# Maths Long Term Plan – Year 2

| Year 2 Maths | |
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| National Curriculum Objectives Year 2 | Key Links |
| Pupils should be taught to:<br><br>The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the 4 operations, including with practical resources [for example, concrete objects and measuring tools].<br><br>At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.<br><br>By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.<br><br>Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1. | Year 2 – White Rose<br><br>Maths Guidance Year 2 (Gov.uk)<br><br>Mathematics Programmes of Study: Key Stage 1 and 2 (Gov.uk) |

| Topics | | N.C Objectives | Small Steps | Key Vocabulary |
|---|---|---|---|---|
| Autumn 1 | Number: Number and Place Value | Pupils should be taught to:<br>• count in steps of 2, 3, and 5 from<br>• 0, and in tens from any number,<br>• forward and backward<br>• recognise the place value of<br>• each digit in a two-digit number<br>• (tens, ones)<br>• identify, represent and estimate<br>• numbers using different representations, including the number line<br>• compare and order numbers from 0 up to 100; use <, > and = signs<br>• read and write numbers to at least 100 in numerals and in words<br>• use place value and number facts to solve problems | • count objects to 100<br>• read and write in numerals and words<br>• represent to 100<br>• tens and ones with a part-whole model<br>• tens and ones using addition<br>• use a place value chart<br>• compare objects<br>• compare numbers<br>• order objects and numbers<br>• count in 2s, 5s, 10s, 3s | place value<br>number<br>equal to<br>greater than/less than<br>teen<br>tens/ones<br>symbol<br>more/less<br>compare<br>tens frame<br>part-whole<br>base 10 |

<u>Maths Progression:</u>

Year 1:

- Count within 100, forwards and backwards, starting with any number.
- Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =

Year 3:

- Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other threedigit multiples of 10.
- Recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit numbers using standard and non-standard partitioning
- Reason about the location of any three-digit number in the linear number system, including identifying the previous and next multiple of 100 and 10
- Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.

| Topics | | N.C Objectives | Small Steps | Key Vocabulary |
|---|---|---|---|---|
| Autumn 1 and Autumn 2 | Number: Addition and Subtraction | Pupils should be taught to:<br>• solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures.<br>• 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.<br>• 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.<br>• show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.<br>• recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems | • fact families - addition and subtraction bonds to 20<br>• check calculations<br>• compare number sentences<br>• related facts<br>• bonds to 100 (tens)<br>• add and subtract 1s<br>• 10 more and 10 less<br>• add and subtract 10s<br>• add a 2-digit and 1-digit numbers -<br>• crossing 10<br>• subtract a 1-digit number from a<br>• 2-digit number - crossing 10<br>• add two 2-digits numbers - not<br>• crossing ten - add ones and add tens<br>• add two 2-digits numbers - crossing<br>• ten - add ones and add tens<br>• subtract a 2-digit number from a<br>• 2-digit number - not crossing 10<br>• subtract a 2-digit number from a<br>• 2-digit number - crossing 10 - subtract<br>• ones and tens<br>• bonds to 100 tens and ones)<br>• Add three 1-digit numbers | number bonds<br>column<br>ones<br>total<br>sum<br>number sentence<br>tens<br>add<br>more than<br>addition'; '+';<br>'take away';<br>'subtract'<br>'fact family',<br>'10 more' and '10 less'. |

Maths Progression:

Year 1:
- Develop fluency in addition and subtraction facts within 10.
- Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers.
- Read, write and interpret equations containing addition ( ), subtraction ( ) and equals ( ) symbols, and relate additive expressions and equations to real-life contexts.

Year 3:
- Secure fluency in addition and subtraction facts that bridge 10, through continued practice
- Calculate complements to 100.
- Add and subtract up to three-digit numbers using columnar methods.
- Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part–part–whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction

| Topics | | N.C Objectives | Small Steps | Key Vocabulary |
|---|---|---|---|---|
| Autumn 2<br>Money | Measurement:<br>Money | Pupils should be taught to:<br><br>• recognise and use symbols for pounds (£) and pence (p)<br>• combine amounts to make a particular value<br>• find different combinations of coins that equal the same amounts of money.<br>• solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change | • count money - pence<br>• count money - pounds (notes and coins)<br>• count money - notes and coins<br>• select money<br>• make the same amount<br>• compare money<br>• find the total<br>• find the difference<br>• find change<br>• two-step problems | money'; 'coins';<br>'notes'; 'pounds<br>£'; 'pence p';<br>'left'; 'buy';<br>'spend'; 'how much';<br>'value';<br>'total';<br>'altogether';<br>'difference';<br>'compare';<br>'most'; 'least';<br>'less than <';<br>'more than >'; 'equal =')<br>change',<br>'amount'<br>'total value' |

<u>Maths Progression:</u>

Year 1:

- recognise and know the value of different denominations of coins and notes

Year 3:

- add and subtract amounts of money to give change, using both £ and p in practical contexts

| Topics | N.C Objectives | Small Steps | Key Vocabulary |
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| Autumn 2/Spring 1 | Number: Multiplication and Division | Pupils should be taught to:<br>• recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers<br>• calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs<br>• show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot<br>• solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. | • recognise equal groups<br>• make equal groups<br>• add equal groups<br>• make arrays<br>• multiplication sentences using the x symbol<br>• multiplication sentences from pictures<br>• use arrays<br>• 2/5/10 times table<br>• make equal groups - sharing<br>• make equal groups – grouping<br>• divide by 2/5/10 | equal groups'; 'equal parts'; 'same'; 'different'; 'more than'; 'in total'; 'multiplication x'; 'repeated addition'; 'skip counting'; 'number in a group'; 'number of groups'; 'times-table'; 'array'; 'rows'; 'columns'; 'number line' |

<u>Maths Progression:</u>

Year 1:

- solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher

Year 3:

- recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
- write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods
- solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects

| Topics | | N.C Objectives | Small Steps | Key Vocabulary |
|---|---|---|---|---|
| Spring 1 | Statistics | Pupils should be taught to:<br>• interpret and construct simple pictograms, tally charts, block diagrams and simple tables<br>• ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity<br>• ask and answer questions about totalling and comparing categorical data | • make tally charts<br>• draw pictograms (1-1)<br>• interpret pictograms (1-1)<br>• draw pictograms (2, 5 and 10)<br>• interpret pictograms (2, 5 and 10)<br>• block diagrams | tally',<br>'tally charts',<br>'pictograms',<br>'block diagrams'<br>'tables' |

<u>Maths Progression:</u>

Year 1:

- Topic starts in Year 2.

Year 3:

- interpret and present data using bar charts, pictograms and tables
- solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables

| Topics | | N.C Objectives | Small Steps | Key Vocabulary |
|---|---|---|---|---|
| Summer 1 | Number: Multiplication and Division | Pupils should be taught to:<br>● solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher | • Count in 2s<br>• Count in 5s<br>• Count in 10s<br>• Make equal groups<br>• Add equal groups<br>• Make arrays<br>• Make doubles<br>• Make equal groups – grouping<br>• Make equal groups – sharing | Multiply<br>Divide<br>Equal<br>Group<br>Sharing<br>array<br>double<br>counting |

<u>Maths Progression:</u>

Year 2:

- 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.

| Topics | | N.C Objectives | Small Steps | Key Vocabulary |
|---|---|---|---|---|
| Spring 2<br>Properties of Shape<br><br>Summer 1<br>Position and Direction | Geometry: Properties of Shape | Pupils should be taught to:<br>• identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line<br>• identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces<br>• 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 | • recognise 2D and 3D shapes<br>• count side on 2D shapes<br>• count vertices on 2D shapes<br>• draw 2D shapes<br>• lines of symmetry<br>• sort 2D shapes<br>• Make patterns with 2D saheps<br>• count faces on 3D shapes<br>• count edges on 3D shapes<br>• count vertices on 3D shapes<br>• sprt 3D shapes<br>• make patterns | ‘prism’, ‘polygon’, ‘pentagon’, ‘hexagon’, ‘octagon’ and ‘hemisphere’ vertices’, ‘vertex’, ‘quadrilateral’, ‘line of symmetry’ and ‘curved surface’ |
| | Geometry: Position and Direction | Pupils should be taught to:<br>• order and arrange combinations of mathematical objects in patterns and sequences<br>• 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). | • describe movement<br>• describe turns<br>• describe movement and turns<br>• making patterns with shapes | clockwise’ and ‘anti-clockwise’ right and left |

Maths Progression:

Year 1:

- Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another.
- Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.

Year 3:

- Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations.
- Draw polygons by joining marked points, and identify parallel and perpendicular sides.

| Topics | | N.C Objectives | Small Steps | Key Vocabulary |
|---|---|---|---|---|
| Spring 2 | Number: Fractions | Pupils should be taught to:<br>• recognise, find, name and write fractions 1/3 , 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity.<br>• write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2 . | • make equal parts<br>• recognise a half<br>• find a half<br>• recognise a quarter<br>• find a quarter<br>• recognise a third<br>• find a third<br>• unit fractions<br>• non unit fractions<br>• equivalence of 1/2 and 2/4<br>• find three quarter<br>• count in fractions | equal' or 'equivalent'. grouping' and 'sharing' division unit fractions' and 'non-unit fractions' fractions' wholes', 'parts' equal parts' |

Maths Progression:

Year 1:

- 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.

Year 3:

- Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts
- Find unit fractions of quantities using known division facts (multiplication tables fluency)
- Reason about the location of any fraction within 1 in the linear number system.
- Add and subtract fractions with the same denominator, within 1.

| Topics | | N.C Objectives | Small Steps | Key Vocabulary |
|---|---|---|---|---|
| Summer 1 | Measurement: Length and Height | Pupils should be taught to:<br>• 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<br>• compare and order lengths, mass, volume/capacity and record the esults using >, < and = | • measure length (cm)<br>• measure length (m)<br>• compare lengths<br>• order lengths<br>• four operations with lengths | length',<br>'height',<br>'width',<br>'distance'<br>'ruler'.<br>compare<br>longer<br>shorter |

Maths Progression:

Year 1:

- compare, describe and solve practical problems for:
- lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]
- measure and begin to record the following:
- lengths and heights

Year 3: (length)

- measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)

| Topics | | N.C Objectives | Small Steps | Key Vocabulary |
|---|---|---|---|---|
| Summer 1 | Measurement: Length and Height | Pupils should be taught to:<br>• compare and sequence intervals of time<br>• 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<br>• know the number of minutes in an hour and the number of hours in a day. | • o'clock and half past<br>• quarter past and quarter to<br>• telling time to 5 minutes<br>• hours and days<br>• find durations of time<br>• compare durations | 24 hours', 'daytime', 'night time', 'quarter to', 'quarter past', 'a quarter of an hour', 'to (e.g. twenty to three)', 'a.m.', 'p.m.', 'duration', 'longer', 'shorter' minute hour second hand analogue intervals o'clock half past |

Maths Progression:

Year 1:

- compare, describe and solve practical problems for: time (for example, quicker, slower, earlier, later)
- measure and begin to record the following: time (hours, minutes, seconds)
- sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]
- recognise and use language relating to dates, including days of the week, weeks, months and years
- tell the time to the hour and half past the hour and draw the hands on a clock face to show these times

Year 3:

- tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks
- estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight
- know the number of seconds in a minute and the number of days in each month, year and leap year
- compare durations of events [for example to calculate the time taken by particular events or tasks].

| Topics | | N.C Objectives | Small Steps | Key Vocabulary |
|---|---|---|---|---|
| Summer 1 | Measurement: Mass, Capacity and Temperature | Pupils should be taught to:<br>• 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<br>• compare and order lengths, mass, volume/capacity and record the results using >, < and = | • compare mass<br>• measure mass in grams<br>• measure mass in kilograms<br>• compare volume<br>• millilitres<br>• litres<br>• temperature | grams',<br>'kilograms',<br>'millilitres',<br>'litres',<br>'temperature',<br>'thermometer',<br>'degrees Celsius',<br>'hottest',<br>'coldest',<br>'g', 'kg',<br>'ml', 'l',<br>'ºC' |

Maths Progression:

Year 1: (weight and volume)

- compare, describe and solve practical problems for:
  - 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]

- measure and begin to record the following:
  - mass/weight
  - capacity and volume

Year 3: (mass, capacity)

- measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)

| Key Texts | How Big is a Million? by Anna Milbourne and Serena Riglietti<br>Five Minutes' Peace by Jill Murphy<br>A Triangle for Adaora by Ifeoma Onyefulu<br>Lucy in the City by Julie Dillemuth and Laura Wood<br>Is It Larger? Is It Smaller? by Tana Hoban<br>Henry's Map by David Elliot<br>Balancing Act by Ellen Stoll Walsh<br>Nigel's Numberless World by Lucy Coates and Neal Layton<br><br>Recommendations from MathsThroughStories.org - for specific topics |
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