Year 2 Mathematics Curriculum Objectives

Mathematics – Year 2
Number & Place Value
Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.
Count in multiples of 2
Count forwards in multiples of 2 from 0.
Count backwards in multiples of 2 from any multiple up to 12×.
Recognise digit patterns.
Use to solve problems, e.g., How many 2p coins are needed to make 12p?
Count in multiples of 5
Count forwards in multiples of 5 from 0.
Count backwards in multiples of 5 from any multiple up to 12×.
Recognise digit patterns.
Use to solve problems, e.g., How many toes on 7 feet?
Count in multiples of 3
Count forwards in multiples of 3 from 0.
Count backwards in multiples of 3 from any multiple up to 12×.
Recognise digit patterns.
Use to solve problems, e.g., How many corners on 5 triangles?
Count in tens from any number, forward and backward.
Explore the patterns of multiples and their final digits, e.g., colouring on 100-squares.
Count up to 100 objects efficiently by grouping them and counting in tens, fives or twos.
Count confidently forwards and backwards in multiples of 10 from any number and use to solve problems, e.g., 'How much change is needed from £1 if you spend 45p?' (count on in 10s from 45p)
Recognise patterns when counting in tens, forwards or backwards, from any start number, e.g., when counting backwards or forwards in 10s from 16 the numbers always end in 6.
Recognise the place value of each digit in a two-digit number (tens, ones).
Explain why it is necessary to have a 0 in some numbers, e.g., 40.
Know what each digit in a two-digit number represents using apparatus to support the explanation, e.g., 'In 23 the 2 has a value of 20 and the 3 is three ones.'
Know which two multiples of 10 any two-digit number lies between.
Partition two-digit numbers in different ways, including into multiples of 10 and 1, with and without concrete apparatus to support subtraction, e.g.,
32 = 30 + 2 and 20 + 12 so 32 – 12 = 20 and 32 – 20 = 12.
Solve place value problems, e.g.:
Make as many different numbers as possible with the cards 20, 40, 3 and 5.
32 = □+ 2.
Fill in the missing values in a partly numbered 100-square.
Identify, represent and estimate numbers using different representations, including the number line.

Year 2 Mathematics Curriculum Objectives

Using Apparatus

Record solutions in an organised way using pictures or symbols.

Refer to materials used, such as tens and ones boards with base 10 apparatus, and talk about what has been done their work, e.g., 'I have 3 tens and 4 ones and that is 34.'

Use bead strings / number lines / number tracks / hundred squares to represent calculations and compare their relationships, e.g., 'How many more than 33 is 53', 'How many less than 53 is 33?'

Estimation

Estimate concrete objects to the nearest 10, e.g., A pot with19 pairs of scissors has about 20 pairs.

Estimate amounts more than 10 represented in different ways, e.g.:

Grab handfuls of tens and ones (base 10 apparatus), estimate and count.

Estimate objects in random arrangements, e.g., Counting ITP.

How many marbles in a jar?

Compare and order numbers from 0 up to 100; use <, > and = signs.

Recognise odd and even numbers in context:

Count in twos from zero.

Find halves of quantities.

Use repeated subtraction in twos (division).

Know that the tens digit in a two-digit number is more significant than the units digit when deciding on size, e.g., position a number in the correct place on an un-numbered number track.

Order a selection of numbers in ascending and descending order, discussing the value of their digits and considering their relative positions on a number line, e.g., 65, 56, 66, 55.

Compare the size of two numbers using the <, > and = symbols correctly to record comparisons.

Explain the relationship between three or more numbers, e.g., 15 is greater than 3 but less than 62.

Solve problems, e.g., Fill in numbers that make sense □ > □ < □ = □.

Read and write numbers to at least 100 in numerals and in words.

Should be able to concentrate on 20 to 100 as 1 to 20 were covered thoroughly in Year 1.

Read numbers 1 to 100 in numerals, using number tracks, number lines and number squares to identify where they lie, individually or in blocks, e.g., Identify the 'fifties' on a 100-square.

Write numerals for numbers to 100, understanding that numbers from 10 to 99 have 2 digits, and why it is important that the order of the digits is correct, e.g., Be able to explain the difference between 14 and 41.

Explain why there is a place keeping zero in the tens numbers, e.g., How is 40 different from 4?

Read numbers to 100 in words, such as labels around the classroom.

Write numbers to 100 in words (this could be a writing activity), e.g., Start counting, stop and pupil writes the next number on a whiteboard in words (and numerals).

Use place value and number facts to solve problems.

Describe and extend number sequences, e.g.:

Find missing numbers in sequences of threes. Not necessarily at the same time as the counting work with threes.

Describe patterns in the sequences generated when they count on or back in steps of 1, 2, 3, 5 and 10, e.g., When counting in fives the numbers are odd, even, odd, etc.

Use and apply number and place value into word problems, e.g.:

Using three single-digit numbers, make the largest / smallest two-digit number possible.

How would you create the largest possible two-digit even number from the digit 7 and another one of your choice?

Use and apply number and place value into investigations, e.g.:

A purse contains 63p. How much money is left when 10p is taken out?

Use charts and diagrams to present information, e.g.:

Year 2 Mathematics Curriculum Objectives

Sort a set of dominoes on a Carroll diagram for 'has a two spot' and 'does not have a two spot'.

Sort a set of numbers on a Venn diagram for 'odd number' and 'smaller than 10'.

Year 2 Mathematics Curriculum Objectives

Mathematics – Year 2
Addition & Subtraction
Using concrete objects and pictorial representations, including those involving numbers, quantities and measures.
Solve simple problems in a practical context involving addition and subtraction of money . . . (Measurement Year 2)
Solve problems using a range of concrete objects and pictorial representations:
Use counting objects, e.g., Put 15 buttons in three boxes so that each box has 3 more buttons than the one before.
Use cut lengths for measuring or comparison, such as pieces of string, to answer the questions such as 'Is your stride longer than Mary's? How much longer or shorter is it?'
Use measuring instruments, such as a balance and weights, to answer 'How much lighter is the green ball than the blue one?' or 'There is a green ball on one side and a blue one on the other. How can you make it balance?'
Use pictures, such as two thermometers, to answer the question 'What's the difference between the temperature inside and outside the classroom?'
Draw illustrations, e.g., 'Sue has 13 litres of water. A bucket holds 5 litres. How many buckets are needed to hold all the water?
Use coins to answer questions, e.g., Marcus spent 24p. He spent 8p more than Chelsea. How much did Chelsea spend?
Use a 100 square grid, e.g., to add or subtract a multiple of 10 to or from any two-digit number.
Use place value apparatus, such as base 10 / abacus, e.g., to add multiple of 10 to a two-digit number or to partition a number before subtraction.
Use number lines, e.g., use an empty number line to find passage of time between two events, such as, 'We started the PE lesson at 9:30 and finished it at 10:15. How long did it last?'
Select apparatus and representations appropriate to the task.
Applying their increasing knowledge of mental and written methods.
If number facts are not known, i.e., mental recall is not secure, support for calculation will be number lines and number grids as opposed to concrete objects or pictorial representations for this objective.
Look at the numbers in a calculation carefully before deciding whether to use a mental or written solution to addition and subtraction calculations / problems. Explain decision.
Select the easiest method of subtraction in context of the problem and explain the choice made, such as: counting back from the larger number; finding a difference by counting on from the smaller number.
Record answers to problems in number sentences, using the appropriate words and symbols of plus (+), minus (–) and equals (=).
Add and subtract numbers using concrete objects, pictorial representations, and mentally . . . (Number: Addition and Subtraction, Year 2)
To 20 fluently.
Know all pairs of numbers that equal any given number up to 20, e.g., 'Which addition equations equal 6? Have you got them all?'
Know all the subtraction facts within 20 that equal a specified answer, e.g., Tell me six different subtraction facts with an answer of 3 where no number in the number sentence is greater than 20. Could you have found any more? How would you know if you had found them all?
Know number bonds and related subtraction facts to 20, e.g., Respond instantly to questions such as: What must I add to 6 to equal 11? Which double has an answer of 14? What is the difference between 15 and 9? Tell me an addition fact that equals 15.
Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. (Number: Addition and Subtraction, Year 2)
And derive and use related facts up to 100.
Recall and use addition and subtraction facts to 20 fluently (Number: Addition and Subtraction, Year 2) for the first part of this objective. (Number: Addition and Subtraction, Year 2)
Add and subtract ten to any two-digit number, initially using equipment such as base 10 apparatus.
Using number bond knowledge to 10, derive all pairs of multiples of 10 with totals up to 100, e.g., 3 + 4 = 7 so 30 + 40 = 70.
Know what needs to be added / subtracted to / from a two-digit number to reach the next multiple of 10 (not into negatives for subtraction), e.g.: What needs to be added to 87 to equal 90? or 87 + □= 90.

Year 2 Mathematics Curriculum Objectives

□+ 87 = 90.

What needs to be subtracted from 87 to reach 80?

87 - □= 80.

Use known number bonds, that have single digits only, and their related subtraction fact, to derive number bonds to 100 and related subtraction facts, e.g.:

6 + 7 = 13 so 36 + 7 = 43 and 36 + 27 = 63.

9 – 7 = 2 so 49 – 7 = 32 and 49 – 27 = 22.

Adding three one-digit numbers.

Addition and Subtraction Coverage Using Apparatus Support As Necessary

Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures (Number: Addition and Subtraction, Year 2)

Add and subtract single-digit numbers in the same equation, e.g., 9 + 4 – 5.

Add or subtract a one-digit number to or from a two-digit number.

Add or subtract a multiple of 10 to or from any two-digit number, e.g., use a 100 square grid.

Add or subtract two two-digit numbers, where:

the ones do not cross a tens boundary, such as 21 + 37 or 56 – 23;

the ones do cross a tens boundary and bridging is required, such as 36 + 48 or 45 – 27.

Add 9 to any number by adding 10 then subtracting 1.

Subtract 9 from any number by subtracting 10 then adding 1.

Subtract 11 from any number by subtracting 10 then subtracting 1 more.

Add 11 to any number by adding 10 then adding 1 more.

Mental Addition and Subtraction

Add three one-digit numbers by starting with the largest, e.g., In your head turn 1 + 2 + 5 into 5 + 2 + 1.

Add or subtract a multiple of 10 to or from any two-digit number.

Be able to say pairs of multiples of 10 that equal 100, e.g., 30 + 70.

Add or subtract any one-digit number to or from any two-digit number by applying known number facts.

Add or subtract any two two-digit numbers that do not cross boundaries, e.g., 16 + 21 or 86 – 43.

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

Understand that the answer is always the same when the same two or more numbers are added together in different orders, e.g., make a number bond with Multilink, flip it over, talk about what has happened and write equations to match the two outcomes.

Use knowledge that addition can be done in any order to:

find pairs of multiples of 10 before addition, such as 7 + 9 + 3 = 10 + 9 or 6 + 7 + 33 = 40 + 6;

start with the largest number first, e.g., 2 + 9 + 2 = 13 can be calculated as 9 + 2 + 2 = 13.

Know subtraction cannot be done in any order, such as 9 - 4 does not give the same answer as 4 – 9, e.g., demonstrate this with objects and on number lines. (Don't say, 'We can't take 9 away from 4.')

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

Explore inverse operations, recognising that subtraction 'undoes' an addition and vice versa, e.g., add 7 to any number and then subtract 7 and record, such as 48 + 7 = 55, 55 - 7 = 48.

Apply inverse operations to missing number problems, e.g.: 24 - □ = 15.

Put + or – in each circle to make these calculations correct: 27 □8 = 35 or 62 □ 55 = 7.

Here are two numbers (13 and 7). They are part of a missing number calculation. What could the other number be? Write down all the number facts you can with your numbers.

Use 1, 4, 5 and +, –, = to write as many calculations as you can.

Year 2 Mathematics Curriculum Objectives

Use addition to check the answer to subtraction calculations and subtraction to check addition.	

Year 2 Mathematics Curriculum Objectives

Mathematics – Year 2
Multiplication & Division
Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.
Understand and solve problems in different formats and by different methods, including:
Using and interpreting arrays, e.g., How many different calculations can you write about this array?
Using repeated addition / subtraction on number lines, e.g., A carton of orange fills 5 cups. Gareth is having 12 people to his party and needs enough orange for everybody. How many cartons of orange does he need to buy?
Using mental recall, e.g., If you can hop 10 times in one minute, how many hops could you do in 5 minutes? Can you work out how many you could do in half a minute?'
Solve properties of numbers problems, e.g.:
Write down 3 different numbers that can be shared equally between 2 people and also equally between 5 people. What do you notice? Can you write down more numbers without checking them? (10, 20, 30 . . .)
Sort numbers such as 13, 4, 30, 82, 19, 166 into double-circled Venn diagrams, with properties 'even' / 'a multiple of 5' / 'bigger than 50', etc.
Solve calculation problems, e.g.: Use function machines, such as &#x25a1 ⇒ double ⇒ subtract 2 ⇒ halve . What do you notice about your answers?
Tell or draw a division or multiplication story for 20 ÷ 5 or 6 × 5;
Shut your eyes and imagine your pencil is on 0 on a number line. Draw five loops going up in 2s. Now draw two loops going back in 2s towards 0. What number did you finish on? Draw what you imagined on your whiteboard.
Complete missing numbers problems, e.g.: What could the missing numbers be for □× □= 20?
Look at this number pattern, 15, 20, 25. Can you write the two numbers that come before / after?
Explain how a problem has been solved.
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.
Steps to knowing the 10× table:
Recite the times table fluently forwards and backwards.
Write the times tables in ascending and descending order.
Know by heart the multiplication and division facts.
Use the 10× table facts confidently in calculations.
Steps to knowing 2× table:
Recite the times table fluently forwards and backwards.
Write the times tables in ascending and descending order.
Know by heart the multiplication and division facts.
Use the 2× table facts confidently in calculations.
Steps to knowing 5× table:
Recite the times table fluently forwards and backwards.
Write the times tables in ascending and descending order.
Know by heart the multiplication and division facts.
Use the 5× table facts confidently in calculations.
Know the term 'multiple' as a property of a number, e.g., 50 is a multiple of 5
Doubling and Halving
Recognise that doubling a number is the same as multiplying it by 2.
Use diagrams to show doubling of a quantity, amount or measure, e.g., Draw hops on a number line.
Recognise that finding half of a number is the same as dividing it by 2.

Year 2 Mathematics Curriculum Objectives

Use diagrams to show halving a quantity, amount or measure, e.g., Share 16 cherries between 2 cakes.
Understand that halving is the inverse of doubling, e.g., 40 ÷ 2 = 20, 20 is half of 40.
Recall doubles of all numbers up to 20 in context, such as money and measures.
Recall halves of even numbers up to 40 in context, such as money and measures.
Odd and Even Numbers
Know that even numbers are multiples of 2 and odd numbers are non-multiples of 2, e.g., Explain that there is one left over when sharing any odd number equally between 2 people.
Recognise odd and even numbers written in numerals by number patterns in the final digit, e.g., Sort a range of numbers up to 100 for odd and even properties.
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.
Relate division to multiplication by rephrasing an equation into words or vice versa, e.g., 20 shared into groups of 5 can be altered to, 'How many 5s make 20?'
Understand and write the symbols × and ÷ in mathematical statements.
Record equal jumps on a number line or bead string, writing the repeated addition / subtraction statement and the matching multiplication / division statement, e.g., 2 + 2 + 2 + 2 + 2 + 2 and 6 × 2.
Be able to use inverse operations of × and ÷ to record number facts, e.g., Write down 4 calculations that have only the trio of numbers 8, 2 and 4 in them.
Know it might be necessary to record a remainder when sharing unknown quantities, e.g., 22 sweets shared between 5 children results in a remainder of 2 ⇒ 22 ÷ 5 = 4 remainder 2.
Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.
Investigate the answers and patterns of rotated pairs of numbers in multiplication, such as 2 × 4 and then 4 × 2, e.g., make arrays on peg boards or counters on squared paper.
Explain why multiplication can be done in any order based on practical experience.
Explain why division cannot be done in any order based on practical experience, e.g., Share 8 cubes between 2 cups so there are 4 in each cup, then 2 cubes between 8 cups so there are some cups without any cubes (unless the cubes can be quartered).
Know that if the number of objects is smaller than the number they are being shared between there will not be enough for one each.
Recognise that in some cases, where objects can be broken into parts, equal sharing is possible but the answer might not be a whole number, e.g., 1 cake can be equally shared between 2 people by cutting the cake in half.
Recognise, find, name and write fractions 1/3, 1/4, 2/4, and 3/4 of a length, shape, set of objects or quantity. (Number: Fractions, Year 2)

Year 2 Mathematics Curriculum Objectives

Mathematics – Year 2

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.

See Fractions Year 1 for detailed work on half and a quarter of shapes and quantities. Re-visit if necessary.

Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. (Number: Multiplication and Division, Year 2)

Third of one

Find a third of one object that can be broken / contents moved, e.g., playdough, container of water, string, piece of fruit, and piece of paper.

Find a third of one object that cannot be broken, e.g., a 30 cm ruler.

Find a third of a range of different paper shapes (different sizes and orientations).

Third of a shape

Recognise / talk about an object that is a third of something.

Know that three thirds of a shape can combine to make one.

Know that a third of one shape might be larger or smaller than a third of another one.

Third of a quantity more than one

Find a third of a quantity of objects by equal sharing, e.g., counters.

Know that objects might not always share equally into 3 groups – there may be 1 or 2 left.

Find a third of a quantity that cannot be moved, e.g., objects in a picture.

Find a third in the context of measures and money, e.g., 'You have 60p. One third of your money will buy a ball. How much does a ball cost?'

Three-Quarters

Find three-quarters of one object that can be broken / contents moved, e.g., playdough, container of water, string, piece of fruit, and piece of paper.

Combine quarters of shapes to make three-quarters of the shape, explaining what has been done.

Know that three-quarters of the same shape, such as a rectangle, can be shown in different ways and they may look different from each other.

Find 3/4 of a quantity by equal sharing into four and recombining three lots.

General

Recognise and write fraction notation for 1/3, 1/4, 2/4, and 3/4. 1/3 1/4 2/4 3/4

Write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2.

Find fractions in the context of numbers and measures through equal sharing and grouping, e.g.:

How long is half of this piece of string?

How many ml, do you need to make the one-litre cylinder one-quarter full?

Record findings about fractional quantities in equations using fractional notation, e.g., 1/2 of 12 cm is 6 cm.

Find half of an odd number within 100, e.g., half of 3 cakes, half of 81.

Equivalence of One-Half and Two-Quarters

Count forwards and backwards in quarters up to 10, changing equivalence along the way, i.e. 1 2/4 will become 1 1/2

Know that 1/2 and 2/4 are equivalent fractions in all contexts, e.g.:

When counting on a number line, label the same number line in halves on the top and quarters on the bottom and compare.

Would you rather have a half of the pizza or two quarters? Why?

Would you rather have a half of these sweets or two quarters?

Year 2 Mathematics Curriculum Objectives

Mathematics – Year 2
Measurement
Compare and sequence intervals of time.
Build up an understanding of how long a minute is, e.g., Watch the sand in a one minute timer running through whilst counting silently in their head. See if they can guess a minute when the timer is hidden.
Sequence and talk about sets of pictures / labels / pictures of clocks that show passage of time.
Understand the most appropriate measure of time when comparing different events, e.g., Say what might be measured in seconds, minutes, hours, days, weeks, months, years.
Work out a simple time interval, e.g., Say how long play time lasts, by counting in 5 minute steps.
Understand how a calendar is organised.
Use a calendar to work out how many days between two or more events / dates in the same month.
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.
Always use geared clocks when working with analogue times and moving hands.
Recall clock times for o'clock and half past and relate to fractions.
Tell / show the time on an analogue clock relating movement to amounts of turn for: quarter past; quarter to.
Know that between each number from 1 to 12 on the clock there is a 5-minute time interval and count clockwise and anti-clockwise in 5s.
Know that 'past' times are counted clockwise from 12 until the 5 is reached.
Know that 'to' times are counted anti-clockwise from 12 until the 7 is reached.
Read and show on a real clock face, watch or clock diagram any time at a 5-minute interval.
Write times shown on a clock face in words.
Draw times on a clock face given in words.
Know the number of minutes in an hour and number of hours in a day.
Know there are 60 minutes in an hour, 30 minutes in half an hour, 15 minutes in a quarter of an hour.
Know there are 24 hours in one day.
Know that the hour hand on an analogue clock completes two full turns in a day.
Capacity (litres/ml)
Establish approximate benchmarks for capacity and volume, e.g. a teaspoon holds 5ml, a can / bottle of cola holds 330 ml, so 3 cans is about 1l, large milk is 2l
Make a sensible estimate of how much a vessel will hold, using benchmarks to refine guesses.
Measure an object using the most appropriate unit e.g. millilitres or litres?
Record using standard abbreviations of ml and l.
Read a scale to the nearest division e.g. on a litre jug marked in 100 ml divisions.
Know the relationship between 100 ml and 1l.
Compare and order lengths, mass, volume/capacity and record the results using >, < and =.
Compare and order lengths and record the results using >, < and =.
Use language of comparison such as, longer, shorter, taller, smaller, wider, narrower, higher, lower, about the same, etc., e.g., James is taller than Mohammed but shorter than Angela. Is this true?
Find the difference in length between two objects to the nearest centimetre / metre and record and / or explain, e.g., 'The pencil is just under 2 cm shorter than the straw.'
Solve practical problems, e.g., How much longer / shorter than the red ribbon is the blue ribbon?

Year 2 Mathematics Curriculum Objectives

Record comparisons with concrete objects or in words with the symbols <, > and =, e.g., red rod < yellow rod > lime rod.
Compare and order mass and record the results using >, < and =.
Use language of comparison, e.g., The jug is heavier than the box but lighter than the tin.
Find the difference in weight between two objects to the nearest gram / kilogram or scale division and record and / or explain, e.g., The book is 100 g heavier than the tin.
Solve practical problems, e.g., How much lighter than half a kilogram is each of these objects – just a bit lighter, a lot lighter, or about the same?
Record comparisons with concrete objects or in words with the symbols <, > and =, e.g., in a cake recipe, flour > sugar = butter.
Compare and order volume / capacity and record the results using >, < and =.
Use language of comparison, e.g., empty, full, half empty / full, hold less / more, no space left.
Find the difference in capacities / volumes between two objects, e.g., 'The jug holds about 200 $m\ell$ more than the cup.' 'I can pack 6 more cubes into the yellow box than into the blue one.'
Solve practical problems, e.g., Find a bottle that holds enough to fill 7 beakers.
Record comparisons of capacity or volume with concrete objects or in words with the symbols <, > and =, e.g., in a cocktail mix, orange juice = lime juice < water.
use symbols for pounds (£) and pence (p);
Understand and use £ and p symbols when recording money calculations.
Write amounts totalling more than £1 correctly, e.g., £1·23, not £1·23p.
combine amounts to make a particular value.
Understand and use £ and p symbols when recording money calculations.
Write amounts totalling more than £1 correctly, e.g., £1·23, not £1·23p.
Length/height in any direction (m/cm).
Establish benchmarks for lengths, heights and widths, e.g.: a door is just about 2 m high; a piece of A4 paper is 30 cm long; my finger is 1 cm wide.
Make a sensible estimate of what an object measures using benchmarks, check and discuss how close the estimate was, e.g., How wide is the classroom to the nearest metre?
Measure an object using the most appropriate unit, e.g., metres or centimetres.
Read a scale to the nearest division, e.g., Make own tape measure, marked every 10 cm, and use.
Measure objects / areas (length and width only) and record using standard abbreviations of cm and m.
Know the relationship between 1 cm and 1 m.
Mass (kg/g).
Establish benchmarks to help with estimation of weights, e.g.: apple about 150 g, bag of sugar 1 kg.
Make a sensible estimate of what an object weighs, using benchmarks to refine guesses.
Measure an object using the most appropriate unit, e.g., grams or kilograms.
Read a scale to the nearest division.
Record using standard abbreviations of g and kg.
Know the relationship between:
1 g weight and 10 g weight;
10 g weights and 100 g weight;
100 g weight and l kg weight.
Temperature (°C).
Establish a benchmark for temperature and use in estimation, e.g., the classroom is about 20°C.
Describe and compare air temperatures / liquids, using temperature language such as feels cold, colder, hot, and hotter, freezing, too hot to drink.

Year 2 Mathematics Curriculum Objectives

Measure the temperature with a thermometer to the nearest degree and record temperature using °C., e.g., class record temperatures for inside and outside the classroom on a chart and compare.
Find different combinations of coins that equal the same amounts of money.
Know how many of each coin denomination makes another, e.g., two 10p coins = 20p.
Find different combinations to make a given amount, checking that no two are the same by ordering each arrangement.
Understand the relationship between coins and notes, e.g., Exchange 20p, 50p and £1 coins for £5 and £10 notes in different ways.
Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.
Solve problems with addition and subtraction. (Number: Addition and Subtraction, Year 2) Recording will usually be an image of practical results rather than a formal number sentence.
Count forwards and backwards in coin / note amounts.
Add mixed sets of coins totalling less than £1.
Total mixed sets of £1 and £2 coins and £5, £10 and £20 notes.
Subtract a pence amount from a pence amount. (Within context of numbers used in calculation.)
Subtract whole pounds from whole pounds. (Within context of numbers used in calculation.)
Compare amounts, e.g., How much more has Jane than Bobby?
Subtract money amounts in the context of change, e.g., Pay for an item worth 33p with only 20p coins and take change in least coins possible.
Solve practical problems , e.g.:
Which purse would you rather have? From the shop, find different pairs of items you can you afford with 50p, £1, £1·50, etc. Give change (up to £1), perhaps with some rules such as, 'There are no 10p coins left in the till.'

Year 2 Mathematics Curriculum Objectives

Mathematics – Year 2

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.

2-D Shapes: including regular and irregular pentagons, hexagons and octagons.

Name flat shapes by counting the sides.

Recognise shapes in the environment in different orientations and positions.

Select shapes matched to whether they have / have not got given properties, e.g., will fit together without leaving spaces (tessellate).

Describe shapes by their properties, e.g., has a line of symmetry or will fit together without leaving spaces.

Visualise shapes, extending the complexity of language and instructions from Year 1, e.g., I am

thinking of a shape that has 4 corners, 2 long sides and 2 short sides. Draw the shape on your whiteboard.

Solve shape problems, e.g.:

How many rectangles can be seen in a diagram?

Here are five triangles the same size. Use some or all of the triangles to make a bigger triangle. Is there another way to do it?

Identify shapes that have a right angle, e.g., make as many different pentagons as you can on geoboards and sort them for right angles.

Vertical Line Symmetry

Understand that objects and shapes can be reflected, e.g., Talk about reflections of objects in water.

Know that the line of symmetry is the imaginary line where you could fold a shape and both halves match exactly.

Make and describe simple symmetrical patterns, e.g., ink blots or pegboards.

Identify shapes with a line of symmetry, e.g., Fold a shape in half and view it in a mirror.

Draw a line of symmetry on a shape or picture, with some degree of accuracy, using a ruler.

Sort objects into has / has not got a line of symmetry.

Complete a picture or pattern to make it symmetrical along a vertical line and check.

Solve symmetry problems, e.g., 'How many ways can you make a symmetrically coloured pattern with all these squares in one line?'

Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.

Recognise 3-D shapes in the environment and in pictures in different orientations and positions, e.g., Name some of the shapes used in making a 3-D model.

Describe shapes by their properties, e.g., will roll or has a face with a right angle.

Visualise a shape from a description, e.g., I am looking at a shape that has 6 faces. One of its faces is a pentagon. Can you get it out of the box?

Count, faces, corners (vertices) and edges, e.g., on a model made with 4 interlocking cubes.

Identify 2-D shapes on the surface of 3-D shapes [for example, a circle on a cylinder and a triangle on a pyramid].

Name 2-D shapes on the faces of 3-D shapes. Difficult to do this for some, e.g., a cone.

Match a set of 3-D shapes to 2-D shapes, e.g., Put a cube, cuboid, square pyramid on a square mat and say why they have not put the triangular prism there.

Make a 3-D model with Clixi or Polydron, e.g., has a hexagonal face.

Compare and sort common 2-D and 3-D shapes and everyday objects.

Sort and classify shapes by properties, e.g.:

Sort shapes into sets that have / have not got square faces.

Sort shapes into sets that have / have not got a line of symmetry.

Ask questions 'how do you know this shape is a square?'

Compare 2 shapes and say how they are the same/different e.g., a cereal box and a die (dice) or a triangle and a square.

Year 2 Mathematics Curriculum Objectives

Mathematics – Year 2
Geometry: Position & Direction
Order and arrange combinations of mathematical objects in patterns and sequences.
Use shapes, coins, etc., that will give additional opportunities for discussion / problem solving.
Explain a given pattern / sequence.
Continue a given pattern / sequence.
Find the missing object in a given pattern / sequence.
Predict an object further along the sequence.
Make own pattern / sequence and explain it.
Display practical sequences in different directions, e.g., horizontal, vertical or circular.
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).
Understand and use positional vocabulary, extending the work from Year 1.
Use and understand 'straight' in the context of lines on shapes and in the context of movement in a straight line when walking, running, etc.
Associate turning a quarter of a turn with turning a right angled (square) corner, e.g.: In PE, follow instructions to move, such as making a one-quarter turn clockwise. In the playground mark out a big square. Establish that it is a square by talking about its properties. Follow instructions to walk round it, using language such as turning (clockwise / anti-clockwise) in quarter turns, walking in straight lines.
Respond to instructions to make two quarter turns and know this is half a turn, first with objects, such as geostrips, then with themselves.
Recognise that, when turning through a half-turn, you end up facing in the opposite direction.
Make quarter and three-quarter turns from the same starting point, associating these with the right angles on a square shape.
Recognise that, when moving a quarter turn clockwise and moving a three-quarter turn anti-clockwise from the same starting point (and vice versa), an object / person is in the same position and facing the same way.
Follow a series of instructions to move on a path from A to B using single and multiple right angled fractions of turn and straight lines.
Give instructions for a friend to walk a shape, e.g., a bigger square, a rectangle.
Solve movement problems, e.g., 'Guide the dog to the bone. Can you give 2 different sets of instructions to do this?'
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. (Geometry: Properties of Shape, Year 3)

Year 2 Mathematics Curriculum Objectives

Mathematics – Year 2
Statistics
Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.
General
Take part in a class data collection; e.g., Record the weather for a week / month on a class chart.
Work through the data-handling cycle: pose a question and answer it by collecting data, organising, representing and interpreting it.
Know that the same information can be presented in different types of charts and diagrams and say why they prefer one to another, e.g., weather symbols on a calendar, in a list, on a pictogram.
Know that titles, labels, scales and keys are important elements of all types of charts and use them to identify the information required.
Interpret vertical and horizontal pictograms and block graphs.
Pictograms
Make pictograms with real objects.
Represent objects in pictograms with drawings of objects exactly the same size so that the heights / lengths of the pictogram bars can be compared. (This might not have a numbered axis in early work.)
Know that adding a column for totals helps to answer questions about the pictogram.
Tally Charts
Know that a tally chart is used only when one person needs to be asked at a time in the collection of data.
Organise the tally chart neatly with counts in 5s (four vertical lines joined by a diagonal to make 5).
Block Diagrams
Make a 3-D block graph with cubes to represent each item; e.g., Children put a brick on the drink they prefer from orange juice, water, milk or cola.
Make links between pictograms and block diagrams: how they are the same; how they are different.
Represent items by shading the correct length of bar for the count, at first using a unitary y-axis scale against which to match.
Make and compare block graphs, using ICT, and answer questions. (Could be a class activity.)
Use many-to-one correspondence (scaling) with simple ratios on axes such as 2, 5, and 10 and correctly answer questions based on these.
Tables and Lists
Organise information in a list or table; e.g., Make a list of all the odd numbers between 15 and 35.
Ask and answer questions about totalling and comparing categorical data.
Answer questions from a range of chart presentations, including: tables; pictograms; block graphs.
Answer questions about data totalling; e.g., 'n how many days was there some sunshine?
Answer questions about data comparison; e.g., How many more people prefer chocolate to strawberry?
Make statements about data; e.g., Most of our class had pizza today. Nobody had stew.
Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.
Answer counting questions by reading and interpreting a numbered axis.
Ask questions about data; e.g., ask a question for a friend to answer about a 'chart'.
Rearrange categories by sorting lists in order; e.g., in a descending table by quantity.
Venn and Carroll diagrams are not specific to the statutory requirement but can be used to present data in a measurement or numbers context, e.g.:

Interpret a Venn diagram; e.g., 'How many pupils have blue eyes and are more than 1 m tall?'

Know the meaning of 'not' in a data context; e.g., shapes that are not red.

Interpret a Carroll Diagram; e.g., How many of these shapes are circles but are not red?

Year 2 Mathematics Curriculum Objectives