Intent:

At Kentish Town C of E, we develop children's knowledge and understanding of mathematical concepts from the Early Years through to the end of Y6. We intend to:

• Reflect the National Curriculum intent for maths in our curriculum design.

• Organise the programmes of study into distinct domains, but ensure pupils make rich connections across mathematical ideas.

• Develop pupils' fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.

• Teach pupils to explain their choice of methods and develop their mathematical reasoning skills with a focus on oracy in lessons across the school.

• Challenge children to 'go deeper' in their learning through conceptual and/or procedural variation in each lesson

• Teach using a CPA approach (concrete, pictorial, abstract) to ensure conceptual understanding

• Encourage resilience, adaptability and acceptance that struggle is often a necessary step in learning (good mistakes modelled and celebrated, growth mind-set)

• Fill gaps in and consolidate pupils' knowledge and skills by looking at prior year group objectives

• Use the NCETM Curriculum Prioritisation maps to support filling gaps following the impact of the pandemic

• Have a whole-school focus on fluency and fact recall of facts

Mathematics at

Kentish Town C of E

Enrichment:

• NSPCC Number Day

• Maths Week London

• Maths Week England

• TimesTable Rockstars competitions

• Whole-School Maths in our community photo competitions

• Barvember competition for children in UKS2

• Camden Spring Slam

• Maths Challenges

Key Learning

Acorns (Nursery)

Develop fast recognition of up to 3 objects, without having to count them individually ('subitising').

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 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'.

Make comparisons between objects relating to size, length, weight and capacity

Select shapes appropriately and combine shapes to make new ones

Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wall-paper. 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...'

Mathematics at

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Vocabulary:

- All number words to ten and then beyond
- 'more than', 'less than', 'fewer', 'the same as', 'equal to'
- Add, take away
- 'sides', 'corners'; 'straight', 'flat', 'round'
- Heavier, lighter
- Under, over, in front of, behind, on, in

Oak (Reception):

Count objects, actions and sounds

Subitise.

Link the number symbol (numeral) with its cardinal number value.

Count beyond ten.

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 0–5 and some to 10

Select, rotate and manipulate shapes to develop spatial reasoning skills.

Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.

Continue, copy and create repeating patterns.

Compare length, weight and capacity.

Ash (Year 1):

Number- Place Value

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; count in multiples of twos, fives and tens

given a number, identify one more and one less

identify and represent numbers using objects and pictorial representations including the number line,

use the language of: equal to, more than, less than (fewer), most, least

read and write numbers from 1 to 20 in numerals and words.

Number– Addition and Subtraction

read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs

represent and use number bonds and related subtraction facts within 20

add and subtract one-digit and two-digit numbers to 20, including zero

solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = − 9.

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- Add, take away
- 'sides', 'corners'; 'straight', 'flat', 'round'
- Heavier, lighter
- Under, over, in front of, behind, on, in
- first', 'then...' next

Number– Multiplication and Division

solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher

Number– Fractions

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

recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.

Measurement

compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] mass/weight [for example, heavy/light, heavier than, lighter than] capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] ime [for example, quicker, slower, earlier, later]

measure and begin to record the following: lengths and heights, mass/weight , capacity and volume, time (hours, minutes, seconds)

recognise and know the value of different denominations of coins and notes

sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]

recognise and use language relating to dates, including days of the week, weeks, months and years

tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.

Geometry– Properties of Shapes

recognise and name common 2-D and 3-D shapes, including:2-D shapes [for example, rectangles (including squares), circles and triangles] , 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].

Geometry– Position and Direction

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

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Vocabulary:

Willow (Year 2):

Number- Place Value

Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward

recognise the place value of each digit in a two-digit number (tens, ones)

identify, represent and estimate numbers using different representations, including the number line

compare and order numbers from 0 up to 100; use and = signs

read and write numbers to at least 100 in numerals and in words

use place value and number facts to solve problems.

Number– Addition and Subtraction

solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures, applying their increasing knowledge of mental and written methods

recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100

add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers, adding three one-digit numbers

show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot

recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Number– Multiplication and Division

recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers

calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs

show that multiplication of two numbers can be done in any order (commutative) 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.

Number– Fractions

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

write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2
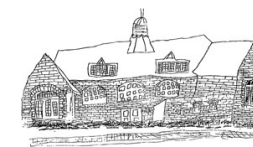
Mathematics at

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Vocabulary:

Number– Fractions

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Measurement

choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels

compare and order lengths, mass, volume/capacity and record the results using >, < and =

recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value

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

compare and sequence intervals of 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.

Geometry– Properties of Shapes

identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line

identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces ⬜ identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]

compare and sort common 2-D and 3-D shapes and everyday objects

Geometry– Position and Direction

order and arrange combinations of mathematical objects in patterns and sequences

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 anticlockwise).

Statistics

interpret and construct simple pictograms, tally charts, block diagrams and simple tables

ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity

ask and answer questions about totalling and comparing categorical data.

Mathematics at
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Vocabulary:

Key Learning End of KS1 outcomes:

Pupils can:

- read scales* in divisions of ones, twos, fives and tens

- partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus

- add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17)

- recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10, then 17 + 3 = 20; if 7 – 3 = 4, then 17 – 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14)

- recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary

- identify 1/4 , 1/3 , 1/2 , 2 /4 , 3/4 , of a number or shape, and know that all parts must be equal parts of the whole

- use different coins to make the same amount • read the time on a clock to the nearest 15 minutes

- name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry
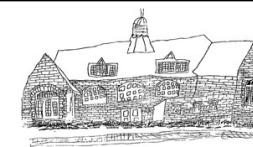
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Cedar (Year 3):

Number- Place Value

count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number

recognise the place value of each digit in a three-digit number (hundreds, tens, ones)

compare and order numbers up to 1000

identify, represent and estimate numbers using different representations

read and write numbers up to 1000 in numerals and in words

solve number problems and practical problems involving these ideas.

Number– 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

estimate the answer to a calculation and use inverse operations to check answers

solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.

Number– Multiplication and Division

recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables

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.

Number– Fractions

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

recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.

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

recognise, find and write fractions of a discrete set of objects: unit fractions and non unit fractions with small denominators 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, $5/7 + 1/7 = 6/7$]

compare and order unit fractions, and fractions with the same denominators

solve problems that involve all of the above.
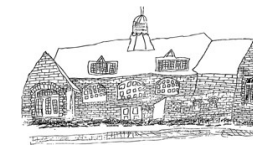
Mathematics at

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Vocabulary:

Key Learning **Measurement**

measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)

measure the perimeter of simple 2-D shapes

add and subtract amounts of money to give change, using both £ and p in practical contexts

tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight

know the number of seconds in a minute and the number of days in each month, year and leap year

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Vocabulary:

Intent:

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