

Medium Term Plans Year 2

NB- These plans are not static and will change year on year and sometimes within a year depending on cohort needs and knowledge and understanding needs.

Year 2 Big Ideas for mathematics

NUMBER AND PLACE VALUE

Each ten in a number is made of ten 1s, e.g. 30 is 3 tens; 30 is 30 ones; 30 is one ten and 20 ones. One hundred is made of ten 10s

One item can be used to represent more than one object, e.g. a 20p coin

The position of a digit in a number determines its value, e.g. 21 is more than 12

Quantities can be represented by a position on a number line

NUMBER ADDITION AND SUBTRACTION

Numbers can be added in any order, e.g. $5+4+5$ is the same as $5+5+4$

= means 'the same as', e.g. $5=7-2$ and $4+1=8-3$

Addition and subtraction are linked (part whole relationships) e.g. $9+7=16$ and $16-9=7$

Subtraction can be done by counting up to find the difference or by counting back

Number facts can be approximated or calculated by replacing numbers with other numbers, e.g. $29+8$ as one less than $30+8$

Numbers can be broken down to calculate e.g. $8+7$ is the same as $8+2+5$

The same number sentence can describe different situations, AND different number sentences can describe a the same situation

NUMBER MULTIPLICATION AND DIVISION

Multiplication is adding the same number

Multiplication and division are inverse operations (shown with arrays)

Division can be carried out by sharing e.g. $15\div 3$ as 15 shared into 3 sets or grouping $15\div 3$ as how many 3s in 15?

There are connections between times tables, e.g. the 10x table is double the 5x table

NUMBER FRACTIONS

Fractions are equal parts of a whole. The property that is equal may differ e.g. area, length or quantity

A fraction of an area can be equal without being the same shape

Fractions can be used when each share gives less than one or where the item measured is smaller than the measuring unit

MEASUREMENT

Measurement shows equivalence e.g. a table is the same length as how many cubes?

Different measurements describe different properties of an item e.g. the length, weight or size of a parcel

An object is equivalent to more of a smaller unit and less of a larger unit

We need standard units of measure, and different sized measures, to compare and describe items accurately

On an analogue clock the hour hand shows the approximate time in the day and the minute hand shows a more exact time

GEOMETRY

2D shapes exist in the real-world as faces on 3D shapes

Shapes have defining characteristics e.g. number of sides and non-defining characteristics e.g. size, colour

A shape doesn't change when it's in a different orientation e.g. a rotated square

Shapes can be made by combining different shapes

It is possible to mentally visualise the transformation of a shape

STATISTICS

Data is collected with a specific purpose in mind, e.g. which areas of the playground are most popular?

Tally charts are used to collect data over time, e.g. insects in a nature area

Graphs and charts are used as ways to show information clearly

WEEK	AUTUMN	SPRING	SUMMER
1-3	<ul style="list-style-type: none"> 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 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 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 shapes 	<ul style="list-style-type: none"> count in steps of 3 from 0, forward and backward 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 solve problems with addition and subtraction: <ul style="list-style-type: none"> using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental methods add and subtract numbers using concrete objects, pictorial representations, and mentally, including: <ul style="list-style-type: none"> a two-digit number and ones recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value 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 	<ul style="list-style-type: none"> count in steps of 3 from 0, forward and backward recognise the place value of each digit in a two-digit number (tens, ones) compare and order numbers from 0 up to 100; use $<$, $>$ and $=$ signs use place value and number facts to solve problems add and subtract numbers using concrete objects, pictorial representations, and mentally, including: <ul style="list-style-type: none"> two two-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 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)

4-6	<ul style="list-style-type: none"> • solve problems with addition and subtraction: <ul style="list-style-type: none"> - using concrete objects and pictorial representations, • including those involving numbers, quantities and measures <ul style="list-style-type: none"> - applying their increasing knowledge of mental • methods • recall and use addition and subtraction facts to 20 • fluently, and derive and use related facts up to 100 • recognise and use the inverse relationship between • addition and subtraction and use this to solve missing • number problems • choose and use appropriate standard units to estimate • and measure length/height in any direction (m/cm) to • the nearest appropriate unit, using rulers • compare and order lengths and record the results using • $>$, $<$ and $=$ 	<ul style="list-style-type: none"> • 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 (\times), division (\div) and • equals ($=$) signs • solve problems involving multiplication and division, • using materials, arrays, repeated addition, mental • methods, and multiplication and division facts, including problems in contexts • count in steps of 2 and 5 from 0, and in tens from any • number, forward and backward • choose and use appropriate standard units to estimate • and measure mass (kg/g) to the nearest appropriate • unit, using scales • compare and order mass and record the results using $>$, • $<$ and $=$ 	<ul style="list-style-type: none"> • recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers <ul style="list-style-type: none"> • calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs • solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts • count in steps of 2 and 5 from 0, and in tens from any number, forward and backward • choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}\text{C}$); capacity (litres/ml) to the nearest appropriate unit, • using rulers, scales, thermometers and measuring vessels compare and order lengths, mass, volume/capacity and <ul style="list-style-type: none"> • record the results using $>$, $<$ and $=$
7-9	<ul style="list-style-type: none"> • calculate mathematical statements for multiplication • and division within the multiplication tables and write • them using the multiplication (\times), division (\div) and • equals ($=$) signs 	<ul style="list-style-type: none"> • add and subtract numbers using concrete objects, • pictorial representations, and mentally, including: <ul style="list-style-type: none"> - a two-digit number and tens 	<p>solve problems with addition and subtraction:</p> <ul style="list-style-type: none"> - using concrete objects and pictorial representations including those involving numbers, quantities and measures - applying their increasing knowledge of mental and written methods

	<ul style="list-style-type: none"> • 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 • count in steps of 2 and 5 from 0, forward and backward • 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 	<ul style="list-style-type: none"> - 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 • solve problems with addition and subtraction: <ul style="list-style-type: none"> - using concrete objects and pictorial representations, • including those involving numbers <ul style="list-style-type: none"> - applying their increasing knowledge of mental • Methods • add and subtract numbers using concrete objects, pictorial representations, and mentally • 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 • interpret and construct tally charts 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 	<ul style="list-style-type: none"> • add and subtract numbers using concrete objects, pictorial representations, and mentally, including: <ul style="list-style-type: none"> - two two-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 <p>interpret and construct simple pictograms block diagrams and simple tables</p> <p>ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</p> <ul style="list-style-type: none"> • ask and answer questions about totalling and comparing categorical data
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10-12	<ul style="list-style-type: none"> calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) 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 count in steps of 2 and 5 from 0, and in tens from any number, forward and backward and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity. Write simple fractions for example, $\frac{1}{2}$ of $6 = 3$ and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$. 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 	<ul style="list-style-type: none"> 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 (\times), division (\div) and equals (=) signs show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot count in steps of 2 and 5 from 0, and in tens from any number, forward and backward Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity. Write simple fractions for example, $\frac{1}{2}$ of $6 = 3$ and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$. choose and use appropriate standard units to estimate and measure capacity (litres/ml) to the nearest appropriate unit, using measuring vessels compare and order volume/capacity and record the results using $>$, $<$ and $=$ 	<p>calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs</p> <ul style="list-style-type: none"> solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts <p>count in steps of 2 and 5 from 0, and in tens from any number, forward and backward</p> <ul style="list-style-type: none"> Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity. Write simple fractions for example, $\frac{1}{2}$ of $6 = 3$ and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$. <p>compare and sequence intervals of time</p> <ul style="list-style-type: none"> 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
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