**Cambois Primary School** **Long Term Plan Year 1/2**



**New yr1 assessments need downloading from the website (link on each unit)**

**Place Value**

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| Link to WRMH small steps | * <https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/SoLs/Primary/MixedAge/Year-1-and-2-Mixed-Age-Autumn-Block-1-Place-Value.pdf>
 |
| Key NC outcomes | * read and write numbers from 1 to 20 in numerals and words.
* identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least
* count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens

y2* recognise the place value of each digit in a two-digit number (tens, ones)
* read and write numbers to at least 100 in numerals and in words
* use place value and number facts to solve problems
* identify, represent and estimate numbers using different representations, including the number line

DFE guidance<https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/897799/Maths_guidance_year_1.pdf><https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/897800/Maths_guidance_year_2.pdf> |
| Mathematical language | One, Two, Three, Four, Five, Six, Seven, Eight, Nine, Ten, Eleven, Twelve, Thirteen, Fourteen, Fifteen, Sixteen, Seventeen, Eighteen, Nineteen, Twenty More than, greater, larger, biggerLess than, fewer, smallerEqual to, the same amount as, as many as | Greatest/ Most/biggest/largest Least/fewest/smallestHundreds, Tens, units (ones) Exchange Digit  | Place value Digit One-digit Two-digit Three-digitHundreds, tens, ones (units) Number words to one hundredEstimate Represent Partition  |
| Useful resources - reasoning  | NRICH: [Count the crayons](http://nrich.maths.org/10653), [Matching numbers](http://nrich.maths.org/8282), [6 beads](http://nrich.maths.org/152) | NRICH: [Two-digit Targets](http://nrich.maths.org/6343)NRICH: [Largest Even](http://nrich.maths.org/7431)NRICH: [Number Detective](http://nrich.maths.org/204)NRICH: [A story about absolutely nothing](http://nrich.maths.org/5598)NCETM: [Place Value Reasoning](https://www.ncetm.org.uk/public/files/18416215/1_Progression_Map_Place_Value_Reasoning.pdf) (blue questions) | [Y1 mastery](https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y1_Low_Res.pdf)[NCETM Y2 mastery](https://www.ncetm.org.uk/public/files/23305579/Mastery_Assessment_Y2_Low_Res.pdf) |
| Possible misconceptions  | * Some pupils may appear to be counting confidently but they may just be mimicking the rhythm of the counting pattern.
* Some pupils may not be confident in counting over the tens boundaries
* Some pupils may not understand that a number can be used to show/ label the final (cardinal) value of the set of objects being counted, i.e. the final number that they have said represents the value of the objects in the set.
* Some pupils may muddle the ‘teen’ and the ‘ty’ numbers

Some pupils may read the units digit before the tens digit.* Some pupils may read the units digit before the tens or hundreds digits.
* Some pupils may record numbers incorrectly (for example one hundred and twenty-three as 10023)

Some pupils may not understand the importance of 0 as a place holder and may therefore make errors in recording. (For example one hundred an 5 as 15) |
| Assessment | <https://wrm-13b48.kxcdn.com/wp-content/uploads/2018/08/Year-2-Place-Value_End-of-Block-Assessment.pdf><https://whiterosemaths.com/resources/assessment/primary-assessment/end-of-block-assessments/> |

**Addition and subtraction**

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| Link to WRMH small steps | * <https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/SoLs/Primary/MixedAge/Year-1-and-2-Mixed-Age-Autumn-Block-2-Addition-and-Subtraction.pdf>
 |
| Key NC outcomes | * 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
* read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
* add and subtract one-digit and two-digit numbers to 20, including zero
* solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ☐ – 9
* 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
* 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
 |
| Mathematical language | One more, one lessCount on, count backOne hundredNumber bonds/ number factsAddition facts/ subtraction factsFact family | Add, subtract Count on, count back More, lessPlus, minus, total, sumDifference betweenPartitionBridgeRound, adjustInverseNumber lineNumber factsMultiple of ten, tens boundary  |  |
| Useful resources - reasoning  | NRICH: [Sums of Pairs](http://nrich.maths.org/5533), [Sort Them Out](http://nrich.maths.org/6885), [Strike it Out for Two](http://nrich.maths.org/10091)NCETM: [Activity A](https://www.ncetm.org.uk/resources/42529), [Activity C](https://www.ncetm.org.uk/resources/42529), [Activity D](https://www.ncetm.org.uk/resources/42529) | NRICH: [I’m Eight](http://nrich.maths.org/55)NRICH: [2, 4, 6, 8](http://nrich.maths.org/175)NCETM: [Activity A](https://www.ncetm.org.uk/resources/42522), [Activity C](https://www.ncetm.org.uk/resources/42522) | [Y1 mastery](https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y1_Low_Res.pdf)[NCETM Y2 mastery](https://www.ncetm.org.uk/public/files/23305579/Mastery_Assessment_Y2_Low_Res.pdf)I can see reasoning (in shared area)NCETM: [Addition and Subtraction Reasoning](https://www.ncetm.org.uk/public/files/18416326/2_Progression_Map_Addition_and_Subtraction_Reasoning.pdf) (blue questions) |
| Possible misconceptions  | * Some pupils may first include the number that they count from, add to or subtract from (therefore they may be out by 1 each time)
* Some pupils may think that the equals sign means ‘makes’, or ‘’is equal to’
* Some pupils may think that there always ‘has to be an answer’ when writing statements using the equals symbol.
* Some pupils may appear to be counting confidently but they may just be mimicking the rhythm of the counting pattern.
* When exploring related number facts some pupils may just manipulate the numbers and record incorrectly. For example instead of understanding that they need to subtract from the largest number (for example 10 – 6 =4) they may move the numbers around because they think they are related (for example 6 – 4 = 10).
* Some pupils may include the first number in the count (not count on from)
* Some pupils may confuse the language of addition or subtraction, and therefore use the incorrect operation to carry out a calculation
* Some children may assume commutativity within subtraction and say ‘2 take away 7’ when they should say ‘7 take away 2’.
* Many children may think that 2 take away 7 is not possible. It is possible (when negative numbers are introduced in Stage 4), and care with language now will lessen problems with misconceptions later.
 |
| Assessment | <https://whiterosemaths.com/resources/assessment/primary-assessment/end-of-block-assessments/><https://wrm-13b48.kxcdn.com/wp-content/uploads/2018/09/Year-2-Addition-and-Subtraction.pdf> |

**Multiplication**

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| Link to WRMH small steps | * <https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/SoLs/Primary/MixedAge/Year-1-and-2-Mixed-Age-Autumn-Block-3-Multiplication.pdf>
 |
| Key NC outcomes | YR1solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacherY2* 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 |
| Mathematical language | Calculation, CalculateOdd, EvenMultiply, Multiplication, Times, ProductRepeated additionArrayDivide, DivisionGroupsGroupingSharing  | Multiplication table, Times tableMathematical statementCommutativeInverseOperation**Notation:**×, ÷ and = signs |  |
| Useful resources - reasoning  | NRICH: [Lots of Biscuits!](http://nrich.maths.org/6883) NRICH: [Share Bears](http://nrich.maths.org/public/viewer.php?obj_id=2358)  | NRICH: [Multiplication Table – Matching Cards](http://nrich.maths.org/1252)NRICH: [Odd times even](http://nrich.maths.org/8062)NRICH: [Even and Odd](http://nrich.maths.org/6895) | [Y1 mastery](https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y1_Low_Res.pdf)[NCETM Y2 mastery](https://www.ncetm.org.uk/public/files/23305579/Mastery_Assessment_Y2_Low_Res.pdf) |
| Possible misconceptions  | * Some pupils may interpret ‘3 multiplied by 4’ as ‘4 groups/lots of 3’ rather than ‘3 groups/lots of 4’
* Some pupils may try to give whole number answers for the half of an odd number – e.g. Half of 9 is 4 (or 5)
* Some pupils may not share equally when solving division problems – e.g. Divide 10 by 2: Answer 6 and 4
* Some pupils may not see and/or understand the connection between the multiplication statements 2 × 5 and 5 × 2
* Some pupils may the see the times tables as a list of isolated, unconnected statements
* Some pupils may write statements such as 2 ÷ 8 = 4
* Some pupils may think that 30 is odd because ‘3’ is odd
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| Assessment | <https://wrm-13b48.kxcdn.com/wp-content/uploads/2018/11/Year-2-Multiplication-1.pdf><https://whiterosemaths.com/resources/assessment/primary-assessment/end-of-block-assessments/> |

**Division**

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| Link to WRMH small steps | * <https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/10/Year-1-and-2-Mixed-Age-Spring-Block-1-Division.pdf>
 |
| Key NC outcomes | YR1solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacherY2* 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
 |
| Mathematical language | Calculation, CalculateOdd, EvenMultiply, Multiplication, Times, ProductRepeated additionArrayDivide, DivisionGroupsGroupingSharing  | Multiplication table, Times tableMathematical statementCommutativeInverseOperation**Notation:**×, ÷ and = signs |  |
| Useful resources - reasoning  | NRICH: [Square It](http://nrich.maths.org/public/viewer.php?obj_id=2526)NCETM: [Activity Set B](https://www.ncetm.org.uk/resources/42835)NCETM: [Activity Set C](https://www.ncetm.org.uk/resources/42835)NRICH: [Triangles All Around](http://nrich.maths.org/2850) | NCETM: [The Art of Mathematics](https://www.ncetm.org.uk/resources/42835): Activity DNCETM: [Making shapes and solids](https://www.ncetm.org.uk/resources/42835): Activity ANRICH: [Coordinate Challenge](http://nrich.maths.org/5038)NRICH: [A Cartesian Puzzle](http://nrich.maths.org/5038)NCETM: [Activity C: Translation or Destination 1](https://www.ncetm.org.uk/resources/42938)  | [Y1 mastery](https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y1_Low_Res.pdf)[NCETM Y2 mastery](https://www.ncetm.org.uk/public/files/23305579/Mastery_Assessment_Y2_Low_Res.pdf)NCETM: [Geometry - Properties of Shapes Reasoning](https://www.ncetm.org.uk/public/files/18438967/8_Progression_Map_Geometry_properties_of_shapes_Reasoningv2.pdf)I can see reasoning (in shared area)NCETM: [Geometry: Position Direction and Movement Reasoning](https://www.ncetm.org.uk/public/files/18436990/9_Progression_Map_Geometry_position_direction_and_movement_Reasoning.pdf) |
| Possible misconceptions  | * Some pupils may interpret ‘3 multiplied by 4’ as ‘4 groups/lots of 3’ rather than ‘3 groups/lots of 4’
* Some pupils may try to give whole number answers for the half of an odd number – e.g. Half of 9 is 4 (or 5)
* Some pupils may not share equally when solving division problems – e.g. Divide 10 by 2: Answer 6 and 4
* Some pupils may not see and/or understand the connection between the multiplication statements 2 × 5 and 5 × 2
* Some pupils may the see the times tables as a list of isolated, unconnected statements
* Some pupils may write statements such as 2 ÷ 8 = 4
* Some pupils may think that 30 is odd because ‘3’ is odd
 |
| Assessment | <https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/01/Year-2-Division.pdf><https://whiterosemaths.com/resources/assessment/primary-assessment/end-of-block-assessments/> |

**Statistics (place value yr 1 – objectives in first unit page)**

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| Link to WRMH small steps | * <https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/10/Year-1-and-2-Mixed-Age-Spring-Block-1-Division.pdf>
 |
| Key NC outcomes | YR1Objectives on first sheet* read and write numbers from 1 to 20 in numerals and words.
* identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least

count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tensY2* 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 |
| Mathematical language | DataPictogramTally, Tally chartBlock diagramTableCategory, Categorical dataTotalCompare | Multiplication table, Times tableMathematical statementCommutativeInverseOperation**Notation:**×, ÷ and = signs |  |
| Useful resources - reasoning  | NRICH: [Sticky Data](http://nrich.maths.org/7687)NRICH: [If the World Were a Village](http://nrich.maths.org/7725)NRICH: [Ladybird Count](http://nrich.maths.org/public/viewer.php?obj_id=2341)NCETM: [Activity E](https://www.ncetm.org.uk/resources/42886) | NCETM: [Statistics Reasoning](https://www.ncetm.org.uk/public/files/18437062/10_Progression_Map_Statistics_Reasoning.pdf)Y1NRICH: [Count the crayons](http://nrich.maths.org/10653)NRICH: [Matching numbers](http://nrich.maths.org/8282)NRICH: [6 beads](http://nrich.maths.org/152) | [Y1 mastery](https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y1_Low_Res.pdf)[NCETM Y2 mastery](https://www.ncetm.org.uk/public/files/23305579/Mastery_Assessment_Y2_Low_Res.pdf)I can see reasoning (in shared area) |
| Possible misconceptions  | * Some pupils may cross off each five when tallying, rather than crossing of each four lines with a fifth.
* Some pupils may not group in fives when tallying
* Some pupils may think that a symbol always represents one unit in a pictogram.

Y1* Some pupils may appear to be counting confidently but they may just be mimicking the rhythm of the counting pattern.
* Some pupils may not be confident in counting over the tens boundaries
* Some pupils may not understand that a number can be used to show/ label the final (cardinal) value of the set of objects being counted. If a pupil is asked to count a group of objects and then asked how many there are in the set, if they have to count again, then they do not have an understanding that the final number that they have said represents the value of the objects in the set.
* Some pupils may muddle the ‘teen’ and the ‘ty’ numbers

Some pupils may read the units digit before the tens digit. |
| Assessment | <https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/01/Primary_Spring_Mini_Assessments/Spring-Block-2-Year-2-Statistics.pdf><https://whiterosemaths.com/resources/assessment/primary-assessment/end-of-block-assessments/> |

**Measurement – length and height**

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| Link to WRMH small steps | * <https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/10/Year-1-and-2-Mixed-Age-Spring-Block-3-Length-and-Height.pdf>
 |
| Key NC outcomes | YR1* measure and begin to record the following: lengths and heights; mass/weight; capacity and volume; time (hours, minutes, seconds)

compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]; mass/weight [for example, heavy/light, heavier than, lighter than]; capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]; time [for example, quicker, slower, earlier, laterY2* 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 =
 |
| Mathematical language | MeasureLength, height, distanceMass, weightTimeCapacity, volumeLong, short, longer, shorter, tall, tallerHeavy, light, heavier, lighterFull, empty, half full | Quicker, slower, earlier, laterMore than, greater than, less thanDouble, half, quarterHour, minutes, secondRulerContainerOrder, Compare |  |
| Useful resources - reasoning  | NRICH: [Little Man](http://nrich.maths.org/4789/note)NRICH: [Sizing Them Up](http://nrich.maths.org/4962/note) | NRICH: [Order, Order!](http://nrich.maths.org/7340), [Oh! Harry!](http://nrich.maths.org/5979), [Can You Do it Too?](http://nrich.maths.org/8327)   [More and more buckets](http://nrich.maths.org/6850)NCETM: [Activity A](https://www.ncetm.org.uk/resources/42718) | [Y1 mastery](https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y1_Low_Res.pdf)[NCETM Y2 mastery](https://www.ncetm.org.uk/public/files/23305579/Mastery_Assessment_Y2_Low_Res.pdf)I can see reasoning (in shared area)NCETM: [Measurement Reasoning](https://www.ncetm.org.uk/public/files/18436766/7_Progression_Map_Measurement_Reasoning.pdf) |
| Possible misconceptions  | * Some pupils may think that cm (for example) is a unit for measuring anything
* Some pupils may think that all times have to be measured in minutes
* Some pupils may think that the straight line is longer than the wiggly line
* Some pupils may think that you put the end of the ruler (rather than the ‘0’) at the start of a line to measure it.
* Some pupils may think that milli- refers to ‘million’
* Some pupils may think that cm (for example) is the unit for measuring anything
 |
| Assessment | <https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/03/Primary_Mini_Assessments/Spring-Block-5-Mini-Assessment-Year-2-Length-and-Height.pdf><https://whiterosemaths.com/resources/assessment/primary-assessment/end-of-block-assessments/> |

**Properties of shapes**

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| Link to WRMH small steps | * <https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/10/Year-1-and-2-Mixed-Age-Spring-Block-4-Properties-of-Shape.pdf>
 |
| Key NC outcomes | * recognise and name common 2-D and 3-D shapes, including: 2-D shapes [for example, rectangles (including squares), circles and triangles]; 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]
* y2
* identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]
* identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line
* compare and sort common 2-D and 3-D shapes and everyday objects

identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces |
| Mathematical language | 2-D shape (polygon)Rectangle, square, circle, triangle and other 2-D shapes if appropriate3-D shapeCuboid, cube, cone, cylinder, pyramid, sphereShape, patternFlat, curved, straight, round, hollow, solidCorner, point, pointedFace, side, edge, endSort, make, build, draw | QuadrilateralCircular, Triangular, Rectangular3-D shapeCuboid, Cube, Cone, Cylinder, Pyramid, Sphere, PrismSide, Corner, Line symmetry, VerticalMirror line, Reflection, FoldEdge, Vertex, Vertices, FaceRegularIrregular |  |
| Useful resources - reasoning  | NRICH: [Chain of changes](http://nrich.maths.org/221)NRICH: [Playing with 2D shape](http://nrich.maths.org/8878)NRICH: [Matching Triangles](http://nrich.maths.org/5638)NRICH: [What Shape for Two](http://nrich.maths.org/9925) | NRICH: [Take a ... Geoboard](http://nrich.maths.org/10674)NRICH: [Properties of Shapes KS1](http://nrich.maths.org/9020)NRICH: [Stringy Quads](http://nrich.maths.org/2913)NRICH: [Let us reflect](http://nrich.maths.org/1873) | [Y1 mastery](https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y1_Low_Res.pdf)[NCETM Y2 mastery](https://www.ncetm.org.uk/public/files/23305579/Mastery_Assessment_Y2_Low_Res.pdf)I can see reasoning (in shared area)NCETM: [Geometry - Properties of Shapes Reasoning](https://www.ncetm.org.uk/public/files/18438967/8_Progression_Map_Geometry_properties_of_shapes_Reasoningv2.pdf) |
| Possible misconceptions  | * Some pupils may think that a rectangle and square are the same shape.
* Some pupils may think that a cuboid and cube are the same solid.
* Some pupils may be confused over the language used to describe the properties of shapes (for example using edges rather than sides when describing 2-D shapes)
* Some pupils may only recognise shapes when they are in a specific (often horizontal orientation)
* Some pupils think that all hexagons, pentagons, octagons and decagons are regular
 |
| Assessment | <https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/01/Primary_Spring_Mini_Assessments/Spring-Block-3-Year-2-Properties-of-Shape_Assessment.pdf><https://whiterosemaths.com/resources/assessment/primary-assessment/end-of-block-assessments/> |

**Fractions**

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| Link to WRMH small steps | * <https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/10/Year-1-and-2-Mixed-Age-Spring-Block-5-Fractions.pdf>
 |
| Key NC outcomes | * recognise, find and name a half as one of two equal parts of an object, shape or quantity
* recognise, find and name a quarter as one of four equal parts of an object, shape or quantity

y2* identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]
* identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line
* compare and sort common 2-D and 3-D shapes and everyday objects

identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces |
| Mathematical language | PartEqualWhole Half, halvesQuarterFractionNumeratorDenominator | three quartersThirdEquivalentFractionUnit fraction, non-unit fraction |  |
| Useful resources - reasoning  | NRICH: [Halving](http://nrich.maths.org/1788/note)  NRICH: [Happy Halving](http://nrich.maths.org/217)NRICH: [Making longer, making shorter](http://nrich.maths.org/5590) | NRICH: [Early Fraction Development](http://nrich.maths.org/9746) | [Y1 mastery](https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y1_Low_Res.pdf)[NCETM Y2 mastery](https://www.ncetm.org.uk/public/files/23305579/Mastery_Assessment_Y2_Low_Res.pdf)I can see reasoning (in shared area)NCETM: [Fractions Reasoning](https://www.ncetm.org.uk/public/files/18416412/4_Progression_Map_Fractions_Reasoning_.pdf) |
| Possible misconceptions  | * Some pupils may not understand that when splitting one whole into a fractional amount, each part must be equal
* Some pupils may think that a quarter is a larger piece than a half since 4 is greater 2

Some pupils may not appreciate that when shading a fraction of a shape, the position of the shaded section can vary* Some pupils may think that to find ¾ you split into 4 and then each of those parts into 3
* Some pupils may think that a quarter is a larger piece than a third since 4 is greater 3

Some pupils may not appreciate that when shading a fraction of a shape, the position of the shaded section can vary |
| Assessment | <https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/02/Primary_Spring_Mini_Assessments/Spring-Block-4-Mini-Assessment-Year-2-Fractions.pdf><https://whiterosemaths.com/resources/assessment/primary-assessment/end-of-block-assessments/> |

**Geometry – position and direction**

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| Link to WRMH small steps | * <https://wrm-13b48.kxcdn.com/wp-content/uploads/2020/03/2020/03/Year-1-and-2-Mixed-Age-Guidance-Summer-Block-1-Position-and-Direction.pdf>
 |
| Key NC outcomes | * describe position, direction and movement, including whole, half, quarter and three-quarter turns

y2* 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)
* order and arrange combinations of mathematical objects in patterns and sequences
 |
| Mathematical language | PositionDirectionTop, middle, bottomOn top ofIn front ofAboveBetween | Around, Near, Close, FarUp, DownInside, OutsideForwards, BackwardsLeft, RightHalf turn, Quarter turn, Three-quarters turnStraightLineClockwise  |  |
| Useful resources - reasoning  | NRICH: [Tangram Tangle](http://nrich.maths.org/2398)NRICH: [Olympic Rings](http://nrich.maths.org/7551)NRICH: [2 Rings](http://nrich.maths.org/public/viewer.php?obj_id=5330)NRICH: [Turning](http://nrich.maths.org/public/viewer.php?obj_id=5656)NCETM: [Activity A, B, C, D and E](https://www.ncetm.org.uk/resources/42879) | NRICH: [Turning Man](http://nrich.maths.org/public/viewer.php?obj_id=5560)NRICH: [Walking Round a Triangle](http://nrich.maths.org/8084)NRICH: [Poly Plug Pattern](http://nrich.maths.org/7515)NRICH: [Triple Cubes](http://nrich.maths.org/7128) NRICH: [A City of Towers](http://nrich.maths.org/public/viewer.php?obj_id=183)NRICH: [Caterpillars](http://nrich.maths.org/public/viewer.php?obj_id=5742)NRICH: [Repeating Patterns](http://nrich.maths.org/5944)NCETM: [Activity A](https://www.ncetm.org.uk/resources/42932)NCETM: [Activity B](https://www.ncetm.org.uk/resources/42932) | [Y1 mastery](https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y1_Low_Res.pdf)[NCETM Y2 mastery](https://www.ncetm.org.uk/public/files/23305579/Mastery_Assessment_Y2_Low_Res.pdf)I can see reasoning (in shared area)NCETM: [Geometry: Position Direction and Movement Reasoning](https://www.ncetm.org.uk/public/files/18436990/9_Progression_Map_Geometry_position_direction_and_movement_Reasoning.pdf) |
| Possible misconceptions  | * Some pupils may think that quarter turns have to look like this:

 * Some pupils may have difficulty remembering left and right

Some pupils may get confused with ‘clockwise’* Some pupils may think that right angles have to be created from a horizontal and vertical line

Some pupils may think that all turns have to be in a clockwise direction |
| Assessment | <https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/04/2019/04/2019/04/Year-2-Position-and-Direction.pdf><https://whiterosemaths.com/resources/assessment/primary-assessment/end-of-block-assessments/> |

**Measurement - time**

|  |  |
| --- | --- |
| Link to WRMH small steps | * <https://wrm-13b48.kxcdn.com/wp-content/uploads/2020/03/2020/03/Year-1-and-2-Mixed-Age-Guidance-Summer-Block-2-Time.pdf>
 |
| Key NC outcomes | measure and begin to record the following: lengths and heights; mass/weight; capacity and volume; time (hours, minutes, seconds)y2* know the number of minutes in an hour and the number of hours in a day.
* 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
 |
| Mathematical language | Time Hour, minute, secondDayo’clockHalf pastQuarter to, quarter pastClockHandsAnalogueInterval |  |  |
| Useful resources - reasoning  | NRICH: [What Is the Time?](http://nrich.maths.org/7377)NRICH: [Two Clocks](http://nrich.maths.org/4806)NCETM: [Activity D (Telling the time ITP)](https://www.ncetm.org.uk/resources/42718) |  | [Y1 mastery](https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y1_Low_Res.pdf)[NCETM Y2 mastery](https://www.ncetm.org.uk/public/files/23305579/Mastery_Assessment_Y2_Low_Res.pdf)I can see reasoning (in shared area)NCETM: [Measurement Reasoning](https://www.ncetm.org.uk/public/files/18436766/7_Progression_Map_Measurement_Reasoning.pdf) |
| Possible misconceptions  | * Some pupils may confuse the two different scales on the clock face (the hour scale and the minute scale); e.g. read 10 past 5 as 2 past 10.
* Some pupils may incorrectly record the minutes on the clock face; i.e. not appreciate the fact that when the minutes are past the hour, the minute hand must be carefully positioned in relation to how many minutes past the hour it is and not point to the hour.
* Some pupils may decimalise time and incorrectly use 100 seconds = 1 minute or 100 minutes = 1 hour
 |
| Assessment | <https://whiterosemaths.com/resources/assessment/primary-assessment/end-of-block-assessments/><https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/05/Year-2-Time.pdf> |

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| Link to WRMH small steps | * <https://wrm-13b48.kxcdn.com/wp-content/uploads/2020/03/2020/03/Year-1-and-2-Mixed-Age-Guidance-Summer-Block-3-Place-Value-recap-and-Problem-Solving.pdf>
 |
| Key NC outcomes | This unit involves a recap of place value through use of problems and puzzles for Y1 and gives time for Y2 SAT tests. |
| Mathematical language |  |  |  |
| Useful resources - reasoning  |  |  | [Y1 mastery](https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y1_Low_Res.pdf)[NCETM Y2 mastery](https://www.ncetm.org.uk/public/files/23305579/Mastery_Assessment_Y2_Low_Res.pdf)I can see reasoning (in shared area) |
| Possible misconceptions  |  |
| Assessment |  |

**Problem Solving**

**Weight and volume**

|  |  |
| --- | --- |
| Link to WRMH small steps | * <https://wrm-13b48.kxcdn.com/wp-content/uploads/2020/03/2020/03/Year-1-and-2-Mixed-Age-Guidance-Summer-Block-4-Mass-Capacity-and-Temperature.pdf>
 |
| Key NC outcomes | * measure and begin to record the following: lengths and heights; mass/weight; capacity and volume; time (hours, minutes, seconds)
* compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]; mass/weight [for example, heavy/light, heavier than, lighter than]; capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]; time [for example, quicker, slower, earlier, later]

y2* 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 =
 |
| Mathematical language | MeasureLength, height, distanceMass, weightTimeCapacity, volumeLong, short, longer, shorter, tall, tallerHeavy, light, heavier, lighter | Full, empty, half fullQuicker, slower, earlier, laterMore than, greater than, less thanDouble, half, quarterHour, minutes, secondRulerContainerOrder, Compare |  |
| Useful resources - reasoning  | NRICH: [Little Man](http://nrich.maths.org/4789/note)NRICH: [Sizing Them Up](http://nrich.maths.org/4962/note)NCETM: [Activity A](https://www.ncetm.org.uk/resources/42711) | KM: [Measures In Action](http://kangaroomaths.com/free_resources/teaching/geometry/rl_measures_in_action.docx)KM: [Posting a letter/parcel](http://www.royalmail.com/personal/help-and-support/Tell-me-about-size-and-weight-formats): explore the sizes of letters and parcels allowed by the Post OfficeNRICH: [Order, Order!](http://nrich.maths.org/7340), [Oh! Harry!](http://nrich.maths.org/5979), [Can You Do it Too?](http://nrich.maths.org/8327)   [More and more buckets](http://nrich.maths.org/6850)NCETM: [Activity A](https://www.ncetm.org.uk/resources/42718) | [Y1 mastery](https://www.ncetm.org.uk/public/files/23305594/Mastery_Assessment_Y1_Low_Res.pdf)[NCETM Y2 mastery](https://www.ncetm.org.uk/public/files/23305579/Mastery_Assessment_Y2_Low_Res.pdf)I can see reasoning (in shared area) |
| Possible misconceptions  | * Some pupils may think that milli- refers to ‘million’
* Some pupils may think that cm (for example) is the unit for measuring anything
 |
| Assessment | <https://wrm-13b48.kxcdn.com/wp-content/uploads/2019/06/Year-2-Measurement-1.pdf><https://whiterosemaths.com/resources/assessment/primary-assessment/end-of-block-assessments/> |

**Investigations**

|  |  |
| --- | --- |
| Link to WRMH small steps | * <https://wrm-13b48.kxcdn.com/wp-content/uploads/2020/03/2020/03/Year-1-and-2-Mixed-Age-Guidance-Summer-Block-5-Four-Operations-recap-and-Consolidation.pdf>
 |
| Key NC outcomes | * This unit allows time for consolidations of areas that children have struggled with through investigation
 |
| Mathematical language |  |  |  |
| Useful resources - reasoning  |  |  |  |
| Possible misconceptions  |  |
| Assessment |  |