Mathematics Curriculum Progression – Year 5

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When	Unit	National Curriculum Coverage	Progressive small steps of learning	Vocabulary to be recalled from prior learning	New Vocabulary
Autumn	**Decimal Fractions**	Number & Place value Number Facts	Pupils identify tenths as part of a whole Pupils describe and represent tenths as a decimal fraction Pupils count in tenths in different ways Pupils describe and write decimal numbers with tenths in different ways Pupils compare and order decimal numbers with tenths Pupils explain that decimal numbers with tenths can be composed additively Pupils explain that decimal numbers with tenths can be composed multiplicatively Pupils use their knowledge to calculate with decimal numbers within and across one whole Pupils use their knowledge to calculate with decimal numbers using mental methods Pupils use their knowledge to calculate with decimal numbers using column addition and subtraction Pupils use representations to round a decimal number with tenths to the nearest whole number Pupils identify hundredths as part of a whole Pupils describe and represent hundredths as a decimal fraction Pupils describe and write decimals numbers with hundredths in different ways Pupils compare and order decimal numbers with hundredths Pupils explain that decimal numbers with hundredths can be partitioned in different ways Pupils use their knowledge of decimal place value to convert between and compare metres and centimetres Pupils explain that different lengths can be composed additively and multiplicatively Pupils use their knowledge of decimal place value to solve problems in different contexts Pupils use their knowledge to calculate with decimal numbers up to and bridging one tenth Pupils use their knowledge to calculate with decimal numbers using column addition and subtraction Pupils round a decimal number with hundredths to the nearest tenth Pupils round a decimal number with hundredths to the nearest whole number Pupils read and write numbers with up to 3 decimal places Pupils compare and order numbers with up to 3 decimal places	Rounding, Tenths, Equal Parts, Compare, Decimal, Partition, Number Facts, Bridging, Decimal Number, Regrouping, Place Value, Decimal Point, Convert	Additively, Factor, Product, Hundredth, Thousandth, Multiplicative, Interval
	Money	Number & Place value Number Facts	Pupils explain and represent whole pounds as a quantity of money Pupils explain and represent whole pounds and pence as a quantity of money Pupils convert quantities of money between pounds and pence Pupils explain how to compare amounts of money Pupils use their knowledge of money to solve real-life problems Pupils use their knowledge of addition to efficiently add commonly used prices Pupils use their knowledge of subtraction to calculate the change due when paying whole pounds or notes Pupils use and explain the most efficient strategies when adding quantities of money Pupils use and explain the most efficient strategies when subtracting quantities of money Pupils find the change when purchasing several items Pupils use the most efficient and reliable strategy to find the change when purchasing several items	Smallest Ascending Descending Cheapest Most expensive Addend Adjust Round	Difference Change Altogether Regrouping Minuend Subtrahend Exchange
	Negative Numbers	Number & Place Value	Pupils represent a change story using addition and subtraction symbols Pupils interpret numbers greater than and less than zero in different contexts Pupils read and write negative numbers Pupils explain how the value of a number relates to its position from zero Pupils identify and place negative numbers on a number line Pupils interpret sets of negative and positive numbers in a range of contexts Pupils use their knowledge of positive and negative numbers to calculate intervals Pupils explain how negative numbers are used on a coordinate grid Pupils use their knowledge of positive and negative numbers to interpret graphs	Coordinates, positive, negative, temperature, fewer	Quadrant, axis-axes, interval, positive change, negative change
	Short Multiplication and Division	Number facts Multiplication and Division	Pupils explain why the product stays the same when one factor is doubled and the other is halved Pupils explain the effect on the product when scaling the factors by the same amount Pupils use their knowledge of equivalence when scaling factors to solve problems Pupils explain the effect on the quotient when scaling the dividend and divisor by 10 Pupils explain the effect on the quotient when scaling the dividend and divisor by the same amount Pupils explain how to multiply a three-digit by a two-digit number Pupils explain how to accurately use the method of long multiplication to multiply two, two-digit numbers (no regrouping of ones to tens) Pupils explain how to accurately use the method of long multiplication (with regrouping of ones to tens) Pupils explain how to accurately use the method of long multiplication to multiply a three-digit by a two-digit number Pupils explain how to accurately use the method of long multiplication to multiply a four-digit by a two-digit number Pupils divide a three-digit number by a single-digit number using partitioning and representations (no exchanging, no remainders)	Product exchange, doubled, halved	Factor, Quotient, diviend, divisor, equivalence, scaling

			Pupils divide a three-digit number by a single-digit number using partitioning and representations (one exchange, no remainders) Pupils divide a three-digit number by a single-digit number using partitioning and representations (with exchanging and remainders) Pupils divide a three-digit number by a single-digit number using short division Pupils divide a three-digit number by a single-digit number using short division (with exchanging and remainders) Pupils solve short division problems accurately when the hundreds digit is smaller than the divisor Pupils will use efficient strategies of division to solve problems		
Spring	**Area and Scaling**	Geometry	Pupils explain what area is and can measure using counting as a strategy (1) Pupils explain what area is and can measure using counting as a strategy (2) Pupils explain how to make different shapes with the same area Pupils explain how to compare the area of different shapes Pupils measure the area of flat shapes area using square centimetres Pupils measure the area of flat shapes area using square metres Pupils calculate the area of a rectangle using multiplication Pupils calculate the area of rectilinear shapes Pupils use their knowledge of area to solve problems Pupils compare and describe lengths by using their knowledge of multiplication Pupils use their knowledge of multiplication to solve comparison and change problems Pupils compare and describe lengths by using their knowledge of division Pupils use their knowledge of division to solve comparison and change problems Pupils compare and describe measurements by using their knowledge of multiplication and division (mass/capacity/time) (1) Pupils compare and describe measurements by using their knowledge of multiplication and division (mass/capacity/time) (2) Pupils describe the changes in measurements using their knowledge of multiplication and division Pupils use their knowledge of multiplication and division to solve comparison and change problems	**Area, ascending, descending, length , width, comparison, change**	**Square units, rectilinear, square metres, compound, dimensions, mass, capacity, volume**
	Calculating with decimal fractions	Multiplication & Division	Pupils explain the effect of multiplying and dividing a number by 10, 100 and 1,000 (1) Pupils explain the effect of multiplying and dividing a number by 10, 100 and 1,000 (2) Pupils use their knowledge of multiplication and division by 10/100/1,000 to convert between units of measure (length) Pupils use their knowledge of multiplication and division by 10/100/1,000 to convert between units of measure (mass and capacity) Pupils explain how to use known multiplication facts and unitising to multiply decimal fractions by whole numbers (tenths) Pupils explain how to use known multiplication facts and unitising to multiply decimal fractions by whole numbers (hundredths) Pupils use their knowledge of multiplying decimal fractions by whole numbers to solve measures problems Pupils explain the relationship between multiplying by 0.1 dividing by 10 Pupils explain the relationship between multiplying by 0.01 dividing by 100 Pupils explain how to use multiplying by 10 or 100 to multiply one-digit numbers by decimal fractions (1) Pupils explain how to use multiplying by 10 or 100 to multiply one-digit numbers by decimal fractions (2) Pupils explain how to use the size of the multiplier to predict the size of the product compared to the multiplicand Pupils explain how to use multiplying by 10 or 100 to divide decimal fractions by one-digit numbers (1) Pupils explain how to use multiplying by 10 or 100 to divide decimal fractions by one-digit numbers (2)	**Tenth, Hundredth, Equivalent**	**Mass, dividend, quotient, scaling, factor, product, decimetre**
	Factors, Multiples and Primes	Multiplication & Division	Pupils explain what 'volume' is using a range of contexts Pupils describe the units used to measure volume Pupils explain how to calculate the volume of a cuboid Pupils explain what a cube number is Pupils use their knowledge of calculating volume to solve problems in a range of contexts Pupils explain how to calculate the volume of compound shapes Pupils explain the use of the commutative and distributive laws when multiplying three or more numbers Pupils explain the reasons for changing two-factor multiplication calculations to three-factor multiplications Pupils explain what a factor is and how to use arrays and multiplication/division facts to find them Pupils explain how to systematically find all factors of a number and how they know when they have found them all Pupils use a complete list of factors to explain when a number is a square number Pupils explain how to identify a prime number or a composite number Pupils explain how to identify a common factor or a prime factor of a number Pupils explain how to identify a multiple or common multiple of a number Pupils use knowledge of properties of number to solve problems in a range of contexts Pupils explain how to use the factor pairs of '100' to solve calculations efficiently	**Factor, multiple, product**	**Common multiple, volume, cubic centimetre, cubic metre, commutative law, associative law, square number, prime number, composite number**

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Summer	**Fractions**	Fractions	Pupils explain the relationship between repeated addition of a proper fraction and multiplication of fractions (unit fractions) Pupils explain the relationship between repeated addition of a proper fraction and multiplication of fractions (non-unit fractions) Pupils multiply a proper fraction by a whole number (within a whole) Pupils multiply a proper fraction by a whole number (greater than a whole) Pupils multiply an improper fraction by a whole number Pupils multiply a mixed number by a whole number (product is within a whole) Pupils multiply a mixed number by a whole number (product is greater than a whole) Pupils find a unit fraction of a quantity Pupils explain the relationship between finding a fraction of a quantity and multiplying a whole number by a unit fraction Pupils explain the relationship between dividing by a whole number and multiplying a whole number by a unit fraction Pupils use their knowledge of multiplying a whole number by a unit fraction to solve problems Pupils find a non-unit fraction of a quantity (mental calculation) Pupils find a non-unit fraction of a quantity (written calculation) Pupils multiply a whole number by a proper fraction Pupils explain when a calculation represents scaling down and when it represents repeated addition Pupils find the whole when the size of a unit fraction is known Pupils find a unit fraction when the size of a non-unit fraction is known Pupils find the whole when the size of a non-unit fraction is known Pupils find the unit fraction when the size of a non-unit fraction is known Pupils use representations to describe and compare two fractions (1/4 and 3/12) Pupils use representations to describe and compare two fractions (1/5 and 5/10) Pupils use representations to describe and compare two fractions (pouring context) Pupils correctly use the language of equivalent fractions Pupils explain the vertical relationship between numerators and denominators within equivalent fractions (1/5, 1/3 and equivalent) Pupils use their knowledge of the vertical relationship to solve equivalent fractions problems Pupils explain the horizontal relationship between numerators and denominators across equivalent fractions (1/5, 1/3 and equivalent) Pupils explain the relationship within families of equivalent fractions Pupils use their knowledge of equivalent fractions to solve problems Pupils explain and represent how to divide 1 into different amounts of equal parts Pupils use their knowledge of common equivalents to compare fractions with decimals Pupils practise recalling common fraction-decimal equivalents Pupils use their knowledge of common fraction-decimal equivalents to solve conversion problems in a range of contexts Pupils use their knowledge of common equivalents to compare fractions with decimals beyond one Pupils use their knowledge of simplifying calculations by substitution to solve problems in a range of contexts	**Whole number** **Mixed number** **Fractional part** **Unit fraction** **Improper fraction** **Equivalent fractions** **Subtrahend** **Minuend** **Commutative**	**Equivalent Fractions** **Non-unit fraction** **Product** **Scaling**
	Converting Units	Number & Place Value	Pupils apply memorised unit conversions to convert between units of measure (larger to smaller units - whole number conversions) Pupils apply memorised unit conversions to convert between units of measure (smaller to larger units - whole number conversions) Pupils convert from and to fraction and decimal fraction quantities of larger units Pupils derive common conversions over 1 Pupils carry out conversions that correspond to 100 parts Pupils solve measures problems involving different units Pupils understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints Pupils convert between miles and kilometres Pupils solve problems involving converting between units of time	**Equivalent, Convert, Grams, Kilograms, Metres, Millimetres, Litres Millilitres**	**Metric, Imperial**

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	Angles	Geometry	Pupils compare the size of angles where there is a clear visual difference Pupils use the terms acute, obtuse and reflex when describing the size of angles or amount of rotation with relation to right angles Pupils use a unit called degrees (°) as a standard unit to measure angles Pupils estimate the size of angles in degrees using angle sets Pupils measure the size of angles accurately using a protractor Pupils draw angles accurately using a protractor	**Quarter turn** **Half turn** **Three quarter turn** **Full turn** **Clockwise** **Anticlockwise**	**Acute angle** **Obtuse angle** **Reflex angle** **Degrees°**