



Fairfield Primary Academy Medium Term Mathematics Plans

Who are the Mathematics Medium Term Plans for?

The purpose of this planning document is to map out the mathematics medium term plan for teaching and learning at Newcroft for Reception to Year 6. It should be used in conjunction with the school's Calculations Policy (included at the back of the document).

There are objectives identified for each year group for each half term, ensuring curriculum coverage over the academic year. Teachers should use professional judgement when deciding how much time should be spent on each theme. Objectives should be extended for the most able pupils, drawing on objectives from later terms or years if pupils are secure at the current expectation for the year group.

The aim is that all pupils are able to meet the objectives by the end of each year. It is designed to support the 2014 National Curriculum for Mathematics at Key Stages 1 and 2. This booklet will be relevant and useful for all the following at our school:

- Class Teachers and HLTAs
- Teaching Assistants/Learning Support Assistants
- The SENCo
- Inclusion Leader
- Parents
- Pupils
- Volunteers
- Supply Teaching Staff
- ITT Students

How do I use the Medium Term Plans?

During the planning process (and ongoing weekly):

- \circ $\,$ Add the week numbers as objectives are covered
- Add the dates
- Build in 'Assess and Review' opportunities each half term (using the Symphony Assessment System Milestones) ready for data collection and analysis
- The objectives are broad so may need breaking down further. They will also need success criteria to clarify them
- Annotate the plans as you go adjusting and extending expectations at every opportunity
- Be prepared to hand in your annotated plans on a termly basis (as part of the process of whole school monitoring and evaluation)

Denise Elliott

Mathematics Subject Leader Autumn 2017





1 – EYFS Mathematics

Numbers: children count reliably with numbers from 1 to 20, place them in order and say which number is one more or one less than a given number. Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing.

Shape, space and measures: children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.

Theme	Date	Week	Foundation Stage - Autumn 1
			• To recognise numerals 1 to 5.
			 To count up to three or four objects by saying one number name for each item.
			 To select the numeral to represent 1 to 5.
			 To recognise numbers of personal significance.
			 To count an irregular arrangement of up to 10 objects.
Number and			 To know that numbers identify how many objects are in a set.
Place Value			 To count from 0-5 forwards and backwards within a play situation.
			• To recite numbers in order to 10, then 20.
			 To say and use number in songs, rhymes and stories.
			 To count backwards from 10 to 0.
			 To show awareness of one-to-one correspondence through practical everyday
			experience.
			 To find one more or one less from a group of up to five objects.
Addition and			 To say the number that is one more than a given number.
Subilaciion			 To sing action songs and rhyme related to addition and subtraction.
Measurement			 To use everyday language related to time.
(time)			 To order and sequence familiar events.
			• To use familiar objects and common shapes to create and recreate patterns and build
			models.
			 To show an interest in shape and space by playing with shapes or making
Proportion of			arrangements with objects.
riopenies of			 To show an awareness of shapes in the environment.
snapes			 To show an interest in shape by sustained construction activity or by talking about
			shapes in the environment.
			 To use shapes appropriately for tasks.
			 To begin to talk about the shapes of everyday objects e.g. round, tall.
Position and			 To use positional language.
direction			





Theme	Date	Week	Foundation Stage - Autumn 2
			 To count objects to 10, and beginning to count beyond 10.
			 To select the correct numeral to represent 1 to 10 objects.
			 To count actions or objects which cannot be moved.
			 To count out up to six objects from a larger group.
Number and			 To rehearse counting back from 10 to 0, including in songs, stories and rhymes.
Place value			• To move around, or partition and recombine small groups of up to five objects, and
			recognise that the total is still the same.
			• To count objects up to 10 in a line, or by moving them.
			• To order numerals to 10 and beyond.
Addition			 To find one more or one less from a group of up to five objects.
and Subtraction			• To say the number that is one more than a given number.
			 To sing action songs and rhyme related to addition and subtraction.
Measurement			 To show an interest in practical activities related to length, capacity and weight.
(length,			• To compare two heights using direct comparison (using language of taller and shorter).
mass,			 To compare two lengths using direct comparison (using language of longer and
capacity)			shorter).
Manusana			 To begin to use everyday language related to money.
measurement (monov)			 To use money in role play (e.g. pound shop).
(money)			 To solve practical problems involving counting / role play.





Theme	Date	Week	Foundation Stage – Spring 1
			 To use the language 'more' or 'fewer' to compare two sets of objects.
			 To count from 0-10 forwards and backwards beginning with 0 or 1 or from any given
			number.
			 To recognise numerals 0-10 and begin to order them.
			• To recite numbers to 20, then to 100.
			 To count back from at least 10 to zero.
			 To order numbers across the 10 boundary (e.g. 8 to 11).
Nume le sur sur sl			 To count up to 20 objects.
Number and			 To begin to use the ordinal language of 'first', 'second' and 'third' in practical
nace value			contexts.
			 To count actions and sounds.
			 To rehearse counting to 100 and counting back.
			• To match numerals to the number in a set and understand zero to describe an empty
			set.
			 To count out up to 10 objects from a larger set (know when to stop!)
			• To say the number that is one more than a given number and begin to say one less to
			ten.
			 To find one more or less from a group of up to 10 objects.
			 To find the total number of items in two groups by counting all of them.
			$_{\odot}$ To begin to use the vocabulary involved in adding and subtracting in practical
			activities and discussion.
			 To record, using marks that they can interpret and explain.
Addition and			 To say the next number (without counting from 1).
Subtraction			 To find the total number of objects in two groups by counting all of them.
			 To add 1 to any number.
			 To add 2 to any number up to 10 and to read the corresponding addition.
			 To recognise that the number of objects in a set does not change if they are moved
			around.
			 To remove objects from a small group and count how many are left.
			 To use everyday language related to time.
			 To order and sequence familiar events.
Measurement			 To measure short periods of time in simple ways.
(time)			 To use the days of the week in context, e.g. story.
			 To recognise a minute as unit of time.
			 To count actions carried out in a minute (less than 20).
			 To begin to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes, and
Dropoulion of			mathematical terms to describe shapes.
Properties of			 To select a particular named shape.
snupes			 To sort other objects using given criteria.
			 To begin to explore symmetry.
Position and Direction			• To describe their relative position such as 'behind' or 'next to'.





Theme	Date	Week	Foundation Stage – Spring 2
			o To count back from 20 to 0.
Number and			o To compare numbers to 20.
Place Value			 To read numbers to 20, match numerals to sets.
			 To estimate how many objects they can see and check by counting them.
			 To find one more or less from a group of up to 10 objects.
			 To find the total number of items in two groups by counting all of them.
			 To begin to use the vocabulary involved in adding and subtracting in practical
			activities and discussion.
			 To record, using marks that they can interpret and explain.
Addition and Subtraction			 To say the next number (without counting from 1).
			 To find the total number of objects in two groups by counting all of them.
			 To add 1 to any number.
			 To add 2 to any number up to 10 and to read the corresponding addition.
			• To recognise that the number of objects in a set does not change if they are moved
			around.
			 To remove objects from a small group and count how many are left.
2D shares			• To recognise and name common 3D shapes including a cube, cuboid and sphere.
3D snape			 To sort 3D shapes according to whether they roll or not, stack or not.
			 To order two or three items by length or height.
Measurement			 To order two items by weight or capacity.
(length.			 To use uniform non-standard units to measure items up to 10 units high.
Mass,			 To put three heights in order.
capacity)			 To put three lengths in order.
			 To solve practical problems involving counting or role play.
Measurement			 To compare prices in pounds up to £10 (by making lines of pound coins).
(money)			 To recognise 1p, 2p, 5p and 10p coins and know the value of each.
			 To recognise £1 and £2 coins.





Theme	Date	Week	Foundation Stage – Summer 1	
			 To begin to count forwards in twos, fives, tens. 	
			 To recognise, say and identify numerals up to 20. 	
			• To counts reliably with numbers from one to 20, place them in order and say the	
			number that comes before and after a given number.	
Counting			• To instantly recognise, without counting, organised and random arrangements of small	all
			numbers of objects.	
			• To count to and cross 20, forwards and backwards beginning with 0 or 1 or from any	
			given number.	
			 To write numerals to 10 with some reversal. 	- al
			 To begin to identify their own mathematical problems based on their own interests an fractionalism. 	a
			rascinations. To find the total number of items in two second has a sufficient all of them.	
			 Io find the fordi number of items in two groups by counting dil of them. 	
			 To begin to use the vocabulary involved in adding and subtracting in practical 	
			activities and discussion.	
Addition			 Remove a smaller number from a larger and find how many are left by counting bac 	;K
Addition			from the larger number.	
Subtraction			 Io begin to find out how many have been removed from a larger group of objects by 	У
			counting up from a number.	
			 Using quantities and objects add and subtract two single-digit numbers and counts o 	n
			or back to find the answer.	
			 In practical situations, begin to know their addition number facts to 10 	
			 To find one more/two more and one less/two less from a group of up to 20 objects. 	
Multiplication			 To solve problems in practical situations including doubling halving and sharing 	
and Division				
			 To use everyday language related to time. 	
			 To order and sequence familiar events. 	
			• To measure short periods of time in simple ways for example, count actions carried or	ut
			in a minute (more than 20); recognise that there are 60 seconds in 1 minute; carry out	†
			activities done in 1 minute.	
Measurement			 To know how key times of day (hours only) are shown on the clock, analogue and 	
(fime)			digital.	
			 To begin to know months of the year, including important months, e.g. birthday, 	
			celebrated festivals.	
			 To recite the days of the week. 	
			 To use everyday language to talk about time to solve problems. 	
			• To begin to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes, and	
			mathematical terms to describe shapes.	
			 To select a particular named shape. 	
			\circ To begin to explore symmetry	
Shape			 To explore characteristics of everyday objects and shapes and use mathematical 	
Properties			language to describe them.	
			 Sort irregular shapes according to number of corners/sides 	
			 Sort objects using criteria such as colour, curved no of corners, etc. 	
			 Sort objects using their own criteria 	
			 To recognise create and describe patterns 	
Desilien and			To use even/day language to talk about position and distance (near far in front on	
Position and			top, not to under	
DIECIOI				





Theme	Date	Week		Foundation Stage – Summer 2
			0	To recite numbers to 100.
			0	To begin to read numbers to 100.
Counting and			0	To fill in missing numbers in a track to 20.
comparing			0	To count reliably with numbers from one to 20 by using efficient strategies.
numbers			0	To count and record number of objects to 20.
			0	To count on or back 2 or 3.
			0	To begin to identify their own mathematical problems based on their own interests and
				fascinations.
			0	To find the total number of items in two groups by counting all of them.
			0	To begin to use the vocabulary involved in adding and subtracting in practical
				activities and discussion.
			0	Remove a smaller number from a larger and find how many are left by counting back
Addition and				from the larger number.
Subtraction			0	To begin to find out how many have been removed from a larger group of objects by
				counting up from a number.
			0	Using quantities and objects add and subtract two single-digit numbers and counts on
				or back to find the answer.
			0	To begin to develop an awareness of the addition and subtraction sign.
			0	To find one more/two more and one less/two less from a group of up to 20 objects
Multiplication			0	To solve problems in practical situations including doubling, halving and sharing.
and Division			-	· · · · · · · · · · · · · · · · · · ·
			0	To order two or three items by length or height.
			0	To order two items by weight or capacity.
			0	To begin to identify their own mathematical problems based on their own interests and
Measurement				fascinations.
(length, mass,			0	To use uniform non-standard units to measure items up to 10 units high.
capacity)			0	To put three heights in order.
			0	To put three lengths in order.
			0	To use everyday language to talk about size, weight and capacity to compare
				quantities and objects and to solve problems.
Measurement			0	To use everyday language to talk about money to solve problems.
(Monev)			0	To recognise all coins.
(0	To carry out simple addition and subtraction problems involving money.





Mathematics Purpose of Study – National Curriculum 2014

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Aims

The National Curriculum for mathematics aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

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 four operations, including with practical resources [for example, concrete objects and measuring tools].

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.

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.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Dule	week	Yedr I - Aufumn I
		• To count to and across 50, forwards and backwards, beginning with 0 or 1, or from any
		given number.
		 To read numbers to 20 in numerals.
		o To order numbers up to 50 and say one more and one less using concrete objects or
		pictorial representations.
		 To count in multiples of 2, using quantities or objects.
		 To identify and represent numbers using objects and pictorial representations.
		 To use language one more and one less in practical situation using concrete objects or
		pictorial representations.
		• To start to read, write and interpret mathematical statements involving addition (+),
		subtraction (-) and equals (=) signs within 10.
		 To begin to know number bonds to TU (using concrete objects or pictorial
		representations).
		 Io solve one-step problems that involve addition and subtraction using concrete abiant.
		 To <u>use</u> the vocabulary associated with + and – (e.g. add, take dway, more, less, autorate minut)
		Subjicite, minus).
		To begin to know belies up to double 5.
		 To begin to know haves up to to: To solve one stop problems involving multiplication and division by calculating the
		answer using concrete objects with the support of the teacher
		To recognize patterns of numbers in the 10y table
		 To begin to recognise and use language relating to dates including days of the week
		and be able to sequence these
		To tell the time to the hour and begin to draw hands on a clock face to show these
		times.
		 To begin to recognise and name common 2D shapes, including;
		• 2D shapes (for example, rectangles (including squares), circles and triangles)
		 Selects a particular named shape e.g. pick up the square, triangle, rectangle.





Position and direction			0	To know the vocabulary 'left' and 'right'.		
arection I I 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 four operations, including with practical resources [for example, concrete objects and measuring tools]. 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.						
at this early stage Pupils should read 1.	will aid flu and spell	iency. mathema	atical vocc	bulary, at a level consistent with their increasing word reading and spelling knowledge at key stage		
Theme	Date	Week		Year 1 - Autumn 2		
Addition and Subtraction			0 0 0	To start to read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs within 10. To begin to know number bonds to 10 (using concrete objects or pictorial representations). To solve one-step problems that involve addition and subtraction using concrete objects. To <u>use</u> the vocabulary associated with + and – (e.g. add, take away, more, less, subtract, minus).		
Multiplication and Division			0 0 0	To begin to know doubles up to double 5. To begin to know halves up to 10. To solve one-step problems involving multiplication and division by calculating the answer using concrete objects, with the support of the teacher. To recognise patterns of numbers in the 10x table.		
Fractions			0	To recognise, find and name a halt as one of two equal parts of a shape. To find half of a quantity less than 10 using concrete objects.		
Measurement (length, mass, capacity)			0	 To use everyday language to talk about mass/weight and volume/capacity. To compare, describe and solve practical problems for: Lengths and heights (for example: long/short, longer/shorter, tall/short, double/half) e.g. which is taller? Which is shorter? Mass/weight (for example: heavy/light, heavier than, lighter than) e.g. which is heavier? Which is the heaviest? Capacity and volume (for example: full/empty, more than, less than, half, half full, quarter). To measure and begin to record the following using non-standard measures: Lengths and heights e.g. cubes, hands, worms. Mass/weight e.g. cubes, teddy bears. Capacity and volume e.g. cups, sand, rice. 		
Measurement (monev)			0	To begin to recognise different denominations of coins and notes.		





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.

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.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Theme	Date	Week	Year 1 – Spring 1
Number and Place Value			 To count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. To count, read and write numbers to 100 in numerals. To count in multiples of twos to 50 and tens to 100. To identify one more and one less when given a 2 digit number. To 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. To read and write numbers from 1 to 20 in numerals. To begin to recognise odd and even numbers. To begin to understand the place value of tens and units.
Addition and subtraction			 To read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs within 20 (e.g. 7+6=13, 5-3+2 and 12 = 7+6, 2 = 5-3). To know bonds of all numbers to 10 (with concrete objects or pictorial representations). To represent and use number bonds. To add and subtract one-digit and two-digit numbers to 20, including zero. To solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = () -9. To understand the vocabulary associated with problem solving.
Multiplication and Division			 To begin to know doubles to double 10. To begin to know corresponding halves. To solve one-step problems involving multiplication and division by calculating the answer using concrete objects and pictorial representations with the support of the teacher. To recognise patterns of numbers in x2 x10. To recognise odd and even numbers.
Measurement (time)			 To sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening). To recognise and use language relating to dates, including days of the week, weeks, months and years. To tell the time to the hour and half past the hour and begin to draw the hands on a clock face to show these times.
Properties of Shape			 To begin to recognise and name common 2D and 3D shapes, including: 2D shapes (for example, rectangles (including squares), circles and triangles). 3D shapes (for example, sphere, cone, cube).
Position and direction			 To describe position, direction and movement, using the terms 'whole' and 'half' turns practically.

Year 2 ITAFs: Working Towards Expected (WTS)

Working At Expected (EXS)





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.

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.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Theme	Date	Week	Year 1 – Spring 2
Addition and subtraction			 To read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs within 20 (e.g. 7+6=13, 5-3+2 and 12 = 7+6, 2 = 5-3). To know bonds of all numbers to 10 (with concrete objects or pictorial representations). To represent and use number bonds. To add and subtract one-digit and two-digit numbers to 20, including zero. To solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = () -9.
Multiplication and Division			 To begin to know doubles to double 10. To begin to know corresponding halves. To solve one-step problems involving multiplication and division by calculating the answer using concrete objects and pictorial representations with the support of the teacher. To recognise patterns of numbers in x2 x10. To recognise odd and even numbers.
Fractions			 To recognise, find and name a half as one of two equal parts of an object, shape or quantity using concrete objects. To recognise, find and name a quarter as one of four equal parts of an object or shape using concrete objects.
Measurement (length, mass, capacity)			 To begin to measure the following using standard units of measurement and equipment e.g. rulers Lengths and heights e.g. rulers, metre sticks. Mass/weight e.g. scales. Capacity and volume e.g. measuring jugs.
Measurement (money)			 To recognise the value of different denominations of coins and notes (NOT conversion at this stage).

Year 2 ITAFs: Working Towards Expected (WTS)

Working At Expected (EXS)





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.

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.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Theme	Date	Week	Year 1 – Summer 1
			 To count beyond 100, forwards and backwards, beginning with 0 or 1, or from any given number
			To be able to say one more or less than a number beyond 100
Number and			To count in multiples of 2s 5s to 100 and 10s to 120
Place Value			o To say one more and one less than a given number.
			• To write numbers 1-20 in numerals and words (not necessarily spelt correctly).
			• To recognise odd and even numbers.
			 To read, write and interpret mathematical statements involving addition (+),
			subtraction (-) and equals (=) signs within 100.
			 Io add and subtract one digit and two digit numbers to 100 (e.g. 46+3=49 and 43=41+2, 52=55-3)
A delition and			 To represent and use number bonds and related subtraction facts within 20 (using
Addition and			concrete objects or pictorial representations).
subilaction			 To begin to know bonds of all numbers to 20 (using concrete objects or pictorial
			representations).
			 To solve one step problems that involve addition and subtraction, using concrete
			objects and pictorial representations, and missing number problems such as $7 = [] - 9$
			with numbers up to 100.
			 To group objects into 2, 5 or 10 to all counting.
Multiplication and Division			 Io solve one-step problems involving multiplication and advision by calculating the approximation operated placets placets and arguing and arguing with the support of
			the teacher
			\sim To recognise patterns of numbers in x2 x10, x5
			 To use everyday language to compare, describe and solve practical problems for time
			e.a. auicker, slower, earlier and later.
Measurement			 To measure and begin to record time (hours, minutes, seconds).
(iime)			 To know the names of the seasons.
			 To know the names and sequence of the months.
Properties of			 To recognise and name common 2D shapes in different orientations and sizes.
Shape			 To recognise and name cube, cuboid, sphere, cylinder, cone and pyramid.
Position and			 To describe position, direction and movement, using the terms 'quarter' and 'three
direction			quarter' turns.

Year 2 ITAFs: Working Towards Expected (WTS)

Working At Expected (EXS)





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.

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.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Theme	Date	Week	Year 1 – Summer 2
Addition and subtraction			 To read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs within 100. To add and subtract one digit and two digit numbers to 100 (e.g. 46+3=49 and 43=41+2, 52=55-3) To represent and use number bonds and related subtraction facts within 20 (using concrete objects or pictorial representations). To begin to know bonds of all numbers to 20 (using concrete objects or pictorial representations). To solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = [] - 9 with numbers up to 100.
Multiplication and Division			 To group objects into 2, 5 or 10 to aid counting. To 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. To recognise patterns of numbers in x2 x10, x5.
Fractions			 To recognise, find and name a quarter as one of four equal parts of an object, shape or quantity using concrete objects.
Measurement (length, mass, capacity)			 To begin to measure and record the following using standard units of measurement and equipment when given the equipment and units of measure to use Lengths and heights e.g. pen = 7cm. Mass/weight e.g. glue stick = 10g. Capacity and volume e.g. cup = 100ml.
Statistics			 Begin to interpret simple pictograms where the picture is worth 1 unit. Begin to interpret simple tally charts.

Year 2 ITAFs: Working Towards Expected (WTS)

Working At Expected (EXS)





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.

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.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Theme	Date	Week	Year 2 - Autumn 1
Number and Place Value			 To count in steps of 2 and 5 from 0; forwards and backwards. To begin to use the term 'multiple'. To identify and represent numbers using different representations. To estimate a number of objects up to 20. To compare and order numbers of objects up to 20. To compare and order numbers up to 100. To use number facts to solve problems. To read and write numbers up to 50 in words and numerals (not necessarily spelt correctly).
Addition and subtraction			 To solve problems with addition and subtraction: Using concrete objects and pictorial representations, including those involving numbers, quantities and measures. To understand and use 'sum' and 'difference'. To add and subtract numbers using a range of strategies e.g. concrete objects, hundred square, number line. To begin to recall and use addition and subtraction facts for all numbers up to 10. To begin to relate number facts to 10 to adding and subtracting multiples of 10 to 100. To show that addition of two numbers can be done in any order (commutative).
Multiplication and Division			 To begin to recall x facts for 2s, 5s and 10s. To recall doubles and halves to 20. (a) To begin to derive double multiples of 10 and relate this to the inverse e.g. double 30 is 60, half of 60 is 30. To understand multiplication as repeated addition (for 2x, 5x and 10x). To read and interpret ÷ = signs (when used in a number sentence). To solve one-step problems involving multiplication and division using materials, arrays, including problems in contexts.
Measurement (time)			 To tell and write the time to o'clock, half past and quarter past the hour and draw the hands on a clock face to show o'clock and half past.
Properties of Shape			 To recognise and name common 2D shapes in different orientations and sizes, for example, hexagons and pentagons. To recognise and name 3D shapes, for example, cylinder.
Position and direction			 To order and arrange combinations of mathematical objects in (increasingly complex) patterns and sequences.

Year 2 ITAFs: Working Towards Expected (WTS)

Working At Expected (EXS)





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.

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.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Theme	Date	Week	Year 2 - Autumn 2
			 To solve problems with addition and subtraction: Using concrete objects and pictorial representations, including those
Addition and subtraction			involving numbers, quantities and measures.
			 To undersiding and use sum and "allerence". To add and subtract numbers using a range of strategies of a concrete objects.
			bundred square, number line
			 To begin to recall and use addition and subtraction facts for all numbers up to 10.
			• To begin to relate number facts to 10 to adding and subtracting multiples of 10 to 100.
			• To show that addition of two numbers can be done in any order (commutative).
			 To begin to recall x facts for 2s, 5s and 10s.
Multiplication and Division			o To recall doubles and halves to 20. ®
			• To begin to derive double multiples of 10 and relate this to the inverse e.g. double 30 is
			60, half of 60 is 30.
			 To understand multiplication as repeated addition (for 2x, 5x and 10x).
			 To read and interpret ÷ = signs (when used in a number sentence).
			 Io solve one-step problems involving multiplication and division using materials, arrays,
			including problems in contexts.
			 To count in halves from 0 to 10.
Fractions			 To recognise, find and name fractions 1/2, 1/3 and ¼ of a shape, set of objects or second therein a block to the second se
			quantity using objects.
			0 TO begin to find 72 and 74 or a serior objects.
Measurement			 To begin to choose and use appropriate standard utility to medsube length/height in any direction (m/cm)) mass (live/a) tamparature (%); concerned to length/height in
(length,			any direction (m/cm), muss (kg/g), remperiode (C), cupacity (mes, m) to me
mass,			medies appropriate on the g. nearest chroning bang bless, scales, memorineres and
capacity)			 To begin to read labelled divisions for measure.
			• To recognise and use symbols for pounds (£) and pence (p).
Measurement			• To begin to solve simple problems in a practical context involving addition of money of
(monev)			the same unit, using appropriate amounts (e.g. 50p-23p, $\pounds 5 - \pounds 4$ – refer to addition and
			subtraction section for clarification.
Statistics			• To accurately interpret and construct simple pictograms, tally charts and block
STATISTICS			diagrams.

Year 2 ITAFs: Working Towards Expected (WTS)

Working At Expected (EXS)





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.

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.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Theme	Date	Week		Year 2 – Spring 1
			• To	count in steps of ten from any number, forward and backward.
			o To (demonstrate an understanding of place value e.g. the difference in tens and ones:
			77	and 33 has a difference of 40 and 4 ones (can be done practically).
			o To	recognise the place value of any digit in a two-digit number (tens, ones).
			o To	partition numbers into tens and ones.
Number and			o To	name the value of any digit in whole numbers up to 99.
Place Value			o To i	identify, represent and estimate numbers using different representations, including
			the	number line.
			• To	compare and order numbers from 0 up to 100; use <, > and = signs.
			o To I	read and write numbers to at least 100 in numerals and in words.
Theme Number and Place Value Addition and subtraction Multiplication and Division Measurement (time) Properties of Shape			o Toi	identify odd and even numbers.
			0 10	use place value and number facts to solve problems.
			• To :	solve 2 step problems with addition and subtraction:
				Applying their increasing knowledge of mental and written methods (2 digit
Addition and subtraction			-	and 2 aigit).
			0 10	ada ana subtract numbers using concrete objects, pictorial representations, and
			me	ntally, including:
				A two-digit number and tars a gr 22110 (2120 (not ever 100 bounders))
				 A two-algit number and tens e.g. 25+10, 45+20 (not over 100 boundary) Two two digit numbers (bagin to do this montally for numbers that don't cross.
				the 100 boundary or 23+31)
				recall and use addition and subtraction facts to at least 10, and begin to derive and
				elected facts up to 100
				show that addition of two numbers can be done in any order (commutative) and
			sub	show indicated in the normalized because able in any class (commonative) and
				recognise and use the inverse relationship between addition and subtraction and
			sol	ve missing number problems e.g 14 = 28.
			o To	use estimation to check that their answers to a calculation are reasonable e.g.
			kno	owing 48 + 35 will be less than 100.
			o To l	begin to recall and use multiplication and division facts for the 2, 5 and 10
			mu	Itiplication tables; use counting strategies to solve problems.
			• IO	make connections between multiplication by 2 and doubling and halving (and use
			the	se to reason about problems and calculations).
			0 10	calculate mathematical statements for multiplication and division within the
			mu – di	iniplication tables and write them using the multiplication (x), division (τ) and equals fars (within 2, 5 and 10 times tables)
Multiplication				solve one step problems involving multiplication and division, using materials, arrays
and Division			o io.	solve one step problems involving moniplication and division, using materials, analys,
and Division			pro	blems in contexts (within the 2-5 and 10 times tables)
				begin to recognise (using equipment) the relationship between addition and
			sub	straction and can rewrite addition statements as simplified multiplication statements
			e.0	$1.2 + 2 + 2 = 3 \times 2.$
			• To	show that multiplication of two numbers can be done in any order (commutative)
			and	d division of one number by another cannot.
			o To I	recognise odd and even numbers to at least 100 (and explain why).
Mogauramart			o To 1	tell and write the time to o'clock, half past, quarter past and quarter to the hour and
(time)			dro	w the hands on a clock face to show these times.
(inite)			<u> </u>	know the number of minutes in an hour and the number of hours in a day.
			o To i	identify and describe the properties of 3D shapes, including the number of edges,
Properties of			ver	tices and faces.
Shape			o To i	identify 2D shapes on the surface of 3D shapes (e.g. a circle on a cylinder and a
			tria	ngle on a pyramid).
Position and			• To	use mathematical vocabulary to describe position, direction and movement,
arection	1	1	inc	iuding movement in a straight line.

Year 2 ITAFs: Working Towards Expected (WTS)

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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 four operations, including with practical resources [for example, concrete objects and measuring tools]. 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.

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. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Theme	Date	Week	Year 2 -	Spring 2
			• To solve 2 step problems with addition	and subtraction:
			Applying their increasing know and 2 digit)	wledge of mental and written methods (2 digit
			\sim To add and subtract numbers using co	ncrete objects, nictorial representations, and
			mentally, including:	nerere objects, pretonal representations, and
			A two-digit number and one:	
			 A two-diait number and tens 	e.a. 23+10, 43+20 (not over 100 boundary)
Addition and			• Two two-digit numbers (begin the 100 boundary e.g. 23+31	n to do this mentally for numbers that don't cross
subtraction			 To recall and use addition and subtract 	tion facts to at least 10, and begin to derive and
			use related facts up to 100.	
			 I o snow that addition of two numbers subtraction of one number from anoth 	can be done in any order (commutative) and er cannot.
			 To recognise and use the inverse relat solve missing number problems e.g. 	onship between addition and subtraction and - 14 = 28.
			 To use estimation to check that their a 	nswers to a calculation are reasonable e.g.
			knowing 48 + 35 will be less than 100.	-
			• To begin to recall and use multiplication	on and division facts for the 2, 5 and 10
			multiplication tables; use counting stro	tegies to solve problems.
			 To make connections between multiple these to reason about problems and c 	ication by 2 and doubling and halving (and use alculations).
			 To calculate mathematical statements 	for multiplication and division within the
			multiplication tables and write them us	ing the multiplication (x), division (÷) and equals
			= signs (within 2, 5 and 10 times tables).
Multiplication			• To solve one step problems involving r	nultiplication and division, using materials, arrays,
and Division			repeated addition, mental methods, a	and multiplication and division facts, including
			problems in contexts (within the 2, 5 a	nd 10 times tables).
			 To begin to recognise (using equipme 	nt) the relationship between addition and
			subtraction and can rewrite addition s	tatements as simplified multiplication statements
			e.g. 2 + 2+ 2 = 3 x 2.	
			• To show that multiplication of two num	bers can be done in any order (commutative)
			and division of one number by anothe	r cannot.
			 Io recognise odd and even numbers f 	o af least 100 (and explain why).
			 Io count in naives up to 10 from any n To recognize find name and write fra 	umper.
			 To recognise, find, name and whe had augntity using objects 	clions 175 and 14 of a shape, set of objects of
Fractions			To recognise find name and write fra	ctions of $\frac{1}{2}$ a length shape set of objects or
riaciions			auantity.	
			 To write simple fractions for example, ! 	$_{2}$ of 6 = 3 and recognise the equivalence of 2/4
			and ½.	
			 To choose and use appropriate stando 	ard units to estimate and measure length/height
			in any direction (m/cm); mass (kg/g);	capacity (litres, ml) to the nearest appropriate
Measurement			unit using rulers, scales and measuring	vessels (not converting units – to the nearest
(length,			appropriate unit).	
mass,			 To read scales in divisions of ones, two 	s, fives and tens in a practical situation where all
capacity)			the numbers on the scale are given.	
			 To compare and order lengths, mass, " 	volume/capacity and record the results using < >
			and = (within the same measurement	e.g. 30cm > 23cm).
			 Io combine amounts of money to mal a a 2(a = 00 + 10 + 10 + 10 + 10 + 10 + 10 + 10	te a particular value using pounds and pence
Measurement			e.g. $36p = 20p + 10p + 5p + 1p or £9.52$:= 17 + 50p + 2p .
(money)			 io solve simple problems in a practical 	i comexi involving adalilon and subtraction of
			statements for quidance)	iare amounts (see addition and subtraction
			To interpret and construct simple table	e
Statistics			 To ask and answer simple questions by 	ounting the number of objects in each
Signation			category and sorting the categories b	v quantity
			category and soming the categories c	

Year 2 ITAFs: Working Towards Expected (WTS)

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Fairfield Primary Academy – Mathematics Medium Term Plan

Working at Greater Depth (GDS)

D Elliott





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 four operations, including with practical resources [for example, concrete objects and measuring tools]. 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. 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

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. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Addition and subfraction To count in steps of 3 from 10 to at jecas 40. Number and Place Value To partition numbers in different ways e.g. 23 as 20+3 or 10+13. To begin to understand the place value of 3 digit numbers. To estimate numbers on an empty number line. To compare and order numbers beyond 100 To round numbers to the nearest 10. To round numbers to the nearest 10. To round numbers to the nearest 10. To round numbers to 00 estimate receiving in the nearest 10. To solve problems with addition and subtraction: • Applying their increasing knowledge of mental and written methods to solve 3 step problems with addition and subtraction: • To solve problems and explain recasing knowledge of mental and written methods. To add 2 two digit numbers within 100 est. 48 + 35 and demonstrate their method using concrete apparatus or pictoial representations. • Adding a word jumbers within the oblems est. 7-4.33 • Method and subtraction where regrouping is required e.g. 91-73. • Adding a word diffic and subtraction facts to 20 fluently; and derive and use related facts up to 100. • To recoin a subtraction facts to 20 fluently; and derive and use related facts up to 100. • To recoin a subtraction and subtraction and subtraction and use this to check calculations and solve missing number problems (involving a two- digit number ont 10 to 10.). • To recoin a subtraction facts to 2.0 and a subtraction and use this to check calculations and solve missing number willoways be odd. <td< th=""><th>Theme</th><th>Date</th><th>Week</th><th></th><th>Year 2 – Summer 1</th></td<>	Theme	Date	Week		Year 2 – Summer 1
Addition and subtraction soft of so place value holder in 2 and 3 digit numbers. Number and Place Value To begin to understand the place value of 3 digit numbers. To begin to understand the place value of 3 digit numbers. To compare and order numbers beyond 100. To read and write numbers beyond 100. To read and write numbers beyond 100. To read and write numbers beyond 100. To read and write numbers beyond 100. To read and write numbers beyond 100. To read and explain reasoning. To add 2 two digit numbers writin 100 e.g. 48 + 35 and demonstrate their methods using concrete apparatus or pictorial representations. To add and subtraction writin 100 e.g. 48 + 35 and demonstrate their method using concrete apparatus or pictorial representations. Adding a word light numbers e.g. 74.33 Mentia calculations where regrouping is required e.g. 91-73 Adding a word light numbers within 100 e.g. 48 + 35 and demonstrate their methods. To begin to solve + and – in columns without arosing boundaries. To begin to solve + and – in columns without arosing boundaries. To begin to solve + and – in columns without arosing boundaries. To reace and use the inverse relationship between addition and subtraction and use the inverse relationship between addition and subtraction and use the inverse relationship between addition and subtraction and use the inverse relationship between addition and subtraction and use this to chack taces to rat, 5, 10 and their inversere using number problems e.g. 14 + - 3 = 17.				0 T	o count in steps of 3 from 0 to at least 30.
Number and Place Value • To partition numbers in different ways e.g. 23 as 20-3 or 10+13. • To begin to understand the place value of 3 dight numbers. • To estimate numbers on an empty number line. • To compare and order numbers beyond 100. • To round numbers to the nearest 10. • To solve problems and explain reasoning. • To solve problems with addition and subtraction: • Applying their increasing knowledge of mental and written methods • To add and subtracting two-digit numbers 4. • Subtracting two-digit numbers 4. • Subtracting two-digit numbers 4. • Subtracting two-digit numbers 6. • Subtracting two-digit numbers 6. • Subtracting two-digit numbers 6. • Subtracting several single digit numbers • Adding and subtracting several single digit numbers • Adding and subtracting several single digit numbers • Adding and subtracting several single digit numbers • To begin to solve 4 and – in columns without crossing boundaries. • To recagine and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems (involving a two- digit number and 1s or 103). • To recagnise and use the inverse relationship between addition and subtraction • To solve more complex missing number problems e.g. 14 + 3 = 17. • To solve problems involving multiplication (x), division (+) • and equals (+) sign. • To solve word problems involving multiplication and withing. • To solve word problems involving multiplication and division, using the williplication (x), division (+) • and equals (+) sign. • To solve word problems in contexts. • To determine remainders using known facts. • To recalk stacts for multiplication and within facts. Including problems in contexts. • To adverse the similation and subtraction and rewrite addition statements e.g. 10+10+10+5+5 = 3x10				0 T	o understand the importance of 0 as a place value holder in 2 and 3 digit numbers.
Number and Place Value • To begin to understand the place value of 3 digit numbers. • To estimate numbers on an empty number line. • To compare and order numbers beyond 100. • To read and wife numbers beyond 100. • To read and wife numbers beyond 100 in numerals and words. • To solve 3 step problems with addition not subfraction: • Applying their increasing knowledge of mental and written methods. • To solve 3 step problems with addition and subfraction: • Applying their increasing knowledge of mental and written method using concrete appardus or pictorial representations. • To add and subfract numbers mentally and using written columnar methods, including: • Adding several two-digit numbers e.g. 74-33 • Adding a two-digit numbers e.g. 74-33 • Adding a several two-digit numbers. • To begin to solve + and - in columns without crossing boundaries. • To begin to solve + and - in columns without crossing boundaries. • To compare addition and subtraction and subtraction and use this to check calculations was abbrection tacts to 20 fluently, and derive and use related facts up to 100. • To recognise and use the inverse relationship between addition and subtraction and use that or cossing boundaries. • To begin to solve + and - in columns without crossing boundaries. • To begin to solve traction and solve more line write weel addition and subtraction and use tractice of a solve more complex missing number problems (involving a two-digit numbers e.g. 104-1-17. • To recogn solv				o T	o partition numbers in different ways e.g. 23 as 20+3 or 10+13.
Multiple To estimate numbers on an empty number line. Place Value To compare and order numbers beyond 100. To round numbers to the nearest 10. To round numbers beyond 100 in numerals and words. To solve problems and explain reasoning. To solve problems and explain reasoning. To solve solve 3 step problems with addition and subtraction: Addition and using written columnar methods. To add and subtracting two-digit numbers with 35 and demonstrate their methods. Addition and Subtracting two-digit numbers of the-digit numbers Subtraction To recognase and a wordigit numbers of the-digit numbers Addition and subtracting several two-digit numbers of the-digit numbers Subtraction To recognase and a wordigit numbers of the-digit numbers To begin to solve and - in acclumos without crossing boundaries. To recognase and a wordigit number to a the-edigit numbers To recols is call set and - in acclumos without crossing boundaries. To recols is call set and - in acclumos without crossing boundaries. To recols is call set and - in acclumas with adverse edigit number set the- acclustation and solve missing number problems (involving a two-digit numbers with adverse edigit number set the- acclustation and solve missing number problems (involving a two-digit number set the acclustation and solve sissing number problems e.g. 104 + 1 - 3 = 17. <td>Number and</td> <td></td> <td></td> <td>0 T</td> <td>o begin to understand the place value of 3 digit numbers.</td>	Number and			0 T	o begin to understand the place value of 3 digit numbers.
Multiplication To compare and order numbers beyond 100. To read and write numbers beyond 100 in numerals and words. To solve 3 step problems with addition and subtraction: 	Place Value			0 T	o estimate numbers on an empty number line.
Multiplication 0 To read and write numbers beyond 100 in numerals and words. 0 15 solve problems and explain reasoning. 0 0 15 solve as tep problems with addition and subfraction: • Applying their increasing knowledge of mention and written methods of add 2 kwo digit numbers within 100 e.g. 48 + 35 and demonstrate their method using concrete apparatus or pictorial representations. 0 15 add 2 kwo digit numbers were regrouping is required e.g. 91-73 Adding a two-digit numbers e.g. 74-33 • Mental calculations where regrouping is required e.g. 91-73 • Adding and subfracting two-digit numbers e.g. 74-33 • Mental calculations where regrouping is required e.g. 91-73 • Adding and subfraction facts to 20 fluently, and derive and use file of tacts up to 100. 0 16 solve in and - in columns without crossing boundaries. 0 10 recall send use the inverse relationship between addition and subtraction and use fils to check calculations and solve missing number problems (involving a two-digit number and use fils to check calculations and solve missing number solve missol solve missing number solve missing number solve mis	Flace value			• T	o compare and order numbers beyond 100.
Multiplication Or read and write numbers beyond 100 in numerals and words. • To solve a step problems with addition and subtraction: • Applying their increasing, nowledge of mential and written methods • To add 2 two digit numbers within 100 e.g. 48 + 35 and demonstrate their method using concrete apparatus or pickonial representations. • To add 2 two digit numbers e.g. 74-33 • Adding a two-digit numbers e.g. 74-33 • Adding a two-digit numbers e.g. 74-33 • Adding a fwo-digit number to a three-digit numbers • Adding a two-digit numbers e.g. 74-33 • Adding a fwo-digit number to a three-digit numbers • To teccl and use addition and subtraction tests to bluently, and derive and use related tacks up to 100. • To reconside and use addition and subtraction facts to 20 fluently, and derive and use related tacks up to 100. • To reconside and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems (involving a two-digit number and 1s or 10s). • To reconside to r2, 5, 10 and their inverse using the multiplication (x), division (c) and equals (c) signs. • To reclar factors and measures e.g. 40%-220, and 20 is hand halving. • To better facts for multiples of 5 by (for example) multiplication and halving. • To ereclar factors and measures e.g. 40%-220, and 20 is half of 40. • To recell a facture be 20 as it does on three 20 of 5 is the anors. • To recellar factors and measures e.g. 10%-10%-220, and 20 is half or 40.				0 T	o round numbers to the nearest 10.
Addition and 0 To solve problems and explain reasoning. Applying their increasing knowledge of mental and written methods I for add 2 knowligh numbers within 100 e.g. 48 + 35 and demonstrate their method using concrete apparatus or pictofrail representations. Addition and To add an avoit butcar humbers mentally and using written columnar methods, including: Addition and • Adding avo-digit numbers e.g. 74-33 Adding a two-digit number e.g. 74-33 • Mental calculations where regrouping is required e.g. 91-73 Adding a two-digit number e.g. 74-33 • Adding a two-digit number e.g. 74-33 • Adding a two-digit number to e.g. 74-33 • Adding a two-digit number to a three-digit numbers • Displit to solve in and - in columns without crossing boundaries. • To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems (involving a two-digit number and is to 100. • To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems (involving a two-digit numbers will always be odd. • To recognise complex missing number problems e.g. 14 +				0 T	o read and write numbers beyond 100 in numerals and words.
Multiplication • To solve 3 step problems with addition and subtraction: • Applying their increasing knowledge of mental and written methods • To add 2 two digit numbers within 100 e.g. 48 + 35 and demonstrate their method using concrete apparatus or pictorial representations. • To add and subtract numbers mentally and using written columnar methods, including: • Adding several two-digit numbers e.g. 74-33 • Adding and subtracting several subtracting several single digit numbers • Adding and subtracting several single digit numbers • To begin to solve + and - in columns without crossing boundaries. • To recognise and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. • To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems (involving a two-digit number and 15 or 10 humbers will always be odd. • To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems (involving a two-digit number and 15 or 10 humbers). • To recognise and use the inverse relationship between addition and subtraction and use the inverse using the multiplication (x), division (†) and equals (=) signs. • To recognise and use the inverse set and the multiplication (x), division (†) and equals (=) sign multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication facts, including problems inclinthy multiplication and d				0 T	o solve problems and explain reasoning.
Applying their increasing knowledge of mental and written methods o To dd 2 two digit numbers within 100 e.g. 48 + 35 and demonstrate their method using concrete apparatus or pictorial representations. o To add and subtract numbers mental and using written columnar methods, including: Adding a two-digit numbers e.g. 74-33 Mental calculations where regrouping is required e.g. 91-73 Adding a two-digit number e.g. 74-33 Mental calculations where regrouping is required e.g. 91-73 Adding a non-dispit number e.g. 74-33 To begin to solve + and - in columns without acts to 20 benetity, and derive and use related facts up to 100. To reccil and use addition and subtraction facts to 20 heating. To recol and use addition end subtraction sign number problems (involving a two-digit number excited facts up to 100. To recol and tas to 100. To recol and tas to 100. To recol and tas to 100. To solve more complex mising number problems e.g. 14 +, 3 = 17. No solve and tas to 100. To recol at facts for subtraction and division using meterosising number problems e.g. 14 +, 3 = 17. To recol at facts for multiples of 5 by (for example) multiplication facts, including problems in columns. To solve more complex mising number problems e.g. 14 +, 3 = 17. To solve more of polems involve more than one step. To solve more complex mising number problems (involving at wo-digit number example) multiplication facts. Including problems in contexts. To solve word problems incl involve more than one ste				0 T	o solve 3 step problems with addition and subtraction:
Multiplication and Division 10 add 2 two digit numbers within 100 e.g. 48 + 35 and demonstrate their method using concrete apparatus or pictorial representations. A dotation several two-digit numbers 10 add 2 two digit numbers eq. 74-33 Addition and subtraction 10 add numbers were logit numbers eq. 74-33 Addition and subtraction 10 begin to solve + and - in columns without crossing boundaries. 0 To begin to solve + and - in columns without crossing boundaries. 10 record and subtraction facts to 20 fluently, and derive and use related facts up to 100. 0 To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems (involving a two- digit number and 1s or 10s). 0 To recognix facts for x2, 5, 10 and their inverse using the multiplication (x), division (c) and equals (c) signs. 0 To reclaix facts for multiples of 5 by (for example) multiplication (x), division (c) and equals (c) signs. 0 To solve problems involving multiplication and division facts, including problems in contexts. 0 To solve word problems that involve more than one step. 0 To solve word problems that involve more than one step. 0 To solve word problems tha tinvolve more than a subtraction and rewrite additi				_	 Applying their increasing knowledge of mental and written methods
Multiplication and Division To code and subtract numbers mentality and using written columnar methods, including: 				0 I	o add 2 two digit numbers within 100 e.g. 48 + 35 and demonstrate their method using
Adding several two-digit numbers Adding several two-digit numbers Adding a wo-digit numbers Subtraction Adding a two-digit numbers Subtraction Subtraction Adding a two-digit numbers Subtraction Subtraction Adding and two-digit numbers Subtraction Subtraction Subtraction To begin to solve + and - in columns without crossing boundaries. To recall and use addition and subtraction (x), division (+) and equals (=) signs. To recell chartions and measures e.g. 40+2=20, and 20 is half of 40. To a solve problems involving multiplication and division facts. Including problems in contexts. To solve word problems that involve more than one step. To a solve problems into involving multiplication and subtraction and rewrite addition statements e.g.				C C	concrete apparatus or pictorial representations.
Addition and • Subtracting two-digit numbers e.g. 74-33 Addition and subtraction • Mental calculations where regrouping is required e.g. 91-73 • Adding a two-digit number to a three-digit number • Adding a two-digit number to a three-digit number • Adding a two-digit number to a three-digit number • Adding a two-digit number to a three-digit number • Do begin to solve + and - in columns withhout crossing boundaries. • To recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. • To recall and use addition e.g. the sum of 3 odd numbers will always be odd. • To reacon about addition e.g. the sum of 3 odd numbers will always be odd. • To reacen about addition e.g. the sum of 3 odd numbers will always be odd. • To reactions and measures e.g. 14 + - 3 = 17. • To reacting tractions and measures e.g. 14 + young materials, arrays, repeated addition, mental methods, and multiplication (x), division (*) and equals (+) signs. • To addive facts for x2, 5, 10 and their inverse using hem multiplication facts, including problems involving multiplication and division (sumg materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems involving multiplication facts is nucleus. Multiplication • To solve word problems that involve more than one step. • To solve word problems involving adverted word 0 or 5 in the ones. • To econtins the between addition and subtraction and everte addition statements as simplified multiplication statements e.g. 10+10+10				0	o dad and subtract numbers mentally and using written columnar methods, including:
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(time) to solve problems. o To compare and sequence intervals of time (e.g. I know a month is longer than a week – not converting and comparing units of time). Properties of Shape o To compare and sort common 2D and 3D shapes and everyday objects using more than one criterion (on the basis of their geometric properties including vertices, sides, edges, faces). Properties of Shape o To describe the similarities and differences of shape properties e.g. that a cube and cuboid have the same number of edges, vertices and faces but can describe what is different about them. o To identify line symmetry in a vertical line when exploring 2D shapes. Position and o To explore, describe and explain patterns.	Measurement			• T	o know that there are 60 minutes in an hour and 24 hours in a day and use these facts
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Properties of Shape 	. ,			• T	o compare and sequence intervals of time (e.g. I know a month is longer than a week
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Properties of Shape than one criterion (on the basis of their geometric properties including vertices, sides, edges, faces). • To describe the similarities and differences of shape properties e.g. that a cube and cuboid have the same number of edges, vertices and faces but can describe what is different about them. • To identify line symmetry in a vertical line when exploring 2D shapes. • To explore, describe and explain patterns.				• T	o compare and sort common 2D and 3D shapes and everyday objects using more
Properties of Shape edges, faces). • To describe the similarities and differences of shape properties e.g. that a cube and cuboid have the same number of edges, vertices and faces but can describe what is different about them. • To identify line symmetry in a vertical line when exploring 2D shapes. Position and • To explore, describe and explain patterns.				t	han one criterion (on the basis of their geometric properties including vertices, sides,
Shape To describe the similarities and differences of shape properties e.g. that a cube and cuboid have the same number of edges, vertices and faces but can describe what is different about them. To identify line symmetry in a vertical line when exploring 2D shapes. To explore, describe and explain patterns. 	Properties of			e	edges, faces).
Position and cuboid have the same number of edges, vertices and faces but can describe what is different about them. • To identify line symmetry in a vertical line when exploring 2D shapes. • To explore, describe and explain patterns.	Shane			0 T	o describe the similarities and differences of shape properties e.g. that a cube and
Mail Mail <th< td=""><td></td><td></td><td></td><td>c</td><td>uboid have the same number of edges, vertices and faces but can describe what is</td></th<>				c	uboid have the same number of edges, vertices and faces but can describe what is
O Io identity line symmetry in a vertical line when exploring 2D shapes. Position and o To explore, describe and explain patterns.				c	litterent about them.
Position and o I o explore, describe and explain patterns.				0 T	o identity line symmetry in a vertical line when exploring 2D shapes.
	Position and			0 T	o explore, aescribe and explain patterns.
direction I o distinguish between rotation as a turn and in terms of right angles for quarter, half	direction			0 T	o assunguish between rotation as a turn and in terms of right angles for quarter, half
ana inree-quarter iurns.				c	ina inree-quarter turns.



0

To use the terms clockwise and anti-clockwise to describe position, direction and



				movement.
ear 2 ITAFs: Wor	king Tow	ards Exp	ected (WI	(S) Working At Expected (EXS) Working at Greater Depth (GDS)
The principal focu counting and pla concrete objects shapes and use th as length, mass, c By the end of yec	us of mathe ce value. and mea: ne related capacity/v ar 2, pupils	ematics te This should suring too vocabuld rolume, tin should kn	eaching in A d involve wo ols]. At this st ary. Teachin me and mo now the num	key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, orking with numerals, words and the four operations, including with practical resources [for example, age, pupils should develop their ability to recognise, describe, draw, compare and sort different ag should also involve using a range of measures to describe and compare different quantities such ney. nber bonds to 20 and be precise in using and understanding place value. An emphasis on practice
at this early stage	will aid flu	ency. Pup	pils should re	ead and spell mathematical vocabulary, at a level consistent with their increasing word reading and
Theme	Date	Week		Vear 2 – Summer 2
	Bale	Week	0	To solve 3 step problems with addition and subtraction:
Addition and subtraction			0 0 0 0 0	 Applying their increasing knowledge of mental and written methods To add 2 two digit numbers within 100 e.g. 48 + 35 and demonstrate their method using concrete apparatus or pictorial representations. To add and subtract numbers mentally and using written columnar methods, including: Adding several two-digit numbers Subtracting two-digit numbers e.g. 74-33 Mental calculations where regrouping is required e.g. 91-73 Adding and subtracting several single digit numbers Adding and subtracting several single digit number Adding and subtracting several single digit numbers To recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. To recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems (involving a two-digit number and 1s or 10s). To reason about addition e.g. the sum of 3 odd numbers will always be odd.
			0	To solve more complex missing number problems e.g. $14 + \3 = 17$.
Multiplication and Division				and equals (=) signs. To relate fractions and measures e.g. 40÷2=20, and 20 is half of 40. To derive facts for multiples of 5 by (for example) multiplying by 10 and halving. To solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. To solve word problems that involve more than one step. To use multiplication facts to make deductions outside known multiplication facts e.g. 18 x 5 cannot be 92 as it does not have a 0 or 5 in the ones. To determine remainders using known facts. To recognise the relationship between addition and subtraction and rewrite addition statements as simplified multiplication statements e.g. 10+10+10+5+5 = 3x10 + 2x5 = 4x10. To count in 3s to solve x and ÷ problems for the 3 x table.
Fractions			0 0 0	To count in quarters up to 10 from any number. To recognise, find, name and write fractions 1/3, 1/4, 1/2 and 3/4 of a length, shape, set of objects or quantity using objects (include 2/4). To recognise and find the equivalence of 1/2 and 2/4 in practical contexts and when counting in fractions. To find and compare fractions of amounts e.g. 1/4 of £20 = £5 which is greater than 1/2 of £8.
Measurement (length, mass, capacity)			0	To read scales in divisions of ones, twos, fives and tens in a practical situation where NOT all numbers on the scale are given.
Measurement (money)			0	To find different combinations of coins that equal the same amounts of money. To solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change with appropriate amounts (e.g. change from £1 or change from £50 e.g. £50-£36).
Statistics			0	To interpret and construct pictograms (where the symbols show many-to-one correspondence) and block graphs (where the scale is divided into 2s and 5s). To ask and answer questions about totaling and comparing categorical data.

Year 2 ITAFs: Working Towards Expected (WTS)

Working At Expected (EXS) Working at Greater Depth (GDS)





At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 3, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Theme	Date	Week	Year 3 – Autumn 1	
			 To begin to count from 0 in multiples of 50 and 100. 	
Number and place value			 To recognise the place value of each digit in a three-digit number (hundreds, tens, 	
			<u>ones).</u>	
			 To identify and represent numbers to 1000 using different representations (using 	
			counters, jottings, pictures).	
			 To partition 3 digit numbers into hundreds, tens and ones. 	
			• To partition numbers in different ways e.g. 23 as 20+3 or 10+13. ®	
			 To estimate numbers on an empty number line ® 	
			• To round numbers to the nearest 10.®	
			 To find 10 or 100 more or less than a given number. 	
			 To read and write numbers up to 1000 in numerals. 	
Addition and subtraction			 To add and subtract two 2 digit numbers where answers may exceed 100 (mentally 	<u>/).</u>
			 To solve 3 step problems with addition and subtraction within 100: 	
			Applying their increasing knowledge of mental and written methods ®	
			 Io solve + and – in columns without crossing boundaries 	
			 Io use rounding to make estimates. 	
			 Io reason about adainon e.g. the sum of 3 oda numbers will diways be oda. ® To solve more complex mission number probleme a g. 14 (1997) 2 = 17 (2007) 	
			 Io solve more complex missing number problems e.g. 14 + 3 = 17. III 	
			 Io learn facts for the 3 times fables and inverse. 	
Multiplication			• Io learn multiplication facts up to 12 x 3.	
and division			 To derive facts for X4 and X8 by doubling. To solve mathematical statements for multiplication and division using known tables. 	~
			 To solve mainematical statements for multiplication and division using known tables. 	5.
Magaziramant			 To tell and write the time to tive minutes and araw the hands on a clock face to sho these times. 	w.
(time)			To estimate and read time with increasing accuracy to the negrest minute	
(ime)			To estimate and read time with increasing accuracy to the nearest minute.	
Proportios of			 In recognise and name prisms. To draw 2D shapes and make 3D shapes using modelling materials. 	
shapes			To recognize 3D shapes in different orientations and describe them	
silupes			 To identify right angles (as a quarter turn) 	
Position and			 To use the terms clockwise and anti-clockwise to describe position direction and 	
direction			movement (R)	
allection			movement, o	

Year 2 ITAFs: Working Towards Expected (WTS)

Working At Expected (EXS)





At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Theme	Date	Week		Year 3 – Autumn 2
			0	To add and subtract two 2 digit numbers where answers may exceed 100 (mentally).
			0	To solve 3 step problems with addition and subtraction within 100:
Addition and				 Applying their increasing knowledge of mental and written methods ®
subtraction			0	To solve + and – in columns without crossing boundaries
subliction			0	To use rounding to make estimates.
			0	To reason about addition e.g. the sum of 3 odd numbers will always be odd. $oldsymbol{\mathbb{B}}$
			0	To solve more complex missing number problems e.g. 14 + 3 = 17. ®
			0	To learn facts for the 3 times tables and inverse.
Multiplication			0	To learn multiplication facts up to 12 x 3.
and division			0	To derive facts for x4 and x8 by doubling.
			0	To solve mathematical statements for multiplication and division using known tables.
			0	To count up in tenths; recognise that tenths arise from dividing an object into 10 equal
				parts and in dividing one-digit numbers or quantities by 10.
			0	To recognise the equivalence of $\frac{1}{2}$ and $\frac{2}{4}$ in practical contexts and when counting in
Fractions				fractions ®
			0	To find and compare fractions of amounts e.g. $\frac{1}{4}$ of £20 = £5 which is greater than $\frac{1}{2}$ of
				£8. ®
			0	To solve problems that involve all of the above, with appropriate fractions.
Measurement			0	To read (and apply to problem solving) unlabelled divisions for measure – in 1s, 2s and
(length,				10s.
mass,			0	To reason about simple multiplicative relationships such as twice as long or 10 times as
capacity)				high (and drawing upon 2, 5 and 10 times table).
			0	To interpret and construct pictograms (where the symbols show many-to-one
Statistics				correspondence) and block graphs (where the scale is divided into 2s and 5s). ®
			0	To understand and use simple scales (e.g. divisions 2, 5 and 10).

Year 2 ITAFs: Working Towards Expected (WTS)

Working At Expected (EXS)





At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Theme	Date	Week	Year 3 – Spring 1
			 To count from 0 in multiples of 50 and 100.
			 To understand the importance of 0 as a place holder in numbers up to 1000.
			 To name the value of any digit in whole numbers up to 999.
			• To partition 3 digit numbers in different ways e.g. 342 becomes 300 + 20 + 22.
Number and			• To identify, represent and estimate numbers up to 1000 using different representations
			using counters, jottings or pictures.
place value			 To compare and order numbers up to 1000, using < > and =
			 To round numbers to nearest 100.
			 To find 10 or 100 more or less than a given number.
			 To read and write numbers up to 1000 in numerals and in words.
			 To solve number problems and practical problems involving these ideas.
			 To add and subtract numbers mentally, including:
			A three-digit number and ones
			 A three-digit number and tens (multiples of 10)
			 A three-digit number and hundreds (multiples of 100)
Addition and			 <u>To use columnar method for + and – with 2 digit numbers, crossing tens boundaries.</u>
subtraction			 I o estimate the answer to a calculation.
			 To begin to solve problems, using number tacts, place value, and multiple step
			addition and subtraction with numbers up to 100.
			 To begin to solve missing number problems involving addition and subtraction with
			number bonds up to 100, which include balancing equation e.g. 48 + = 100.
			 Io recall and use multiplication and division facts for the 3, 4 and 8 times fables.
			 To begin to write and calculate mathematical statements for multiplication and distinguishes and calculate mathematical statements for multiplication and
A A			aivision using the multiplication tables above, including for two-algit numbers times
Multiplication			one-aigi nombes, using menial methods and joinings.
and division			 To begin to write and calculate mamernalical statements for multiplication and division using the multiplication tables above, including for two digits unpher times.
			division distriguing fine moniplication rabies above, including for two-dign normaes times
			To solve mixing number prohoms involving multiplication and division
			To solve missing from ber problems involving moniplication and division.
			 To estimate and read time with increasing accorder to the heatest minore using the vocabulary of am/on
Mogsuromont			To tall and write the time from an analogue clock including using Poman numerals
(time)			from to Yill and the 112 bour clock
(inne)			To compare durations of events (for example to calculate the time taken by particular
			events or tasks)
			 To identify horizontal and vertical lines
Properties of			 To recognise analysis a property of shape or a description of turn
shapes			 To identify right and a property of a two right angles make a half turn three make
anapea			three augiters of a turn and four complete a turn
Position and			 To know and use the terms 'North' 'South' 'East' 'West'
direction			





At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Theme	Date	Week	Year 3 – Spring 2	
			 To add and subtract numbers mentally, including: 	
			A three-digit number and ones	
			 A three-digit number and tens (multiples of 10) 	
			 A three-digit number and hundreds (multiples of 100) 	
Addition and			 To use columnar method for + and – with 2 digit numbers, crossing tens boundaries 	<u>s.</u>
subtraction			 To estimate the answer to a calculation. 	
			• To begin to solve problems, using number facts, place value, and multiple step	
			addition and subtraction with numbers up to 100.	
			 To begin to solve missing number problems involving addition and subtraction with 	٦
			number bonds up to 100, which include balancing equation e.g. $48 + _$ = 100.	
			• To recall and use multiplication and division facts for the 3, 4 and 8 times tables.	
			• To begin to write and calculate mathematical statements for multiplication and	
			division using the multiplication tables above, including for two-digit numbers time	s
Multiplication			one-digit numbers, using mental methods and jottings.	
and division			• To begin to write and calculate mathematical statements for multiplication and	
			division using the multiplication tables above, including for two-digit numbers time	\$S
			one-digit numbers, using formal written methods.	
			 To solve missing number problems involving multiplication and division. 	
			 To count up and down in tenths. 	
			 To recognise, find and write fractions of a discrete set of objects: non-unit fractions 	s with
			small denominators.	
			 To recognise and use fractions as numbers: unit fractions and non-unit fractions wi 	th
Addition and subtraction Multiplication and division Fractions Measurement (length, mass, capacity) Statistics			small denominators.	
			 To compare and order unit fractions and fractions with the same denominators. 	
			 To recognise and show, using diagrams, equivalent fractions with small denomination 	tors.
			 To place fractions on a number line. 	
			 To add and subtract fractions with the same denominator within one whole [for 	
			example, $5/7 + 1/7 = 6/7$] with appropriate fractions.	
			 To solve problems that involve all of the above, with appropriate fractions. 	
Mogsuromont			 To measure and compare: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ 	ml).
(longth			 To add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). 	
(lengin,			 To measure the perimeter of simple 2D shapes. 	
canacity)			 To read (and apply to problem solving) labelled divisions for measure – in 1s, 2s, 5s 	, 10s,
cupucity)			100s – and begin to do so for unlabelled divisions up to the same numbers.	
			 To interpret and present data using bar charts, pictograms and tables. 	
Statistics			 To solve one-step questions (for example, 'how many more?' And 'how many few 	∕er?'
			using information presented in scaled bar charts and pictograms and tables.	





At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Theme	Date	Week	Year 3 – Summer 1
			 To count from 0 in multiples of 4, 8, 50 and 100.
			 To use partitioning up to 999 to solve problems.
			• To identify, represent and estimate numbers using different representations including
			measures up to 1000.
Number and			 To compare and order numbers beyond 1000, using < > and =
place value			 <u>To round numbers to the nearest 10 or 100.</u>
			 To confidently read and write numbers beyond 1000 in numerals and in words.
			o To read Roman numerals up to 20.
			 To solve number problems and practical problems involving these ideas and explain
			reasoning.
			 To add and subtract numbers mentally, including:
			A three-digit numbers and ones ®
			 A three-digit numbers and tens (multiples of 10) ®
			 A three-digit number and hundreds (multiples of 100) ®
Addition and			 To add and subtract numbers with up to three digits, using formal written methods of
subtraction			columnar addition and subtraction up to 999.
			 To estimate the answer to a calculation and use inverse operations to check answers.
			 Io solve problems, using number facts, place value, and multiple step addition and
			subtraction (with numbers up to 100).
			 Io solve missing number problems involving addition and subfraction with numbers up
			to 100, which include balancing equations e.g. 48 + _ = 100.
			 Io know facts for 2, 3, 4, 5, 8, 10 times tables up to x12.
			 Is write and calculate mathematical statements for multiplication and division using
			the multiplication tables above, including for two-digit numbers times one-digit
Multiplication			numpers, using mentai metnoas ana jotings.
and division			 To write and calculate mainternatical statements for multiplication and division using the prutitalized and calculate mainternatical statements for multiplication and division using the prutitalized and calculate mainternatical statements for multiplication and division using the prutitalized and calculate mainternatical statements for multiplication and division using the prutitalized and calculate mainternatical statements for multiplication and division using the prutitalized and calculate mainternatical statements for multiplication and division using the prutitalized and calculate mainternatical statements for multiplication and division using the prutitalized and calculate mainternatical statements for multiplication and division using the prutitalized and calculate mainternatical statements for multiplication and division using the prutitalized and calculate mainternatical statements for multiplication and division using the prutitalized and calculate mainternatical statements for multiplication and division using the prutitalized and calculate mainternatical statements for multiplication and division using the prutitalized and the prutitalized an
			numbers, units formal written matheda
			To solve problems including mining number problems involving multiplication and
			 To solve problems, including missing number problems, involving multiplication and division including positive integer realing problems.
			To toll and write the time from an analogue clock including using 12 hour and 24 hour
			o ter ana whie me ime iron an analogue clock, including using 12-nour and 24-nour
Magguramant			To estimate and read time with increasing decuracy to the negrest minute
(time)			To estimate drid read mine with increasing accords minutes and hours
(inne)			To use vesebulary such as clock merning afferneen need and midnight
			 To know the number of days in each month, year and leap year
			 To identify vertical and horizontal lines of symmetry in common 2D shapes
Properties of			 To identify pairs of perpendicular parallel lines
shapes			 To identify whether angles are areater than or less than a right angle
			To know and use the terms 'North' 'North-East' 'East' 'South-East' 'South' 'South' 'South-West'
Position and			West' and 'North-West'
direction			 To be able to move between compass directions in half and quarter turns





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By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Theme	Date	Week	Year 3 – Summer 2	
			 To add and subtract numbers mentally, including: 	
Addition and			 A three-digit numbers and ones ® 	
			 A three-digit numbers and tens (multiples of 10) ® 	
			 A three-digit number and hundreds (multiples of 100) ® 	
			 To add and subtract numbers with up to three digits, using formal written methods 	of
subtraction			<u>columnar addition and subtraction up to 999.</u>	
sobilaciion			 To estimate the answer to a calculation and use inverse operations to check answ 	vers.
			 To solve problems, using number facts, place value, and multiple step addition ar 	nd
			subtraction (with numbers up to 100).	
			 To solve missing number problems involving addition and subtraction with number 	rs up
			to 100, which include balancing equations e.g. 48 + _ = 100.	
Multiplication and division			 To know facts for 2, 3, 4, 5, 8, 10 times tables up to x12. 	
			 To write and calculate mathematical statements for multiplication and division us 	ing
			the multiplication tables above, including for two-digit numbers times one-digit	
			numbers, using mental methods and jottings.	
			 To write and calculate mathematical statements for multiplication and division using the statements for multiplication and division using the statements for multiplication. 	ing
			the multiplication tables above, including for two-digit numbers times one-digit	
			numbers, using formal written methods.	
			 To solve problems, including missing number problems, involving multiplication and 	d
			division, including positive integer scaling problems.	
			 To count up and down in tenths; recognise that tenths arise from dividing an obje 	ct:
			into 10 equal parts and in dividing one-digit numbers or quantities by 10.	
			 To recognise, find and write fractions of a discrete set of objects: non-unit fractions 	<u>s with</u>
Fractions			small denominators.	
indenoito i			 To compare and order unit fractions, and fractions with the same denominators u 	sing <
			>=	_
			 To solve problems that involve all of the above, with appropriate fractions, includi 	ing
			measures.	
Measurement			 To measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); 	
(length,			volume/capacity (I/ml).	
mass,			 To read (and apply to problem solving) labelled and unlabelled divisions for meas 	sure –
capacity)			in 1s, 2s, 5s, 10s, 100s and other multiples of 1000.	
Measurement			• To add and subtract amounts of money to give change, using both £ and p in	
(money)			practical contexts with appropriate amounts up to £5.	
Statistics			 To solve 2 step questions (for example, 'How many more?' and 'How many fewer? 	<u>?'</u>
5141151165			using information presented in scaled bar charts and pictograms and tables.	





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By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Theme	Date	Week	Year 4 – Autumn 1
			• To confidently count on in multiples of 2, 3, 4, 5, 8, 10 ® 50 and 100 (from any given
			<u>starting number).</u>
			 To recognise the place value of each digit in a four-digit number (thousands, hundred)
			tens and ones).
Number and			 To begin to identify, represent and estimate four-digit numbers up to 9999 using
place value			different representations (using counters, jottings, pictures).
			 To find 1000 more or less than a given number.
			 To read Roman numerals to 50 (1 to L)
			 To begin to understand the concept of negative numbers.
			 To solve number and practical problems that involve all of the above.
			 To add and subtract numbers mentally, including:
			Four-digit numbers and ones (multiples of 10)
			 Four-digit numbers and tens (multiples of 100)
			 With different numbers of digits e.g. 3 digit +/- 2 digit (without crossing the 100
Addition and			boundary
subtraction			 To add and subfract numbers with up to 3 digits, using formal written methods of
			columnar adaltion and subtraction with answers exceeding 999.
			 To solve problems, using number tacts, place value, and multiple step addition and
			subtraction with numbers up to 1000 (explaining reasoning).
			 To solve missing number problems involving addition and subtraction, which include he slage strategies with source to 2000, successing the second strategies in the strategies in the source strategies in the strategi
			balancing equations, with numbers up to 1000, explaining reasoning.
			 Io know facts for 2, 3, 4, 9, 8, 10 times tables up to x12. (a)
			 To understand the term "tactor".
			 To solve problems including missing number problems, involving multiplication and division including positive integer sequing problems and express problems in
Multiplication			unision, including positive integer scaling problems and correspondence problems in
and division			To use place value known and derived facts to multiply and divide mentally
			 To use place value, known and derived racis to moniply and divide mentality, including:
			incloung.
			Dividing by 1
			• e a $2x_{3}=6 \text{ so } 600\pm3=200$
Measurement			 To read and write analogue and digital time
(time)			
(To know names of common quadrilaterals.
Properties of			 To know and name common trianales.
shapes			 To identify all lines of symmetry in common 2D shapes.
			 To complete a simple symmetric figure with respect to a specific line of symmetry.
Position and			 To know and use all terms relating to compass directions.
direction			





At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Theme	Date	Week	Year 4 – Autumn 2
Addition and subtraction			 To add and subtract numbers mentally, including: Four-digit numbers and ones (multiples of 10) Four-digit numbers and tens (multiples of 100) With different numbers of digits e.g. 3 digit +/- 2 digit (without crossing the 100s boundary To add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction with answers exceeding 999. To solve problems, using number facts, place value, and multiple step addition and subtraction with numbers up to 1000 (explaining reasoning). To solve missing number problems involving addition and subtraction, which include balancing equations, with numbers up to 1000, explaining reasoning.
Multiplication and division			 To know facts for 2, 3, 4, 5, 8, 10 times tables up to x12. ® To understand the term 'factor'. To 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. To use place value, known and derived facts to multiply and divide mentally, including: Multiplying by 0 and 1 Dividing by 1 e.g. 2x3=6 so 600÷3=200
Fractions (including decimals)			 To count up in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. To compare and order unit fractions, and fractions with the same denominators using <, > and =. ® To add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7] with appropriate fractions. ® To solve problems with simple non-unit fractions (3/4, 52/3) to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number. Round decimals with one decimal place to the nearest whole number. To solve simple measure and money problems involving fractions and decimals to one decimal place.
Measurement (length, mass, capacity)			 To find the area of rectilinear shapes by counting squares. To measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m.
Measurement (money)			 To use decimal notation to record money.
Statistics			 To solve 2 step questions (for example, 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables. ®





At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Theme	Date	Week	Year 4 – Spring 1
Number and place value			 To begin to count in multiples of 25 and 1000. To begin to identify, represent and estimate four digit numbers up to 9999 using different representations (counters, jottings, pictures). ® To order and compare numbers beyond 1000 using <> = ® To round any number to the nearest 1000. To find 1000 more or less than a given number. To read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. To count backwards through zero to include negative numbers. To solve number and practical problems that involve all of the above and with increasingly large positive numbers up to 10,000.
Addition and subtraction			 To add and subtract numbers mentally, including: Four-digit numbers and hundred (multiples of 100) Four-digit numbers and thousands (multiples of 1000) (including crossing the 100s boundary). To add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate not crossing the thousands barrier. To begin to estimate and use inverse operations to check answers to a calculation with appropriate numbers (up to 9999). To begin to solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why; with numbers up to 9999. To begin to solve missing number problems involving addition and subtraction with numbers up to 1000, which include balancing equations.
Multiplication and division			 To know multiplication and division facts for 6 and 9 times tables. To recall multiplication and division facts for all multiplication tables up to 12 x 12. To recognise and use factor pairs and commutativity in mental calculations. To multiply two-digit and three-digit numbers by a one-digit number using a formal written layout. To begin to divide two-digit and three-digit numbers by a one-digit number using a formal written layout. To solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems in which n objects are connected to m objects (using appropriate x tables).
Measurement (time)			• To convert between analogue and digital 12- and 24-hour clocks (using am and pm).
Properties of shapes			 To compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. To identify lines of symmetry in 2D shapes presented in different orientations. <u>To identify acute and obtuse angles.</u>
Position and direction			 To describe positions on a 2D grid as coordinates in the first quadrant. To read, write and use pairs of co-ordinates (2,5). To describe movements between positions as translations of a given unit to the left/right and up/down.





At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Theme	Date	Week	Year 4 – Spring 2
Addition and subtraction			 To add and subtract numbers mentally, including: Four-digit numbers and hundred (multiples of 100) Four-digit numbers and thousands (multiples of 1000) (including crossing the 100s boundary). To add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate not crossing the thousands barrier. To begin to estimate and use inverse operations to check answers to a calculation with appropriate numbers (up to 9999). To begin to solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why; with numbers up to 9999. To begin to solve missing number problems involving addition and subtraction with numbers up to 1000, which include balancing equations.
Multiplication and division			 To know multiplication and division facts for 6 and 9 times tables. To recall multiplication and division facts for all multiplication tables up to 12 x 12. To recognise and use factor pairs and commutativity in mental calculations. To multiply two-digit and three-digit numbers by a one-digit number using a formal written layout. To begin to divide two-digit and three-digit numbers by a one-digit number using a formal written layout. To solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems in which n objects are connected to m objects (using appropriate x tables).
Fractions (including decimals)			 To count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten, including use of a number line. To recognise and show, using diagrams, families of common equivalent fractions ½, ¼ and 1/3. To add and subtract fractions with the same denominator within and beyond one. To recognise and write decimal equivalents to ¼, ½, ¼. To solve problems involving increasingly harder fractions where the answer is a whole number. To recognise and write decimal equivalents to ¼, 1/2, ¾. To compare numbers with one decimal place. To solve simple measure and money problems involving fractions and decimals to two decimal places.
Measurement (length, mass, capacity)			 To read (and apply to problem solving) labelled/unlabelled divisions for measure – in 25s, 50s, 100s and other multiples of 1000. To convert between different units of measure [for example, kilometre to metre, hour to minute].
Measurement (money) Statistics			 Io compare and calculate different measures, including money in pounds and pence. To draw and read line graphs.





At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Theme	Date	Week	Year 4 – Summer 1
Number and place value			 To count in multiples of 6, 9, 25 and 100. Use partitioning up to 9999 to solve problems. To begin to identify, represent and estimate numbers up to 10,000 using different representations. To read, write and order numbers to 10,000. To read ny number to the nearest 10, 100, 1000. To read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. ® To begin to order and compare negative numbers. To count forwards through zero from a negative number. To solve number and practical problems that involve all of the above and with increasingly large positive numbers up to 10,000 and explain reasoning.
Addition and subtraction			 Begin to solve problems with negative numbers in context e.g. temperature. To add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate, crossing the thousands barriers with different numbers of digits e.g. 4-digit – 3-digit. To estimate and use inverse operations to check answers to a calculation with appropriate number, explaining reasoning and beginning to ensure that solutions make sense in the context of a problem. To solve missing number problems involving addition and subtraction with numbers up to be appropriate number of a problem.
Multiplication and division			 To know 7 and 11 times tables. To instantly recall all facts for tables to 12 x 12. To begin to use the formal method of short multiplication. To solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems in which n objects are connected to m objects (using appropriate x tables). To use place value, known and derived facts to multiply and divide mentally, including: Multiplying by 0 and 1 Dividing by 1 Multiplying together 3 numbers
Measurement (time)			 To solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days using appropriate amounts. To convert between different units of measure, for example: hour to minute. ®
shapes Position and direction			 To plot specified points and draw sides to complete a given polygon.





At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Theme	Date	Week		Year 4 – Summer 2
Addition and subtraction			0	To add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate, crossing the thousands barriers with different numbers of digits e.g. 4-digit – 3-digit. To estimate and use inverse operations to check answers to a calculation with appropriate number, explaining reasoning and beginning to ensure that solutions make sense in the context of a problem. To solve missing number problems involving addition and subtraction with numbers up to 1000, explaining reasoning
			0	To know 7 and 11 times tables.
			0	To instantly recall all facts for tables to 12 x 12.
			0	To begin to use the formal method of short multiplication.
			0	To begin to use the formal method of short division.
Multiplication and division			0	To solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems in which n objects are connected to m objects (using
				appropriate x tables).
			0	To use place value, known and derived facts to multiply and divide mentally,
				including:
				 Multiplying by 0 and 1 Dividing by 1 Multiplying together 3 numbers
			0	Io multiply and divide whole numbers by 10, 100.
			0	To connect hundreaths to tenths and place value and decimal measures.
			0	To recognise and write decimal equivalents of any number of fenths or hundredths,
Fractions				including use of the number line.
(including			0	To compare numbers with up to two decimal places.
decimals)			0	To find the effect of dividing a one of two-algit number by TU and TUU, identifying the
-				value of the algits in the answer as ones, tenths and hundreaths.
			0	to solve simple measure and money problems involving iractions and decimals to two
				decimal places, with a mixed number of decimal places.
Measurement			0	including desimple (tenthe)
(lengin,				Including decimals (lenins).
mass,			0	minutal @
Measurement			0	To estimate, compare and calculate different measures, including money in pounds
(money)			0	and pence
(money)		1	0	To draw and read line graphs @
Statistics			0	To interpret and present discrete and continuous data using appropriate graphical methods including bar charts and time graphs





At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

Theme	Date	Week	Year 5 – Autumn 1
			 To count in multiples of 7.
			 To count forwards or backwards in steps of powers of 10 for any given number up to
			 To identify, represent and estimate numbers up to 10,000 using different representations
Number and			To read write, order and compare numbers to at least 10,000 and determine the value
place value			of each diait
			 To order and compare negative numbers using <> and =.
			 To round any number up to 10,000 to the nearest 10, 100 and 1000.
			 To read Roman numerals to 1000 (M)
			 To recognise and describe linear number sequences.
Addition and			 To solve addition and subtraction two-step problems in contexts, deciding which
subtraction			operations and methods to use and why; with four digit numbers and explain their
			reasoning.
			• To instantly recall all facts for tables to 12x12. ®
			 To identify multiples and factors, including finding all factor pairs of a number.
			 Io multiply and alvide numbers mentally arawing upon known facts.
			 To use formal methods of short multiplication. To divide numbers use to 4 divide the second divide number using the formal written method.
			of short division without remainders in the context
Multiplication			 To solve problems involving multiplying and adding, including using the distributive law.
and division			to multiply two digit numbers by one digit, integer scaling problems and harder
			correspondence problems, such as n objects are connected to m objects (using
			appropriate times tables).
			 To multiply and divide whole numbers by 10, 100 and 1000.
			 To know and use the vocabulary of prime numbers.
			 To recognise and use squared numbers, and the notation for squared (²).
			 To identify 3D shapes, including cubes and other cuboids, from 2D representations.
_			 To distinguish between regular and irregular polygons based on reasoning about equa
Properties of			sides and angles.
shapes			 Io know that angles are measured in degrees.
			 Io estimate and compare acute, objuse and reflex angles.
			 Io araw given angles, and measure them to the nearest 10°.





At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

Theme	Date	Week	Year 5 – Autumn 2	
Addition and			o To solve addition and subtraction two-step problems in contexts, deciding which	
subtraction			operations and methods to use and why; with four digit numbers and explain their	
300110011			reasoning.	
			 To instantly recall all facts for tables to 12x12. ® 	
			 To identify multiples and factors, including finding all factor pairs of a number. 	
			 To multiply and divide numbers mentally drawing upon known facts. 	
			 To use formal methods of short multiplication. 	
			 To divide numbers up to 4 digits by a one-digit number using the formal written met 	thod
Multiplication			of short division without remainders in the context.	
and division			 Io solve problems involving multiplying and adding, including using the distributive I 	law
			to multiply two digit numbers by one digit, integer scaling problems and harder	
			correspondence problems, such as n objects are connected to m objects (using	
			appropriate times tables).	
			 Io multiply and divide whole numbers by 10, 100 and 1000. 	
			• Io know and use the vocabulary of prime numbers.	
			 To recognise and use squared numbers, and the notation for squared (*). 	
			 Io identify, name and write equivalent fractions of a given fraction, represented viewelly, including to the and hundred the 	
			visually, including tenths and nunareatins.	
Fractions			 To compare and order fractions whose denominators are all multiples of the same number 	
(including			To add and subtract fractions with the same denominator	
decimals and			To dud und sublider indenois with the sume denomination.	
percentages)			To round docimals with two docimal places to the pagest whole number	
percentages)			To read and write decimal numbers as fractions (for example, 0.71 = 71/100)	
			To recognise and use thousand the and relate them to tenths, hundred the and decir	mal
			equivalents	mai
			 To measure and calculate the perimeter of composite rectilinear shapes in centime 	otros
Measurement			and metres	SHCS
(length			 To begin to read (and apply to problem solving) labelled divisions for measure with 	
mass			both decimals (up to 3dp) and whole numbers up to 1 000 000	
capacity)			 To use all four operations to solve problems involving measure (for example, length) 	
• ap a • ,)			mass, money) using decimal notation, including scaling with appropriate numbers.	
Measurement			 To use all four operations to solve problems involving measure (for example, length) 	
(money)			mass, money) using decimal notation, including scaling with appropriate numbers.	
(To solve comparison, sum and difference problems using information presented in a 	a
			line graph.	
Statistics			 To solve comparison, sum and difference problems using information presented in t 	bar
			charts, pictograms, tables and other graphs.	





At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

Theme	Date	Week	Year 5 – Spring 1	
			 To count forwards or backwards in steps of powers of 10 for any given number up to 100 000)
			 To read, write, order and compare numbers to at least 100,000 and determine the 	
Number and			value of each digit using <, > and =.	
place value			 <u>Io round any number up to 10,000 to the nearest 10, 100, 1000.</u> 	
			 Io interpret negative numbers in context, count forwards and backwards with positive and a spetter sub-le supplier is shading the supplier of the supplice of the supplice of the supplier of the supplice of the supplice of the supplice of the	<u>ve</u>
			and negative whole humbers, including through zero.	ala
			 Io recognise and describe linear number sequences including fractions and decime 	ais.
			 Io solve number problems and practical problems involving all of the above. 	
			with numbers up to 10,000 and/or mixed numbers of algits:	<u> </u>
			 Io dad and subtract numbers mentally with increasingly larger numbers up to 10,000 To add and subtract whole numbers with more than 4 divide including using formal 	υ.
			 To dad and subtract whole numbers with more than 4 digits, including using formal with a mathe ale (a language additional and and and a digits). 	
Addition and			written methods (columnar adaition and subtraction).	
subtraction			 To use rounding to check answers to calculations and determine, in the context of c problem lough of accuracy. 	J
			problem, reversion accordcy.	
			 To solve addition and subfraction multi-step problems in contexis, deciding which opportions and mothods to use and why 	
			To identify multiples and factors including finding all factor pairs of a number, and	
			o to definity moniples and racios, including inding an actor pais of a normely, and	
			To multiply numbers up to 4 digits by a one or two digit number using a formal writte	n
			nothing in official operations by a one of two-digit normal values of the official operation of the official operation of the	/11
			 To divide numbers us to 4 diaits by a one diait number using the formal written method. 	bod
Multiplication			of short division and interpret remainders appropriately for the context	100
and division			 To solve problems involving addition subtraction multiplication and division and a 	
			combination of these including understanding the megning of the equals sign	
			 In multiply and divide whole numbers and those involving decimals by 10 and 100 	
			 To establish whether a number up to 100 is prime and recall prime numbers up to 19 	2.
			 To recognise and use squared and cubed numbers, and the notation for squared (² 	²).
Measurement			 To solve problems involving converting between units of time (including problems) 	
(time)			involving the duration of events).	
(• To identify:	
			Angles at a point and one whole turn (total 360°)	
Properties of			 Angles at a point on a straight line and ½ a turn (total 180°) 	
shapes			Angles at other multiples of 90°	
			 To draw given angles, and measure them to the nearest 5°. 	
			 To describe positions on a 2D grid as coordinates in the first quadrant. ® 	
Position and			• To identify, describe and represent the position of a shape following a reflection or	
direction			translation, using the appropriate language and know that the shape has not	
			changed.	





At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

Theme	Date	Week		Year 5 – Spring 2
				With numbers up to 10,000 and/or mixed numbers of digits:
			0	To add and subtract numbers mentally with increasingly larger numbers up to 10,000.
			0	To add and subtract whole numbers with more than 4 digits, including using formal
Addition and				written methods (columnar addition and subtraction).
subtraction			0	To use rounding to check answers to calculations and determine, in the context of a
				problem, levels of accuracy.
			0	To solve addition and subtraction multi-step problems in contexts, deciding which
				operations and methods to use and why.
			0	To identify multiples and factors, including finding all factor pairs of a number, and
				common ractors of two numbers.
			0	to multiply numbers up to 4 digits by a one of two-digit number using a formal written
				melhod, including long multiplication for two-algit numbers.
Multiplication			0	of short division and interpret remainders appropriately for the context
and division				of short division and interpret remainders appropriately for the context.
			0	combination of these, including understanding the meaning of the equals sign
			0	To multiply and divide whole numbers and those involving decimals by 10 and 100
			0	To establish whether a number up to 100 is prime and recall prime numbers up to 19
			0	To recognise and use squared and cubed numbers, and the notation for squared $\binom{2}{2}$
			0	To add and subtract fractions with the same denominator and denominators that are
			Ŭ	multiples of the same number.
			0	To recognise mixed numbers and improper fractions and convert from one form to the
				other and write mathematical statements > 1 as a mixed number (e.g. $2/5 + 4/5 = 6/6 =$
				1 1/5).
Fractions			0	To multiply proper fractions and mixed numbers by whole number, supported by
(Including				materials and diagrams.
decimais and			0	To calculate simple fractions and percentages of whole numbers and quantities.
percentages)			0	To read, write, order and compare numbers with up to three decimal places.
			0	To round decimals with two decimal places to the nearest whole number and to one
				decimal place.
			0	To add and subtract decimal numbers (to at least 3dp) and round as required.
			0	To solve problems involving decimals with up to 3dp.
			0	To calculate and compare the area of rectangles (including squares) and including
				using standard units, square centimetres and square metres and estimate the area of
				irregular shapes (if necessary, by counting squares including fractions of squares.
Measurement			0	To begin to read (and apply to problem solving) unlabelled divisions for measure with
(length,				both decimals (up to 3dp) and whole numbers up to 1,000,000.
mass,			0	To convert between different units of metric measure (for example, kilometre to metre;
capacity)				centimetre and metre; centimetre and millimetre; gram and kilogram; lifte and
				Millillite). Ta una all'faur anarationa ta calua arabiana invaluina na anura (fau aurorata la calua
			0	to use all tour operations to solve problems involving measure (for example, length,
Charlishing				mass, money using decimal hold iton, including scaling with appropriate numbers.
STATISTICS			0	IO COMPLETE, READ AND INTERPRET INFORMATION IN TABLES, INCLUDING TIMETABLES.





At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

Theme	Date	Week	Year 5 – Summer 1
			 To count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000
			To read, write, order and compare numbers to at least 1,000,000 and determine the
			value of each diatiusing < > and =
Number and			\sim To round dry number up to 1,000,000 to the pegrest 10, 100, 10,000, and 100,000
place value			 To recognize vegis written in Roman numerals (i.e. read and write Roman numerals to
			at least 3000- MMM).
			• To recognise and describe linear number sequences including fractions and decimals
			and find term to term rule in words.
			With numbers up to 100,000 and/or mixed numbers of digits:
			• To add and subtract numbers mentally with increasingly large numbers up to 100,000.
			 To add and subtract whole numbers with more than 4 digits, including using formal
Addition and			written methods (columnar addition and subtraction).
subtraction			• To use rounding to check answers to calculations and determine, in the context of a
SUBILICIION			problem, levels of accuracy.
			 To solve addition and subtraction multi-step problems in contexts, deciding which
			operations and methods to use and why.
			 To use calculators to explore more complex number problems.
			• To multiply numbers up to 4 digits by a one- or two-digit number using a formal written
			method, including long multiplication for two-digit numbers. ®
			 To divide numbers up to 4 digits by a one digit number using the formal written method
			of short division and interpret remainders appropriately for the context, expressing
			remainders as a fraction or decimal.
			 Io solve problems involving multiplication and division, including scaling (multiplicative
			reasoning) by simple tractions and problems involving simple rates.
Multiplication			 Io multiply and divide whole numbers and those involving decimals (up to 3dp) by 10, 100 and 1000
and division			To know and use the vecebulary of prime number, prime factor, and composite (pen
			o how and use the vocabulary of plime hombers, plime factors and composite (hom- prime) numbers.
			To recognize and use squared numbers (up to at least 144) and subed numbers, and
			the notation for squared (3) and cubed (3)
			To solve problems involving multiplication and division including using their knowledge
			of factors and multiples, squares and cubes
			To begin to use letters to symbolise unknown numbers to belp to solve missing number
			problems involving multiplication and division (with one unknown).
Properties of			 To use the properties of rectangles to deduce related facts and find missing lengths
shapes			and angles.
sinches			 To draw given angles, and measure them to the nearest °
Position and			 To describe positions on a 2D grid as coordinates in the first two quadrants.
direction			





At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

Theme	Date	Week		Year 5 – Summer 2
				With numbers up to 100,000 and/or mixed numbers of digits:
			0	To add and subtract numbers mentally with increasingly large numbers up to 100,000.
			0	To add and subtract whole numbers with more than 4 digits, including using formal
Addition and				written methods (columnar addition and subtraction).
subtraction			0	To use rounding to check answers to calculations and determine, in the context of a
				problem, levels of accuracy.
			0	To solve addition and subtraction multi-step problems in contexts, deciding which
				operations and methods to use and why.
			0	To use calculators to explore more complex number problems.
			0	To multiply numbers up to 4 digits by a one- or two-digit number using a formal written
				method, including long multiplication for two-digit numbers. ®
			0	To divide numbers up to 4 digits by a one digit number using the formal written method
				of short division and interpret remainders appropriately for the context, expressing
				remainaers as a traction or aecimal. To solve any laboration or aecimal.
			0	to solve problems involving multiplication and division, including scaling (multiplicative
				Te multiply and divide whole numbers and these involving simple rates.
Multiplication			0	100 and 1000
and division			0	To know and use the vecabulary of prime numbers, prime factors and composite (non-
			0	no know and use the vocabolary of prime normbers, prime raciors and composite (non-
			0	To recognise and use squared numbers (up to at least 144) and cubed numbers and
			0	the notation for squared (2) and cubed (3)
			0	To solve problems involving multiplication and division including using their knowledge
			Ű	of factors and multiples, saugres and cubes.
			0	To begin to use letters to symbolise unknown numbers to help to solve missing number
			_	problems involving multiplication and division (with one unknown).
			0	To identify equivalent fractions, using common multiples to express fractions in the
Frenchione				same denomination.
(including			0	To recognise the percent symbol (%) and understand that per cent relates to 'number
(including				of parts per hundred', and write percentages as a fraction with denominator 100, and
Dercontagos)				as a decimal.
percentages)			0	To solve problems which require knowing percentage and decimal equivalents of 1/2,
				¹ /4. 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25.
			0	To read labelled/unlabelled divisions for measure with both decimals (up to 3dp) and
Measurement				whole numbers up to 1,000,000.
(length,			0	To estimate volume [for example, using 1 cm ³ to build cuboids (including cubes)] and
mass,				capacity (for example using water).
capacity)			0	To understand and use approximate equivalences between metric units and common
		I	1	imperial units such as inches, pounds and pints.





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By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

Theme	Date	Week	Year 6 – Autumn 1
			 To count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000. ®
Number and			 To read and write numbers up to at least 1,000,000 in numerals and words and
place value			<u>determine the value of each digit using < > and =.</u>
			 To round any whole number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 1,000,000.
			• To add and subtract numbers mentally with increasingly larger numbers up to 10,000.
			 To add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).
Addition and			 To use rounding to check answers to a calculation and determine, in the context of a problem, levels of accuracy.
subtraction			 To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
			• To use letters to symbolise unknown numbers to help to solve missing number problems involving addition and subtraction (with one unknown).
Multiplication and division			• To multiply and divide numbers mentally drawing upon known facts. ®
Properties of			 To use the properties of rectangles to deduce related facts and find missing lengths and angles. B
snapes			o To draw given angles, and measure them to the nearest °. ®





At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

Theme	Date	Week	Year 6 – Autumn 2
Addition and subtraction	30.10.18 2.11.18	1&2	 To add and subtract numbers mentally with increasingly larger numbers up to 10,000. To add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). To use rounding to check answers to a calculation and determine, in the context of a problem, levels of accuracy. To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. To use letters to symbolise unknown numbers to help to solve missing number problems involving addition and subtraction (with one unknown).
Multiplication and division	22.10.18	1	• To multiply and divide numbers mentally drawing upon known facts. ®
Fractions (including decimals and percentages)	30.10.18 _ 2.11.18	1	 To add and subtract decimal numbers (to at least 3dp) and round as required. ® To solve problems involving numbers up to three decimal places. To solve problems which require knowing percentage and decimal equivalents of 1/2, ¼. 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25. ® To calculate simple fractions and percentages of whole numbers and auantities.
Measurement (length, mass, capacity)			 To read and apply to problem solving, labelled and unlabelled divisions for measure with both decimals (up to 3dp) and whole numbers up to 1,000,000. ® To use all four operations to solve problems involving measure (for example, length, mass, money) using decimal notation, including scaling with appropriate numbers. ®





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By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

Theme	Date	Week	Year 6 – Spring 1	
			• To read, write, order and compare numbers up to 10,000,000 in numerals and words	
Number and			and determine the value of each digit.	
			 To round any whole number to a required degree of accuracy. 	
place value			 <u>To use negative numbers in context.</u> 	
			 To solve number and practical problems that involve all of the above. 	
Addition and			 To use calculators to develop and investigate patterns and sequences. 	
subtraction			• To start to understand the use of brackets.	
Multiplication			 To divide numbers up to 4 digits by a two-digit number using the formal written method 	bd
and division			of short division.	
			 To draw 2D shapes using given dimensions and angles. 	
Properties of			• To recognise, describe and build simple 3D shapes, including making nets.	
shapes			• To calculate, estimate and compare the volume of cubes/cuboids using standard	
			units.	
Position and			 To describe positions on the full coordinate grid (all four quadrants). 	
direction			• To draw and translate simple shapes on the coordinate plane in the first quadrant.	
			• To use simple formulae.	
Algebra			 To generate and describe linear number sequences. 	
-			 To express missing number problems algebraically. 	





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By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

Theme	Date	Week	Year 6 – Spring 2
Addition and			 To use calculators to develop and investigate patterns and sequences.
subtraction			 To start to understand the use of brackets.
Multiplication			• To divide numbers up to 4 digits by a two-digit number using the formal written method
and division			of short division.
			 To compare and order fractions, including fractions >1.
			 To multiply simple pairs of proper fractions.
			• To divide proper fractions by whole numbers (e.g. $1/3 \div 2 = 1/6$).
Fractions			 To associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (3/8).
(including			• To identify the value of each digit in numbers given to three decimal places and
aecimais and			multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal
percentages)			places.
			• To multiply one-digit numbers with up to two decimal places by whole numbers.
			• To recall and use equivalences between simple fractions, decimals and percentages.
			• To round decimals for simple fractions with recurring decimal equivalents.
Measurement			 To recognise that shapes with the same areas can have different perimeters and vice
(length,			versa.
mass,			 To convert between miles and kilometres.
capacity)			
Statistics			 To interpret pie charts and line graphs and use these to solve problems.
			 To solve problems involving the calculation of percentages (e.g. of measures, and
Patio and			such as 15% of 360) and the use of percentages for comparison, multiples of 5 and 10.
proportion			 To solve problems involving similar shapes where the scale factor is known or can be found.
			\circ To use simple ratio and proportional reasoning to solve problems.





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By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

Theme	Date	Week	Year 6 – Summer 1
Number and place value			 To read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. To round any number to a required degree of accuracy. ® To use negative numbers in context, and calculate intervals across zero.
			 To solve number and practical problems that involve all of the above. To perform mental calculations, including with mixed operations, and large numbers.
			 To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
Addition and subtraction			 To use estimation (and approximation) to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.
			 To explore the order of operations using brackets e.g. 2+1x3=5; [2+1]x3=9 To use their knowledge of the order of operations to carry out calculations involving the four operations.
			 To perform mental calculations, including with mixed operations and large numbers. To multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.
			 To divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions or by rounding, as appropriate to the context
Multiplication			 To solve multiplication and division multi-step problems in contexts, deciding which operations and methods to use and why.
and division			 To solve problems involving addition, subtraction, multiplication and division. To identify common factors, common multiples and prime numbers.
			 To use their knowledge of the order of operations to carry out calculations involving the four operations.
			 Io use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.
			 To use read, write and convert between different standard units, converting
Measurement (time)			measurements of length, mass, volume and time from a smaller unit of measure to a larger unit and vice versa, using decimal notation up to three decimal places.
			• To compare and classify geometric shapes based on their properties.
Properties of			 To illustrate and name parts of circles, including radius, diameter and circumference
			and know that the diameter is twice the radius.
snapes			 Io find unknown angles in any friangles and quadrilaterals. To recommiss angles where they most of a point are on a straight line, or are vertically.
			 To recognise angles where they meet at a point, are on a straight line, or are vehically opposite, and find missing angles
			 To draw and translate simple shapes on the coordinate plane in any auadrant and
Position and			reflect them in the axis.
airection			 To solve problems relating to coordinates, reflections and translations.
			 To find pairs of numbers that satisfy an equation with two unknowns.
Algebra			 To find possible values in missing number problems and equations involving 1 or 2
			unknowns.





At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

Theme	Date	Week	Year 6 – Summer 2
			 To perform mental calculations, including with mixed operations and large numbers. To solve addition and subtraction multi-step problems in contexts, deciding which
			operations and methods to use and why.
Addition and			 To use estimation (and approximation) to check answers to calculations and
subtraction			determine, in the context of a problem, an appropriate degree of accuracy.
			 To explore the order of operations using brackets e.g. 2+1x3=5; [2+1]x3=9
			 To use their knowledge of the order of operations to carry out calculations involving the four operations.
			To perform monthal adjustations, including with mixed opportions and large purphers
			 To perform menuit diaculations, including with mixed operations and adge hormbers.
			formal written method of long multiplication
			 To divide numbers up to 4 diaits by a two-diait whole number using the formal written
			method of long division and interpret remainders as whole number remainders
			fractions or by rounding, as appropriate to the context.
			 To solve multiplication and division multi-step problems in contexts, deciding which
Multiplication			operations and methods to use and why.
and division			 To solve problems involving addition, subtraction, multiplication and division.
			 To identify common factors, common multiples and prime numbers.
			• To use their knowledge of the order of operations to carry out calculations involving
			the four operations.
			 To use estimation to check answers to calculations and determine, in the context of a
			problem, an appropriate degree of accuracy.
			 To check with a calculator.
			 To add and subtract tractions with different denominators and mixed numbers, using the execution of a mixed numbers, using
			The concept of equivalent fractions.
			 To use common factors to simplify fractions: To use common multiples to express fractions in the same denomination
Fractions			 To use common moliples to expless indentitis in the same denomination. To multiply simple points of proper fractions, writing the answer in its simplest form (e.g. 1/.)
(including			$x''_{1} = 1/8$
(including			 A 72 = 170, To recall and use equivalences between simple fractions, decimals and percentages
percentages)			including in different contexts.
po.co			 To use written division methods in cases where the answer has up to two decimal
			places.
			 To solve problems which require answers to be rounded to specified degrees of
			accuracy.
			 To use, read, write and convert between different standard units, converting
Measurement			measurements of length, mass, volume and time from a smaller unit of measure to a
(length,			larger unit and vice versa, using decimal notation up to three decimal places.
mass, capacity)			• To recognise when it is possible to use formulae for area and volume of shapes
			 To solve problems involving the calculation and conversion of units of measure, using
			decimal notation.
			 To construct pie charts and line graphs and use these to solve problems.
Statistics			 Io calculate and interpret the mean as an average (for sets of discrete data in different contexts)
			CONTEXTS).
			o To solve problems involving the calculation of percentages (e.g. of measures, and such as 15% of 340) and the use of percentages for comparison single digit
Ratio and			such as 15% of soul and the use of percentages for comparison, single digit percentages e.g. 7% 22%
proportion			Description of the relative sizes of two quantities where missing values can
			be found by using integer multiplication and division facts

Mathematics Half Termly Planning Objectives



Theme	Date	Week		Beyond Year 6 – Autumn 1
Properties of			0	To compare and classify regular polygons.
shapes				
Alaebra			0	To enumerate possibilities of combinations of two variables.

Theme	Date	Week		Beyond Year 6 – Autumn 2
Fractions (including			0	To understand the relationship between unit fractions and division to work backwards
decimals and				
percentages)				
Measurement			0	To calculate the area of parallelograms and triangles.
(length,			0	To calculate, estimate and compare volume of cubes and cuboids using standard
mass,				units, including cubic centimetres (cm ³) and cubic metres (m ³), and extending to other
capacity)				units (e.g. mm³ and km³).
Ratio and			0	To solve problems involving unequal sharing and grouping using knowledge of
proportion				fractions and multiples.





Theme	Date	Week	Beyond Year 6 – Spring 1
Number and place value			 To round large numbers to a given power of 10 and to one significant figure. To make generalisations about properties of number e.g. prime numbers, square or cube numbers.
Multiplication and division			\circ To understand and use square root symbol $$
Properties of shapes			 To recognise and use common 2D representations of 3D objects e.g. interpret diagrams on isometric paper. To find the fourth coordinate when given the coordinates of 3 vertices of a parallelogram.
Position and direction			 To reflect shapes in oblique mirror lines where the shape either does not touch the mirror line or where the shape crosses the mirror line. To reflect shapes not presented on grids by measuring perpendicular distances to or from the mirror.
Algebra			 To construct, express in symbolic form, and use simple formulae involving one or two operations. E.g. understand simple expressions using symbols 2 less than n can be written as n - 2. To evaluate expressions by substituting numbers into them and use symbols to represent an unknown number or a variable. To use and interpret coordinates in all four guadrants.

Theme	Date	Week	Beyond Year 6 – Spring 2
Multiplication and division			$_{\circ}$ To understand and use square root symbol $$
Fractions (including decimals and percentages)			 To use a calculator where appropriate to calculate fractions/percentages of quantities and/or measurements. To understand and use common denominators to add and subtract fractions. To order and approximate decimals.
Measurement (length, mass, capacity)			 To use a straight edge and compasses to carry out standard construction.
Statistics			 To construct pie charts using ICT and on paper. To construct frequency diagrams using ICT and on paper. E.g. construct simple time graphs for time series, interpret frequency diagrams. To understand and use the mode and range to describe sets of data. To understand that the median represents the middle value of a set of data. To understand the language of probability such as more likely, equally likely, fair, unfair and certain in the context of everyday situations.





Theme	Date	Week	Beyond Year 6 – Summer 1
Number and place value			 To understand and use negative numbers as translations on a number line e.g. know the direction of travel when subtracting a negative number. To use concepts and vocabulary of highest common factor (HCF) and lowest common factor (LCF).
Addition and subtraction			• To add and subtract fractions by writing them with a common denominator.
Multiplication and division			 To estimate using known facts e.g. using √81 = 9 and √100 = 10 to estimate √85. To use prime factor decomposition of positive integers e.g. understand that 120 can be expressed as 2 x 2 x 3 x 5 or 23 x 3 x 5.
Properties of shapes			 To know and use the properties of quadrilaterals to classify different types of quadrilateral e.g. sort using criteria such as 'diagonals bisect each other' and 'diagonals intersect at right angles' and identify a shape for each region of their Venn diagram. To identify alternate and corresponding angles. To understand a proof that the sum of angles in a triangle is 180° and in quadrilaterals is 360°. To solve problems using angle and symmetry properties of polygons, and explain these properties. To solve problems using angle properties of intersecting and parallel lines, and explain these properties.
Position and direction			 To reflect shapes in two mirror lines where the shape is not parallel or perpendicular to either mirror. To devise instructions for a computer to generate and transform shapes and paths. To enlarge 2D shapes by a positive whole-number scale factor, when given a centre of enlargement. To begin to understand properties of translations, reflections and rotations e.g. understand that translations, reflections and rotations preserve length and angle. To map objects onto congruent images and describe the transformation.
Algebra			 To find and describe in words the rule for the next term or nth term of a sequence where the rule is linear. To formulate and solve linear equations with whole number coefficients. To use trial and improvement methods and ICT tools when solving equations such as e.g. x3 + x = 20. To represent mappings expressed algebraically, and use Cartesian coordinates for araphical representation.





Theme	Date	Week	Beyond Year 6 – Summer 2
Addition and subtraction			 To add and subtract fractions by writing them with a common denominator.
Multiplication and division			 To estimate using known facts e.g. using √81 = 9 and √100 = 10 to estimate √85. To use prime factor decomposition of positive integers e.g. understand that 120 can be expressed as 2 x 2 x 3 x 5 or 23 x 3 x 5.
Fractions (including decimals and percentages)			 To evaluate one number as a fraction or percentage of another. To calculate fractions of quantities with fractional answers. To understand and use equivalences between fractions, decimals and percentages e.g. 7/8, 1/6. To use trial and improvement methods when solving numerical problems that involve ordering and approximating decimals. To solve problems that include percentage increase or decrease. To know which number to consider as 100 per cent, or a whole, in problems involving comparisons.
Measurement (length, mass, capacity)			 To calculate lengths, areas and volumes in plane shapes and right prisms e.g. calculate volumes and surface areas of cuboids. To understand and use appropriate formulae for finding circumferences and areas of circles, areas of plane rectilinear figures and volumes of cuboids when solving problems e.g. deduce and use formulae for the area of a triangle and parallelogram.
Statistics			 To design a survey or experiment to capture necessary data from one or more sources, for example: Design, trial and, if necessary, refine data collection sheets. Design and use two-way tables. To collect and record continuous data, choosing appropriate equal class intervals over a sensible range to create frequency tables, for example: Choose suitable class intervals when constructing tables. For large sets of raw (discrete or continuous) data, when dealing with a combination of two experiments, identify all the outcomes, using diagrammatic, tabular or other forms of communication.
Ratio and proportion			 To calculate using ratio in appropriate situations. To divide a quantity into two or more parts in a given ratio.





Fairfield Primary School Written calculation Policy



ADDITION (1)			
Step 1	4 + 2 = 6	Pictures or objects Children use pictures or objects to help them count, and add what they need to.	
Step 2	8 + 3 = 11 8 + 3 = 11	Tallies or dots Children use tallies or dots to help them be more efficient and add what they need to.	
Step 3	7 + 4 = 11	Addition number line (jumping in 1s) Children 'jump' in 1s on a number line from one number.	
Step 4	23 + 12 = 35	Addition number line (jumping in 10s and 1s) Children 'jump' in 10s and 1s from one number to help them be more efficient.	



ADDITION (2)			
Step 5	83 + 42 = 125	234 + 179 = 413	Expanded column method
			Children add the numbers together starting from the right hand side (smallest place value column), writing the answers to each column added separately.
Step 6	234 + 179 = 413	74.5 + 48.8 =	Column method Children add the numbers together starting from the right hand side (smallest place value column), writing the answers to each column on a single line, and 'carrying' if needed.



SUBTRACTION (1)			
5 - 2 = 3	Pictures or objects Children use pictures or objects to help them, and take away what they need to.		
13 - 4 = 9 13 - 4 = 9	Tallies or dotsChildren use tallies or dots to help them be more efficient, and take away what they need to.		
13 – 5 = 8	Subtraction number lines		
Take away:	(jumping in 1s) Take away: Children take away a number by 'jumping' back in 1s on a		
13 - 5 = 8	Hornber inte.		
Difference between:	Difference between: Children 'jump' forwards in 1s from the smallest to the largest number. The language for each is very specific – <u>take away</u> or <u>difference</u> between the		
	SUBTRACTION (1) 5-2=3 13-4=9 13-5=8 Take away: 13-5=8 Difference between:		





SUBTRACTION (2)			
Step 4	24 - 11 = 13	Subtraction number lines	
	Take away:	(jumping in 10s and 1s)	
		Take away: Children take away a number by 'jumping' back in 10s and 1s on a number line.	
	24 – 11 = 13 Difference between:	Difference between: Children 'jump' forwards in 10s and 1s from the smallest to the largest number.	
		The language for each is very specific – <u>take away</u> or <u>difference</u> between the two numbers.	
Step 5	87 - 35 = 52 37.9 87.6 - 49.7 =	Column method Children take the bottom digits away from the digits above it, starting from the right hand side (smallest place value column), and 'borrowing' from the larger column to the left if needed.	



MULTIPLICATION (1)			
Step 1	2 x 3 = 6	3 x 2 = 6	Pictures or objects
	2 cubes, 3 times is 6	3 cars, 2 times is 6	Children use pictures or objects to help them count.
Step 2	4 x 5 = 20	5 x 4 = 20	'Arrays' using dots
	4 dots, repeated 5 times times	5 dots, repeated 4	Children use dots to help them become more efficient, arranging the dots into rectangles (or 'arrays') according to the numbers.
Step 3	4 x 5 = 20		Repeated addition
			Children use a number line to repeatedly 'jump' forward the number of times needed.
	Repeatedly add 4 (in this co	ase, 5 times)	



MULTIPLCATION (2)			
Step 4	27 x 6 = 162		Grid method
	56 x 34 = 1904		Children 'partition' the numbers into units, tens, hundreds etc. and arrange outside a grid. Each number within the grid is made by multiplying the numbers in the same row and column. The answers are then added together to give the answer.
Step 5	27 x 6 = 162	56 x 34 = 1904	Column method
			The digit(s) at the bottom are multiplied by each digit from the top number in turn, with each answer written on a new line below. Each of those answers is
			then added together to give the answer to the question.

Γ



DIVISION (1)			
Step 1	6 ÷ 2 = 3	Pictures or objects	
	What is 6 <u>shared between</u> 2? = 3	then	
Sharing		Tallies or dots	
		Division as 'sharing' (What is 18 <u>shared</u> <u>between </u> 3?)	
	$12 \div 3 = 4$		
	What is 12 <u>shared between</u> 3? = 4	This involves children 'sharing' objects or numbers between 2, 3, 4 etc.	
Step 2	6 ÷ 2 = 3	Pictures or objects	
	How many <u>groups</u> of 2 are in 6? = 3 <u>groups</u>	then	
Grouping	1 group 1 group 1 group	Tallies or dots	
	12 ÷ 3 = 4	Division as 'grouping' (How many <u>groups</u> of 3 are there in 18?)	
	How many <u>groups</u> of 3 are in 12? = 4 <u>groups</u>	This involves children 'grouping'/ sorting objects or numbers into groups of 2s, 3s, 4s etc.	





DIVISION (2)			
Step 3	15 ÷ 3 = 5 Count in 3s until reaching 18.	Division number line in jumps of the divisor	
		Children count in 'jumps' of the 'divisor' (the number they are dividing by) and count the number of jumps they made to get to the 'dividend' (the number being divided).	
	27 ÷ 4 = 6 r 3 For 'remainders', count in 4s until just <u>before</u> 27, as you can't land directly on 27. What is left over is the 'remainder'.	This links division with multiplication (counting in the times table of the divisor, called 'repeated addition').	





DIVISION (3)			
Step 4	52 ÷ 4 = 13	Division number line in	
	The <u>lots of</u> the divisor are 10 in the first jump (because 10 lots of 4 is 40) and 3 in the second	larger jumps of the divisor	
	jump (because 3 lots of 4 is 12), so the answer is 13.	Children 'jump' much larger steps forwards towards the 'dividend' in large multiples of the 'divisor'.	
	135 ÷ 6 = 22 r 3	This is more efficient when dividing large numbers, and the children don't have to write <u>every</u> multiple on their number line up to the dividend	
		To find the answer, the <u>lots of</u> the divisor are added together	
Step 5	748 ÷ 9 = 83 r 1 748 ÷ 16 = 46 r 12	Bus stop method 1	
		The dividend is under the 'bus stop', with the divisor outside to the left. The chidren see how many times the divisor 'goes into' each digit of he dividend, starting from the left. The number of times is written above the bus stop, and any spare digits left over are written next to the next	





DIVISION (4)			
Step 6	135 ÷ 6 = 22 r 3 7	′48 ÷ 9 = 83 r 1	Bus stop method 2
			As above, but the children don't write the multiples of the divisor in their margin.
			This means they are
	748 ÷ 16 = 46 r 12		more efficient.
			Remainders are the amount of the dividend that is 'left over'.
Step 6	748 ÷ 9 =		Bus stop method 2
Extension 1			As before, but any remainders are written as <u>fractions</u> instead of writing r
	748 ÷ 16 =		If there are any remainders, the childen write them as a fraction of the divisor.
	The remainder above is simpli	fied to ¾.	They can then 'simplify' the fraction if possible.



DIVISION (4)			
Step 6	748 ÷ 9 =	Bus stop method 2	
Extension2		As above, but any remainders are written as <u>decimals</u> instead of fractions or writing r	
	748 ÷ 16 =	If there are any remainders, the children carry them to a '0' digit to the right of the dividend (beyond a deimal point that they draw for remainders), repeating as necessary – e.g. to 2 decimal places.	