Year Six – end of year maths expectations

AUTUMN ONE

Place Value	Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit	Round any whole number to a required degree of accuracy	Use negative numbers in context, and calculate intervals across zero	Solve number and practical problems that involve all the above
Written Calculations	dd and subtract whole numbers with more than 4 digits (Year 5 objective)	Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of multiplication	Multiply one-digit numbers with up to two decimal places by whole numbers	Divide up to 4 digits by a two-digit whole number and interpret remainders as whole number remainders, fractions, or by rounding
	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	Solve problems involving addition, subtraction, multiplication and division	Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles
2d Shapes	Draw 2-D shapes using given dimensions and angles	Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons	Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius	Associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g 3/8)
Fractions and Decimals	Identify common factors, common multiples and prime numbers	Use common factors to simplify fractions; use common multiples to express fractions in the same denomination	Identify the value of digits in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places	
	Compare and order fractions, including fractions > 1			

AUTUMN TWO

Converting Units of measure	Pie Charts	Percentages	Area and Perimeter
Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate	Interpret and construct pie charts and use these to solve problems	Recall and use equivalences between simple fractions, decimals and percentages	Recognise that shapes with the same areas can have different perimeters and vice versa
			Calculate the area of parallelograms and triangles
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 up to three decimal places	**Mental Methods**	Solve problems involving the calculation of percentages [e.g. of measures, and such as 15% of 360]	Use simple formulae
	Use their knowledge of the order of operations to carry out calculations involving the four operations		Recognise when it is possible to use formulae for area and volume of shapes
Interpret and construct line graphs and use these to convert units of measure	Perform mental calculations, including with mixed operations and large numbers		Express missing number problems algebraically

SPRING ONE

3d Shapes	Recap of written methods	Ratio and Proportion
Recognise, describe and build simple 3-D shapes, including making nets	Recap written methods for four operations, including numbers with decimal places	Interpret and construct line graphs and use these to solve problems
Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres and cubic metres, and extending to other units	Use written division methods in cases where the answer has up to two decimal places	Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
	Solve problems which require answers to be rounded to specified degrees of accuracy	
Adding and Subtracting Fractions	**Growing Patterns**	Convert between miles and kilometres
Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	Generate and describe linear number sequences	Solve problems involving similar shapes where the scale factor is known or can be found
	Use simple formulae	

SPRING TWO		
Coordinate Grid	Multiplication and Division of Fractions	Bar Model for Solving Problems
Describe positions on the full coordinate grid (all four quadrants)	Multiply simple pairs of fractions, writing the answer in its simplest form	Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
Draw and translate simple shapes on the coordinate plane, and reflect them in the axes	Divide proper fractions by whole numbers	Find pairs of numbers that satisfy an equation with two unknowns
The Mean		Enumerate possibilities of combinations of two variables
Calculate and interpret the means as an average		

SUMMER ONE	Review all objectives taught this year	Review assessment and plan and teach objectives as required
SUMMER TWO	Use and apply mathematical concepts	Problem solve