## End of Year Maths Expectations

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Number and Place Value
Year 1
Count to and across 100, forwards and backwards from 0 or 1 or any given number
Identify, read and write numbers in numerals to 100
Read and write numbers from 1 to 20 in numerals and words
Given a number, identify the number that is one more or less within 100
Identify and represent numbers using objects and pictorial representations, including the numberline, within 100
Compare and order numbers up to 100, using language of comparison (greater than > , less than < , equal to = )
Solve simple problems involving numbers up to 100
Reason about numbers up to 100
Recognise place value of numbers beyond 20 and demonstrate understanding by partitioning – including using practical apparatus and part-whole models
Year 2
Count objects to 100 in numerals and words
Read and write numbers to 100 in numerals and words
Recognise place value of two digit numbers using practical apparatus
Compare numbers from 0 to 100 using < > =
Partition two-digit numbers in different ways
Position numbers from 0 to 100 on an empty number line
Estimate and represent numbers in different ways e.g. using objects, counting or on a number line
Order numbers and sets of objects from 0 to 100
Solve problems using place value knowledge and number facts
Year 3
Read and write numbers to 1000 in numerals and words
Compare objects and numbers using < > = and order numbers to 1000
Identify 10 and 100 more or less than a given number within 1000
Identify place value of each digit in numbers up to 1000 and partition into hundreds, tens and ones
Identify, represent and estimate numbers within 1000 using different representations (including on a numberline)
Solve number problems and practical problems using place value knowledge (567=+60+7)
Reason about number and place value within 1000
Year 4
Count forwards and backwards through zero (positive and negative whole numbers)
Read and write numbers to 10,000 in numerals and words
Identify 10, 100 and 1000 more or less than a given number within 10,000
Compare using < > = and order numbers to 10,000
Round three-digit and four-digit numbers to the nearest 10, 100 or 1000
Identify place value of each digit in numbers up to 10,000 and partition into thousands, hundreds, tens and ones
Represent three-digit numbers using different representations (including using a numberline)
Reason about numbers and place value
Solve problems, including empty box problems
Year 5
Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000
Read and write numbers to 1,000,000
Compare and order numbers to 1,000,000
Recognise the place value of each digit and partition six-digit numbers
Round numbers up to 1,000,00 to the nearest 10, 100, 1000, 10,000 or 100,000
Solve problems using place value knowledge, including adding and subtracting 10, 100, 1000, 10,000 or 100,000
Count forwards and backwards through zero including positive and negative numbers
Interpret and use negative numbers in context
Read and write roman numerals to 500, then 1000
Recognise some years written in Roman numerals
Year 6
Read and write numbers to 10,000,000
Compare and order numbers within 10,000,000
Identify the place value of each digit in numbers with up-to seven digits and partition
Round numbers up to 10,000,000 to the nearest 10, 100, 1000, 10,000, 100,000 and 1,000,000
Interpret and use negative numbers in context
Calculate intervals across zero
Use knowledge of place value to solve number and practical problems
Solve problems involving negative numbers

Addition and Subtraction
Year 1
Read, write and interpret mathematical statements + - =
Use vocabulary related to + and -
Add a one digit number, including zero, to a number up to 20
Subtract a one digit number, including zero, from a number up to 20
Solve simple one step word problems involving numbers to 20
Solve missing number problems involving adding to 20 and subtracting from 20- including comparison of addition and subtraction statements
Represent, use and memorise number bonds and related addition/subtraction facts within 20
Year 2
Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20
Recall and use addition and subtractions facts to 20 fluently and derive pairs of multiples of 10 with totals up to 100
Show that addition can be done in any order but subtraction cannot
Recognise and use inverse relationships between addition and subtraction of two digit numbers
Add three one-digit numbers using objects, pictures and mentally
Add a two-digit numbers and a one-digit number within 100 using concrete objects
Subtract a one-digit numbers from two-digit numbers within 100 using concrete objects
Add tens to a two-digit number within 100 (no regrouping/bridging)
Subtract a one-digit number from a two-digit number within 100 (no regrouping/bridging)
Add two two-digit numbers using an efficient strategy
Subtract two two-digit numbers using an efficient strategy
Solve one step word problems involving money and measures
Solve missing number/empty box problems using addition/subtraction and understanding of the inverse
Year 3
Add a three-digit numbers and ones, within 1000, mentally
Add a three-digit numbers and tens, within 1000, mentally
Add a three-digit numbers and hundreds, within 1000, mentally
Add numbers with up to three digits using short written method
Subtract a three-digit number and ones within 1000 mentally
Subtract a three-digit number and tens within 1000 mentally
Subtract a three-digit number and hundreds within 1000 mentally
Subtract numbers numbers with up to three digits using short written method
Use inverse operations to check answers
Estimate the answer to a calculation
Solve two step word problems that involve adding and subtracting three-digit and two-digit numbers
Year 4
Make a sensible estimate
Use a formal written method to add a three-digit number to a four-digit number and two four-digit numbers
Use a formal written method to subtract a three-digit from a four-digit, and a four-digit number from a four-digit number
Use the inverse to check answers to a calculation
Solve one step and two step word problems involving addition/subtraction (including money and measures)
Year 5
Add numbers with more than four digits using formal written method
Subtract numbers with more than four digits using formal written method
Use rounding to estimate and check answers
Solve one-step, two-step and multi-step addition and subtraction word problems involving money and measures
Add larger numbers and decimals mentally using jottings
Subtract larger numbers and decimals mentally using jottings
Year 6
Use estimating, rounding and inverse operations to check answers
Add and subtract mentally using mental methods
Use my knowledge of the order of operations (BIDMAS) to carry out calculations
Solve multi-step word problems involving addition and subtraction

Multiplication and Division
Year 1 Count forwards and backwards in multiples of 2
Count forwards and backwards in multiples of 10
Count forwards and backwards in multiples of 5
Double numbers up to 10 + 10 using practical resources
Solve practical problems involving combining groups of 2, 5 or 10 and making arrays (with use of x sign)
Solve practical problems involving sharing equally or putting into equal groups (with use of the ÷ sign)
Recognise odd and even numbers to 20
Year 2
Count forwards from 0 and backwards in 2's and 10's
Count forwards from 0 and backwards in 5's
Recall and use multiplication facts for the 2x, 10x and 5x tables
Recall and use division facts for the 2x, 10x and 5x tables
Calculate mathematical statements for multiplication and division and write them
Show that multiplication of two numbers can be done in any order and that division of two numbers cannot be done in any order
Use the inverse relationship to solve missing number problems
Solve simple one step word problems involving multiplication and division
Year 3
Count forwards from 0 and backwards in 4s, 8s, 50s and 100s
Recall and use multiplication facts for the 2x, 5x, 10x, 3x, 4x and 8x tables
Recall and use division facts for the 2X, 5X, 1UX, 3X, 4X and 8X tables
Write and calculate mathematical statements for multiplication using the 2x, 5x, 10x, 3x, 4x and 8x tables, including for two-digit numbers times one-digit
Use the inverse relationship between multiplication and division to solve missing number problems
Multiply a two digit by a one-digit number using the expanded multiplication method
Multiply a two digit by a one-digit number using the short formal method
Solve problems including missing number, positive integer scaling and correspondence
Year 4
Count in multiples of 25 and 1000
Count in multiples of 3 and 6 forwards and backwards
Recall and use multiplication facts for the 6x tables
Recall and use division facts for the 6x tables
Recall and use multiplication facts for the 9y tables
Recall and use division facts for the 9x tables
Count in multiples of 7 forwards and backwards
Recall and use multiplication facts for the 7x tables
Recall and use division facts for the 7x tables
Count in multiples of 11 forwards and backwards
Recall and use multiplication facts for the 11x tables
Recall and use division facts for the 11x tables
Count in multiples of 12 forwards and backwards
Recall and use division facts for the 12x tables
Recognise and use factor pairs of numbers using known multiples
Multiply by 1 and 0. divide by 1
Use short multiplication to multiply two and three-digit numbers by a one-digit number
Use distributive law to multiply a two-digit number by a one digit number mentally
Use partitioning to divide a two-digit number by a one digit number mentally
Solve word problems including distributive law, positive integer scaling and correspondence
Year 5
Identify multiples and factors
Find all factor pairs of a number
Find all common factors of two numbers
Divide numbers by ten, one hundred and one thousand, including decimal answers
Multiply a four-digit number by a one-digit number using short formal method
Multiply numbers up to four digits by a two-digit number using long multiplication
Divide a four-digit number by a one-digit number using short formal method, with whole number answers and remainders, interpreting in context
Understand, identify and use square numbers up to 12 x 12 using notation
Understand, identify and use cube numbers using notation
Recall prime numbers up to 19
Understand, identify and use prime numbers up to 100 and composite numbers
Use inverse operations, place value and known facts to calculate mathematical statements
Solve problems using knowledge of factors, multiples, squares and cubes
Divide numbers mentally using a range of strategies, including known facts and partitioning
Solve word problems including scaling by simple fractions and problems involving simple rates
Solve problems involving all four operations
Year 6
Find all factors of a given number, common factors of two numbers and prime factors of a given number
Identify common multiples

Identify prime numbers up to 100 and understand that prime numbers have two factors
Multiply numbers and decimals by 10, 100 and 1000
Divide numbers and decimals by 10, 100 and 1000
Multiply decimal numbers (with up to two decimal places) by a single digit number
Multiply a two, three and four digit number by a two-digit number using long multiplication
Divide numbers with up to four digits by a single digit numbers using short formal, expressing remainders as a fraction
Divide numbers with up to four digits by a two digit number using short formal, including answers up to two decimal places
Divide numbers with up to four digits by a two digit number using long division, including answers up to two decimal places
Interpret remainders as whole numbers, fractions and decimals or by rounding as appropriate
Use estimating, rounding and inverse operations to check answers
Solve multiplication and division calculations using mental methods
Solve multi-step word problems involving all four operations, including money and measures,

Fractions
Year 1
Recognise, find and name a half as one of two equal parts of an object or shape
Recognise, find and name a quarter as one of four equal parts of an object or shape
Find half of numbers within 20/ set of objects
Find a guarter of numbers within 20/set of objects
Year 2
Understand that ½ represents one of two equal parts of a whole and that ¼ represents one of four equal parts of a whole
Recognise and find ½ of a shape and set of objects
Recognise and find 1/4 of a shape and set of objects
Understand that 2/4 represents two of three equal parts of a whole and that 3/4 represents three of four equal parts of a whole
Find ½ of a quantity and length, and write fraction
Find % of a quantity and length, and write fraction
Recognise and find 2/4 and 3/4 of a shape and set of objects
Recognise that % is equivalent to 2/4
Understand that 1/3 represents one of three equal parts of a whole
Becognise and find 1/3 of a shape and set of objects
Vear 3
Understand that tenths arise from dividing an object, shape or quantity into ten equal parts
Count up and down in tenths
Find unit and non-unit fractions, with small denominators, of numbers or quantities, using diagrams
Recognise and show simple equivalent fractions using diagrams
Add and subtract fractions with the same denominator within one whole
Compare unit fractions and non-unit fractions with the same denominator $<>=$ using diagrams
Order a set of unit fractions and a set of non-unit fractions with the same denominator
Becogise fractions as ordered numbers and numerical methods what he band become and the second
Reason and solve simple nrohlems involving fractions
Vear 4
Court up and down in hundredths
Becognise that hundredths arise when dividing by 100 and dividing tenths by 10
Recognise and show using diagrams families of common equivalent fractions
Add and subtract fractions with the same denominator, eithin one and beyond one
Solve problems involving finding unit and non-unit fractions of numbers and quantities
Solve word problems involving adding and subtracting fractions
Var S
Compare and order fractions whose denominators are multiples of the same number
Identify equivalent fractions of a given fraction using multiplication and factors
Recording equivalent numbers and improper fractions using multiplication and factors
Convert mixed numbers and improper fractions from one form to the other
Add and subtract fractions with the same denominator. Including improper fractions and mixed numbers
Aud and subtract matchins with the same deformation including improper matchins and match numbers
Vaar 6
Name and write equivalent fractions of a given fraction, using common factors to simplify
Use common multiples to express fractions in the same denomination
Compare and order fractions including fractions >1 on a numberline
Add and subtract fractions with different denominators multiples of the same number including improper fractions and mixed numbers
Multiply fractions by integers
Multiply mectors by integers Multiply simple pairs of proper fractions, writing the answer in its simplest form
Divide proper fractions by whole numbers
Solve proper nactions by whole numbers Solve problems involving fractions which require answers to be rounded to specified degrees of accuracy.
Solve problems involving fractions which require answers to be rounded to specified degrees of accuracy

Decimals
Year 4
Recognise and write decimal equivalents of any number of tenths or hundredths
Find the effect of dividing one and two digit numbers by 10, giving the answer in ones and tenths
Recognise and write that ½ is equivalent to 0.5
Find the effect of dividing one and two digit numbers by 100, giving the answer in ones, tenths and hundredths
Recognise and write that 1/4 is equivalent to 0.25
Recognise and write that 3/4 is equivalent to 0.75
Round numbers with one decimal place to the nearest whole number
Compare and order numbers with two decimal places (relating to money and measures)
Solve simple measure and money problems involving decimals to two decimal places
Year 5
Recognise and use thousandths and relate them to tenths, hundredth and decimal equivalents
Read and write numbers with up to three decimal places
Read and write decimal numbers as fractions
Compare and order decimal numbers with up to three decimal places
Round decimal numbers with up to two decimal places to the nearest whole number and to one decimal place
Solve problems involving number up to 3 decimal places
Year 6
Identify the place value of each digit in a decimal number with up to three decimal places
ldentify fraction, decimal and percentage equivalents for ½ ¼ ¾ 1/5 2/5 4/5 and those with a denominator of a multiple of 10 or 25
Associate fractions with division
Recall and use equivalences between fractions, decimals and percentages (including ordering)
Solve problems involving decimals which require answers to be rounded to specified degrees of accuracy

## Percentages

Recognise the percent symbol and understand that per cent relates to number of parts per hundred

Write percentages as a fraction with a denominator of 100 and as a decimal number

Know and write decimal and percentage equivalents of ½ ¼ ¾ 1/5 2/5 4/5 and those with a denominator of a multiple of 10 or 25 Solve simple percentage problems using knowledge of equivalents

Year 6

Year 5

Find percentages of whole number quantities using known fraction equivalences 15%, 35% etc

Solve problems involving calculating percentages

## **Ratio and Proportion**

Year 6 Solve problems involving relative size of two quantities using integer multiplication and division

Solve problems involving similar shapes where the scale factor is known

Solve problems involving unequal sharing and grouping

Algebra
Year 6
Use simple formulae using symbols and letter to represent variables and unknowns
Express missing number problems algebraically
Find pairs of numbers that satisfy an equation with two unknowns
Find all possibilities of combinations of two variables
Recognise, generate and describe linear number sequences using words then algebra

Measurement
Year 1
Estimate, measure and record length and weight using standard units
Estimate, measure and begin to record capacity using standard units
Investigate problems involving weight and canacity
Sequence events in chronological order and compare time using language of time
Show the time and draw clock to the hour and half past hour
Recognise and know the value of different coins to £1 and notes
Year 2
Estimate, measure and calculate (using four operations) length and height using standard units (metres and centimetres) in any direction
Compare and order length and height using comparative language and <> =
Estimate, measure and calculate (using four operations) mass using standard units (grams and kilograms)
Compare and order mass using comparative language and < > =
Estimate and measure capacity using standard units (millilitres and litres)
Compare and order capacity using comparative language and <> =
Understand temperature and read scales (thermometer)
Understand units of time (how long a second, minute and hour are)
know the relationship between units of time (minutes and hours)
Compare and sequence intervals of time
Read the time to the quarter hour using an analogue clock
Show the time and draw clock to the quarter hour
Read the time to the nearest five minutes using an analogue clock
Show the time and draw clock to the nearest five minutes
Know the value of different coins and can use symbols for pounds and pence
Find different combinations of coins that equal the same amounts of money
Solve simple problems (one and two step) in a practical context involving addition and subtraction of money of the same unit, including giving change, and
comparing amounts
Year 3
Estimate, measure and compare mass using appropriate equipment and units (g and kg)
Estimate, measure and compare capacity using appropriate equipment and units (ml and l)
Estimate, measure and compare length using mixed units of measure
Add and subtract quantities in practical activities
Measure perimeter of simple polygons using metres and mixed units of metres and centimetres
Know the relationships between seconds in a minute, minutes in an hour, days in a year and lean year, months in a year
Know the number of days in each month
Record and compare time in terms of seconds, minutes and hours
Read the time to the nearest one minute using an analogue clock and 12 hour digital clock
Solve problems relating to time, comparing duration of events
Add and subtract amounts of money within £10 in practical contexts, including giving change
Year 4
Understand the relationship and convert units of length
Understand the relationship and convert units of mass
Understand the relationship and convert units of capacity
Estimate, measure and compare different measures using appropriate units and equipment
Measure the perimeter of rectilinear shapes using cm or m
Calculate the perimeter of rectilinear shapes using cm or m
Pind and compare the area of rectangles by counting squares
Read, write and convert between 12 hour and 24 hour digital clocks
Solve problems involving converting from one unit of time to another
Year 5
Convert between different units of metric measures, using decimal notation
Estimate volume using blocks to build cuboids and capacity using water
Understand and use approximate equivalences between metric and common imperial units
Use all four operations to solve problems involving measure, including scaling
Measure and calculate the perimeter of composite rectilinear shapes and express formula, in centimetres and metres
Calculate and compare the area of rectangles, using the formula and standard units
Estimate the area of irregular shapes by counting squares
Solve problems involving converting units of time
Year 6
Understand and use the formula to calculate the area of triangles and parallelograms
Recognise that shapes with the same area can have different perimeters and vice versa.
use, read, write and convert measurements or length, mass, volume and time from a smaller unit to a larger unit and vice versa, using decimal hotation to 3 decimal places
Know that miles are an imperial measurement of length and convert miles to kilometres
Express the formula for finding volume in words then letters/symbols
Estimate, calculate and compare volume of cubes and cuboids using standard units

Estimate, calculate and compare volume of cubes and cuboids using standard units

Geometry – Properties of shapes
Year 1
Recognise and name common 2D shapes and describe their properties
Recognise and name common 3D shapes
Describe properties of common 3D shapes
Year 2
Identify, describe and draw 2D shapes (numbers of corners and sides)
Sort 2D shapes using knowledge of properties
Identify and describe most 3D shapes (numbers of edges, vertices and faces
Sort 3D shapes and everyday objects using knowledge of properties
Identify 2D shapes on the surface of 3D shapes
Year 3
Draw 2D shapes
Name and describe 3D shapes including number of faces, vertices and edges and shape of faces
Make 3D shapes using model materials
Identify horizontal and vertical lines, linking to 2D shapes
Identify pairs of perpendicular and parallel lines using known polygons
Recognise angles as a property of shapes or description of turns
Recognise that one right angle is a quarter turn, two right angles make a half turn and four right angles make a full turn
Identify angles that are right angles, less than a right angle and greater than a right angle
Year 4
Name, compare and classify polygons based on their properties and sizes (including different triangles and quadrilaterals)
Identify lines of symmetry in 2D shapes in different orientations and other images
Complete a symmetrical figure or drawing where the line of symmetry doesn't dissect the original shape/figure
Identify angles that are greater than or less than a right angle using the terms acute and obtuse
Identify angles in regular and irregular polygons as acute, obtuse or right angles
Compare and order angles up to 2 right angles in size
Year 5
Identify 3D shapes from 2D representations
Understand acute, right, obtuse and reflex angles and know that angles are measured in degrees
Estimate, compare and order acute, obtuse and reflex angles
Measure angles to the nearest degree
Draw given angles
Know that angles in a straight line total 180 or half a turn, angles at a point total 360 or one whole turn and other multiples of 90
Calculate missing angles in a straight line, using a protractor to check
Calculate missing angles at a point
Recognise regular and irregular polygons based on reasoning about equal sides and angles
Use the properties of rectangles to deduce related facts and find missing lengths and angles
Year 6
Draw 2D shapes using given dimensions and angles
Identify, describe, classify and compare 2D shapes, based on their properties and sizes, including triangles and quadrilaterals
Calculate missing angles on a straight line and at a point
Calculate missing angles in a triangle, quadrilateral and regular polygon and express algebraically
Know that vertically opposite angles are equal and reason about missing angles
Know the parts of a circle (radius, diameter, circumference) and know that diameter is twice the radius, express this algebraically (d=rx2)
Describe the properties of 3D shapes and build 3D shapes including using nets
Investigate the different nets that would make given 2D representations of 3D shapes

Geometry – Position and Direction
Year 1
Use positional language and language of turns to describe position and movement
Year 2
Order and arrange combinations of mathematical objects (including shapes) in patterns and sequences
Describe the amount of turn using right angles for quarter, half and three quarter turns (clockwise and anti-clockwise)
Describe position and movement, including movement in a straight line
Year 4
Describe and write position on a 2D grid as co-ordinates in the first quadrant
Plot specified points using co-ordinates in the first quadrant
Draw sides to complete a given polygon using co-ordinates
Describe movement between positions as translations of a given unit to the left/right and up/down using co-ordinates
Year 5
Using co-ordinates in the first quadrant and second quadrant, describe and represent the position of a shape following a translation or reflection
Year 6
Use a full co-ordinate grid to plot specified points and draw sides to complete a polygon
Translate polygons on a full co-ordinate grid and describe new position
Reflect polygons in the x and y axis and describe new position using co-ordinates

Statistics
Year 2
Interpret pictograms where one symbol represents one or more than one (1s, 2s, 5s, 10s)
Collect data using a simple table and construct a pictogram
Interpret block diagrams where the scale goes up in 1s, 2s, 5s, 10s
Interpret tables and tally charts
Collect data using a tally chart and construct a block diagram
Ask and answer simple questions by counting and sorting
Ask and answer simple questions about totalling and comparing data
Year 3
Interpret data presented in a table, pictogram or bar chart
Collect and present data using a table and pictogram
Collect and present data using a bar chart
Ask and answer one-step and two-step problems using information presented in a bar chart, pictogram, tally and table
Year 4
Interpret discrete data using a greater range of scales
Collect and present discrete data using appropriate graphical methods, using a greater range of scales
Interpret continuous data using a greater range of scales
Collect and present continuous data using time graphs and a greater range of scales
Solve problems using information presented in scaled bar charts, tallies and tables including comparison, sum and difference problems
Year 5
Read and interpret line graphs
Solve comparison, sum and difference problems using information presented in a line graph
Read and interpret information in timetables that include 12 hour and 24 hour
Complete information in timetables that include 12 hour and 24 hour
Year 6
Interpret and construct pie charts
Calculate and interpret the mean as an average for a set of discrete data
Interpret and construct line graphs with a range of scales
Solve problems that involve line graphs and pie charts