP)	Add and subtract unit fractions with different denominators including mixed numbers; understand what improper fractions and mixed numbers are and add fractions with the same denominator, writing the answer as a mixed number
1 week	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; revise using short division to find unit fractions of amounts

1 week	Problem solving, reasoning and algebra (PRA); Decimals, percentages and their equivalence to fractions (DPE)	Revise equivalence simplifying fractions; Convert fractions, decimals and percentages and make comparisons using percentages; revise using short division to find unit fractions of amounts
1 week	Problem solving, reasoning and algebra (PRA)	Revise multiplying and dividing by 10, 100 and 1000; use strategies to find simple percentages of amounts, including money; describe ratio and use ratio to solve problems; find fractions and simplify ratios

Spring Term 2		
Wk	**Strands**	**Weekly Summary**
1 week	Geometry: properties of shapes (GPS)	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 quadrilaterals and use these facts and mathematical reasoning to calculate missing angles
1 week	Geometry: properties of shapes (GPS)	Know what the angles of triangles, pentagons, hexagons and octagons add to and use these facts and mathematical reasoning to calculate missing angles
1 week	Geometry: properties of shapes (GPS)	Know what the angles of triangles and quadrilaterals add to; draw polygons using a ruler and a protractor
1 week	Geometry: position and direction (GPD)	Read and plot coordinates in all four quadrants, draw and translate simple polygons using coordinates and find missing coordinates for a vertex on a polygon; draw and reflect simple polygons in both the x-axis and y-axis using coordinates
1 week	Statistics (STA)	Calculate and understand the mean average; construct and interpret distance/time line graphs where intermediate points have meaning, including conversion line graphs; understand pie charts are a way of representing data; using percentages, interpret and construct pie charts

Summer Term 1		
Wk	**Strands**	**Weekly Summary**

1 week	Number and place value (NPV); Mental multiplication and division (MMD); Decimals, percentages and their equivalence to fractions (DPE)	Read, write and compare 8-digit numbers and know what each digit represents read, write and compare 1-, 2- and 3-place decimal numbers; round any whole number and decimals to a required degree of accuracy
1 week	Written multiplication (WM); Written division (WD); Number and place value (NPV)	Multiply one-digit numbers with up to two decimal places by whole numbers; use written division methods in cases where the answer has up to two decimal places
1 week	Written multiplication (WM); Written division (WD); Number and place value (NPV)	Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication; divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
1 week	Problem solving, reasoning and algebra (PRA); Mental addition and subtraction (MAS)	Use simple formulae; generate and describe linear number sequences; express missing number problems algebraically
2 weeks	Measurement (MEA); Problem solving, reasoning and algebra (PRA); Number and place value (NPV)	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate; use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places; convert between miles and kilometres

Summer Term 2		
Wk	**Strands**	**Weekly Summary**
1 week	Measurement (MEA); Problem solving (P)	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.
1 week	Fractions, ratio and proportion (FRP); Problem solving, reasoning and algebra (PRA); Decimals, percentages and their equivalence to fractions (DPE)	use common factors to simplify fractions; use common multiples to express fractions in the same denomination; compare and order fractions, including fractions > 1
1 week	Fractions, ratio and proportion (FRP); Decimals, percentages and their equivalence to fractions (DPE);	Convert fractions, decimals and percentages and make comparisons using percentages; find simple percentages of amounts, including money
1 week	Fractions, ratio and proportion (FRP)	Describe ratio and use ratio to solve problems; simplify ratios
1 week	Measurement (MEA); Geometry: properties of shapes (GPS)	Recognise that shapes with the same areas can have different perimeters and vice versa; use formulae for area and volume of shapes; calculate the area of parallelograms and triangles

| 1 week | Geometry: properties of shapes (GPS) | Recognise, describe and build simple 3-D shapes, including making nets; illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius; revise finding unknown angles in any triangles, quadrilaterals, and regular polygons |