Woodside Academy Maths overview

Year 1

Number

- 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 2s, 5s and 10s
- Given a number, identify 1 more and 1 less
- Identify and represent numbers using objects and pictorial representations including the number line, and 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
- 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 0
- Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ? – 9
- 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

Fractions,

- Recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity
- Recognise, find and name a quarter as 1 of 4 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)
- Time (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 shape

- 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

Woodside Academy Maths overview

Year 2

Number

- Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- Count, read and write numbers to 1000 in numerals and words; count in multiples of 2s, 3s, 4s, 5s and 10s
- Given a number, identify 1, 10 and 100 more and 1, 10 and 100 less
- Identify and represent numbers using objects and pictorial representations including the number line, and 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
- Compare and order numbers using signs
- Use place value to solve problems
- 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 0
- Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and mentally
- Recognise and use inverse between addition and subtraction
- Recognise odd and even numbers
- Derive and use related facts up to 100
- 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 1 of 2 equal parts of an object, shape or quantity
- Recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity
- Recognise, find and name a third as 1 of 3 equal parts of an object, shape or quantity

Measurement

- Compare, describe and solve practical problems using standard units 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)
- Time (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 (pounds, pence)
- 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, half past the hour, quarter past and quarter to and draw the hands on a clock face to show these times and recognising 5 minute intervals

Geometry – Properties of shape

Recognise and name common 2-D and 3-D shapes and their properties
Recognise 2D shapes on the surface of 3D shapes
Compare and sort 2D and 3D shapes

Geometry – Position and Direction

Describe position, direction and movement, including whole, half, quarter and three-quarter turns
Distinguish in between rotation as a turn and in terms of right angles

Statistics

Interpret and construct simple pictograms, tally charts and block tables
Solving problems and asking questions based on data

Woodside Academy Maths overview

Year 3

Number

- Count from 0 in multiples of 4, 8, 50 and 100
- Find 10 or 100 more or less
- Recognise the place value of digits
- Compare and order numbers up to 10 000
- Estimate numbers
- Read and write numbers to 10 000 in numerals and words
- Solve number and practical problems
- Add and subtract numbers mentally
- Add and subtract numbers mentally using columnar method for addition and subtraction
- Estimate the answer to a calculation and use the inverse to check
- Solve problems, including missing number problems and number facts
- Recall and use multiplication and division facts for 3, 4 and 8 times tables
- Write and calculate mathematical statements for multiplication facts
- Solve multiplication and division related problems

Fractions

- Count up and down and have a recognition of tenths
- Recognise, find and write fractions for a discrete set of objects
- Recognise and use fractions as numbers
- Recognise and show, using diagrams, equivalent fractions
- Add and subtract fractions with the same denominator within one whole
- Compare and order unit fractions
- Solve problems that involve all of the above

Measurement

- Measure, compare, add and subtract lengths, mass, volume/capacity
- Measure the perimeter of simple 2D shapes
- Add and subtract amounts of money to give change
- Tell and write the time from an analogue clock, including using Roman Numeral and the 12 and 24 hour clock
- Estimate and read time with increasing accuracy
- Know the number of seconds in a minute, days in each month, year and leap year
- Compare durations of events

Geometry – Properties of Shape

- Draw 2D shapes and make 3D shapes using modelling materials
- Recognise 3D shapes in different orientations
- Recognise and describe angels
- Identify, understand and make right angels
- Identify horizontal and vertical lines and pairs of perpendicular lines

Statistics

- Interpret and present data using bar charts, pictograms and tables
- Solve one-step and two-step questions using information presented in scales bar charts, pictograms and tables

Woodside Academy Maths overview

Year 4

Number

- Count in multiples of 6, 7, 9, 25 and 1000
- Find 1000 more or less than a given number
- Count backwards through zero to include negative numbers
- Recognise the place value of each digit in a four digit number
- Order and compare numbers beyond 1000
- Identify, represent and estimate numbers using different representations
- Round any number to 10, 100 or 1000
- Solve number and practical problems that involve al of the above and with increasingly large positive numbers
- Read Roman numerals to 100
- Add and subtract numbers with up to 4 digits using formal written methods
- Estimate and use invers operations to check answers to a calculation
- Solve addition and subtraction two-step problems in context.
- Recall multiplication and division facts up to x12
- Use place value known and derived facts to multiply and divide mentally
- Recognise and use factor pair in mental calculations
- Multiply two-digit and three-digit numbers by a one digit number using a formal written method
- Solve problem involving multiplying and adding

Fractions and decimals

- Recognise and show, using diagrams, families of common equivalent fractions
- Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten
- Solve problems involving increasingly harder fractions
- Add and subtract fractions with the same denominator
- Recognise and write decimal equivalents of any number of tenths and hundredths
- ##recognise and write decimal equivalents to one quarter, a half and three quarters
- Find the effects of dividing a one or two digit number by 10 and 100
- Round decimals with one decimal place to the nearest whole number
- Compare numbers with the same number of decimal places up to two decimal places
- Solve simple measure and money problems involving fractions and decimals to two decimal places

Measurement

- Convert between different units of measure
- Measure and calculate the perimeter of rectilinear figure in cm and m
- Find the area of rectilinear shapes by counting squares
- Estimate, compare and calculate different measures including money in pounds and pence
- Read, write and convert time between analogue and digital 12 and 24 hour clocks
- Solve problems involving converting from hours to minute: minutes to seconds: year to monts: weeks to days

Geometry – Properties of Shape

- Compare and classify geometric shapes including quadrilaterals and triangles based on their sizes
- Identify acute and obtuse angle sand compare and order angles up to two right angles by size
- Identify lines of symmetry in 2D shapes presented in different orientations
- Complete a simple symmetric figue with respect to a specific line of symmetry

Geometry – Position and Direction

- Describe positions on a 2D grid as coordinates in the first quadrant
- Describe movements between positions as translations of a given unit (left/right up/down)
- Plot specified points and draw sides to complete a given polygon

Statistics

- Interpret and present discrete and continuous data using appropriate graphical methods including bar charts and time graphs
- Solve comparison, sum and diference problems using information presented in bar charts, pictograms, tables and other graphs

Woodside Academy Maths overview

Year 5

Number

- Read, write order and compare numbers to at least 1,000,000 and determine the value of each digit
- Count forward or backwards in steps of powers of 10 for any given number up to 1,000,000
- Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero
- Round any number up to 1,000,000 ot the nearests 10, 100, 1000, 10,000 and 100,000
- Solve number problems and practical problems that involve all of the above
- Read Roman numerals to 1000 (M) and recognise years written in Roman numerals
- add and subtract whole numbers with more than 4 digits, including using formal written methods
- add and subtract numbers mentally with increasingly large numbers
- use rounding to check answers to calculations and determine, in the context of a problem
- solve addition and subtraction multi-step problems in contexts
- identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- now and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
- establish whether a number up to 100 is prime and recall prime numbers up to 19
- multiply numbers up to 4 digits by a one- or two-digit number using a formal written method,
- multiply and divide numbers mentally drawing upon known facts
- divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
- multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
- recognise and use square numbers and cube numbers, and the notation for squared and cubed
- solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes
- solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
- solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates

Fractions, Decimals and Percentages

- compare and order fractions whose denominators are all multiples of the same number
- identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
- recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number
- add and subtract fractions with the same denominator and denominators that are multiples of the same number
- multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
- read and write decimal numbers as fractions
- recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- round decimals with two decimal places to the nearest whole number and to one decimal place
- read, write, order and compare numbers with up to three decimal places
- solve problems involving number up to three decimal places
- recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred',
- solve problems which require knowing percentage and decimal equivalents of a half, one quarter, one fifth, two fifths, four fifths and those fractions with a denominator of a multiple of 10 or 25

Measurement

- convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
- understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
- measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
- calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes
- estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]
- solve problems involving converting between units of time
- use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling
-

Geometry – Properties of Shape

- identify 3-D shapes, including cubes and other cuboids, from 2-D representations
- know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
- draw given angles, and measure them in degrees (o)
- identify: angles at a point and one whole turn (total 360)
- identify: angles at a point on a straight line and a half a turn (total 180) and identify: other multiples of 90
- use the properties of rectangles to deduce related facts and find missing lengths and angles
- distinguish between regular and irregular polygons based on reasoning about equal sides and angles

Geometry – Position and Direction

- identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed

Statistics

- solve comparison, sum and difference problems using information presented in a line graph
- complete, read and interpret information in tables, including timetables

Woodside Academy Maths overview

Year 6

Number

- Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit
- Round any whole number to a required degree of accuracy
- Use negative numbers in context, and calculate intervals across 0
- Solve number and practical problems that involve all of the above
- Multiply multi-digit numbers up to 4 digits by a two-digit whole numbers using the formal written method of long multiplication
- Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
- 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 those with mixed operations and larger numbers
- Use their knowledge of the order of operations to carry out calculations involving the 4 operations
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Fractions, Decimals and Percentages

- Use common factors to simplify fractions; - use common multiples to express fractions in the same denomination
- Compare and order fractions, including fractions >1
- 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, × =]
- Divide proper fractions by whole numbers [for example, ÷ 2 =]
- Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example,]
- Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places
- Multiply one-digit numbers with up to 2 decimal places by whole numbers
- Use written division methods in cases where the answer has up to 2 decimal places
- Solve problems which require answers to be rounded to specified degrees of accuracy
- Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

Ratio and Proportion

- Solve problems involving the relative sizes of 2 quantities where missing values can be found by using integer multiplication and division facts
- Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison
- 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 2 unknowns
- Enumerate possibilities of combinations of 2 variable

- Interpret and construct pie charts and line graphs and use these to solve problems • Calculate and interpret the mean as an average

Measurement

- Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate • 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 up to 3 decimal places
- Convert between miles and kilometres
- Recognise that shapes with the same areas can have different perimeters and vice versa
- Recognise when it is possible to use formulae for area and volume of shapes
- Calculate the area of parallelograms and triangles
- Calculate, estimate and compare volumes 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]

Geometry – Properties of Shape

- Draw 2-D shapes using given dimensions and angles
- Recognise, describe and build simple 3-D shapes, including making nets
- Compare and classify geometric shapes based on their properties and sizes and 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

Geometry – Position and Direction

- Describe positions on the full coordinate grid (all 4 quadrants)
- Draw and translate simple shapes on the coordinate plane, and reflect them in the axes