



MATHS AT CHASE VIEW

Nursery

Number:

- Begin to recognise and identify numbers to 100
- Count up to 100 - start from any given number
- Begin to identify 1 more and 1 less.
- Begin to write numbers accurately 0 - 9
- Order and describe relationships e.g. missing numbers, patterns, sequences,
- Begin to count in 5s and 10s.

Addition and subtraction

- Begin to look at the concept of addition.

Geometry:

- Recognise and name common 2D shapes - square, rectangle, circle and triangle
- Recognise and name common 3D solids - cube, sphere, cylinder, pyramid, cone

Measure:

- Compare length and heights, using specific vocabulary: long - short, tall - small, half - double.
- Use specific vocabulary associated with weight: heavy - light, greater than - lesser than
- Use specific vocabulary associated with capacity: full - empty, half - double - more than - less than

Time:

- Recognise and use language relating to days of the week, months and year.
- Where appropriate use vocabulary: before, after, next, first, today, yesterday, tomorrow, morning, afternoon and night time/ evening

Reception

Number and Place Value:

- Recognise and understand the place value of 2 digit numbers, using the vocabulary tens and ones
- Read and recognise numbers to 20 in words
- Identify 1 more and 1 less
- Write numbers accurately to 100.
- Count to and across 100 forwards and backwards from any given number
- Count in multiples of 2s, 5s and 10s.

Addition and Subtraction:

- To understand the +, - and = symbols
- To add and subtract (using objects) up to 20
- Begin to recall number bonds to 10
- Solve simple problems using addition and subtraction (objects and pictorial diagrams)

Multiplication and Division:

- Begin to make links with the terminology of sharing with the division symbol.

<ul style="list-style-type: none"> • Begin to make links with the terminology of lots of with the multiplication symbol. • Begin to find and name a half as 1 of 2 equal parts of an object or quantity.
<p>Geometry:</p> <ul style="list-style-type: none"> • Begin to identify the properties of 2D shapes • Begin to use the language associated with 3D solids
<p>Measure:</p> <ul style="list-style-type: none"> • Begin to read and record lengths and heights, weight and capacity and volume.
<p>Time:</p> <ul style="list-style-type: none"> • To know key times within a day e.g. break time, lunch time, home time and possibly o'clock. • Use vocabulary: before, after, next, first, today, yesterday, tomorrow, morning, afternoon and night time/ evening
<p>Money:</p> <ul style="list-style-type: none"> • To know different denominations of coins and notes

Year 1
<p>Number and Place Value:</p> <ul style="list-style-type: none"> • Pupils extend their understanding of numbers up to 100 and begin to derive related facts up to 100. • Read and recognise numbers up to 100 in numbers and words • Count in steps of 2s, 5s and 10s and from a given number, forwards and begin to count backwards.
<p>Addition and Subtraction:</p> <ul style="list-style-type: none"> • Fluent recall of number bonds to 20 • Add and subtract one and two digit numbers to 20, including zero. • Solve one - step problems involving addition and subtraction, including missing numbers. • Understand that addition can be done in any order (commutative law) and subtraction of one number from another cannot.
<p>Multiplication and Division:</p> <ul style="list-style-type: none"> • Using concrete objects, pictorial representations and arrays to solve problems involving multiplication and division. • Begin to recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers • Assign concrete objects, pictorial representations and arrays to the calculations of \times and \div e.g. $3 \times 2 = 6$, • Recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity.

<ul style="list-style-type: none"> Recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity. Write simple fractions, for example, $\frac{1}{2}$ of 4 = 2
<p>Geometry:</p> <ul style="list-style-type: none"> To identify and describe the properties of 2D shapes. To use the language associated with 3D solids - faces, vertices and edges to identify them. Describe position, direction and movement including whole, half and three-quarter turns.
<p>Measure:</p> <ul style="list-style-type: none"> Read, measure and record lengths and heights, weight, capacity and volume. Introduce and begin to use standard measures (cm, m - ruler, scales grams, containers ml and l)
<p>Time:</p> <ul style="list-style-type: none"> Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. Sequence events in chronological order using key terms before, after, next, first, today, yesterday, tomorrow, morning, afternoon and night time/ evening
<p>Money:</p> <ul style="list-style-type: none"> Recognise and use symbols for pounds £ and pence p and the decimal point. Begin to solve simple problems in a practical context involving addition and subtraction of money of the same unit.

<u>Year 2</u>
<p>Number and Place Value:</p> <ul style="list-style-type: none"> Use the signs <, > and = to compare and order numbers to 100 Fluently count in steps of 2, 3, 5 and 10 from any number including zero, forwards and backwards. Read and Write numbers to at least 100 in words. Derive related facts to 100 e.g. $23 = 20 + 3$ and $23 = 10 + 10 + 3$
<p>Addition and Subtraction:</p> <ul style="list-style-type: none"> Add and subtract numbers using concrete objects, pictorial representations and mentally including: <ul style="list-style-type: none"> A two-digit numbers and ones A two-digit number and tens Two two-digit numbers Adding three one -digit numbers Use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. Use known numbers facts to derive related calculations e.g. $5 + 2 = 7$, $7 - 2 = 5$, $70 - 20 = 50$, $50 + 20 = 70$. Extend language associated with addition and subtraction (sum and

difference)

- Introduce column addition and subtraction.

Multiplication and Division:

- Recall and use multiplication and division facts for 2, 3, 5 and 10 tables.
- Introduce 4 and 8 times table and associated division facts.
- Multiplication of two numbers can be done in any order (commutative law) and division of one number by another cannot.
- Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.
- Recognise, find and name a third as 1 of 3 equal parts of an object, shape or quantity.
- Read, recognise, find and write $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$ and $\frac{1}{3}$ of a length, shape and set of objects.
- Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$
- Count in fractions up to 10. E.g. $1\frac{1}{4}$, $1\frac{2}{4}$ ($\frac{1}{2}$) $1\frac{3}{4}$,

Geometry:

- Compare and sort 2D and 3D shapes, using precise vocabulary quadrilaterals, prisms, polygons, sides, edges, vertices and faces.
- Investigate lines of symmetry.
- Begin to recognise a right angle.
- Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).

Measure:

- Choose and use appropriate standard units to estimate and measure length/height in (m/cm); mass (kg/g); temperature ($^{\circ}$ C); capacity (l/ml) to the nearest unit and using appropriate equipment.
- Compare and order lengths and heights, weight, capacity and volume using $<$ $>$ and $=$.

Money:

- Find different combinations of coins that equal the same amounts of money.
- Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.
- Form calculations when solving money problems using \pounds and p where appropriate.

Time:

- Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.

- Know the number of minutes in an hour and the number of hours in a day.

Year 3

Number and Place Value:

- Compare and order numbers to 1000
- Recognise the place value of each digit in a three-digit number.
- Read and write numbers up to 1000 in numerals and words.
- Count in multiples of 4, 8, 50 and 100.
- Find 10 or 100 more or less than a given number.
- Introduce a tenth as 0.1, using appropriate contexts e.g. money, measures,

Addition and Subtraction:

- Add and subtract numbers mentally, including:
 - a three-digit number and ones
 - a three-digit number and tens
 - a three-digit number and hundreds
- Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction

Multiplication and Division:

- Fluent recall of multiplication and division facts for the 3, 4 and 8 tables.
- Introduce multiplication facts for 6, 7 and 9 tables.
- Recall multiplication facts 10×10 .
- Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods
- Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.
- Introduce the formal multiplication method two-digit by a one-digit number.
- Multiply and divide whole numbers by 10.

Fractions:

- Recognise, find and name a tenth as 1 of 10 equal parts of an object, shape or quantity.
- Recognise, find and name a fifth as 1 of 5 equal parts of an object, shape or quantity.
- Recognise, find and write fractions of a discrete set of data: unit fractions and non-unit fractions with small denominators. (build on prior learning from Y1 and Y2)
- Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators

- Recognise and show, using diagrams, equivalent fractions with small denominators
- Add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]

Geometry:

- Identify lines of symmetry in 2D shapes presented in different orientations
- Complete simple symmetric figure with respect to specific line of symmetry.
- Recognise angles as a property of shape or a description of a turn.
- Identify right angles; know two right angles make half a turn, three make three quarters of a turn and four a complete turn.
- Introduce terminology of acute and obtuse angles.
- Identify horizontal and vertical lines.
- Identify and understand pairs of perpendicular lines and parallel lines.

Measure:

- Measure, compare and make links (conversions and decimals):
 - Lengths (mm,/m/m)
 - Mass (g/kg)
 - Volume/capacity (ml/l)
- Measure the perimeter of simple 2D shapes.
- Begin to find the area of rectilinear shapes by counting squares.
- Tell and write the time from an analogue clock and 12 and 24 - hour clocks.
- Tell the time with increasing accuracy.
- Use precise vocabulary to describe time e.g. am/pm, noon, midnight,
- Recall conversions of seconds in minutes, minutes in hours, hours in days, days in each month, year and leap year.

Year 4

Number and Place Value:

- Compare and order numbers beyond 100,000
- Recognise the value of each digit in a five-digit number.
- Round any number to the nearest 10, 100 and 1000.
- Count backwards through zero to include negative numbers.
- Count in multiples of 6, 7, 9, 25 and 1000.
- To read and recognise decimal place value - tenths 0.1 and hundredths 0.01
- To round decimals with one decimal place to the nearest whole number.
- Compare and order decimals up to 2 decimal places.

Addition and Subtraction:

- Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. Include

decimals up to 2 decimal places.

- Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. Include decimal problems up to 2 decimal places.

Multiplication and Division:

- Fluent recall of multiplication and division facts up to 12×12
- Use place value, know and derived facts to multiply and divide mentally.
- Identify multiples and factors, finding all factor pairs and common factors of numbers.
- Recognise and use squared numbers
- Multiply two-digit and three- digit by a one-digit
- Introduce multiplying two-digit by a two digit.
- Introduce long division (no remainders)
- Multiply and divide whole numbers by 10 and 100.

Fractions:

- Recognise, find and name a hundredth as 1 of 100 equal parts of an object, shape or quantity.
- Recognise and show families of common equivalent fractions. Link to simplifying fractions.
- Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number
- Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$
 - Solve simple measure and money problems involving fractions and decimals to 2 decimal places.

Geometry:

- Identify and classify geometric shapes, quadrilaterals (parallelogram, rhombus, kite, trapezium) and triangles (isosceles, equilateral and scalene)
- Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.
- Describe and plot coordinates in the first quadrant; complete shapes and diagrams.
- Describe movements between positions as translations left/right, up/down.

Measure:

- Convert between different units of measure, including time.
- Solve simple problems involving conversions.
- Measure and calculate the perimeter of rectilinear shapes.
- Calculate the area of rectangles, using standard units - squared centimetres, squared metres.
- Read, write and convert time between analogue and 12 and 24 - hour clocks.

Year 5

Number and Place Value:

- Compare and order numbers to 1,000,000
- Recognise the value of each digit in a six-digit number.
- Round any whole number to a required degree of accuracy.
- Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero
- To read and recognise decimal place value - thousandths 0.001.
- To round decimals with two decimal places to the nearest whole number and to one decimal place.
- Read, write, and begin to order and compare decimals up to 3 decimal places.

Addition and Subtraction:

- Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) and decimals.
- Add and subtract numbers mentally with increasingly large numbers
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Multiplication and Division:

- Know and use the vocabulary of prime numbers, prime factors and composite (non - prime) numbers.
- Multiply numbers up to 4 digits by a one- digit and two-digit using formal written methods, including decimals up to 1 decimal place.
- Divide numbers up to 4 digits by a one and two-digit number using formal written method (long or short) interpret remainders appropriately for the context.
- Multiply and divide whole numbers and decimals by 10 and 100.

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, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]
- Compare and order fractions whose denominators are all multiples of the same number.
- Add and subtract fractions with denominators that are the multiples of the same number.

Percentages:

- Recognise the per cent symbol (%) and understand that per cent relates to

'number of parts per hundred'

- Write percentages as a fraction with denominator 100, and as a decimal
- To know common percentage, decimal and fraction equivalences.

Geometry:

- Identify 2D and 3D shapes from given properties.
- Draw given angles and measure them $^{\circ}$ using a protractor.
- Identify:
 - Angles at a point and a whole turn (360°)
 - Angles on a straight line and $\frac{1}{2}$ a turn (180°)
 - Other multiples of 90°
- Find missing lengths and angles using known facts.
- Describe and plot coordinates in the first and second quadrant; identify, describe and represent the position of a shape following a reflection or translation.

Measure:

- 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.
- Measure and calculate the perimeter and area of composite rectilinear shapes in centimetres and metres.
- Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]

Year 6

Number and Place Value:

- Compare and order numbers up to 10,000,000
- Recognise the value of each digit in a seven-digit number
- Use negative numbers in context, and calculate intervals across zero
- Fluently recall, order and compare decimals up to 3 decimal places.
- To round decimals up to 3 decimal places.

Addition and Subtraction:

- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why, (including decimals)

Multiplication and Division:

- Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method, include decimals up to 2 decimal places.
- Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long or short division, and interpret remainders as whole

number remainders, fractions, or by rounding, as appropriate for the context

- Use their knowledge of the order of operations to carry out calculations involving the four operations.
- Multiply and divide whole numbers and decimals by 10, 100 and 1000 giving answers up to 3 decimal places.
- Solve problems involving addition, subtraction, multiplication and division

Fractions:

- 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, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]
- divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$]

Percentages:

- Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
- Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison

Ratio:

- 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 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.

Algebra:

- Use simple formulae
- Generate and describe linear number sequences
- Express missing number problems algebraically
- Find pairs of numbers that satisfy an equation with two unknowns
- Enumerate possibilities of combinations of two variables.

Geometry:

- Draw 2D shapes given dimensions and angles
- 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
- Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
- 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.

Measure:

- Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
- Convert between miles and kilometres
- Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
- Recognise that shapes with the same areas can have different perimeters and vice versa
- Calculate the area of parallelograms and triangles
- 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].