Mathematics – EYFS Content Breadth and Progression

Our mathematics curriculum is taught within EYFS topics, as part of the daily continuous provision and during adult enhanced activities.

Three and Four Year Olds

- Develop fast recognition of up to 3 objects, without having to count them individually ('subsidising').
- Recite numbers past 5.
- Say one number for each item in order: 1,2,3,4,5.
- Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').
- Show 'finger numbers' up to 5.
- Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5
- Experiment with their own symbols and marks as well as numerals.
- Solve real world mathematical problems with numbers up to 5.
- Compare quantities using language: 'more than', 'fewer than'.
- Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'
- Understand position through words alone – for example, "The bag is under the table," – with no pointing.
- Describe a familiar route.
- Discuss routes and locations, using words like 'in front of' and 'behind'.
- Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc. Combine shapes to make new ones – an arch, a bigger triangle, etc.
- Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper.
- Use informal language like 'pointy', 'spotty', 'blobs', etc. Extend and create ABAB patterns – stick, leaf, stick, leaf.
- Notice and correct an error in a repeating pattern.
- Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'

Vocabulary Concepts

Key concepts the children will learn during the year include:

Number
Digit
Add
Total
Take Away
Difference
Sharing
Half
Double
Measure
Money
Corner/ Side
Rectangle
Circle
Triangle
Face
Edge

Carlton Colville Primary

Mathematics – EYFS Content Breadth and Progression

Our mathematics curriculum is taught within EYFS topics, as part of the daily continuous provision and during adult enhanced activities.

Reception

- Count objects, actions and sounds.
- Count beyond ten.
- Subitise.
- Link the number symbol (numeral) with its cardinal number value.
- Link the number symbol (numeral) with its cardinal number value.
- Compare Numbers.
- Understand the 'one more than/one less than' relationship between consecutive numbers.
- Explore the composition of numbers to 10.
- Automatically recall number bonds for numbers 0-10.
- Subitise.
- Link the number symbol (numeral) with its cardinal number value.
- Select, rotate and manipulate shapes in order to develop spatial reasoning skills.
- Continue, copy and create repeating patterns.

Early Learning Goal

Number

- Have a deep understanding of number to 10, including the composition of each number; - Subitise (recognise quantities without counting) up to 5;
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

Numerical Patterns

- Verbally count beyond 20, recognising the pattern of the counting system;
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Vocabulary Concepts

Key concepts the children will learn during the year include:

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Mathematics – Year 1 Content Breadth and Progression

The Key Indicators of our Year 1 Maths curriculum content are highlighted below. For the full content breadth refer to the medium term plans.

Know and Use Numbers

- Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.
- Count, read and write numbers to 100 in numerals.
- Given a number, identify 1 more and 1 less.

Add and Subtract

- Represent and use number bonds and related subtraction facts to 20.
- Solve 1-step problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures and using the +, - and = signs.

Multiply and Divide

- Solve 1-step problems involving multiplication and division.

Fractions

- Recognise, find and name a half as one of two equal parts of an object, shape or quantity.

Properties of Shape

- Recognise and name common 2D and 3D shapes.

Position, direction and movement

- Describe position, direction and movement, including whole, half, quarter and three-quarter turns.

Measures

- Compare, describe and solve practical problems for: lengths and heights, mass, capacity, volume and time.
- Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.

Vocabulary Concepts

Key concepts the children will learn during the year include:

equal to
multiple of
addition
subtraction
multiplication
division
half
fraction
centimetre
kilogram
litre / half litre
capacity
change
total
symmetry
cuboid
cylinder

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Mathematics – Year 2 Content Breadth and Progression

The Key Indicators of our Year 2 Maths curriculum content are highlighted below. For the full content breadth refer to the medium term plans.

Know and Use Numbers

- Recognise the place value of each digit in a two-digit number.

Add and Subtract

- Represent and use number bonds and related subtraction facts to 20.
- Add numbers using concrete objects/ pictorial representations -Two 2-digit numbers.
- Subtract numbers using concrete objects/ pictorial representations -Two 2-digit numbers.

Multiply and Divide

- Solve problems involving multiplication and division using mental methods.
- Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.

Fractions

- Recognise, find, name and write fractions 1/2, 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity.

Properties of Shape

- Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line.
- Identify and describe the properties of 3D shapes, including the number of edges, vertices and faces.

Position, direction and movement

- 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).

Measures

- Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. Read the time to the nearest 15 minutes.
- Use standard units to estimate and measure length/height, mass, temperature and capacity to the nearest unit.
- Read scales in divisions of 1s, 2s, 5s and 10s in a practical situation where all numbers on the scale are given.
- Find different combinations of coins that equal the same amount of money.

Statistics

- Ask and answer questions about totalling and comparing categorical data.

Algebra

- Solve addition and subtraction problems involving missing numbers.

Vocabulary Concepts

Key concepts the children will learn during the year include:

tally
one, two or three-digit number
exchange
place value
equivalent fraction
mixed number
numerator / denominator
one third / two thirds
gram
millilitre
pentagon
hexagon
octagon
clockwise / anticlockwise
right angle
pictogram

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Mathematics – Year 3 Content Breadth and Progression

The Key Indicators of our Year 3 Maths curriculum content are highlighted below. For the full content breadth refer to the medium term plans.

Know and Use Numbers

- Recognise the place value of each digit in a four-digit number.
- Solve number and practical problems with increasingly large positive numbers.

Add and Subtract

- Add and subtract numbers mentally, including: A 3-digit number and ones, a 3-digit number and tens, a 3-digit number and hundreds.

Multiply and Divide

- 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.
- Recall multiplication and division facts for multiplication tables 2,3, 4, 5, 8, 10.

Fractions

- Recognise, find and write fractions of a discrete set of objects: unit fractions and non-fraction units with small denominators.
- count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10.

Properties of Shape

- identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle.

Position, direction and movement

- Identify angles that are greater than a right angle.

Measures

- Measure, compare, add and subtract: lengths/heights, mass/weight, volume/capacity.
- Add and subtract amounts of money to give change (£ and p).
- Read, write and convert time between analogue and digital 12-hour and 24- hour clocks.

Statistics

- Interpret and present data using bar charts, pictograms and tables.

Algebra

- Solve addition and subtraction and multiplication and division problems that involve missing numbers.

Vocabulary Concepts

Key concepts the children will learn during the year include:

factor / factor of
product
remainder
sixths / sevenths / eighths / tenths
millimetre / kilometre / mile
perimeter
quadrilateral
parallel
perpendicular
prism / triangular prism
horizontal, vertical, diagonal
compass
points/north/south/east/west
acute angle / obtuse angle
axis / axes

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Mathematics – Year 4 Content Breadth and Progression

The Key Indicators of our Year 4 Maths curriculum content are highlighted below. For the full content breadth refer to the medium term plans.

Know and Use Numbers

- Count in multiples of 2 to 9, 25, 50, 100 and 1000.
- Count backwards through zero to include negative numbers.
- Order and compare numbers beyond 1000.
- Recognise the place value of each digit in a four-digit number.
- Round any number to the nearest 10, 100 or 1000.

Add and Subtract

- add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.
- solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.

Multiply and Divide

- Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.
- Recall multiplication and division facts for multiplication tables up to 12x12.

Fractions

- Solve simple measure and money problems involving fractions and decimals to two decimal places.
- Round decimals with one decimal place to the nearest whole number.
- Count up and down in hundredths; recognise that hundredths arise from dividing an object by 100 and dividing tenths by ten.
- Recognise and show, using diagrams, families of common equivalent fractions.

Properties of Shape

- Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.
- Identify lines of symmetry in 2D shapes, presented in different orientations.

Position, direction and movement

- Plot specific points and draw sides to complete a given polygon.

Measures

- Convert between different units of measure.

Statistics

- solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.

Algebra

- Solve addition and subtraction and multiplication and division problems that involve missing numbers.

Vocabulary Concepts

Key concepts the children will learn during the year include:

positive / negative / minus
inverse
round up / down / to the nearest…
square number/ squared
cube number / cubed
hundredths
decimal
fraction/point/place/equivalent
area
mass / weight
regular / irregular
2D / two-dimensional
equilateral / isosceles / scalene triangle
heptagon
parallelogram
rhombus
trapezium
polygon
3D / three-dimensional

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Mathematics – Year 4 Content Breadth and Progression

The Key Indicators of our Year 4 Maths curriculum content are highlighted below. For the full content breadth refer to the medium term plans.

Know and Use Numbers

- Count in multiples of 2 to 9, 25, 50, 100 and 1000.
- Count backwards through zero to include negative numbers.
- Order and compare numbers beyond 1000.
- Recognise the place value of each digit in a four-digit number.
- Round any number to the nearest 10, 100 or 1000.

Add and Subtract

- add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.
- solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.

Multiply and Divide

- Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.
- Recall multiplication and division facts for multiplication tables up to 12x12.

Fractions

- Solve simple measure and money problems involving fractions and decimals to two decimal places.
- Round decimals with one decimal place to the nearest whole number.
- Count up and down in hundredths; recognise that hundredths arise from dividing an object by 100 and dividing tenths by ten.
- Recognise and show, using diagrams, families of common equivalent fractions.

Properties of Shape

- Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.
- Identify lines of symmetry in 2D shapes, presented in different orientations.

Position, direction and movement

- Plot specific points and draw sides to complete a given polygon.

Measures

- Convert between different units of measure.

Statistics

- solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.

Algebra

- Solve addition and subtraction and multiplication and division problems that involve missing numbers.

Vocabulary Concepts

Key concepts the children will learn during the year include:

positive / negative / minus
inverse
round up / down / to the nearest…
square number/ squared
cube number / cubed
hundredths
decimal
fraction/point/place/equivalent
area
mass / weight
regular / irregular
2D / two-dimensional
equilateral / isosceles / scalene triangle
heptagon
parallelogram
rhombus
trapezium
polygon
3D / three-dimensional

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Mathematics – Year 6 Content Breadth and Progression

The Key Indicators of our Year 6 Maths curriculum content are highlighted below. For the full content breadth refer to the medium term plans.

Know and Use Numbers

- Determine the value of each digit in any number.

Add, Subtract, Multiply and Divide

- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
- Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.
- 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.

Fractions

- Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.
- 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.
- Divide proper fractions 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.

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 and the use of percentages for comparison.
- Solve problems involving similar shapes where the scale factor is known or can be found.

Properties of Shape

- Compare and classify geometric shapes based on their properties and sizes, find unknown angles in any triangles/quadrilaterals/regular polygons.
- Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

Position, direction and movement

- Describe positions on the full coordinate grid (all four quadrants).

Measures

- Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.
- 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.

Statistics

- Interpret and construct pie charts and line graphs and use these to solve problems.

Algebra

- Use simple formulae.
- Express missing number problems algebraically.

Vocabulary Concepts

Key concepts the children will learn during the year include:

prime factor
ratio
reflex angle
kite
dodecahedron
intersection / intersecting
radius
diameter
circumference
tonne
cubic millimetres (mm^3)
cubic centimetres (cm^3)
cubic metres (m^3)
cubic kilometres (km^3)
profit / loss
statistics
mean
formulae
equation

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