Year 5 Maths Planning

Area of Maths	Knowledge/Learning Content	
Number and Place Value	• Read, write, order and compare numbers to 10,000, 100,000 and 1 000 000 and determine the value of each digit. • Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000. • Find 10, 100, 1000, 10,000 and 100,000 more or less than a given number. • Understand negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero. • Compare and order negative numbers. • Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000. • Solve number problems and practical problems that involve all of the above. • Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	Use and apply place value knowledge across a variety of contexts through: • Word problems • Real life problem solving • Investigations • Games • Find the difference • Verbal and written reasoning Use correct mathematical language.
Addition and Subtraction	• Use efficient mental strategies using knowledge of related facts. • Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). • Add and subtract numbers mentally with increasingly large numbers. • Use estimating and rounding to check answers to calculations. • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	Reason and solve problems which include: • Addition and subtraction multi-step word problems • Missing numbers • Using number facts • Investigations • Bar method • Formal method Use correct mathematical language.
Multiplication and Division	• Recall multiplication and division facts for multiplication tables up to 12 × 12. • Use place value, known and derived facts to multiply and divide mentally, including multiplying by 0 and 1; dividing by 1; multiplying together three numbers. • Recognise and use factor pairs and commutativity in mental calculations.	Reason and solve problems which include: • Using efficient strategies

	• Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. • Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. • Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. • Find prime numbers and prime factors. • Find and recall square numbers. • Calculate cube numbers. • Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers. • Multiply ad 3-digit number by a 2-digit number. • Multiply and divide numbers mentally drawing upon known facts. • Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context. • Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. • Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. • Solve problems involving multiplication and division, including scaling.	• Multiplication and division multi-step word problems including knowledge of factors, multiples, squares and cubes. • Number families/missing numbers. • Drawing and annotating shapes. • Investigations • Formal method Use correct mathematical language.
Fractions/Decimals and percentages	• Find fractions equivalent to a unit fraction and a non-unit fraction. • Compare and order fractions whose denominators are all multiples of the same number. • Identify, name and write equivalent fractions. • Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 = 6/5 = 11/5].	Reason and solve problems which involve: • adding and subtracting fractions and mixed numbers • knowing fraction, decimal and percentage equivalents • numbers up to three decimal places.

	• Add and subtract fractions with the same denominator and multiples of the same number. • Add and subtract fractions to and from mixed numbers. • Subtract two mixed numbers. • Multiply proper fractions and mixed numbers by whole numbers. • Calculate a fraction of a quantity/amount. • Read and write decimal numbers as fractions [for example, 0.71 = 71/100]. • Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. • Round decimals with two decimal places to the nearest whole number and to one decimal place. • Add and subtract decimals with the same and different number of decimal places. • Understand thousandths as fractions and decimals. • Read, write, order and compare numbers with up to three decimal places. • Multiply and divide by 10, 100, 1000. • Recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator 100, and as a decimal. • Know percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those with a denominator of a multiple of 10 or 25.	• Efficient strategies for adding and subtracting decimals • real life problem solving Use correct mathematical language.
Measurement	• Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre). • Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. • Measure and calculate the perimeter of rectilinear and polygons in centimetres and metres.	Reason and solve problems, including word problems which include: • Converting and estimating units of measurement including time • Using all four operations with, length, mass, volume, money, scaling Use correct mathematical language.

	• Calculate and compare the area of rectangles (including squares) using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes. • Estimate and compare volume and capacity using cubic centimetres. • Convert between units of time. Calculate with timetables.	
Geometry: properties of shape	• Identify 3-D shapes, including cubes and other cuboids, from 2-D representations. • Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. • Draw given angles and measure them in degrees up to 180°. • Identify: angles at a point and one whole turn (total 360°) angles at a point on a straight line and ½ a turn (total 180°) other multiples of 90°. • Use the properties of rectangles to deduce related facts and find missing lengths and angles. • Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	Reason and solve problems, including word problems which involve: • Knowing properties of 2 and 3-D shapes • Recognising angle and lines and reasoning about them • Drawing and annotating shapes • Problems involving protractors Use correct mathematical language.
Geometry: position and direction	• Read and plot coordinates in the first quadrant. • Find lines of symmetry in 2D shapes. • Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.	Reason and solve problems involving: • Drawing and annotating shapes • Protractors • Coordinates Use correct mathematical language.
Statistics	• Solve comparison, sum and difference problems using information presented in a line graph. • Draw, complete, read and interpret information in tables, including timetables.	Reason and solve a variety of one and two-step questions using the information presented in line graphs and tables. Use correct mathematical language.