Black – Main content to be taught
Italic – Daily fluency objectives
Purple – Challenge objectives
Learning objectives are not listed in a specific order and may be taught more than once to support learning progression.

HCAT Maths Year on a Page
Year 2 – 2025/2026

Autumn Term 1

Week 1 01/09/25 3-day week **Week 2** 08/09/25 **Week 3** 15/09/25	Number & Place Value	To count in steps of 2, 5, 10 from 0 To recognise the place value of each digit in a 2-digit number (tens and ones) To partition a 2-digit number to tens and ones (using concrete resources) To identify, represent and estimate multiples of 10 using different representation using a number line. To identify, represent and estimate numbers using different representation using a number line. To compare and order numbers from 0 to 100 using the symbols > < = To read and write numbers to at least 50 in numerals and in words. To identify and represent odd and even numbers. To count in steps of 3 from any number forwards. To partition any 2-digit number into different combinations of tens and ones. *To fluently count in 2, 5, 10s from any number forwards*
Week 4 22/09/25	Addition	To recall and use addition facts to and within 20 fluently. To recall at least four of the six number bonds to 10 and reason about associated facts (e.g. 6+4=10, therefore 4+6=10 and 10-6=4). To add three 1-digit numbers. To add a 2-digit number and ones To add a 2-digit number and tens To solve problems with addition using concrete objects and pictorial representations. *To fluently count in 3s, from any number forwards.*
Week 5 29/10/25	Subtraction	To recall and use subtraction facts within 20 fluently. To subtract a 2-digit number and ones. To subtract a 2-digit number and tens. To show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. To recognise and use the inverse relationship between addition and subtraction. To solve problems with subtraction using concrete objects and pictorial representations. *To fluently count in 3s, from any number forwards.*
Week 6 06/10/25	Number: Fractions	To recognise, find, and name fractions, $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$, of a shape and know that all parts must be equal parts of the whole. To recognise, find, and name fractions , $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$ of a set of objects or quantity and know that all parts must be equal parts of the whole. To write simple fractions for example. ½ of 6 = 3 To solve problems by finding fractions of shapes, objects and quantities. *To fluently count in 3s, from any number backwards.*
Week 7 13/10/25	Measurement: Money	To recognise and use symbols for (£) and (p) To know the value of different coins and notes. To apply counting in 2s, 5s and 10s to find total amounts of money. To combine amounts to make a particular value. To order and compare amounts of money using >, < and =. To solve simple problems in a practical context involving addition and subtraction or money of the same unit. *To fluently recall doubles and near doubles.*
Week 8 20/10/24 3-day week	Measurement: Time	To tell and write the time to the nearest 15 minutes including quarter past/to the hour and draw the hands on a clock face to show these times. To compare and sequence intervals of time. To tell and write the time to five minutes and draw the hands on a face clock to show these times. *To fluently recall doubles and near doubles.*

October Half Term

Autumn Term 2

Week 1 03/11/25 **Week 2** 10/11/25	Multiplication And Division	To make links between repeated addition and multiplication. To calculate mathematical statements for multiplication and write them using the x and = sign. To make equal groups by sharing practically. To make equal groups by grouping. To calculate mathematical statements for division and write them using the ÷ and = sign. To solve multiplication and division calculations supported by concrete resources and pictorial representation. To use arrays to explore multiplication and division practically using the language of groups of, lots of and sharing. *To fluently recall multiplication facts for 2, 5 and 10.*
Week 3 17/11/25	**Autumn Assessment Week**	
Week 4 24/11/25	Statistics	To interpret pictograms (units of 1). To interpret tally charts. To construct pictograms. To construct tally charts. To ask questions to gather data and present findings. To record, interpret, collate, organise and compare information (for example, using many-to-one correspondence in pictograms with simple ratios 2, 5, 10) *To fluently recall number bonds to 20.*
Week 5 01/12/25	Geometry: Properties of shape	To identify and describe the properties of 2D shapes. To identify and describe the properties of 3D shapes. To explore lines of symmetry in 2D shapes. To identify 2d shapes on the surface of 3D shapes. To compare and sort common 2D and 3D shapes and everyday objects. To explore a wide variety of 2D and 3D shapes (quadrilaterals, cuboids, prisms and cones) *To fluently recall addition facts within 20.*
Week 6 08/12/25	Measurement: Length & Height	To use a ruler to measure length in cm. To estimate and measure length/height in any direction. To compare lengths/heights. To order lengths/heights. To read scales in divisions of ones, twos, fives and tens. To compare measures including simple multiples such as 'half as high'; 'twice as wide'. *To fluently recall subtraction facts within 20.*
Week 7 15/12/25	Geometry: Position and Direction	To order and arrange combinations of mathematical objects in patterns and sequences. To use mathematical vocabulary to describe position, direction and movement, including movement in a straight line To use mathematical vocabulary to describe position, direction and movement, distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise). *To fluently count in 2s, 3s, 5s and 10s from any number forwards and backwards.*

Christmas End of Term

Spring Term 1

Week 1 05/01/26	Place Value	To partition any 2-digit number into different combinations of tens and ones. To read and write numbers to at least 100 in numerals and in words. To count in steps of 3 from any number forwards and backwards. To apply knowledge of number patterns to identify missing numbers in a sequence including odd and even numbers. To use place value and number facts to solve problems. To count in fractions up to 10, starting from any number. *To fluently recall near doubles.*
Week 2 12/01/26 **Week 3** 19/01/26	Addition & Subtraction	To recall and use addition and subtraction facts to 10 fluently and use related facts up to 100. To add two two-digit numbers using concrete objects (no regrouping). To subtract two two-digit numbers using concrete objects (no regrouping). To add and subtract two two-digit numbers, where no regrouping is required and explain methods verbally, in pictures or using apparatus. To add and subtract numbers using concrete objects, pictorial representations and mentally including: a two-digit number and ones and a two-digit number and tens. To add two two-digit numbers using knowledge of mental and written methods (calculation policy). To subtract two two-digit numbers using knowledge of mental and written methods (calculation policy). To solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures. To solve problems with addition and subtraction applying their increasing knowledge of mental and written methods. To add and subtract any two two-digit numbers using an efficient strategy and explain methods verbally, in pictures or using apparatus (e.g. 48+35=, 72-17=). *To fluently recall addition and subtraction facts within 20.*
Week 4 26/01/26 **Week 5** 02/02/26	Fractions	To recognise and name unit-fractions, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$. To recognise and name non-unit fractions, $\frac{2}{4}$, $\frac{2}{3}$ and $\frac{3}{4}$. To recognise, find, and name fractions , $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ *and* $\frac{3}{4}$ of a shape and know that all parts must be equal parts of the whole. To recognise, find, and name fractions , $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ *and* $\frac{3}{4}$ of a set of objects or quantity and know that all parts must be equal parts of the whole. To recognise, find, and name fractions , $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ *and* $\frac{3}{4}$ of measures, e.g. length, and know that all parts must be equal parts of the whole. To write simple fractions for example. ½ of 6 = 3 and recognise the equivalence of 2/4 and ½. To solve problems by finding fractions of shapes, objects and quantities. To count in fractions up to 10 on a number line using equivalence (e.g. 1 ¼, 1 2/4 (or 1 ½), 1 ¾, 2) *To fluently count in fractions up to a whole.*
Week 6 09/02/26	Geometry: Properties of Shape	To read and write names for shapes. To identify and describe the properties of 2D shapes, including the number of sides and lines of symmetry. To identify and describe the properties of 3D shapes, including the number of edges, vertices and faces. To describe similarities and differences of 2D and 3D shapes, using their properties (e.g. that two different 2D shapes both have only one line of symmetry; that a cube and a cuboid have the same number of edges, faces and vertices, but different dimensions). *To fluently recall 10 more and 10 less from a number.*

February Half Term

HCAT Maths Year on a Page
Year 2 – 2025/2026

Spring Term 2

Week 1 23/02/26	Measurement: Time	To tell and write the time to the nearest 15 minutes including quarter past/to the hour and draw the hands on a clock face to show these times. To compare and sequence intervals of time. To know the number of minutes in an hour and the number of hours in a day. To tell and write the time to five minutes and draw the hands on a face clock to show these times (GD statement) *To fluently count in 5s, from any number forwards and backwards.*
Week 2 02/03/26	Measurement: Mass/Weight	To compare and order mass and record the results using >< = To read scales in divisions of ones, twos, fives and tens To estimate and measure mass (kg/g) to the nearest appropriate unit using scales. To read scales where not all numbers on the scale are given and estimate points in between. *To fluently add multiples of 10*
Week 3 09/03/26	Measurement: Money	To find different combinations of coins that equal the same amounts of money. To order and compare amounts of money using >, < and =. To combine amounts to make a particular value. To solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. To use reasoning about numbers and relationships to solve more complex problems and explain their thinking. *To fluently subtract multiples of 10*
Week 4 16/03/26	Number: Fractions	To recognise the equivalence of 2/4 and ½. To recognise, find and name fractions of a length. To write simple fractions for example. ½ of 6 = 3 To solve problems by finding fractions of shapes, objects and quantities. To count in fractions up to 10 on a number line using equivalence (e.g. 1 ¼, 1 2/4 (or 1 ½), 1 ¾, 2) *To fluently add and subtract multiples of 10.*
Week 5 23/03/26	Number: Multiplication and division	To recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems. To use multiplication knowledge to solve missing number problems (calculation policy) To use knowledge of the commutativity to create a fact family. To solve problems involving multiplication and division. To recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts. To solve unfamiliar word problems that involve more than one step. *To fluently count in 2s, 3s, 5s and 10s from any number forwards and backwards.*

Easter End of Term

Summer Term 1

Week 1 13/04/26	Geometry: Properties of Shape	To identify and describe the properties of 2D shapes including the number of sides and line of symmetry in a vertical line. To identify and describe the properties of 3D shapes including the number of edges, vertices and faces. Compare and sort common 2D and 3D shapes and everyday objects. To describe similarities and differences of 2D and 3D shapes using their properties. *To fluently practise mental addition and subtraction*
Week 2 20/04/26	Addition & Subtraction	To add any two 2-digit numbers using an efficient strategy. To subtract any 2-digit numbers using an efficient strategy. To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. To use the language of sum and difference to solve addition and subtraction problems. To solve problems with addition and subtraction using mental and written methods. To solve unfamiliar word problems that involve more than one step. To use reasoning about numbers and relationships to solve more complex problems and explain their thinking. *To fluently practise mental addition and subtraction*
Week 3 27/04/26	Statistics	To interpret block diagrams To interpret simple tables To construct block diagrams To construct simple tables To ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. To use many-to-one correspondence in pictograms with simple ratios 2, 5 and 10. *To fluently practise mental addition and subtraction*
Week 4 04/05/26 4-day week	Multiplication & Division	To recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. To calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs. To solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. *To fluently practise mental addition and subtraction*
Week 5 11/05/26	Measurement: Capacity/Volume/ Temperature	To compare and order volume/capacity and temperature and record the results using >, < and =. To estimate and measure volume/capacity (litres/ml) and temperature (°C); to the nearest appropriate unit using thermometers and measuring vessels. To read scales in divisions of ones, twos, fives and tens. To read scales where not all numbers on the scale are given and estimate points in between. *To fluently practise mental addition and subtraction*
Week 6 18/05/26	Place Value – Flexible for SATs	To apply knowledge of number patterns to identify missing numbers in a sequence including odd and even numbers. To partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus. To compare and order numbers from 0 up to 100; use <,> and = signs. To apply knowledge of numbers to reason with, discuss and solve problems that emphasise the value of each digit in a two-digit number. *To fluently practise mental addition and subtraction*

Spring Bank Half Term

Summer Term 2 – Consolidating all key concepts, identifying opportunities to draw upon other areas of maths and develop mastery.

Week 1 01/06/26	Combining Concepts	To read and write numbers to at least 100 in numerals and in words. To partition any 2-digit number into different combinations of tens and ones. To solve problems with addition and subtraction applying their increasing knowledge of mental and written methods.
Week 2 08/06/26	Summer Assessment Week	
Week 3 15/06/26	Combining Concepts	To recognise, find and name fractions of a length. To solve problems by finding fractions of shapes, objects and quantities. To solve problems involving multiplication and division. To solve problems by finding fractions of shapes, objects and quantities. To calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs. To apply knowledge of four operations with lengths and heights. To ask and answer questions about totalling and comparing categorical data.
Week 4 22/06/26		
Week 5 29/06/26	Combining Concepts	To use the language of sum and difference to solve addition and subtraction problems. To use mathematical vocabulary to describe position, direction and movement, distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise). To solve subtraction problems applying their increasing knowledge of mental and written methods.
Week 6 06/07/26	Addressing Misconceptions following recent assessments	*Use of trackers and QLA and teacher assessment of pupils within your class to address gaps in learning. Relevant learning objectives need to be taken from this document depending on what your pupils need and used each lesson.* *Use of time to ensure that pupils have the fundamentals for the next academic year.*
Week 7 13/07/26		

Summer Holidays End of Term

HCAT Maths Year on a Page
Year 2 – Curriculum Guide – Place Value

National Curriculum Objectives:

Pupils should be taught to:

- 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.

Misconceptions:

- Misunderstanding the values of each column.
- Failing to understand the difference between tens and ones.
- Misunderstanding vocabulary
- Writing digits the wrong way round.
- Getting the tens and ones in the wring order, eg. 31 instead of 13.
- Not understanding the concept of zero as a place holder.
- Mixing up < and >
- Misunderstanding a calculation when the = sign is at the beginning eg. 10 = 5+5

Mathematical Language:

Numbers to 100, zero, count, on, up, down, to, from, before, after, next, more, less, many, few, fewer, greater, equal to, the same as, value, odd, even, pair, ones, tens, hundreds, digits, figures, compare, larger, largest, smaller, smallest, between, above, below, least , partition, recombine

Development steps:

NOTE: these steps are not necessarily listed in order, nor are they the focus for a whole lesson in some cases. They are listed to support elements that need to be explored at some point.

- Count objects to 100 and read and write numbers in numerals and in words.
- Represent numbers to 100.
- Tens and ones
- Tens and ones with a part whole model
- Tens and ones using addition
- Partition in different ways. Eg. 30 + 6 = 26, 20+ 16 is 36, 10+ 26=36, 10+20 +3+3=36
- Use a place value chart.
- Compare objects, values, numbers and various representations of numbers to 100, using <,> =
- Order numbers
- Count in 2's , 5s, 10s
- Count in 3's

Other links:

- Counting in different measurements, eg cm, m, g, kg, L, ml
- Counting in 5ps and 2ps, 10p.
- Making links - Its nothing new – counting in 20s, 50s, 100s, 30s.
- Links to 2,5,10,3 x tables and division facts
- Recognising numbers on money values and finding their value on a numberline.
- Reading a scale like a numberline to identify measurements.
- Estimating the number of objects
- Ordering a range of measures – ordering scale measurements, ordering money amounts, tens and one representations,
- Partitioning - using 10ps and 1ps to represent tens and ones as well as base 10/straws etc.
- Counting/sorting shapes

Contexts/resources:

Ages of family members and friends, Numerals as labels on buses, car etc., telephone numbers, Page numbers in books and magazines (ordinal), Games of all kinds, e.g. board games, computer games, football scores, Preparing for parties, planning activities and events, counting supplies, Numicon, Use of Story books, A Place for zero, Equal Shmequal, One is a snail, ten is a crab, Top Trumps, Presents in a sack, Order by age, link to tally charts counting in 5's.

White Rose Schemes of Learning:
https://whiterosemaths.com/resources/schemes-of-learning/primary-sols/

NCTEM:
https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y1_Low_Res.pdf

NRICH:
https://nrich.maths.org/content/id/13291/EYFSKS1CurriculumLinkedtoNRICH.pdf

HCAT Maths Year on a Page
Year 2 – Curriculum Guide – Addition & Subtraction

National Curriculum Objectives:

- Read, write and interpret mathematical statements involving addition 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.

Misconceptions:

- Knowing addition facts 4+1 and 1+4 are the same thing.
- Pupils believing, they need to add in the order the question is presented.
- Subtracting from the left or 'start with the ones'. We should be explaining to children that we begin from the right, as in a decimal we do not start with the ones.
- Switching the order they subtract digits in column subtraction to prevent exchanging.

Mathematical Language:

Plus, add, total, altogether, together, how many more, how many less, , subtract, minus, column, exchange, hundreds, tens, ones, left over, subtraction, inverse, difference

Development steps:

NOTE: these steps are not necessarily listed in order, nor are they the focus for a whole lesson in some cases. They are listed to support elements that need to be explored at some point.

- Fact families –addition and subtraction bonds within 20 (this includes facts to 15, 16, 17, 18, 19 etc.)
- Bonds to 100 (multiples of 10)
- Bonds to 100 (tens and ones)
- Teach effective mental strategies/appropriate written methods to:-
- Add and subtract ones
- Adding 3 one digit numbers
- Add and subtract tens
- Add a 1 and 2 digit number not crossing tens.
- Subtract a 1 and 2 digit number not crossing tens.
- Add a 1 and 2 digit number crossing tens.
- Subtract a 1 and 2 digit number crossing tens.
- Add two 2 digit numbers not crossing tens
- Subtract two 2 digit numbers not crossing tens
- Add two 2 digit numbers crossing tens
- Subtract two 2 digit numbers crossing tens
- Solve problems involving addition and subtraction
- Make links between related number facts Eg. 2 + 4 = 6, 20 + 40 = 60
- Checking answers using Inverse operations.
- Missing number calculations

Other links:

- Place value links
- Eg. What is the total of 20 + 3 and 3 tens and 2ones.
- Add and subtract measures.
- Eg to add and subtract 22cm and 6cm.
- Statistics link – how many more/less (bar charts and pictograms)
- Links to algebra (symbols representing numbers
- + = 10 What could these symbols represent?
- Balancing equations
- Eg. 15 = 7 + _____
- 6+7 = 5+ ____
- Geometry – perimeter of shapes
- Addition and subtraction within calendar
- Addition and subtraction of time (hours and minutes)

Contexts/resources:

Money (p), Shopping , Length of items, Use of children's interests eg. Dinosaurs, school, animals, sweets, Events (tickets), Bar charts, Toy Shop, Children's wish list shopping, Adding money cafe, holding a school fayre, birthday birthday planning, jobs that link to adding and subtracting (real life).

NCTEM tasks and activities
https://www.ncetm.org.uk/public/files/23305607/Mastery_Assessment_Y3_High_Res.pdf

NRICH
https://nrich.maths.org/content/id/13291/EYFSKS1CurriculumLinkedtoNRICH.pdf

White Rose Materials
https://whiterosemaths.com/resources/schemes-of-learning/primary-sols/

HCAT Maths Year on a Page
Year 2 – Curriculum Guide – Multiplication & Division

National Curriculum Objectives:

Pupils should be taught to:
- 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.

Misconceptions:

- Lack of understanding vocabulary.
- Seeing an array as a collection of one.
- Linking up multiplying by 2 and doubling.
- Understanding that the number gets bigger when multiplying and smaller when dividing
- Understanding what an equal group is
- Recognising that multiplying is the same as repeated addition.

Mathematical Language:

Numbers, grouping, sharing, multiply, halve, fractions, equal, groups, divide, lots of, groups of, once, twice, three times, multiples, odd, even, count in twos, fives, tens, on from, back from, How many times? times, multiply, , repeated addition, array, row, column, equal groups of.

Development steps:

NOTE: these steps are not necessarily listed in order, nor are they the focus for a whole lesson in some cases. They are listed to support elements that need to be explored at some point.

- Recognise equal groups
- Make equal groups
- Add equal groups
- Multiplication sentences using the x symbol
- Multiplication sentences from pictures
- Use arrays
- 2 times tables
- 5 times tables
- 10 times tables

Other links:

- When shopping find quantities in multiple purchases, sales prices, sharing costs.
- Piece of string: Converting units of measure (10 lots of 10 cm= 1m.)
- Interpreting and evaluating data, calculating amounts from pie charts and pictograms.
- Addition and subtraction
- Place value - number line, ordering and sequencing.
- Multiplying shapes
- Multiplying and dividing time (multiplying minutes and hours- e.g. 1 book is 10 minutes, how long would it take you to read 7 books?) (It takes 10 hours to fill a quarter of a swimming pool. How long would it take to fill the whole pool?)
- Bar model
- Representing in a variety of ways- Repeated addition, repeated subtraction, arrays.

Contexts/resources:

Socks, hands, using children's character families to multiply and divide, e.g. Simpsons, using the days of the week to divide by, using people, stories, petals on a flower, shapes. The Doorbell Rang story (Sharing cookies).

Sticks, Numicon, Tens frame, Number lines, base 10, number flashcards, coins counters, bead strings, counting sticks, dice, Double Dave (book) Two of everything (book). Sharing food items, dinosaurs / park enclosures, feeding animals- sharing out pellets, Christmas dinner/Sunday dinner, class resources how many do we need/cut etc.

White Rose Schemes of Learning
https://whiterosemaths.com/resources/schemes-of-learning/primary-sols/

NCETM
https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y1_Low_Res.pdf

NRICH
https://nrich.maths.org/content/id/13291/EYFSKS1CurriculumLinkedtoNRICH.pdf

HCAT Maths Year on a Page
Year 2 – Curriculum Guide – Fractions, Decimals and Percentages

National Curriculum Objectives:

- 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 .

Misconceptions:

- Not understanding that fractions need to be split into EQUAL values.
- Fraction parts can be equal yet look slightly different.
- Misunderstanding the numerator and denominator.
- Thinking ¼ has a larger value than ½ because the denominator is larger, when the wholes are the same size,
- Knowing that ½ is not always larger than ¼ - it depends on the value of the whole.

Mathematical Language:

Fraction, equal, part, whole, half, quarter, share, divide, two quarters, three quarters, four quarters, two halves, unit fractions, non unit fractions, thirds, two thirds

Development steps:

NOTE: these steps are not necessarily listed in order, nor are they the focus for a whole lesson in some cases. They are listed to support elements that need to be explored at some point.

- Understand a fraction is a part of a whole
- Making equal parts
- Recognising fractions from representations ½, ¼, 1/3, ¾, 2/4
- Unit fractions
- Non unit fractions
- Finding halves and thirds of shapes, amounts and quantities
- Working out the whole when you have been given a unit fraction/non unit fraction. Eg, ¼ is 25p, what is the whole? 2/3 is 80cm. What is the whole?
- Equivalence of ½ and 2/4
- Finding a quarter of a shape or objects
- Find a quarter of a quantity
- Counting in fractions
- Knowing that a half is not always bigger than a quarter. (depends on value of the whole)

Other links:

- Make links to division – sharing into equal groups.
- Make links to double and half.
- Counting in halves and quarters on counting stick.
- ½, 1 whole, 1whole and ½, 2 wholes etc.
- Finding halves and quarters of measures – eg 12cm straws. Locating halfway and quarter point of a journey map.
- Finding half and quarter of money amounts.
- Capacity – finding half and quarter of liquid.
- Geometry – halves and quarters of shapes.
- Half turn and quarter turn (feed into PE)
- Clocks – half past, quarter past
- Word problems involving fractions

Contexts/resources:

- Fractions of shapes, pizza's cakes, chocolate/sweets/fruit food items. Fractions, of length/measures/journeys. Maths stories that look at fractions
- Give me half: https://www.youtube.com/watch?v=hVaxiJB6Fls
- Practically finding half of measures eg. 20cm string – cutting half and quarter.
- Would you rather problems, sharing food for party, fraction of food, decimals - pounds and pence

White Rose Schemes of Learning
https://whiterosemaths.com/resources/schemes-of-learning/primary-sols/

NCTEM
https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y1_Low_Res.pdf

NRICH
https://nrich.maths.org/content/id/13291/EYFSKS1CurriculumLinkedtoNRICH.pdf

HCAT Maths Year on a Page
Year 2 – Curriculum Guide – Geometry

National Curriculum Objectives:

- 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.

Misconceptions:

- Names of the different shapes – vocabulary
- Understanding of what 2D and 3D shapes are
- Irregular and regular shapes
- Not at triangles are equilateral
- Counting the same side more than once (need to mark off)
- Do all four sided shapes look the same?

Mathematical Language:

Position, Over, under, underneath, above, below, top, bottom, side, on, in, outside, inside, around, in front, behind, front, back, Before, after, Beside, next to, Opposite, Apart, Between, middle, edge, centre, Corner, Direction, Journey, Left, right, up, down, forwards, backwards, sideways, Across, Close, far, near, Along, through, Movement, Slide, roll, turn, whole turn, half turn¸ Rotation, Clockwise, anticlockwise, Straight line, Ninety degree

Development steps:

NOTE: these steps are not necessarily listed in order, nor are they the focus for a whole lesson in some cases. They are listed to support elements that need to be explored at some point.

- P.E - 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).

- Recognise 2D and 3D shapes
- Count sides on 2D shapes
- Count vertices on 2D shapes
- Draw 2D shapes
- Lines of symmetry
- Sort 2D shapes
- Make patterns with 2D shapes
- Count faces on 3D shapes
- Count edges on 3D shapes
- Count vertices on 3D shapes
- Sort 3D shapes
- Make patterns with 3D shapes

Other links:

- Multiplying – E.g, counting the amount of sides of 3 triangles.. If there are two squares, how many sides are there altogether? 2 squares = 4 sides x 2
- Adding the sides of all the shapes and length of multiple shapes joined together
- Subtracting – can you take away 4 squares? IF I take away one side, what shape would I have?
- Outdoor learning – finding shapes in environment
- Measuring – the size of shapes
- Money - Shape of coins
- Fractions – how many red triangles out of them all?
- Statistics – pictograms using shapes
- Exploring difference between length of shapes/shape measures.
- Symmetry- create symmetrical shapes with given properties, eg an odd number of red squares, multiple of 5 of green squares. Half the number of blue than green. Etc.
- Algebra – using shapes to represent numbers.

Contexts/resources:

- Feely bag, shapes, sorting hoops, objects, coins, rulers,
- Shapes of real life objects – clock/circular, the window/rectangular
- Explore how shapes are used in art and design, and in religious and cultural symbols
- Outdoor environment
- Math's story – the greedy triangle, patterns for wrapping paper, puzzles, designing a specific box, position and direction PacMan.

White Rose Schemes of Learning
https://whiterosemaths.com/resources/schemes-of-learning/primary-sols/

NCETM
https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y1_Low_Res.pdf

NRICH
https://nrich.maths.org/content/id/13291/EYFSKS1CurriculumLinkedtoNRICH.pdf

HCAT Maths Year on a Page
Year 2 – Curriculum Guide – Measures

National Curriculum Objectives:

- 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.

Misconceptions:

- Understanding that the point of measure is the line and not the space.
- Understand how to use equipment correctly.
- Not recording the correct unit.
- Understanding that there are 60 minutes in 1 hours and not 100.
- Misunderstanding size for weight/ height for capacity.
- When measuring ensure the ruler is lined up at the correct starting point.

Mathematical Language:

Full, half full, empty, holds, container, weigh, weighs, balances, heavy, heavier, heaviest, light, lighter, lightest, scales, time, days of the week, seasons, day, week, month, year, weekend, birthday, morning afternoon, evening, night, midnight, Bedtime, dinnertime, playtime, Today, yesterday, tomorrow, Before, after, Next, last

Now, soon, early, late, Quick, quicker, quickest, quickly , fast, faster, fastest, slow, slower, slowest, slowly, old, older, oldest, new, newer, newest, takes longer, takes less time, Hour, o'clock, half past, Clock, watch, hands, Always, never, often, sometimes, usually , Once, twice, First, second, third, etc. Estimate, close to, about the same as, just over, just under, Too many, too few, not enough, enough, Length, width, height, depth, Long, longer, longest, short, shorter shortest, tall, taller, tallest, high, higher, highest

Low, wide, narrow, deep, shallow, thick, thin, Far, near, close Metre, ruler, metre stick, Money, coin, penny, pence, pound, price, cost, buy, sell, spend, spent, pay, change, dear(er), costs more, costs less, cheaper, costs the same as, Total.

Development steps:

NOTE: these steps are not necessarily listed in order, nor are they the focus for a whole lesson in some cases. They are listed to support elements that need to be explored at some point.

- Compare mass
- Measure mass in grams and in kilograms
- Compare capacity
- Millilitres, litres
- Temperature
- o'clock and half past
- Quarter past and quarter to.
- Telling time to 5 minutes
- Minutes in an hour, hours in a day
- Find durations of time
- Compare durations of time
- Count money- pence, pounds, notes and coins.
- Select money
- Find the total, difference, change
- Two step problem

Other links:

- Place Value – recognising tens and ones in measurements.
- Using < > and = to compare measures
- Counting in measures. Eg. Cm, 5p, 10p, minutes, g/kg etc. Discuss crossing boundaries eg. cm to m etc.
- Counting in fractions of measures.
- Addition and subtraction of months/days in calendar maths
- Addition/Subtraction of measures Eg. add up the weight of luggage to check it is within baggage allowances/ how many shelves can be made out of a given length of wood?
- Fractions – language of half, quarter, three quarters. Converting fraction measures. Eg. 2 ½ Kg = 2, 500g.
- Statistics – graphs showing measurements.
- Calculating difference between measurements.
- Doubling/halving measurements
- Measuring the length of shape sides.
- Multiplication – clock count round in multiples of 5's.
- Sorting odd and even measurements.
- Multiplying and division of measures. Eg. dividing string into equal lengths/multiplying multiple lengths as plants grow etc..

Contexts/resources:

- Measuring distances for long jumps.
- Train/bus timetables, how long is it until lunch?
- Weighing ingredients for baking using metric units of measure.
- Rulers, meter sticks, tape measures, a variety of containers, clock, money, calendar, trundle wheel

White Rose Schemes of Learning
https://whiterosemaths.com/resources/schemes-of-learning/primary-sols/

NCTEM
https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y2_Low_Res.pdf

NRICH
https://nrich.maths.org/content/id/13291/EYFSKS1CurriculumLinkedtoNRICH.pdf

HCAT Maths Year on a Page
Year 2 – Curriculum Guide – Statistics

National Curriculum Objectives:

- 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.

Misconceptions:

- Not knowing that a tally chart is grouped in 5
- Numbers can be represented as pictures and these can change (pictogram) Pictograms can only be shown horizontally

Mathematical Language:

Tally, pictogram, block diagram, simple tables, objects, category, quantity, totalling, comparing data, record data, horizontally, vertically, construct

Development steps:

NOTE: these steps are not necessarily listed in order, nor are they the focus for a whole lesson in some cases. They are listed to support elements that need to be explored at some point.

- Use a tally chart to record data
- Produce pictograms using their tally chart (horizontally and vertically)
- Use 1-to-1 correspondence to help them interpret and answer questions linked to pictograms
- Draw own pictograms where symbols represent 2, 5 and 10 items
- Collect own data to construct larger scale pictograms
- Interpret block diagrams using cubes, move to drawing and interpreting block diagrams

Other links:

- Addition and subtraction methods when collecting data
- Place value- recognising place value (total amount of data collected)
- Scales- counting in multiples of 2's and 10's
- Odd and even numbers

Contexts/resources:

White Rose Schemes of Learning
Resources,https://whiterosemaths.com/resources/schemes-of-learning/primary-sols/