

Information for Parents/Carers - Mathematics Targets

A Year 3 Mathematician

Number, place value, approximation and estimation/rounding

I can count from 0 in multiples of 4, 8, 50 and 100.

I can compare and order numbers up to 1,000.

I can read and write numbers to 1,000 in numerals and words.

I can find 10 or 100 more or less than a given number.

I can recognise the place value of each digit in a 3-digit number.

I can identify, represent and estimate numbers using different representations.

I can solve number problems and practical problems using above.

Calculations

I can add and subtract mentally, including:

A 3-digit number and ones

A 3-digit number and tens

A 3-digit number and hundreds

I can add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.

I can estimate the answer to a calculation and use inverse operation to check answers.

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

I can recall and use multiplication and division facts for the 3, 4 and 8x tables.

I can write and calculate mathematical statements for multiplication and division using the multiplication tables, including for 2-digit numbers, using mental and progressing to formal written methods.

I can solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which n objects are connected to m objects.

Fractions, decimals and percentages

I can count up and down in tenths.

I recognise that tenths arise from dividing an object into 10 equal parts and in dividing 1-digit numbers or quantities by 10.

I recognise and can find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.

I can compare and order unit fractions and fractions with the same denominators.

I can add and subtract fractions with the same denominator within one whole.

I can solve problems involving the above.

Measurement

I can compare lengths using m, cm & mm.

I can compare mass using kg & g.

I can compare volume/capacity using l & ml.

I can measure lengths using m, cm & mm.

I can measure mass using kg & g.

I can measure volume/capacity using l & ml.

I can add and subtract lengths using m, cm & mm.
I can add and subtract mass using kg & g.
I can add and subtract volume/capacity using l & ml.
I can tell and write the time from an analogue clock (12 hour clock).
I can tell and write the time from an analogue clock (24 hour clock).
I can tell and write the time from an analogue clock (Roman numerals).
I can estimate and read time with increasing accuracy to the nearest minute.
I can record and compare time in terms of seconds, minutes and hours.
I can use the following vocabulary: o'clock, am, pm, morning, afternoon, noon & midnight.
I know the number of seconds in a minute.
I know the number of days in each month, year and leap year.
I can compare the duration of events.
I can measure the perimeter of simple 2D shapes.
I can add and subtract amounts of money to give change, using both £ and p in a practical context.

Geometry – properties of shapes

I can identify horizontal, vertical lines and pairs of perpendicular and parallel lines.
I can draw 2D shapes.
I can make 3D shapes using modelling materials.
I recognise 3D shapes in different orientations and describe them.
I recognise that angles are a property of shape or a description of a turn.
I can identify right angles.
I recognise that two right angles make a half-turn & three make a three quarter turn.
I can identify whether angles are greater than or less than a right angle.

Statistics

I can interpret and present data using bar charts, pictograms and tables.
I can solve one-step and two-step questions using information presented in scaled bar charts, pictograms and tables.

Year 3: Mathematics at Greater Depth

I am very confident and consistent when dealing with all the Year 3 objectives.
I can return to a mathematical operation after a break and still feel confident about coping with the problem.
I can explain to my peers how I have reached an answer with the problems I have been given.
I know when to apply my mathematical knowledge and skills to different problems in other subject areas.
I apply my knowledge related to number to solve problems related to money and measures.
I deal very effectively with reasoning problems even if they take a long time.
I show good resilience when the problems are proving very difficult and require me to think very deeply.
I am able to measure, compare, add and subtract more complex problems using common metric measures set out in m/cm/mm; kg/g; l/ml etc.
I can instantaneously recall all multiplication number facts up to 10 x 10.
I know which mathematical operation may be required when setting out statistical evidence.

MATHEMATICS TARGETS - A YEAR 4 MATHEMATICIAN

Number, place value, approximation and estimation/rounding

I can count in multiples of 6, 7, 9, 25 and 1,000.

I can order and compare numbers beyond 1,000.

I can find 1,000 more or less than a given number.

I recognise the place value of each digit in a 4-digit number.

I can read Roman numerals to 100 and know that over time the numeral system changed to include the concept of zero and place value.

I can identify, represent and estimate numbers using different representations.

I can round any number to the nearest 10, 100 or 1,000.

I can count backwards through zero to include negative numbers.

I can solve number and practical problems with the above (involving increasingly large numbers).

Calculations

I can add and subtract numbers with up to 4-digits using the formal written methods of columnar addition and subtraction.

I can estimate and use inverse operations to check answers in a calculation.

I can solve addition and subtraction 2-step problems in contexts, deciding which operations and methods to use and why.

I can recall multiplication and division facts up to 12×12 .

I can use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.

I recognise and use factor pairs and commutativity in mental calculations.

I can multiply 2-digit numbers by a 1-digit number using formal written layout.

I can solve problems involving multiplying and adding, including using the distributive law to multiply 2-digit numbers by 1-digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

Fractions, decimals and percentages

I can count up and down in hundredths.

I recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten.

I recognise and show using diagrams, families of common equivalent fractions.

I can add and subtract fractions within the same denominator.

I recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$.

I recognise and write decimal equivalents of any number of tenths or hundredths.

I can round decimals with one decimal place to the nearest whole number.

I can compare numbers with the same number of decimal places up to 2 decimal places.

I can find the effect of dividing a 1-digit or 2-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.

I can solve problems involving increasingly harder fractions and fractions to divide quantities, including non-unit fractions where the answer is a whole number.

I can solve simple measure and money problems involving fractions and decimals to 2 decimal places.

Measurement

I can compare different measures, including money in £ and p.

I can estimate different measures, including money in £ and p.

I can calculate different measures. Including money in £ and p.

I can read, write and convert time between analogue and digital 12 hour clocks.

I can read, write and convert time between analogue and digital 24 hour clocks.

I can solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.

I can convert between different units of measurements

I can measure and calculate the perimeter of a rectilinear figure in cm and m.

I can find the area of rectilinear shapes by counting squares.

I can calculate different measures

Geometry – properties of shapes

I can compare and classify geometric shapes, including quadrilateral and triangles based on their properties and sizes.

I can identify lines of symmetry in 2D shapes presented in different orientations.

I can complete a simple symmetric figure with respect to a specific line of symmetry,

I can identify acute and obtuse angles and compare and order angles up to two right angles by size.

Geometry – position and direction

I can describe movements between positions as translations of a given unit to the left/right and up/down.

I can describe positions on a 2D grid as coordinates in the first quadrant.

I can plot specified points and draw sides to complete a given polygon.

Statistics

I can interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.

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

Year 4: Mathematics at Greater Depth

I can solve multi-step problems related to on-going learning in science, history and geography.

I can rapidly recall answers when multiplying and dividing a whole or decimal number by 10.

I deal very confidently and rapidly with any addition or subtraction operations involving up to four digits.

I deal effectively with any reasoning problems related to the Year 4 expectations in number and measures.

I show a good level of resilience when it comes to tackling difficult problems which may require deep thinking.

I can explain my reasoning to a peer and at the same time deepen my own understanding.

I show a growing confidence when applying any multiplication facts to on-going learning in other subjects.

I am able to work out which number or measurement operation is most appropriate to a given problem.

I can return to any area of mathematical learning after a break and pick up quickly without needing to be re-taught.

I can collect my own data on a given project and present information in graphical formats of my choosing.

MATHEMATICS TARGETS - A YEAR 5 MATHEMATICIAN

Number, place value, approximation and estimation/rounding

I can count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.

I can read, write, order and compare numbers to at least 1,000,000.

I can determine the value of each digit in numbers up to 1,000,000.

I can read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.

I can round any number up to 1,000,000 to the nearest 10, 100, 1000, 10000 and 100000.

I can interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.

I can solve number problems and practical problems with the above.

Calculations

I can add and subtract numbers mentally with increasingly large numbers.

I can add and subtract whole numbers with more than 4 digits, including using formal written methods.

I can use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.

I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

I can identify multiples and factors, including finding all factor pairs of a number and common factor pairs of two numbers.

I use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.

I can establish whether a number up to 100 is prime and recall prime numbers up to 19.

I recognise and use square numbers and cube numbers, and the notation for squared and cubed.

I can multiply and divide numbers mentally drawing on known facts.

I can multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.

I can multiply numbers up to 4 digits by a 1-digit or 2-digit number using a formal written method, including long multiplication for 2-digit numbers.

I can divide numbers up to 4 digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context.

I can solve problems involving multiplication and division including using knowledge of factors and multiples, squares and cubes.

I can solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.

I can solve problems involving multiplication and division including scaling by simple fractions and problems involving simple rates.

Fractions, decimals and percentages

I can recognise mixed numbers and improper fractions and convert from one form to the other.

I can write mathematical statements >1 as a mixed number.

I can identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.

I can compare and order fractions whose denominators are multiples of the same number.

I can add and subtract fractions with the same denominator and denominators that are multiples of the same number.

I can multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.

I can read and write decimal numbers as fractions.

I recognise and can use thousandths and relate them to tenths, hundredths and decimal equivalents.

I can round decimals with 2 decimal places to the nearest whole number and 1 decimal place.

I can read, write, order and compare numbers with up to 3 decimal places.

I can solve problems involving numbers up to 3 decimal places.

I recognise the percent symbol and understand that percent relates to 'number parts per hundred'.

I can write percentages as a fraction with denominator hundred, and as a decimal.

I can solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator or a multiple of 10 or 25.

Measurement

I can solve problems involving converting between units of time.

I can convert between different units of metric measure.

I understand and use approximate equivalences between metric units and common imperial units, such as inches, pounds and pints.

I can measure and calculate the perimeter of composite rectilinear shapes in cm and m.

I can calculate and compare the area of rectangles (incl. squares), and including using standard units (cm^2 and cm^3) to estimate the area of irregular shapes.

I can estimate volume and capacity.

I can use all four operations to solve problems involving money using decimal notation, including scaling.

Geometry – properties of shapes

I can use the properties of rectangles to deduce related facts and find missing lengths and angles.

I can distinguish between regular and irregular polygons based on reasoning about equal sides and angles.

I can identify 3D shapes, including cubes and other cuboids, from 2D representations.

I know angles are measured in degrees.

I can estimate and compare acute, obtuse and reflex angles.

I can identify angles at a point and one whole turn.

I can identify angles at a point on a straight line and $\frac{1}{2}$ a turn.

I can identify other multiples of 90° .

I can draw given angles and measure them in degrees.

Geometry – position and direction

I can 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

I can complete, read and interpret information in tables, including timetables.

I can solve comparison, sum and difference problems using information presented in a line graph.

Year 5: Mathematics at Greater Depth

I deal confidently with all numbers up to 1,000,000 and apply this knowledge to scientific, historical and geographical learning when it is appropriate to do so.

I consistently use rounding as a strategy for quickly assessing what approximate answers ought to be before calculating.

I am confident when it comes to working across zero for positive and negative numbers to work time, eg, between BC and AD in history.

I use my knowledge of measurement to create plans of areas around school, such as classroom, field, outside play area, etc.

I use a range of timetables to work out journey times on a fictional journey around the world, eg, 'How long would it take to reach the rainforests in the Amazon?'

I confidently collect my own data on a personal project and present information in formats of my choosing, eg, charts, graphs and tables.

I enjoy being challenged with reasoning problems and show a good level of resilience if I find the problem difficult.

I can explain my workings to my peers and help them with their problems whilst at the same time deepen my own understanding.

I can return to most tasks after a break and will not need to be re-taught.

I am particularly quick at recognising which operation may be required to deal with specific problems and can apply this operation with confidence.

MATHEMATICS TARGETS - A YEAR 6 MATHEMATICIAN

Number, place value, approximation and estimation/rounding

I can read, write, order and compare numbers up to 10,000,000.

I can determine the value of each digit in numbers up to 10,000,000.

I can round any whole number to a required degree of accuracy.

I can use negative numbers in context, and calculate intervals across zero.

I can solve number problems and practical problems with the above.

Calculations

I can use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

I can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

I can identify common factors, common multiples and prime numbers.

I can perform mental calculations, including with mixed operations and large numbers.

I can multiply multi-digit numbers up to 4 digits by a 2 digit whole number using the formal written method of long multiplication.

I can divide numbers up to 4 digits by a 2 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.

I can divide numbers up to 4 digits by a 2 digit number using the formal written method of short division where appropriate.

I can solve problems involving addition, subtraction, multiplication and division.

I can use my knowledge of the order of operations to carry out calculations involving the four operations.

Fractions, decimals and percentages

I can use common factors to simplify fractions and use common multiples to express fractions in the same denomination.

I can compare and order fractions, including fractions >1 .

I can add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.

I can multiply simple pairs of proper fractions, writing the answer in the simplest form.

I can divide proper fractions by whole numbers.

I can associate a fraction with division to calculate decimal fractions equivalents for a simple fraction.

I can identify the value of each digit to 3 decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to 3 decimal places.

I can multiply 1-digit numbers with up to 2 decimal places by whole numbers.

I can use written division methods in cases where the answer has up to 2 decimal places.

I can solve problems which require answers to be rounded to specified degrees of accuracy.

I can recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

Ratio and proportion

I can solve problems involving the relative sizes of two quantities, where missing values can be found using integer multiplication and division facts.

I can solve problems involving the calculation of percentages and the use of percentage comparisons.

I can solve problems involving similar shapes where the scale factor is known or can be found.

I can solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

Algebra

I can express missing number problems algebraically.

I can use simple formulae.

I can generate and describe linear number sequences.

I can find pairs of numbers that satisfy an equation with two unknowns.

I can enumerate possibilities of combinations of two variables.

Measurement

I can 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 of up to 3 decimal places.

I can convert between miles and kilometres.

I recognise that shapes with the same areas can have different perimeters and vice versa.

I can calculate the area of parallelograms and triangles.

I recognise when it is possible to use the formulae for the area of shapes.

I can calculate, estimate and compare volume of cubes and cuboids, using standard units.

I recognise when it is possible to use the formulae for the volume of shapes.

I can solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate.

Geometry – properties of shapes

I can compare and classify geometric shapes based on the properties and sizes.

I can describe simple 3D shapes.

I can draw 2D shapes given dimensions and angles.

I recognise and build simple 3D shapes, including making nets.

I can find unknown angles in any triangles, quadrilaterals and regular polygons.

I recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

I can illustrate and name parts of circles, including radius, diameter and circumference.

I know the diameter is twice the radius.

Geometry – position and direction

I can draw and translate simple shapes on the co-ordinate plane, and reflect them in the axes.

I can describe positions on the full co-ordinate grid (all four quadrants).

Statistics

I can interpret and construct pie charts and line graphs and use these to solve problems

I can calculate and interpret the mean as an average.

Year 6: Mathematics at Greater Depth

I can compare, order and convert between fractions, decimals and percentages in contexts related to my science, history or geography learning.

I can use the appropriate formula for measuring area of shape, such as cuboid and triangle to work out area of irregular shape in the school environment.

I can use four operations with mass, length, time, money and other measures, including with decimal quantities.

I can create a scaled model of an historical or geographical structure showing an acceptable degree of accuracy using known measurements.

I can calculate costs and time involved to visit a destination in another part of the world relating to on-going learning in history or geography.

I can collect own data on a personal project and present information in formats of my choosing, charts, graphs and tables and answer specific questions related to my research.

I very confidently use the four operations with mass, length, time, money and other measures, including with decimal quantities.

I confidently explain my thinking to others and in so doing deepen my own understanding.

I can tackle reasoning problems with confidence and relish difficult tasks that really challenge me showing excellent levels of resilience at the same time.

I know I can return to an area of learning after a break and feel confident that I will not require additional support.