

Queens' Federation Termly Progression in Maths – Year 6

Objective	Autumn	Spring	Summer
Number – number and place value			
read, write, order and compare numbers up to 10 000 000 and determine the value of each digit	Read and write numbers up to at least 1 000 000 and determined the value of each digit.	Read, write and order numbers up to at least 1 000 000 and determined the value of each digit.	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	Round any whole number to the nearest 10, 100, 1000 and 10, 000	Round any whole number to the nearest 10, 100, 1000 and 10, 000 and 100,000	round any whole number to a required degree of accuracy
use negative numbers in context, and calculate intervals across zero	Interpret negative numbers in context (counting forwards and backwards) through zero	Complete simple calculations using negative numbers	Complete calculations and problem practical problems, using negative numbers
solve number and practical problems that involve all of the above	Complete simple problems using numbers up to 1 000 000 and negative numbers.	Complete simple problems using numbers up to 1 000 000, rounding and negative numbers.	Complete simple problems using numbers up to 10 000 000, rounding and negative numbers.
Number – addition, subtraction, multiplication and division			
multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication	Multiply two digit numbers by two digit numbers, using long multiplication	Multiply two digit numbers by three digit numbers, using long multiplication	Multiply two digit numbers by four digit numbers, using 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	Divide 4 digit numbers by 1 one digit, using a formal written method and interpret remainders	Divide 4 digit numbers, by 2 digit numbers, using a formal written method and understanding remainders.	Divide 4 digit numbers, by 2 digit numbers, using a formal written method, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context	divide numbers up to 4 digits by a one-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context	divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context	divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
perform mental calculations, including with mixed operations and large numbers	Add and subtract numbers mentally with increasing large numbers.	Perform mental calculations, including with mixed operations	Perform mental calculations, including with mixed operations and large numbers
identify common factors, common multiples and prime numbers	Identify multiples and factors of numbers	Understand prime numbers and composite numbers	identify common factors, common multiples and prime numbers

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use their knowledge of the order of operations to carry out calculations involving the four operations	Understand how to solve problems with all four operations.		use their knowledge of the order of operations to carry out calculations involving the four operations
solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	To understand two step problems involving either addition or subtraction.	To understand multistep problems involving either addition or subtraction	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	solve problems involving addition, subtraction, multiplication and division	solve problems involving addition, subtraction, multiplication and division	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		Understand how to estimate and round numbers.	use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
Number – fractions (including decimals and percentages)			
use common factors to simplify fractions; use common multiples to express fractions in the same denomination	Identify, name and write equivalent fractions of a given fraction.		use common factors to simplify fractions; use common multiples to express fractions in the same denomination
compare and order fractions, including fractions > 1	Compare and order fractions, where the denominator is a multiple of the same number	compare and order fractions, including fractions > 1	
add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions		Add a subtract fractions with the same denominator (supported by materials and diagrams)	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]		Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]
divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$]			divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$]

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associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$]	associate simple fraction with division and calculate decimal fraction equivalents [for example, 0.5] for a simple fraction [for example, $\frac{1}{2}$]	associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$]	
identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places	Multiply and divide numbers by 10, 100 and 1000.	Identify the value of each digit in numbers given to three decimal places	identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places
multiply one-digit numbers with up to two decimal places by whole numbers		multiply one-digit numbers with up to one decimal places by whole numbers	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	Use written division methods in cases where the answer has remainders and link these to decimals.	use written division methods in cases where the answer has one decimal place	use written division methods in cases where the answer has up to two decimal places
recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	Recognise simple fractions as percentages and decimals (e.g. 50%, 75%)	To understand how to convert between fractions, decimals and percentages.	recall and use equivalences between simple fractions, decimals and percentages, including in different contexts
Ratio and proportion			
solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts	???	???	???
solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison		To solve simple problems involving finding percentages of number.	
solve problems involving similar shapes where the scale factor is known or can be found			solve problems involving similar shapes where the scale factor is known or can be found
solve problems involving unequal sharing and grouping using knowledge of fractions and multiples			solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
Algebra			

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use simple formulae		use simple formulae (e.g. how to find the perimeter)	use simple formulae
generate and describe linear number sequences			generate and describe linear number sequences
express missing number problems algebraically	To solve missing number problems.	express missing number problems algebraically	
find pairs of numbers that satisfy an equation with two unknowns	Solve problems using a trial and error method		find pairs of numbers that satisfy an equation with two unknowns
enumerate possibilities of combinations of two variables		enumerate possibilities of combinations of two variables	
Measurement			
solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate	Convert between units of measure, using notion of two decimal places	solve problems involving the calculation and conversion of units of measure, using decimal notation up to two decimal places where appropriate	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 units of measure, using notion of two decimal places	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	Convert between units of measure, using notion of two decimal places		
recognise that shapes with the same areas can have different perimeters and vice versa	To understand how to calculate area and perimeter of compound shapes	recognise that shapes with the same areas can have different perimeters and vice versa	
recognise when it is possible to use formulae for area and volume of shapes	To use formulae to calculate area and perimeter		To use formulae to calculate volume.
calculate the area of parallelograms and triangles	Calculate the area of right angled triangles.	Calculate the area of triangles	calculate the area of triangles (moving on to parallelograms)

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calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm ³) and cubic metres (m ³), and extending to other units [for example, mm ³ and km ³].			calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm ³) and cubic metres (m ³), and extending to other units [for example, mm ³ and km ³].
Geometry – properties of shapes			
draw 2-D shapes using given dimensions and angles	Recognise and name 2D shapes, identifying their properties.	Understand how to accurately measure angles	draw 2-D shapes using given dimensions and angles
recognise, describe and build simple 3-D shapes, including making nets	To recognise and name 3D shapes, identifying their properties.	recognise, describe and build simple 3-D shapes, including making nets	
compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons	compare and classify geometric shapes based on their properties and sizes, including knowledge of angle sums in different polygons		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			illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles		recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	
Geometry – position and direction			
describe positions on the full coordinate grid (all four quadrants)	describe positions on one quadrant coordinate grid	describe positions on the full coordinate grid (all four quadrants)	
draw and translate simple shapes on the coordinate plane, and reflect them in the axes			draw and translate simple shapes on the coordinate plane, and reflect them in the axes
Statistics			
interpret and construct pie charts and line graphs and use these to solve problems	Interpret and construct bar graphs and line graphs.	Interpret and construct bar graphs and line graphs, and use these to solve problems. Begin to understand pie charts.	Interpret and construct pie charts and use these to solve problems.
calculate and interpret the mean as an average		Understand the mean, median and mode.	