

Maths Policy 2023

Statement of Intent

At Trimley St Mary Primary School, we aim 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 develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. That they **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language. And lastly, that they 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.

AIMS AND OBJECTIVES:

The aims of mathematics and how these contribute to the school's aims.

The school aims to:

- Provide a relevant, challenging and enjoyable curriculum for all pupils;
- Provide a stimulating environment and appropriate resources so that pupils can develop their mathematical skills to their full potential;
- Meet the requirements of the National Curriculum programmes of study;
- Promote mathematics as an essential element of communication, which allows pupils to describe, illustrate, interpret, predict and explain;
- Show pupils the wonder of mathematics and promote ways of doing mathematics which harness their imagination, initiative and flexibility of mind;
- Build pupils' confidence by creating an "I can do this" ethos in the classroom;
- Encourage pupils to work systematically and to show a respect for accuracy and meaning;
- Encourage pupils to work independently and with others.
- Promote subject specific vocabulary.

Curriculum Intent

The 8 Cs - Our curriculum is underpinned by core learning skills that all children need in order to be effective learners. Children use these skills to evaluate themselves as learners, in addition to their knowledge and understanding of concepts within History.



Lesson timings

The main maths lesson is delivered in the morning with KS2 lessons lasting 1 hour 15 mins and kS1 lasting 1 hour. Pupils also participate in short burst maths sessions in the afternoons in and around their other curriculum learning. Content is delivered in blocks of learning, varying in length, dependent upon the nature of the topic and skills being developed. For example, a unit on place value may not last as long as a unit based around fractions. Teachers have the professional scope to make adjustments where they think they are needed. For example, if more than one lesson is needed to embed a skill then this can be done. There is no need for Learning Sequences to begin on a Monday or to be completed on a Friday. This being said, there is an expectation that each stage of the learning process takes place and is evident through books, learning walls, flip charts and planning.

A typical lesson in Years 1 to 6 is structured along the following lines:

- Fluent in Five (about 5 to 10 minutes) focusing on whole-class work to rehearse, sharpen and develop calculation skills.
- Rapid reasoning, a chance to apply calculation skills to challenging problems.
- The main teaching activity (about 40 to 50 minutes) which comprises of a significant amount of direct teaching and pupils' activities involving work with the whole class, groups, pairs or individuals as appropriate. Lessons will give children time to discuss mathematical ideas and their work with their peers and adults.
- peers and adults.
 - Mini plenaries will take place during a lesson to enable the teacher to address misconceptions and fine-tune the learning.

We endeavour to set work that is challenging, motivating and encourages the pupils to discuss and explain what they are doing. KS1 also have their awesome maths slots each afternoon, this is currently following the NCETM Maths Mastery Teaching Programme, where Rekenreks and other resources and manipulatives are used to explore and investigate number. The use of 'sentence stems' underpins this approach and encourages children to verbalise their learning and reasoning.

Domain Coverage

It is vital that we adjust our mathematical teaching to meet the needs of our pupils in terms of what we use as a stimulus and how we cover each National Curriculum domain. Below are details of the mathematical domains for both Key Stage 1 and Key Stage 2. In all phases, teachers use these domains to frame mathematical learning. Editable SATS style question formats are also utilised so that children become familiar with the layout and requirements of the formal tests.

KEY STAGE ONE

KEY STAGE TWO

Strand	Substrand	Content		Strand	Substrand	Content domain reference	Strand	Substrand	Content domain reference
		reference		Number and place value	counting (in multiples)	N1	Algebra	missing number problems expressed in algebra	A1
Number and place value	counting (in multiples)	N1			read, write, order and compare numbers	N2		simple formulae expressed in words	A2
	read, write, order and compare numbers	N2			place value; roman numerals	N3		generate and describe linear number sequences	A3
	identify, represent and rounding	N4			identify, represent and estimate; rounding	N4		number sentences involving two unknowns	A4
	number problems	N6			negative numbers	N5 N6		enumerate all possibilities of combinations of two	A5
		Content	ĺ	Strand	Substrand	Content domain	Measurement	variables compare, describe and order measures	
Strand	Substrand	domain reference				reference	Measurement		M1
		C1	{	Addition, subtraction, multiplication and	add / subtract mentally	CI		estimate, measure and read scales	M2
Addition, subtraction, multiplication and	add / subtract mentally		-	division (calculations)	add / subtract using written methods	C2		money	M3
division (calculations)	add / subtract using written methods	C2			estimate, use inverses and check	C3		telling time, ordering time, duration and units of time	M4
	use inverses and check	C3			add / subtract to solve problems	C4		convert between metric units	M5
	add / subtract to solve problems	C4			properties of number (multiples, factors, primes, squares and cubes)	CS		convert metric / imperial	M6
	multiply / divide mentally	C6			multiply / divide mentally	C6		perimeter, area	M7
	multiply / divide using written methods	C7			multiply / divide using written methods	67		volume	M8
	solve problems based on all four operations and knowledge of the commutative facts	C8]		solve problems (commutative, associative, distributive and all four operations)	C8		solve problems (a, money; b, length; c, mass / weight; d, capacity / volume)	M9
	order of operations	C9	1		order of operations	C9	Geometry - properties	recognise and name common shapes	G1
Fractions	recognise, find, write, name and count fractions	F1	1	Fractions, decimals and percentages	recognise, find, write, name and count fractions	F1	of shapes	describe properties and classify shapes	G2
	equivalent fractions	F2	1	and percentages	equivalent fractions	F2		draw and make shapes and relate 2-D to 3-D shapes	G3
Measurement	compare, describe and order measures	M1	1		comparing and ordering fractions	F3		(including nets)	
	measure and read scales	M2	1		add / subtract fractions	F4		angles – measuring and properties	G4
			{		multiply / divide fractions	FS		circles	G5
	money	M3	-		fractions / decimals equivalence	F6	Geometry – position and direction	patterns	P1
	telling time, ordering time and units of time	M4			rounding decimals	F7		describe position, direction and movement	P2
	solve mathematical problems involving measures	M9			compare and order decimals	F8		co-ordinates	P3
Geometry – properties of shape	recognise and name common shapes	G1			multiply / divide decimals	F9	Statistics	interpret and represent data	S1
snape	describe properties and classify shapes	G2]		solve problems with fractions and decimals	F10		solve problems involving data	S2
	draw and make shapes and relate 2-D to 3-D	G3	1		fractions / decimal / percentage equivalence	F11		mean average	\$3
	shapes				solve problems with percentages	F12			
Geometry – position and direction	patterns	P1		Ratio and proportion	relative sizes, similarity	R1			
	describe position, direction and movement	P2			use of percentages for comparison	R2			
Statistics	interpret and represent data	S 1			scale factors	R3			
	solve problems involving data	52	1		unequal sharing and grouping	R4			

Teaching and learning

We provide all pupils with direct teaching every day, which is interactive and stimulating and gives pupils a chance to discuss mathematical ideas with each other. Teaching styles and lesson structure provide opportunities for pupils to consolidate their previous learning, use and apply their knowledge, understanding and skills, pose and ask questions, investigate mathematical ideas, reflect on their own learning and make links with other work.

Our approach to teaching is based on key principles:

- A dedicated mathematics lesson every day;
- Direct teaching and interactive oral work (supported by teacher modelling)
- An emphasis on mental calculation (whilst being able to explain their methods); within a lesson there is an appropriate range of elements in the teaching, namely directing, instructing, demonstrating, explaining and illustrating, questioning and discussing, consolidating, evaluating responses and summarising. Pupils are encouraged to make decisions, communicate their understanding to others and to reason. Teachers aim to create an environment where pupils are secure and feel confident in being able to take risks in their learning.

Teachers are responsible for planning and teaching all elements of the mathematics curriculum to their pupils. Years 1 - 6 use a combination of Inspire, White Rose and Fluent in Five to help plan lessons. Teachers plan weekly and it is adapted to meet the needs of the pupils. The mathematics subject leader provides support and guidance to all teachers. Most teachers are supported by Learning Support Assistants whose work is directed by the teacher. In general, their role is to help the pupils they work with derive as much benefit and make as much progress in lessons as possible.

Our Calculation Policy has been put together in line with the new National Curriculum to outline the progressive calculation skills children need to master.

In class, teachers plan and deliver lessons with flexibility ensure the pitch and pace suit the children within their classes. Teaching will range from whole class, group, paired or individual work. Further information about new approaches to teaching at Trimley St Mary Primary School can be found below under the heading, Mathematical Mastery.

In our Reception classes, teaching also ranges from whole class, group, paired or individual work but with sessions lasting typically 20 minutes depending on the focus. Maths activities are accessible at all times during child initiated learning.

As a school, we use the Big Maths scheme to enhance our number knowledge and recall of number facts using weekly Big Maths Beat That, CLIC and SAFE challenges. These are of differing levels to suit individual pupil needs.

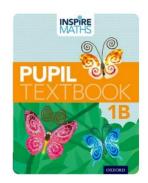
Children whom would benefit from a more personalised, smaller group for maths, have the opportunity to do o in Years 2 and 6 currently, though this can change depending on need. Any children entering year 3 without the firm foundations needed in basic calculation and number skills, access the 'Breaking Barriers' intervention scheme. In years 5/6 we also have a specialist support group for children with extreme barriers to access the maths curriculum which builds upon 'Breaking Barriers' in lower KS2 and focusses on functional number skills.

Using concrete, pictorial and abstract representations

To support the 'Singapore approach' to teaching key concepts in mathematics, (see Mathematical Mastery), lessons are planned so that children can use a variety of different representations. Often, learning begins with the use of concrete apparatus to represent a problem; children use the manipulatives to practically explore the problem. Following this, pictorial representations or diagrams can be used to represent problems with or without the apparatus alongside. This approach aims to secure children's understanding of a concept, such as doubling numbers, before they work with the abstract representation of numbers and symbols. The video below show's this theory in practice.

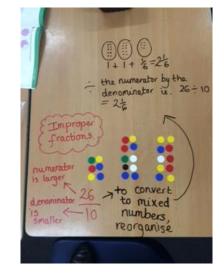
The school has invested heavily in the 'Inspire' maths scheme, with textbooks provided for every year group (1-6) to support teaching and learning alongside many other resources. Inspire Maths is a whole-school primary maths programme that provides everything you need to support a mastery approach to teaching and learning mathematics, and meet the higher expectations of the National Curriculum. It follows world-leading pedagogy based on the *My Pals are Here!* series, a programme used in almost 100% of Singapore's state primary schools.

Each classroom and break out area has access to a range of concrete materials for children to use to support their mathematical understanding including bead strings, counters, numicon, place value cards, compare bears, and multilink to name but a few.









Fluency

Fluency is one of the three aims for the 2014 national curriculum. It is also one of NCETM's '<u>Five Big Ideas of Teaching for Mastery</u>' where it's defined as "quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics".

Three stages of fluency

1. Simple strategies

Initially, as a child gets to grips with a new skill, they can work out an answer using concrete resources or counting strategies. This will probably help them solve a problem accurately, but it's not the most efficient strategy.

2. Mental calculations

As learners become more proficient with new learning, they reach the second stage of fluency. Learners at this stage can work out an answer in their head. It still requires some thinking and effort as they develop reasoning strategies, but they're well on their way to becoming more efficient.

3. Achieving fluency

Finally, children reach the stage of 'I just knew it'. They can reliably produce accurate answers in an efficient way. This stage often involves using their knowledge flexibly; making connections so that the known can be used to work out the unknown.

In the words of Mark McCourt, "we consider someone to be fluent in a technique, procedure, idea, concept or fact at the point at which they no longer need to give attention".

We pay great attention to our children achieving mathematical fluency and time is set aside in every maths lesson to become more fluent. Children from KS1-KS2 participate in daily 'Fluent in Five' session within their maths lessons to practise key calculation skills. The aim is to build competency and pace with arithmetic.

	<u>Fluent in Fi</u>	<u>ve IV.III.MMXX</u>
Brave	Adventurous	Daring
1. 3 ³ + 9 ²	1. 6 ³ + 9 ²	1. 16² + 6³
2. 71.23 ÷ 10	2. 15% of 60	2. 36% of 50
3. 89/3	3. 123/7 =	3. 156/11 =
4. 67 x 892	4. 82.39 ÷ 100	5MART Notebook [®]
5. 1/4 + 5/12	5. 4/7 + 11/14	5. 4 Are (basing v2) stor5 ² + 102.3 Connect to a SMART Board To hide externant

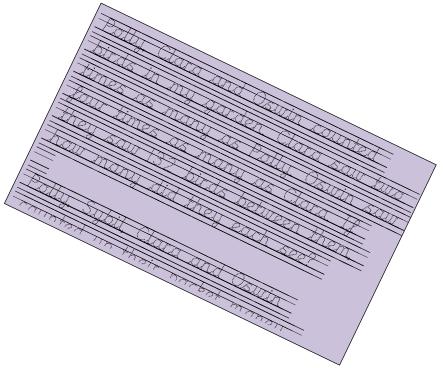
Example of Fluent in Five for lower set Year 6 Maths. Pupils select a level of challenge independently.

Rapid Reasoning provides at least three questions a day for Years 3–6 and is designed to help children develop and practise their reasoning skills. It is designed to complement Third Space Learning's Fluent in Five resource, which provides daily fluency practice. Rapid Reasoning has been carefully structured with progression through the KS2 curriculum in mind.

Regular opportunities for children to practise, recap and apply their reasoning and problem-solving skills are important. Problem solving and reasoning is what makes maths; 'maths' rather than just an exercise in recalling and following instructions or facts. Two of the three aims of the National Curriculum for maths focus on problem solving and reasoning.

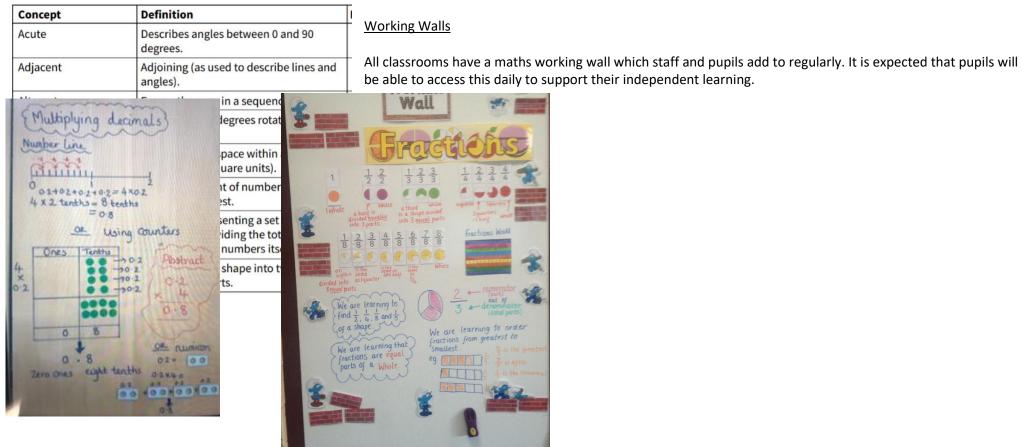
At Trimley St Mary, it is the expectation that all children in KS2, take part in some sort of reasoning activity daily within their maths lesson. These may be from Third Space learning or devised by individual staff to complement learning taking place in the main body of the lesson.

Rapid	Reasoning Questions			Year 6 Week 2 Day 5
Q1	Vicky writes down three numbers: 506,606 650,660 566,600 Write down two things that are the same about these numbers and two things that are different. Same: Different:	Tmark	Q2 Q3	The difference between two whole numbers is four. When each number is rounded to the nearest hundred, the difference between them is 100. Write two possible values for the sets of numbers. and and and 21 and 22 marks Zmarks Marley says " 3/4 and 21/28 are equivalent." Explain why Marley is correct.
🕹 тн	IRD SPACE LEARNING			© Third Space Learning 2018. You may photocopy this page.



Vocabulary

It is vital that pupils are introduced to mathematical vocabulary and that they build upon this knowledge. Without a secure grasp of subject specific vocabulary, reasoning is extremely difficult. Pupils are introduced to new vocabulary with lessons and this is added to working walls for future reference.



Resourcing

In addition to the Inspire textbook and online resources, staff make use of White Rose schemes of work, resources from the NCETM, Angles Maths Hub and via our work with maths consultant Liz Gibbs.

Assessment and recording

Pupil progress is regularly monitored. Pupils who are identified as greater depth will be challenged fully, while any children who are struggling will receive appropriate support and will be identified in the year group and subject specific Raising Attainment Plans (RAPs).

Short-term assessments:

Teachers keep their own records of those pupils whose progress is markedly different from that which is expected. Staff have flexibility to assess children as they see fit, using a range of quizzes, SATs papers, formative and summative assessment.

Medium-term assessments:

Each term, children will complete a PUMA test. This will give a scaled score with 100 being average (as in SATS). These scores will form part of the assessment and will give an indication of the progress being made.

End of year curriculum expectations

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Count to and across 100,	Recognise the place value	Read and write numbers	Read and write numbers	Add and subtract	Perform mental
forwards and backwards,	of each digit in a two-digit	up to 1000 in numerals and	to at least 10 000.	numbers mentally with	calculations including with
beginning with 0 or 1, or	number (tens, ones).	in words. &Identify,	Recognise the place value	increasingly large numbers	mixed operations and large
from any given number.	Partition numbers in	represent and estimate	of each digit in a four-digit	and decimals to two	numbers and decimals.
Read and write numbers	different ways (e.g. 23 = 20	numbers using different	number. &Identify the	decimal places. 🐥 Add and	Add and subtract whole
to 100 in numerals.	+ 3 and 23 = 10 + 13).	representations (including	value of each digit to two	subtract whole numbers	numbers and decimals
Identify and represent	Compare and order	the number line).	decimal places. & Partition	with more than 4 digits and	using formal written
numbers using objects and	numbers from 0 up to 100;	Recognise the place value	numbers in different ways	decimals with two decimal	methods (columnar
pictorial representations	use and = signs. & Find 1 or	of each digit in a three-digit	(e.g. 2.3 = 2+0.3 & 1+1.3).	places, including using	addition and subtraction).
including the number line	10 more or less than a	number (hundreds, tens,	Identify, represent and	formal written methods	Solve addition and
(numbers to at least 30).	given number. &Recall and	ones). & Partition numbers	estimate numbers using	(columnar addition and	subtraction multi-step
Use the language of:	use addition and	in different ways (e.g. 146	different representations	subtraction). 🐥 Solve	problems in contexts,
equal to, more than, less	subtraction facts to 20	= 100+ 40+6 and 146 =	(including the number	addition and subtraction	deciding which operations
than (fewer), most, least.	fluently, and derive and	130+16). &Compare and	line). &Order and compare	multi-step problems in	and methods to use and
Read, write and interpret	use related facts up to 100	order numbers up to 1000.	numbers beyond 1000.	contexts, deciding which	why & Perform mental
mathematical statements	(bonds totalling 5, 10 and	♣Find 1, 10 or 100 more or	Order and compare	operations and methods to	calculations, including with
involving addition (+),	20). &Add and subtract	less than a given number.	numbers with the same	use and why. 🐥 Identify	mixed operations and large
subtraction (-) and equals	numbers using concrete	Round numbers to at	number of decimal places	multiples and factors,	numbers. &Multiply multi-
(=) signs. ♣Add and	objects, pictorial	least 1000 to the nearest	up to two decimal places.	including finding all factor	digit numbers up to 4 digits
subtract one-digit and two-	representations, and	10 or 100. & Find the effect	♣Find 0.1, 1, 10, 100 or	pairs of a number, and	by a two-digit whole
digit numbers to 20,	mentally, including: a two-	of multiplying a one- or	1000 more or less than a	common factors of two	number using the formal
including zero (using	digit number and ones, a	two-digit number by 10	given number. &Round any	numbers. 🐥 Use	written method of long
concrete objects and	two-digit number and tens,	and 100, identify the value	number to the nearest 10,	partitioning to double or	multiplication. & Multiply
pictorial representations).	two two-digit numbers,	of the digits in the answer.	100 or 1000. &Find the	halve any number,	one-digit numbers with up
Recall and use doubles of	adding three one-digit	Choose an appropriate	effect of dividing a one- or	including decimals to two	to two decimal places by

all numbers to 10 and	numbers. &Solve problems	strategy to solve a	two-digit number by 10	decimal places. & Multiply	whole numbers. &Divide
corresponding halves.	with addition and	calculation based upon the	and 100, identifying the	and divide numbers	numbers up to 4 digits by a
Solve one-step problems	subtraction including with	numbers involved (recall a	value of the digits in the	mentally drawing upon	two-digit whole number
involving multiplication	missing numbers: - using	known fact, calculate	answer. & Choose an	known facts. & Solve	using the formal written
and division, by calculating	concrete objects and	mentally, use a jotting,	appropriate strategy to	problems involving	methods of short or long
the answer using concrete	pictorial representations,	written method).	solve a calculation based	multiplication and division	division, and interpret
objects, pictorial	including those involving	<pre>&Recall/use</pre>	upon the numbers involved	including using their	remainders as whole
representations and arrays	numbers quantities and	addition/subtraction facts	(recall a known fact,	knowledge of factors and	number remainders,
with the support of the	measures. & Understand	for 100 (multiples of 5 and	calculate mentally, use a	multiples, squares and	fractions, or by rounding,
teacher. & Understand that	multiplication as repeated	10). Add and subtract	jotting, written method).	cubes. & Multiply numbers	as appropriate for the
a fraction can describe part	addition and arrays.	numbers mentally,	Recall and use addition	up to 4 digits by a one- or	context. &Use written
of a whole. & Recognise,	 Understand division as 	including: a three-digit	and subtraction facts for	two-digit number using a	division methods in cases
=		number and ones, a three-			where the answer has up
find and name a half as one of two equal parts of an	sharing and grouping and that a division calculation	digit number and tens, a	100. & Recall and use +/- facts for multiples of 100	formal written method, including long	to two decimal places.
	can have a remainder.	three-digit number and	•	0 0	Solve problems involving
object shape or quantity	Recall and use	hundreds. Add and	totalling 1000. Add and	multiplication for two-digit	all four operations,
(including measure).		subtract numbers with up	subtract mentally combinations of two and	numbers. A Divide	· · · ·
Recognise and name	multiplication and division			numbers up to 4 digits by a	including those with
common 2-D shapes,	facts for the 2, 5 and 10	to three digits, using formal written methods of	three digit numbers and	one-digit number using the	missing numbers. &Use
including rectangles	multiplication tables,	columnar addition and	decimals to one decimal	formal written method of	common factors to simplify
(including squares), circles	including recognising odd		place. Add and subtract	short division and interpret	fractions; use common
and triangles. A Recognise	and even numbers.	subtraction. A Recall and	numbers with up to 4 digits	remainders appropriately	multiples to express
and name common 3-D	Derive and use doubles	use multiplication and	and decimals with one	for the context.	fractions in the same
shapes, including cuboids	of simple two-digit	division facts for the 3, 4	decimal place using the	Recognise mixed	denomination. & Recall and
(including cubes), pyramids	numbers (numbers in	and 8 multiplication tables.	formal written methods of	numbers and improper	use equivalences between
and spheres. & Compare,	which the ones total less	Derive and use doubles	columnar addition and	fractions and convert from	simple fractions, decimals
describe and solve practical	than 10). A Derive and use	of all numbers to 100 and	subtraction where	one form to the other.	and percentages, including
problems for: - lengths and	halves of simple two-digit	corresponding halves.	appropriate. & Estimate;	Identify, name and write	in different contexts. *Add
heights (for example, long /	even numbers (numbers in	Write and calculate	use inverse operations to	equivalent fractions of a	and subtract fractions with
short, longer / shorter. tall	which the tens are even).	mathematical statements	check answers to a	given fraction, represented	different denominators
/ short, double / half)	Calculate mathematical	for multiplication and	calculation. & Recall	visually, including tenths	and mixed numbers, using
mass/weight (for example,	statements for	division using the	multiplication and division	and hundredths.	the concept of equivalent
heavy / light, heavier than,	multiplication using	multiplication tables that	facts for multiplication	Recognise and use	fractions. & Multiply simple
lighter than) capacity and	repeated addition) and	they know, including for	tables up to 12 × 12. &Use	thousandths and relate	pairs of proper fractions,
volume (for example,	division within the	two-digit numbers times	partitioning to double or	them to tenths,	writing the answer in its
full/empty, more than, less	multiplication tables and	one-digit numbers, using	halve any number,	hundredths and decimal	simplest form e.g. 14 x 12
than, half, half full,	write them using the	mental and progressing to	including decimals to one	equivalents. &Add and	= 1 8 + Solve problems
quarter) time (for	multiplication (×), division	formal written methods.	decimal place. &Multiply	subtract fractions with	involving the calculation of
example, quicker, slower,	(÷) and equals (=) signs.	Understand that finding a	two-digit and three-digit	denominators that are the	percentages (e.g. of
earlier, later). & Recognise	Understand that a	fraction of an amount	numbers by a one-digit	same and that are	measures and such as 15%
and use language relating	fraction can describe part	relates to division.	number using formal	multiples of the same	of 260) and the use of
to dates, including days of	of a set. &Understand that	Recognise that tenths	written layout. &Divide	number (using diagrams).	percentages for
the week, weeks, months	the larger the denominator	arise from dividing objects	numbers up to 3 digits by a	Recognise the per cent	comparison & Draw 2-D

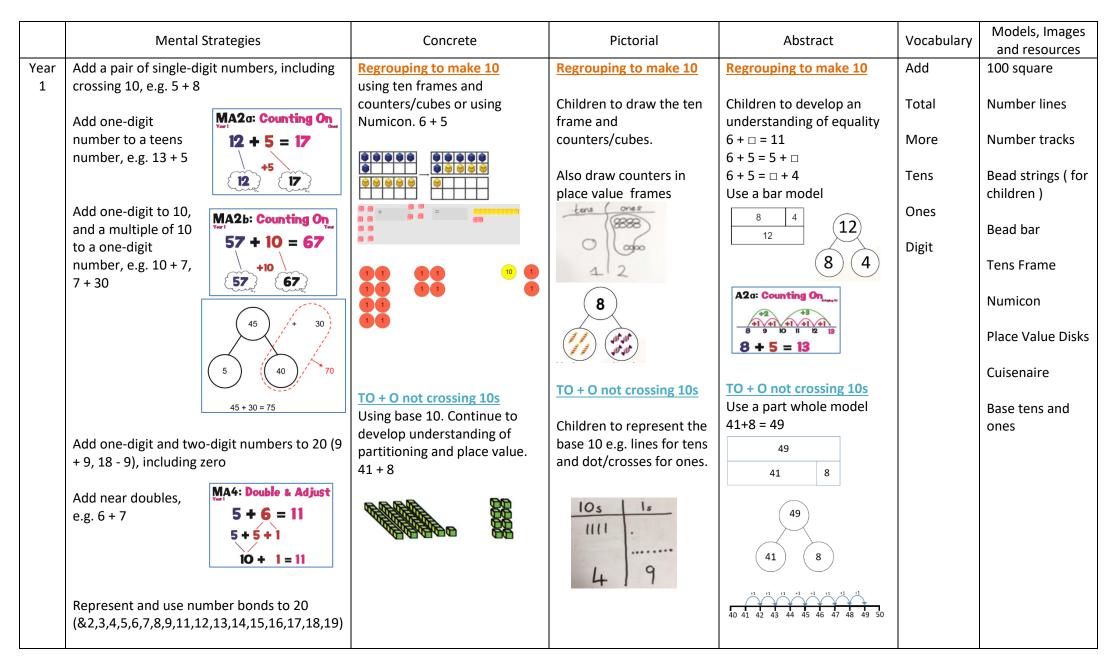
and years. A relif the time is, the more pieces it is spirt into 10 equal parts and in one-digit number using the symbol (%) and understand shapes using given the hour and draw the smaller each part will be or quantities by 10.0 short indivision and interpart into 10 equal parts and in		to the mean of the state of the	inte 10 e muel a ente en l	and distances have all the		ale and a state a stream
the hours and draw the hands on a clock face to show these times.smaller each part will be, or quantities by 10.show thy ison of division and inverse to fractions of a discrete set for the context. Allow the subue of different a dotted ing the number of a vertical ine . Hidentify a shape sind ifferent tick describe position, distreg sea of make 2 hidentify ranges of numerators and tick describe position, distreg sea of a vertical ine . Hidentify ranges of numerators and tick describe position, distreg sea of a vertical ine . Hidentify ranges make a haff tick angle sea of a vertical . Hidentify ranges make a haff tick angles recognise that two tick angles recognise that two tick angles recognise that were . Hidentify ranges a point on tick angles recognise that were . Hidentify ranges and point of tick angles recognise that were . Hidentify ranges and point of tick angles recognise that were real and recolusion in three makes reso tick angles recognise that angles recognise that were . Hidentify ranges and recolusion in there decimal <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td>	-					
hands on a clock face to sow these times sow these times sow these times 					-	_
show these times. Acecognise and know the value of different denominations of coins and notes. 450- to tojects and non-unit fractions with denominations of coins and notes. 450- to tojects and non-unit fractions with a vertical line. 4 identify a vertical line and direction and movement, b direction and movement, a traight line and vertication soft a traige rought in direction soft direction and movement, b direction and movement, b direction and movement, b direction and movement, b direction in a traiget make and index traiget s regular line. 4 identify raigets make a hide vertication soft a and anti-clockwise). a dominators. 4 Recognise and traits a vertical line and vertication soft a and anti-clockwise). a domination vertication soft a direction (m/cm); a vertical line and vertication a vertical line. 4 identify ingrisent a vertical line and vertication a vertical line and vertication a vertical line. 4 identify ingrisent a vertical line soft and vertical line soft a vertical line soft and vertical line soft and vertication a vertical line. 4 identify ingrisent a vertical line soft and v		-				
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straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three- quarter truns (clockwise). 		including movement in a	-	range of numerators and		
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children's place value competence). *Find different combinations of amounts of money. *Tell and write the time to fiveboundary of a shape. *Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocksstandard units square centimetres (cm2) and estimate the area of irregular shapes *Use all four operations to solve			•	and thangles,		
competence). *Findand write the time from an analogue clock, includingcentimetres (cm2) anddifferent combinations of coins that equal the sameusing Roman numeralssquare metres (m2) andamounts of money. *Tell and write the time to fivefrom I to XII, and 12-hour and 24-hour clocksirregular shapes *Use all four operations to solve					U ,	
different combinations of coins that equal the same amounts of money. Tell and write the time to fiveanalogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clockssquare metres (m2) and estimate the area of irregular shapes & Use all four operations to solve		•			-	
coins that equal the same amounts of money. Tell and write the time to fiveusing Roman numerals from I to XII, and 12-hour and 24-hour clocksestimate the area of irregular shapes &Use all four operations to solve						
amounts of money. *Tell and write the time to fivefrom I to XII, and 12-hour and 24-hour clocksirregular shapes *Use all four operations to solve						
and write the time to five and 24-hour clocks four operations to solve		-	-			
		-				
minutes, including quarter & Record/compare time in problems involving					-	
		minutes, including quarter	Record/compare time in		problems involving	

past/to the hour and draw	terms of seconds, minutes,	measure using decimal
the hands on a clock face	hours; use vocabulary such	notation, including scaling.
to show these times.	as o'clock, a.m./p.m.,	Complete, read and
&Know the number of	morning, afternoon, noon,	interpret information in
minutes in an hour and the	midnight. &Know the	tables and timetables
number of hours in a day.	number of seconds in a	
	minute and the number of	
	days in each month, year	
	and leap year. Add and	
	subtract amounts of	
	money to give change,	
	using both £ and p in	
	practical contexts.	

CALCULATION POLICY EYFS Addition

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
EYFS	If available, Numicon shapes are introduced straight away and can be used to :		Children to represent the cubes using dots or	4 + 3 = 7 Four is a part, 3 is a part	Add More	100 square
	Identify 1 more/less	Combining two parts to make a	crosses. They could put each part on a part whole model too.	and the whole is seven.	And Make Sum	Number lines Number tracks
	Combine pieces to add	whole (use other resources too e.g. eggs, shells, teddy bears,		$\langle \gamma \rangle$	Total Altogether	Bead strings (for
	Find number bonds	cars).			Score Double	children)
	Add without counting		(::) (::))	One more, two more,	Bead bar
		000000		The abstract number line: What is 2 more	ten more How many	Tens Frame Numicon
		Counting on using number lines using cubes or Numicon.	A bar model which encourages the children	than 4? What is the sum of 2 and 4? What is the	more to make?	Place Value Disks
		0 1 2 3 4 5 6 7 8 9 10	to count on, rather than count all.	total of 4 and 2? 4 + 2	How many	Cuisenaire
			4	4 5 6	more is than?	Base tens and ones
			:			
	Useful IWB links for manipulatives	https://www.coolmath4kids.com/n https://mathsbot.com/manipulativ https://mathsbot.com/manipulativ https://classroomsecrets.co.uk/free	es/placeValueCounters es/bar	_	n-activity/	
		https://www.nctm.org/Classroom-f http://www.ictgames.com/mobileP	Resources/Illuminations/Inte			

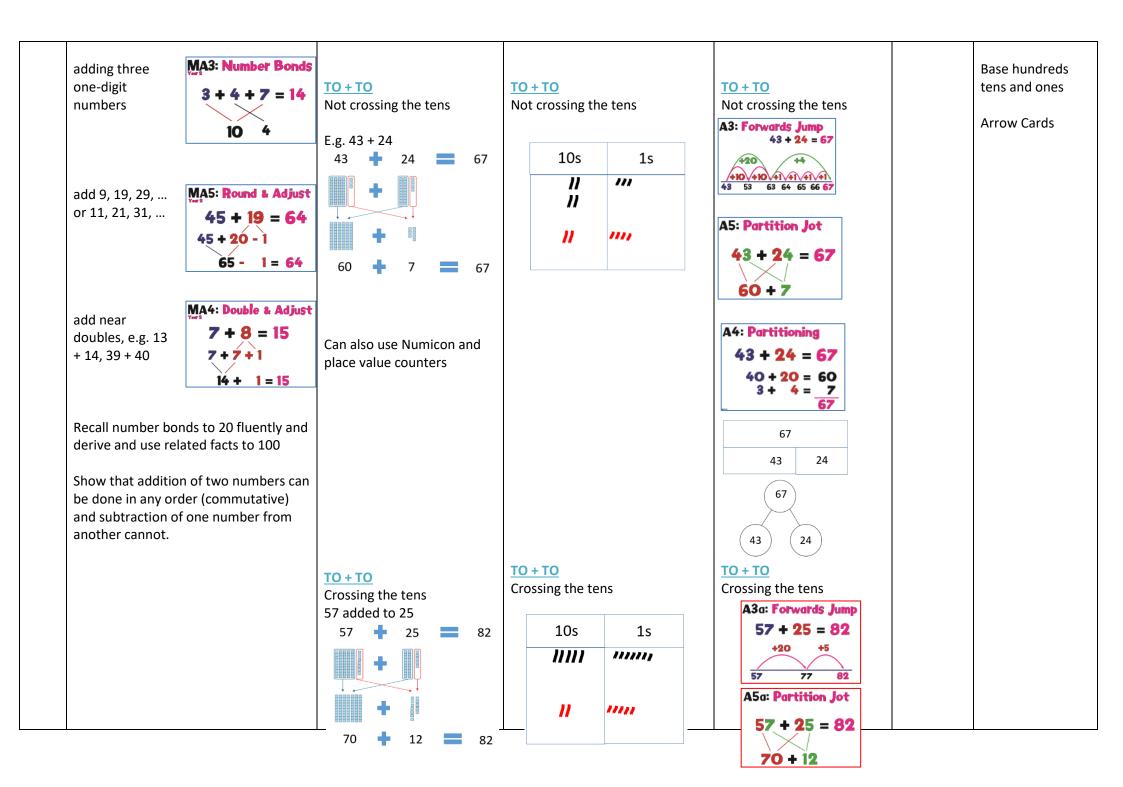
Year One Addition



	Solve simple one-step problems that involve addition using concrete objects and pictorial representations, and missing number problems. Explain methods & reasoning Use the 100 square to add 10 to a single digit number Record addition by: - showing jumps on prepared number lines - recording number sentences Eg 6 + 5 = 11		
	Read, write and interpret mathematical statements involving addition (+) and equals (=)		
	signs		
Useful IWB links for manipulatives	https://www.coolmath4kids.com/manipulatives/base-ten-blocks		
	https://mathsbot.com/manipulatives/placeValueCounters		
	https://mathsbot.com/manipulatives/bar		
	https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtractio	on-activity/	
	https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/		
	http://www.ictgames.com/mobilePage/tenFrame/index.html		

Year Two Addition

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
Year	Add numbers using concrete objects,	TO + O bridging the tens.	TO + O bridging the tens.	TO + O bridging the tens.	Add	100 square
2	pictorial representations, and mentally,	e.g. 24 added to 7	e.g. 24 added to 7	e.g. 24 added to 7		
	including:		_	-	Sum	Number lines
	add a single-digit number to a two- digit number, including		tens ones	24 7 31	More than	Number tracks
	including term				Total	Bead strings (for
	crossing the 78 + 7 = 85		$\Box ((8^{\circ}))$	7 + 24 = 31		children)
	tens boundary,		3 1	7 + 24 = 31 24 + 7 = 31 31	Altogether	
	e.g. 23 + 5,, 78 85		41	31 = 24 + 7 (24) (7)		Bead bar
	then 28 + 5	` <u> </u>		31 = 7 + 24	Plus	
			_	01 7 21		Tens Frame
	add a multiple MA2b: Counting On			1 1 1 1 1 1 1 1	Digit	
	of 10 to any 58 + 40 = 98					Numicon
	two-digit			23 24 25 26 27 28 29 30 31 32	Partition	
	number, e.g. 58 98				into tens	Place Value Disks
	27 + 60 add				and ones	
	two two-digit numbers	•				Cuisenaire



	Can also use Numicon and place value counters $10s$ 1s 0 $1s$
	Count or add in multiples of 10 using 100 square number line 23 33 43
	Add by using partitioning of tens and ones – see above Solve simple one-step problems with addition: using concrete objects and pictorial
	representations, involving numbers, quantities and measures - see above
	Recognise and use the inverse relationship between addition and subtraction to check calculations and missing number problems. Check by adding numbers in a different order eg. $5 + 2 + 1 = 1 + 5 + 2 = 1 + 2 + 5$.
	Begin recording addition in columns to support place value and prepare for efficient written methods - see above
Useful IWB links for manipulatives	https://www.coolmath4kids.com/manipulatives/base-ten-blocks https://mathsbot.com/manipulatives/placeValueCounters https://mathsbot.com/manipulatives/bar

	https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/
	https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/
	http://www.ictgames.com/mobilePage/tenFrame/index.html

Year 3 Addition

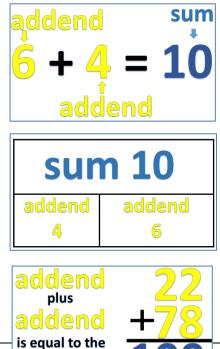
	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
Year 3	Use number bonds to 20 and links to bonds of multiples of 10 to 100, complements to 100 e.g. $45 + 55 =$ 100 Practise solving varied addition questions mentally with two-digit numbers, the answers could exceed 100. Add numbers mentally, including: a three-digit number and ones a three-digit number and ones a three-digit number and tens $MA2a: Counting On784 + 60 = 844$ $\frac{784 + 60 = 844}{844}$ a three-digit number and tens $MA2b: Counting On534 + 300 = 834$ $\frac{534 + 300 = 834}{634}$	TO + TOSee Y2 and now crossing 100s and carrying $100s$ $10s$ $1s$ $100s$ $20s$ $14s$ $100s$ $20s$ $14s$ $124s$	TO + TO See Y2 and now crossing 100s 10s 10s 1s	TO + TO See Y2 and now crossing 100s A3b: Forwards Jump 86 + 48 = 134 +40 +8 86 + 48 = 134 126 134 A5b: Partition Jot 86 + 48 = 134 120 + 14 (A7: Column Addition) H T U 86 + 48 134 1 1 124 12	AddSumMore thanTotalAltogetherPlusPartitioninto tensand onesEmptynumberlineCount onCarry tenaddend	-

Recall number bonds to 20 fluently and derive and use related facts to 100

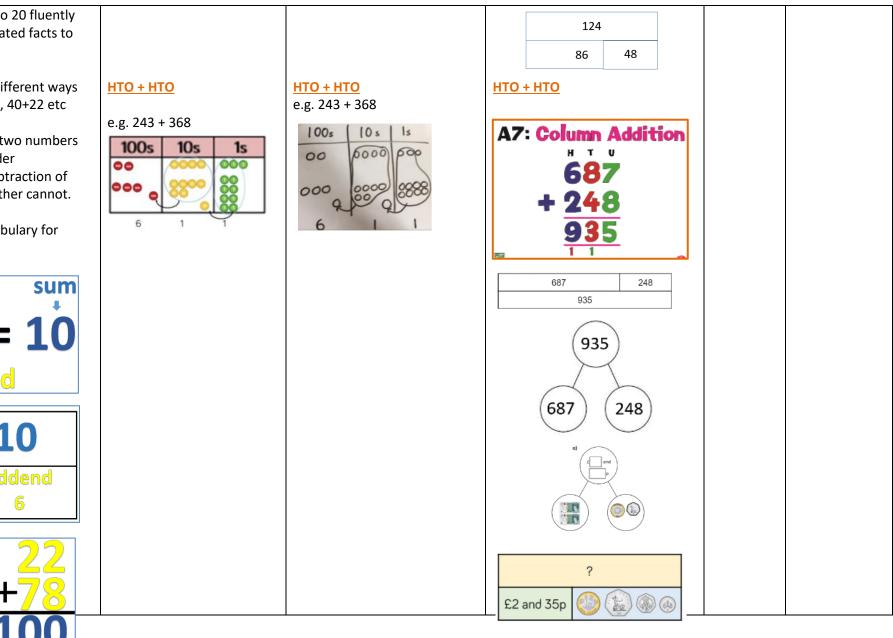
Partition numbers in different ways Eg: 62 = 60 + 2, 50+12, 40+22 etc

Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.

Know the related vocabulary for addition



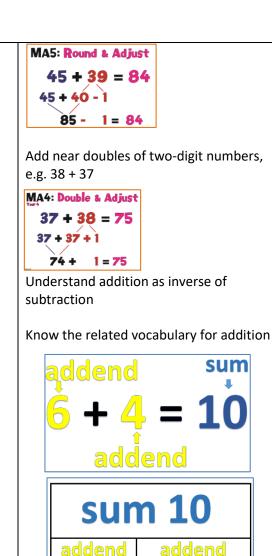
sum



	£3 and 45p + £4 and 34p £3 + £4 = £7 45p + 34p = 79p £7 and 79p Decimal point for money is in Y4 Add numbers with up to three digits, using the efficient written methods. Use understanding of place value and partitioning – see above Estimate the answer to a calculation and use inverse operations to check Solve problems, including missing number problems, using number facts, place value, and more			
	complex addition. Add by using : 1) partitioning TU + TU, HTU + TU or HTU + HTU 2) Expanded columnar addition 3) Compact columnar addition Where there are more than 2 addends in a column –add up the digits efficiently			
	$\begin{array}{c} 416+223+184=823 \\ \hline \\ make 10 \\ + 1 \\ \hline \\ 8 \\ 2 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1$			
Useful IWB links for manipulatives	https://www.coolmath4kids.com/manipulatives/base-ten-blocks https://mathsbot.com/manipulatives/placeValueCounters https://mathsbot.com/manipulatives/bar https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/ https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/ http://www.ictgames.com/mobilePage/tenFrame/index.html			

Year 4 Addition

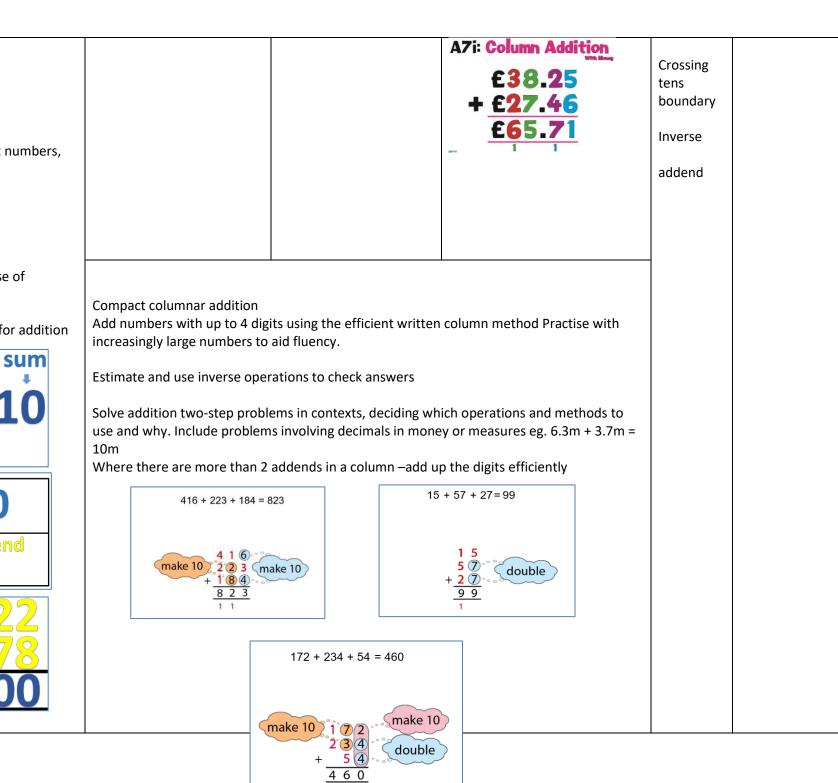
	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
Year	Practise mental methods with increasingly	Use of place value counters	Use of place value grid	ТН Н Т О + ТН Н Т О	Add	100 square
4	large numbers to aid fluency Add numbers mentally, including: A 3-digit number and hundreds	to add TH H T O and also money to	1000x)100x 10x =	A7d: Column Addition	Sum	Number lines
	MA2a: Counting On		88 00 88	4873 + 3762	More than	Number tracks
	837 + 500 = 1337		° 88 88 88	8635	Total	Bead strings (for children)
	+500	$+ \bigcirc \bigcirc$	5701	Decimals - same number of	Altogether	Bead bar
				digits	Plus	Tens Frame
	A 4-digit number and thousands				Partition	
	MACL			A7h: Column Addition	into tens	Numicon
	MA2b: Counting On Final Vier 4			76.7	and ones	Place Value
	4837 + 3000 = 834			+ 58.5	Empty	Disks
	+3000 (4837) (7837)			135.2	number line	Cuisenaire
	Add any pair of two-digit numbers,			Money up to 4 digits	Count on	Base hundreds tens and ones
	including crossing the tens and 100				Carry ten	
	boundary, e.g. 47 + 58				Carry 100	Arrow Cards
	add a near multiple of 10, e.g. 45 + 39				Two digit three digit	



addend

is equal to the **SUM**

6



Useful IWB links for manipulatives	https://www.coolmath4kids.com/manipulatives/base-ten-blocks https://mathsbot.com/manipulatives/placeValueCounters https://mathsbot.com/manipulatives/bar https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/
	https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/ http://www.ictgames.com/mobilePage/tenFrame/index.html

Year 5 and 6 Addition

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
Year	<u>Y5</u>	Use of place value counters to	Use of place value grid	Varied sized numbers up to	Add	100 square
Year 5 And Year 6	Y5Add numbers mentally with increasingly large numbers to aid fluency e.g. 12 462 + 2 $300 = 14 762$ Use rounding to check answers and determine, levels of accuracyAdd a pair of two or three- digit multiples of 10, e.g. 30 + $80, 35 + 36$ and $350+ 360$ MA2b: Counting On 7583 + 5000 = 12583 (2583)MA2b: Counting On (7583 + 5000 = 12583) 	Use of place value counters to add up to 6 digits	Use of place value grid	Varied sized numbers up to millions or 3DP added using compact method. Includes measures and money Decimals - same and different number of digits A7j: Column Addition 73.4 + 5.67 = 79.07 T U. $\pm \pm$ 73.4 + 5.67 79.07 T MA1: Partitioning 4.73 + 2.21 = 6.94 6 + 0.9 + 0.44 = 6.94 A7e: Column Addition	Add Sum More than Total Altogether Plus Partition into tens and ones Empty number line Count on Carry ten Carry 100	
				787567 + 446278	Two digit	
	·	·	·			

Add a near	MA5: Round & Adjust				three digit
multiple of	Your 4				
10, 100 and	345 + 298 = 643				Crossing
1000 to any	345 + 300 - 2				tens
two-digit,	645 - 2 = 643				boundary
three-digit					
number or	MA5: Round & Adjust				Inverse
four-digit	4645 + 1996 = 6641	Compact columnar addition			
number, e.g.	4645 + 2000 - 4	Add numbers with up to 4 digit	-	olumn method Practise w	vith addend
235 + 198	6645 - 4 = 6641	increasingly large numbers to a	-		
		Estimate and use inverse opera			
		Solve addition two-step problem	· · ·	•	
	ecimal fractions each with	and why. Include problems invo		-	
	hs, e.g. 5.7 + 2.5, 6.3 + 4.8	Practise addition for larger num	ibers, using the efficient writi	ten methods of columnar	
<u>Y6</u>		addition.			
	tally with increasingly			de la districció (Chataland	
-	and more complex	Where there are more than 2 a	ddends in a column –add up i	the digits efficiently	
	ncluding Counting on in	416 + 223 + 184 = 82	2 15 +	57 + 27 = 99	
multiples		410 + 223 + 104 - 02	5		
MA2a: Counti	ing On				
43,826 + 30,000	- 73 926	116 **=		15	
		make 10 2 2 3 (mak	ce 10	5 7°° double	
+30,000	3,826	$+\frac{184}{222}$	+		
(43,826) (73	,0203 	<u>823</u> 11		<u> </u>	
Addition facts	for multiples of 10 to	×			
	mal numbers with one		172 + 234 + 54 = 460		
decimal place,			172 - 254 - 54 - 400		
e.g.					
650 + = 930					
+ 1.4 = 2.5		m	ake 10 1 7 2 make 10		
MA5: Round & A			+ 54 double		
45.2 + 49.9 =			4 6 0		
45.2 + 50 - 0.1	4.5 + 4.5 + 0.2		1 1		
95.2 - 0.1 =	= 95.1 9 + 0.2 = 9.2				
I		I			I

Know the related vocabulary for addition See the images from Y4			
Useful IWB links for manipulatives	https://www.coolmath4kids.com/manipulatives/base-ten-blocks https://mathsbot.com/manipulatives/placeValueCounters https://mathsbot.com/manipulatives/bar https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-act https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/ http://www.ictgames.com/mobilePage/tenFrame/index.html	tivity/	

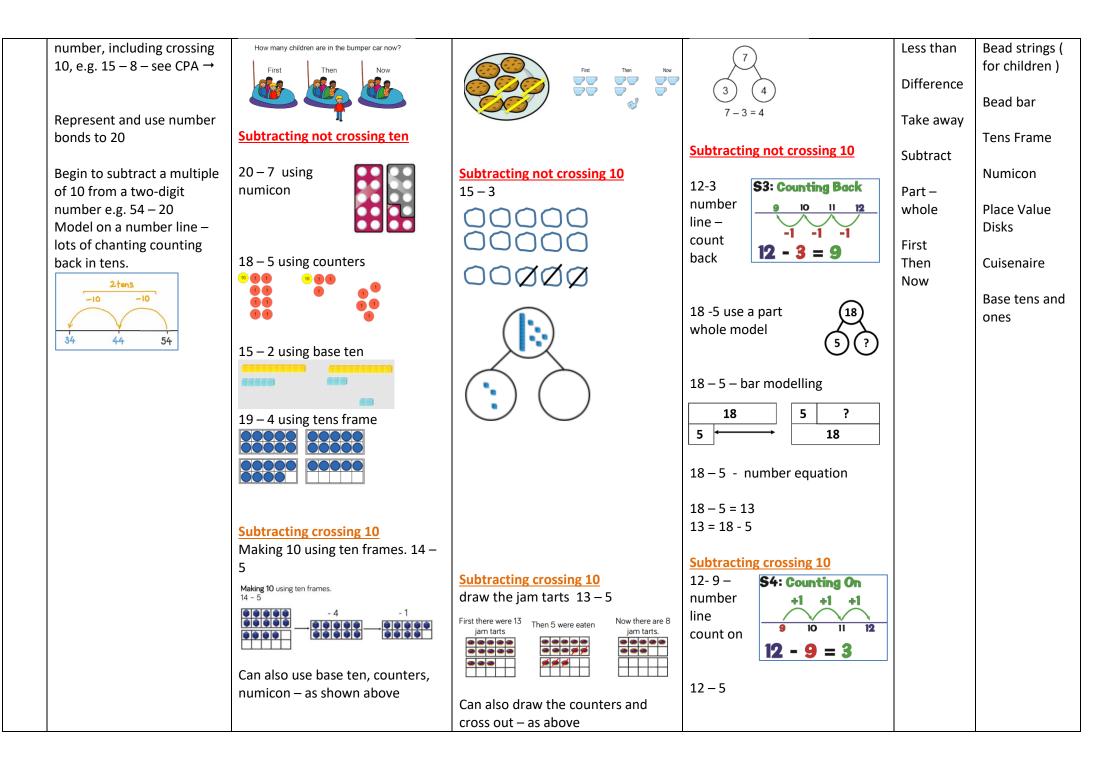
EYFS Subtraction

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
EYFS	If available, Numicon shapes are introduced straight away and can be used to : Concrete apparatus is used to relate subtraction to taking away and counting how many objects are left. 5 – 1 =4 Concrete apparatus models the subtraction of 2 objects from a set of 5. Construct number sentences verbally or using cards to go with practical activities. Children are encouraged to read number sentences aloud in different ways "five subtract one leaves four" "four is equal to five subtract one"	Physically taking away and removing objects from a whole 4-3=1 Counting back (using number lines or number tracks) children start with 6 and count back 2. 6-2=4	Children to draw the concrete resources they are using and cross out the correct amount. The bar model can also be used.	A 3 ? Children to represent the calculation on a number line or number track and show their jumps. Encourage children to use an empty number line	Take (away) Leave How many are left/left over? How many have gone? One less, two less ten less	100 square Number lines Number tracks Bead strings (for children) Bead bar Tens Frame Numicon Place Value Disks Cuisenaire

Children make a record in pictures, words or symbols of subtraction activities carried out. Solve simple problems using fingers	Finding the difference (using cubes, Numicon or Cuisenaire rods, other objects can also be used).	Children to draw the cubes/other concrete objects which they have used or use the bar model to illustrate what they need to calculate.	Can represent difference in a bar model	How many fewer is than Difference between Is the same as	Base tens and ones	
Useful IWB links for manipulatives	https://www.coolmath4kids.com/manipulatives/base-ten-blocks https://mathsbot.com/manipulatives/placeValueCounters https://mathsbot.com/manipulatives/bar https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/ https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/ http://www.ictgames.com/mobilePage/tenFrame/index.html					

Year One Subtraction

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
Year	Subtract a pair of one digit	Subtraction within 10	Subtraction within 10	Subtraction within 10	As above	100 square
1	numbers e.g. 9 -5 – see EYFS Subtract a single-digit number from a teens		Draw 7 cookies and cross out 4 Draw a first, then, now	7 5 2 7-2=5	Count back Count on	Number lines Number tracks

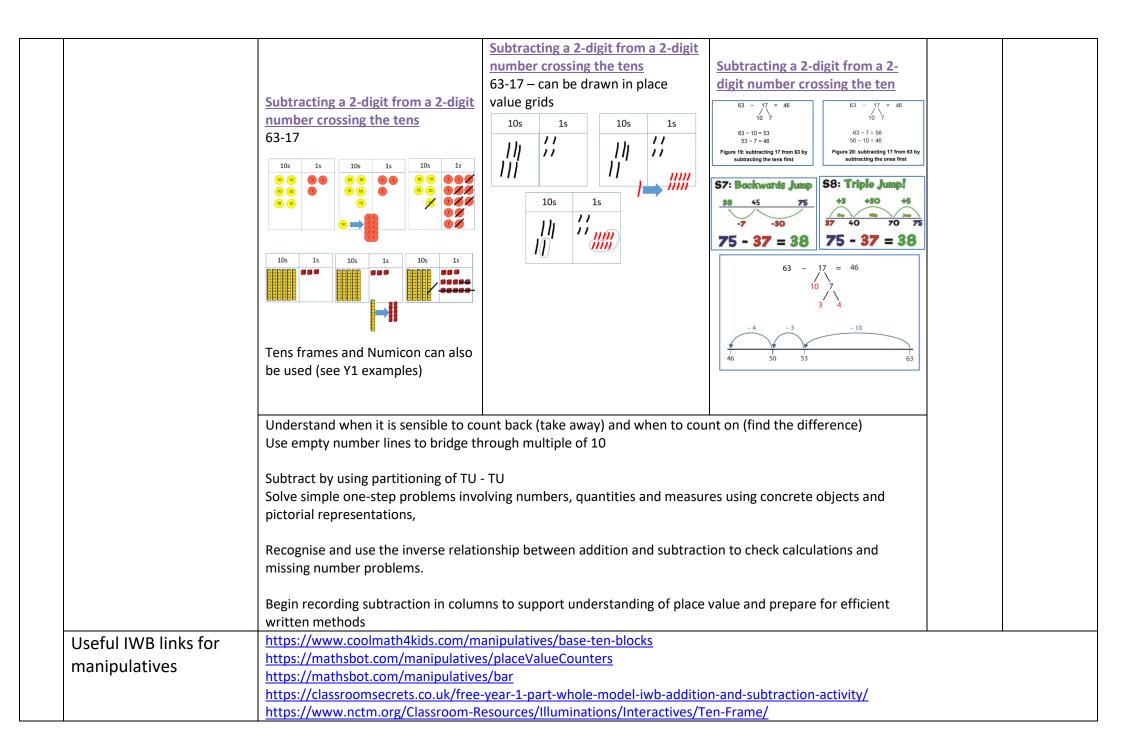


		Making 10 by partitioning the single digit $12 - 5$ 23 10 - 3 = 7
		Bar models, number equations and part whole models as shown above.
	Count back orally or use a marked or partly marked number line ones. E.g. $9 - 4 = 5$ (counting back) and when secure $9 - 4 = 5$	
	3 4 5 6 7 8 9 10	 2) There are 7 cookies on a plate. 6 of the cookies are eaten. Complete the sentences. First there were cookies.
	Use the three stem sentences - First, then, now.	Then cookies were eaten. Now there is cookie.
	Solve simple one-step problems and missing number problems i equipment, concrete objects and pictorial representations, Expl	
Useful IWB links for manipulatives	https://www.coolmath4kids.com/manipulatives/base-ten-block https://mathsbot.com/manipulatives/placeValueCounters https://mathsbot.com/manipulatives/bar https://classroomsecrets.co.uk/free-year-1-part-whole-model-in	wb-addition-and-subtraction-activity/
	https://www.nctm.org/Classroom-Resources/Illuminations/Intentions/	ractives/Ten-Frame/

Year Two Subtraction

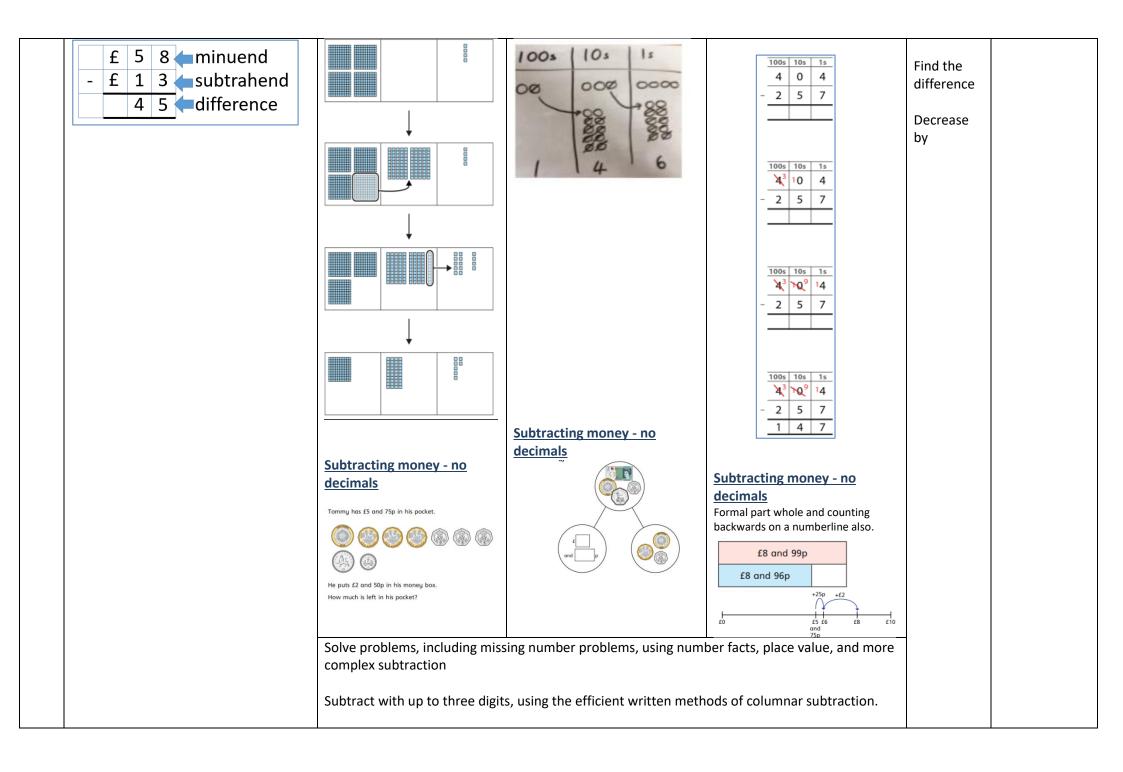
	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
Year		Subtracting not crossing ten	Subtracting not crossing ten	Subtracting not crossing ten	Count	100 square
2	Subtract numbers using				back	
	concrete objects, pictorial	48 -7	48 -7 – children draw them	48 -7 – bar models, part whole		Number lines
	representations, and		10s 1s	models, number lines, number	Count on	N
	mentally, including:	10s 1s 10s 1s	11. 1////	sentence		Number
				? 7	Less than	tracks
	subtract a single-digit number from a two-digit number,	88 66666 6		48 (48)	Difference	Bead strings
	including crossing tens	10s 1s 10s 1s 10s 1s			Difference	(for children
	boundary, e.g. 26 - 5, then 22		10s 1s	48 (?) (7)	Take	
	- 5			7 , ?	away	,
	5				,	Bead bar
	subtract a multiple of 10 from	-		41 48	subtract	
	any two-digit number, e.g. 67		# #			Tens Frame
	-20				Part –	
				48-7=41	whole	Numicon

subtract two two-digit	Tens frames and Numicon can also				
numbers	be used (see Y1 examples)		Subtracting a single digit crossing	Minus	Place Value
numbers	be used (see fit examples)			winnus	Disks
subtract 9, 19, 29, or 11,		Subtracting a single digit crossing	<u>10</u> 24 - 7	Decrease	DISKS
	10s 1s Subtracting a	10	Can use the bar model, part	Decrease	Cuisenaire
21, 31	Subtracting a Image: Subtracting a Image: Subtracting a	24 -7 - children draw them	whole model and number lines as		Cuisenaire
Recall number bonds to 20	10 10 10 10 10 10 10 10 10 10	24 -7 - Children draw them	shown above.		Paca
	crossing 10		snown above.		Base hundreds
fluently and derive and use related facts to 100 (and	24 7 using	10s 1s 10s 1s			
	24 -7 – using base ten and		Also partitioning the subtrahend		tens and
11,12,13,14, 15,16,17, 18,19)			– see below.		ones
Chow that addition of two	exchanging a tens rod for ones	Exchange the ten for ones	24 - 7 24 - 4 = 20		A many Canda
Show that addition of two		Exchange the ten for ones	24 - 4 = 20 20 - 3 = 17		Arrow Cards
numbers can be done in any					
order (commutative) and					
subtraction of one number			<u>17 20 24</u>		
from another cannot	Tens frames and Numicon can also		-3 -4		
	be used (see Y1 examples)		24 – 7 = 17		
		Subtracting a 2-digit from a 2-digit	Subtracting a 2-digit from a 2-		
		number not crossing the tens	digit number not crossing the		
	Subtracting a 2-digit from a 2-digit	number not crossing the tens	tens		
		28 – 13 – can draw in the place	28 - 13 - can draw in the place		
	number not crossing the tens	value grid	value grid		
	28 – 13 – use counters or base ten				
	28 – 13 – dse counters of base ten	10s 1s	Can use the bar model, part		
	10s 1s 10s 1s		whole model and number lines as		
			shown above. Part whole below.		
			(28)		
	Tens frames and Numicon can also				
	be used (see Y1 examples)				
			28 - 13 = 15		
			20 - 13 - 13		
			CURRENT GUIDANCE STATES WE		
			SHOULD NOT USE COLUMN		
			METHOD.		



Year 3 Subtraction

						Models,
	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Images and
						resources
Year	Recall number bonds to 20 and links to	Subtracting a 2-digit from a	Subtracting a 2-digit from a 2-	Subtracting a 2-digit from a 2-	Subtraction	100 square
3	bonds of multiples of 10 to 100 ,	2-digit number not crossing	digit number not crossing the	digit number not crossing the		
	complements to 100 e.g. 100 – 55 = 45	the tens	tens	<u>tens</u>	Partition	Number lines
		Please see Y2 examples	Please see Y2 examples	Please see Y2 examples	into	
	Practise solving varied subtraction			T O Can now	hundreds,	Number tracks
	questions mentally with two-digit			move to	tens and	
	numbers, the answers could exceed			8 7 formal	ones	Bead strings (
	100			– 3 4 column		for children)
				5 3 methods	Empty	
	Subtract numbers mentally, including:				number	Bead bar
				Subtracting a	line	
	a three-digit number and ones		Subtracting a 2-digit from a 2-	2-digit from a 2-digit number		Tens Frame
		Subtracting a 2-digit from a	digit number crossing the tens	crossing the tens	Count on	
	a three-digit number and tens	2-digit number crossing the		Please see Y2		Numicon
		tens	Please see Y2 examples	T O Can now	Carry back	
	a three-digit number and hundreds			78 2 move to		Place Value
		Please see Y2 examples		– <u>2</u> 4 formal	First	Disks
	groups of small numbers, e.g. 9 – 3 – 2			58 column	Then	
				methods	Now	Cuisenaire
	a two-digit number from a multiple of			examples		
	10, eg. 50 - 38, 90 – 27, 68 – 35			Subtracting 3 digit numbers	Empty	Base hundreds
			Subtracting 3 digit numbers	crossing tens and hundreds	number	tens and ones
	Children know the vocabulary below	Subtracting 3 digit numbers	crossing tens and hundreds		line	
		crossing tens and hundreds		Use formal written methods		Arrow Cards
	Minuend minus subtrahend equals the		Represent the place value	where exchange is also	Subtrahend	
	difference	Use base 10 or counters.	counters pictorially;	required.		
		Here is an example with base	remembering to show what		Minuend	
		ten.	has been exchanged.			
					Difference	



	Use understanding of place value and part	itioning				
	Estimate answers calculations and use inv					
	Children will continue to use empty numb	er lines with increasingly large numbers.				
	Count back from the largest number 132-75	Count on or find the difference 102-89				
	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{r} $				
	Missing-addend problems	Missing-subtrahend problems Type of problem: missing part				
	Rewrite the addition equation as a subtraction equation, for example:	Rewrite the subtraction equation by swapping the subtrahend and the difference, for example:				
	329 + = 743 → 743 - 329 =	$477 - \boxed{} = 285 \rightarrow 477 - 285 = \boxed{}$				
	Language focus "There is a missing part. To find the missing part, we subtract the other part from the whole."	Language focus "There is a missing part. To find the missing part, we subtract the other part from the whole."				
Useful IWB links for https://www.coolmath4kids.com/manipulatives/base-ten-blocks manipulatives https://mathsbot.com/manipulatives/placeValueCounters https://mathsbot.com/manipulatives/bar https://mathsbot.com/manipulatives/bar						
	https://www.nctm.org/Classroom-Resour	https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/ https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/ http://www.ictgames.com/mobilePage/tenFrame/index.html				

Year 4 Subtraction

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources	
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Year	Practise mental methods with increasingly	Subtracting 4 digit	Subtracting 4 digit	Subtracting 4 digit numbers	Subtraction	100 square	
4	large numbers to aid fluency	numbers crossing tens and	numbers crossing tens and	crossing tens and hundreds			
		<u>hundreds</u>	<u>hundreds</u>		Partition	Number lines	
	Subtract any pair of two-digit and three-	See Y3 guidance for 3 digit		See Y3 guidance for 3 digit	into		
	digit numbers, including crossing the 10	numbers – it is the same	See Y3 guidance for 3 digit	numbers – it is the same	hundreds,	Number tracks	
	and 100 boundary, e.g. 58 - 23	principle.	numbers – it is the same	principle.	tens and		
			principle.		ones	Bead strings (
	Count on and back in 10s from any	Subtracting with money		Subtracting with money up to 4		for children)	
	number	up to 4 digits using	Subtracting with money up	digits using decimals	Empty		
		<u>decimals</u>	to 4 digits using decimals	£ 5 2 12	number line	Bead bar	
	Subtract a near multiple of 10, e.g. 84 - 29	Use with real money to	Children can draw the		Counton		
	MS3: Round & Adjust	show how to find	coins and notes and show		Count on	Tens Frame	
	84 - 29 = 55 84 - 30 + 1	differences	the exchange.	4 4 • 2 3	Carry back	Numicon	
	84-30 + 1			$\frac{\pounds 1.52}{(+2p) + 50p} + \pounds 1$			
	54 + 1 = 55				First	Place Value	
	Understand subtraction as inverse of			£8.48 £8.50 £9.00 £10.00	Then	Disks	
	addition			£20	Now		
						Cuisenaire	
	Children know the vocabulary below			£8.95 £3.50 ?	Subtrahend		
					Minuend	Base hundreds	
	Minuend minus subtrahend equals the	Subtract numbers with up to 4 digits using efficient written column method with increasingly				tens and ones	
	difference	large numbers to aid fluency					
	£ 5 8 minuend				Difference	Arrow Cards	
		Estimate and use inverse ope	erations to check answers				
	- £ 1 3 — subtrahend				Find the		
	4 5 🕇 difference	•	o problems in contexts, decidir	ng which operations and methods	difference		
		to use and why.			Desire (
		See Y3 missing subtrahend a	nd addend problems.		Decrease /		
					reduced by		
	Useful IWB links for	https://www.coolmath4kids.com/manipulatives/base-ten-blocks					
	manipulatives	https://mathsbot.com/manipulatives/placeValueCounters					
		https://mathsbot.com/manipulatives/bar					
		https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/ https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/					
		http://www.ictgames.com/n	nobilePage/tenFrame/index.ht	<u>ml</u>			

Year 5 and Year 6 Subtraction

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
Year 5	Subtract numbers with increasingly large numbers to aid fluency e.g. 12	Subtract whole numbers with more than 4 digits and	Subtract whole numbers with more than 4 digits and	Subtract whole numbers with more than 4 digits and	Subtraction	100 square
And Year	462 - 2 300 = 10 162	increasingly large numbers using efficient column	increasingly large numbers using efficient column	increasingly large numbers using efficient column written	Partition into	Number lines
6	Use rounding to check answers and determine, levels of accuracy	written methods with decomposition to aid	written methods with decomposition to aid fluency	methods with decomposition to aid fluency	hundreds, tens and	Number tracks
	Subtract a pair of two or three-digit	fluency	Please see the Year 3 and	Please see the Year 3 and Year	ones	Bead strings (for children)
	multiples of 10, e.g. 80 - 30, 45 -36 and 450 – 360	Please see the Year 3 and Year 4 examples as they	Year 4 examples as they have the same principles	4 examples as they have the same principles	Empty number line	Bead bar
	Subtract a near multiple of 10 or 100	have the same principles	Negative numbers	Negative numbers 7-9 = -2	Count on	Tens Frame
	from any two-digit or three-digit number, e.g. 235 - 199	<u>Negative numbers</u> First it was seven Then 9 was cut off	Negative numbers represent change	There is a negative difference of 2	Carry back	Numicon
	Subtract pairs of decimal fractions each with ones and tenths, e.g. 5.7 - 2.5, 6.3 - 4.8	Now there 2cm less than the start	+ 7 cm - 9 cm		First Then Now	Place Value Disks
	12.4 - 5.97 = 6.43				Subtrahend	Cuisenaire
	- 5.97		March April May The temperature was 9 °C in the day, then it dropped to	The difference between 9 and	Minuend	Base hundreds tens and ones
	6.43 See Y3 missing subtrahend and addend	Use practical apparatus to show change	-3 'Cat night. What was the change in temperature?'	-3.	Difference	Arrow Cards
	problems.	First it was 9 degrees Now it is -3 degrees	9-110 9-170 -8 7- 76 7- 55- 34 34	-5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10	Find the difference	
		What was the change?	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Summary: The temperature dropped by 12 °C.	Decrease / reduced by	
					Negative	
			Day Night		change	

Useful IWB links for	https://www.coolmath4kids.com/manipulatives/base-ten-blocks		
	https://mathsbot.com/manipulatives/placeValueCounters		
manipulatives	https://mathsbot.com/manipulatives/bar		
	https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-act	<u>ivity/</u>	
	https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/		
	http://www.ictgames.com/mobilePage/tenFrame/index.html		

EYFS Multiplication

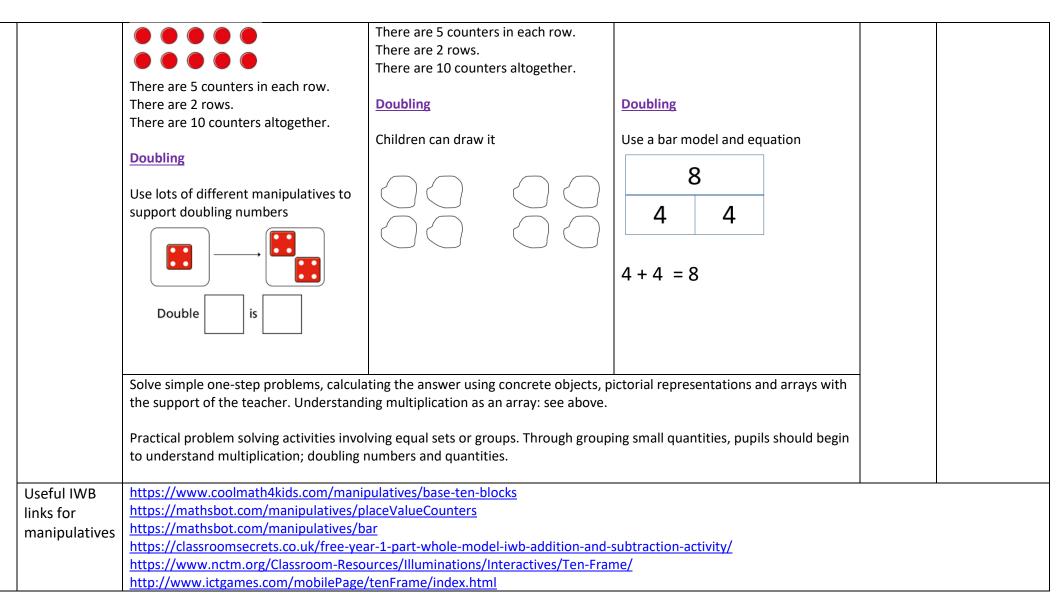
	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
EYFS	The link between addition and multiplication should be introduced	Repeated grouping/repeated addition	Children to draw the concrete resources they are using.	Write the number sentence	Lots of	100 square
	though doubling.				Groups of	Number lines
				2 + 2 + 2 = 6		
	If available, Numicon is used to visualise the repeated adding of the				Times	Number tracks
	same number. These can then be				Repeated	Bead strings (
	drawn around or printed as a way of recording.	er ar er			addition	for children)
					Double	Bead bar
	Real life contexts and use of practical					Tens Frame
	equipment to count in repeated					
1	groups of the same size:					Numicon
1	How many wheels are there					
	altogether?					

Count in twos; fives; tens both aloud and with objects.	 Children are given multiplication problems set in a real life context. Children are encouraged to visualise the problem. How many fingers on two hands? How many sides on three triangles? How many legs on four ducks? Children are encouraged to read number sentences aloud in different ways "five times two makes ten" "ten Is equal to five multiplied by two" 	Place Value Disks Cuisenaire Base tens and ones
Useful IWB links for manipulatives	https://www.coolmath4kids.com/manipulatives/base-ten-blocks https://mathsbot.com/manipulatives/placeValueCounters https://mathsbot.com/manipulatives/bar https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/ http://www.ictgames.com/mobilePage/tenFrame/index.html	<u>v/</u>

Year One Multiplication

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
Year	Count on from	Repeated Addition – Counting in 2s	Repeated Addition Counting in 2s	Repeated Addition Counting in 2s	Lots of	100 square
1	and back to	Lise images of different objects	Draw the objects	Can use her model, number line and	Croups of	Numberlines
	zero in ones, twos, fives or	Use images of different objects	Draw the objects	Can use bar model, number line and equation	Groups of	Number lines
	tens	****	CE E E E E E E		Times	Number tracks
	Make		66 66 66	14 2 2 2 2 2 2	Repeated	Bead strings (
	connections	There are 7 groups of 2	COCOCO	42 43 42 43 43 43 43 24 54 54 54 54 54 54	addition	for children)
	between arrays, number patterns, and		00 00 00	$\begin{array}{c} & & & & & \\ & & & & \\ & & & & \\ 0 & 2 & 4 & 6 & 8 & 10 & 12 & 14 \end{array}$	Double	Bead bar
	counting in		There are 7 groups of 2	2 + 2 + 2 + 2 + 2 + 2 + 2 = 14	Sets	Tens Frame
	twos, fives and					
	tens.	Repeated addition – Counting in Tens	<u>Repeated addition – Counting in Tens</u>	Repeated addition – Counting in Tens	Groups,	Numicon
					Pairs	

Use images of different objects – including Numicon	Draw the objects	As above 40 10 10 10 10 +10 +10 +10 +10	Array	Place Value Disks Cuisenaire Base tens and
4 groups of 10 (fingers and thumbs)	4 groups of ten (t represents ten)	$\begin{array}{c} 10 \\ 0 \\ 10 \\ 10 \\ 20 \\ 30 \\ 40 \\ 10 + 10 + 10 + 10 = 40 \end{array}$		ones
4 groups of 10 pens 18 – 5 using counters	Try to avoid pupils drawing out ALL ten objects 4 times. Repeated addition – Counting in Fives	Popostod addition - Counting in Fives		
Repeated addition – Counting in Fives Please follow the guidance from counting in 2s and 10s – exactly the same principle	Please follow the guidance from counting in 2s and 10s – exactly the same principle	Repeated addition – Counting in Fives Please follow the guidance from counting in 2s and 10s – exactly the same principle		
Using arrays Explain the language of columns and rows. Use concrete apparatus.	Using arrays Explain the language of columns and rows. Children can draw the arrays	Using arrays Explain the language of columns and rows 3 + 3 + 3 + 3 = 12 5 + 5 = 10		
There are 4 columns. There are 12 apples altogether.	There are 12 apples altogether.	5 - 5 - 10		



Year Two Multiplication

Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and
					resources

Year		Fluent in the recall and calculations of	Fluent in the recall and calculations of	Fluent in the recall and calculations of	Lots of	100 square
2	Practise to become	2, 5 and 10 multiplication tables	2, 5 and 10 multiplication tables	2, 5 and 10 multiplication tables		
	fluent in recall and				Groups of	Number lines
	use of	Please see the guidance for Year 1	Please see the guidance for Year 1	Please see the guidance for Year 1		
	multiplication facts			15	Times	Number
	for the 2, 5 and 10	Here is one example	Here is one example – hand drawn	5 5 5		tracks
	multiplication				Repeated	
	tables, (connect	Zurand Zurand Zurand		+5 +5 +5	addition	Bead strings
	the 10x table to	and the west are we was a set of the and a set and the		0 5 10 15		(for children
	place value, and	3 equal groups of 5 equals 15 eggs			Double)
	the 5x table to the		$(\gamma\gamma)$	Introduce the multiplication symbol	Cata	Deedhau
	divisions on the clock face)			5 + 5 + 5 = 5 <mark>x</mark> 3 = 15	Sets	Bead bar
	Double any				Groups,	Tens Frame
	multiple of 5 up to				Groups,	Tens traine
	50, eg. double 35	Using arrays	Using arrays	Using arrays	Pairs	Numicon
	Find the total	Osing arrays				
	number of objects	Please see the guidance for Year 1 and	Please see the guidance for Year 1 and	Please see the guidance for Year 1 and	Array	Place Value
	when they are	using arrays below	using arrays below	using arrays below	-	Disks
	organised into				symbol x	
	groups of 2, 5 or 10	Recognising Multiplication with other				Cuisenaire
	Recognise odd and	factors	Recognising Multiplication with other	Recognising Multiplication with other	times as	
	even numbers		factors	factors	bigas	Base
				16	wideas	hundreds
	Show that multiplication of			4 4 4 4	long	tens and
	two numbers can	🦗 🥸 🗆		+4 +4 +4 +4		ones
	be done in any					Arrow Cards
	order	four groups of four children		0 4 8 12 16		Allow cards
	(commutative) and	four groups of four children Numicon can be used too.	four groups of four children	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		
	division of one	Numeon can be used too.		21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40		
	number by another			31 32 33 34 35 30 37 38 33 40		
	cannot Introduce			_		
	the symbol for			$4 + 4 + 4 + 4 = 4 \times 4$		
	multiplication	Doubling		Doubling		
			Doubling	Doubling		

	See Y1. Children need to double multiples of 10 to 100, then double multiples of 5 to 100 E.g. 35 doubled – use counters –	See Y1. Children need to double multiples of 10 to 100, then double multiples of 5 to 100 E.g. 35 doubled Can be drawn	See Y1. Children need to double multiples of 10 to 100, then double multiples of 5 to 100 E.g. 35 doubled 35 + 35 $30 + 30$ $5 + 5$ 60 10		
Useful IWB links for	https://mathchat.com/manipulatives/place//alueCounters				
manipulatives		ar-1-part-whole-model-iwb-addition-and- purces/Illuminations/Interactives/Ten-Frar			

Year 3 Multiplication

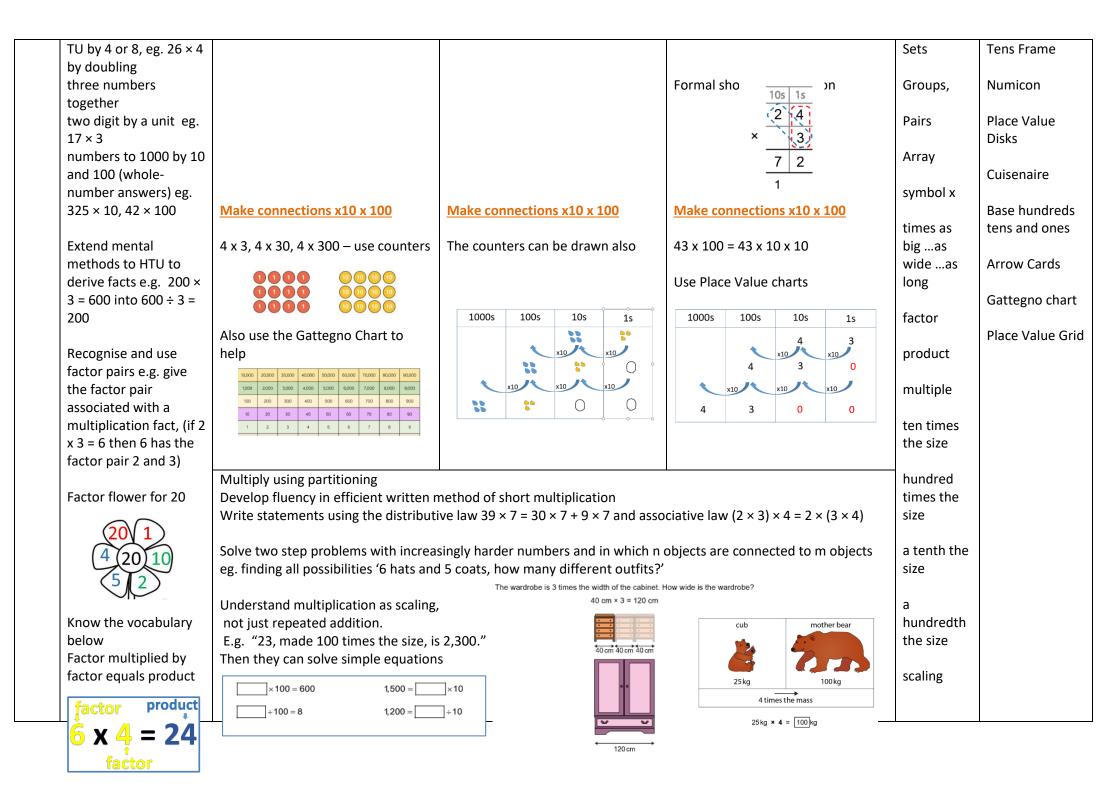
						Models,
	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Images and
						resources
Year	Recall and use	Consolidate 2, 5 10 times table	Consolidate 2, 5 10 times table	Consolidate 2, 5 10 times table	Lots of	100 square
3	multiplication facts	Please see Y2 examples	Please see Y2 examples	Please see Y2 examples		
	for the 4, 8 and 3				Groups of	Number lines
	multiplication tables	4, 8 then 3 times table	4, 8 then 3 times table	4, 8 then 3 times table		
	Practise mental recall				Times	Number tracks
	of x tables to	Please see Y2 examples as they hold	Please see Y2 examples as they	Please see Y2 examples as they hold		
	improve fluency. Use	the same principles	hold the same principles	the same principles	Repeated	Bead strings (
	doubling to connect				addition	for children)
		Make connections x10	Make connections x10	Make connections x10		

the 2, 4 and 8 x			12.12 12	Double	Bead bar
tables.	4 x 3, 4 x 30, 4 x 300 – use counters	4 x 30 = 120 – draw it	4 X 3 = 12	Call	T
Use x facts to derive			4 x 30 =120	Sets	Tens Frame
related facts and	0000		30 30 30 30	Groups,	Numicon
write mathematical	1 1 1 1 1 1 1 1	Draw on a place value grid	Use place value grid	Groups,	Numicon
statements e.g. using				Pairs	Place Value
3 × 2 = 6 to derive 30	Also use the Gattegno Chart to help	100s 10s 1s	100s 10s 1s		Disks
× 2 =60	10.000 Z0.000 30.000 40.000 50.000 70.000 60.000 90.000	55		Array	
	1000 2000 3000 4000 5000 7000 8000 5000 100 200 300 400 500 600 700 600 900	x10 x10	4 3 0		Cuisenaire
Develop efficient	10 20 30 40 50 90 90 90 1 2 3 4 5 6 7 9 9			symbol x	
mental methods					Base hundreds
using commutativity e.g. 4 × 12 × 5 = 4 × 5	Simple 2 digit by one digit	Simple 2 digit by one digit	Simple 2 digit by one digit	times as bigas	tens and ones
× 12 = 20 × 12 = 240)	Use dienes or counters	Draw it in a grid	$23 \times 5 = 20 \times 5 + 3 \times 5$	wideas	Arrow Cards
Double any two-digit	Use dienes of counters		= 100 + 15	long	Arrow carus
number, e.g. double	There are 5 jars.	10s 1s	= 115	10118	Gattegno chart
39 and any multiple	There are 5 jars.		$10 \times 6 = 60$ $10 \times 6 = 60$ $10 \times 6 = 60$ $4 \times 6 = 24$	factor	0
of 5 , 10 or 100, e.g.	Ters Ones				Place Value
double 340, double		""	0 60 120 180 204	product	Grid
800,					
Multiply one-digit or				multiple	
two-digit numbers by 10 or 100 and		Drow it is a grid	14 × 2	ten times	
understand the effect	14	Draw it in a grid See above	^{14 x 3} $14 x 3 = 10 x 3 + 4 x 3$	the size	
e.g. 7 × 100, 46 × 10,			= 30 + 12		
54 x 100	3		= 42	hundred	
				times the	
Know the vocabulary	Doubling all two digit numbers	Doubling all two digit numbers	Doubling all two digit numbers	size	
below					
Factor multiplied by		<i> </i>	<mark>3</mark> 6 + 36	a tenth the	
factor equals product			30 + 30 6 + 6	size	
		Y Y	60 12		
factor product	10 ⁻¹⁰ -			a hundredth	
$6 \times 4 = 24$	Solve problems in context decide whic	L choperation to use and why, includir	ng missing number problems	the size	
factor	integer scaling problems eg double or				

	Correspondence problems in which m objects are connected to n objects eg finding all possibilities '3 hats and 4 coats, how many different outfits?' Understand multiplication represented as an array and the concept of commutativity. "The order of the factors does not affect the product." Tre order of 2 groups of 2 2 groups of 7 7 × 2 = 14 2 × 7 = 14 T × 2 = 2 × 7
Useful IWB links for manipulatives	https://www.coolmath4kids.com/manipulatives/base-ten-blocks https://mathsbot.com/manipulatives/placeValueCounters https://mathsbot.com/manipulatives/bar https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/ https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/ http://www.ictgames.com/mobilePage/tenFrame/index.html

Year 4 Multiplication

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
Year	Recall and practise	Consolidate 3, 4, 8 times table	Consolidate 3, 4, 8 times table	Consolidate 3, 4, 8 times table	Lots of	100 square
4	multiplication facts for	See Y3 guidance - same principle	See Y3 guidance - same principle	See Y3 guidance - same principle		
	tables up to 12 × 12 to				Groups of	Number lines
	aid fluency.	Learn the remaining tables to x 12	Learn the remaining tables to x 12	Learn the remaining tables to x 12		
		See Y3 guidance - same principle	See Y3 guidance - same principle	See Y3 guidance - same principle	Times	Number tracks
	Use place value,					
	known and derived	Multiply 2 digit by one digit	Multiply 2 digit by one digit	Multiply 2 digit by one digit	Repeated	Bead strings (
	facts to multiply				addition	for children)
	mentally, including	24 x 3 – Use Dienes or counters	24 x 3 – Draw it	Informal partition as in Y3		
	multiplying		11 7	2 4	Double	Bead bar
	by 0 and 1			x 3		
	·		n 📊 📥 nnnn 📶	1 2 3 x 4 ones = 12 ones	•	
			n <mark>//</mark>	6 0 3 x 2 tens = 6 tens		
			Ĭ	7 2		



factor times22 22 factor is equal to productX7 154	Understand that adjacent multiples of a times table have a difference of the multiplication table. E.g. adjacent multiples of 6, have a difference of 6.	
Use divisibility tests to identify multiples of 2, 4, 10 and 5	Understand the distributive law. Where a factor can be partitioned and multiplied out. $a \times (b+c) = a \times b + a \times c$ and $a \times (b-c) = a \times b - a \times c$ $6 \times 8 = 6 \times 5 + 6 \times 3$	
Useful IWB links for manipulatives	https://www.coolmath4kids.com/manipulatives/base-ten-blocks https://mathsbot.com/manipulatives/placeValueCounters https://mathsbot.com/manipulatives/bar https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/ https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/ http://www.ictgames.com/mobilePage/tenFrame/index.html	

Year 5 and Year 6 Multiplication

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
Year	Multiply TU X U mentally using known	Multiply up to 4 digits by	Multiply up to 4 digits by a	Multiply up to 4 digits by a	As above	100 square
6	facts for all multiplication tables to 12 x 12	<u>a one- number</u>	<u>one- number</u>	<u>one- number</u>		
ů	numbers				factor	Number lines
		2214 x 4 – use counters	2214 x 4 – can draw in a place	Use formal short method		
	Identify multiples 10 100 1 Has an odd	Th H T O	value grid		product	Number tracks
	and factors, including finding 5 100 50 number of factors	 100 100 (1)	1000s 100s 10s 1s			
	including finding		<i> \ #</i>	2 2 1 4	multiple	Bead strings (
	all factor pairs 4/25 ² a square number!		<i> </i> t <i>#</i>	× 4		for children)
	for numbers		-			
			\ <i>#</i>			

2 × : Esta nur is pr prin to 1 Reco num Mul 100 Mul 30, : num	ognise and use square and cube hbers, and relevant notation. Itiply by 25 or 50, e.g. 48×25 , 32×50 Itiply whole numbers decimals by 10, and 1000 e.g. 4.3×10 , 0.75×100 Itiply pairs of multiples of 10, e.g. $60 \times$ and a multiple of 100 by a single digit hber, e.g. 900×8 $30 \times 80 = 3 \times 8 \times 10 \times 10$ $= 3 \times 8 \times 100$ = 2,400	Multiply up to 4 digits by a two- number If children are working at this level – moving straight to a formal method is the best approach.	Multiply up to 4 digits by a two- number If children are working at this level – moving straight to a formal method is the best approach.	$\frac{Multiply up to 4 digits by a}{two-number}$ $\begin{array}{c ccccccccccccccccccccccccccccccccccc$	ten times the size hundred times the size a tenth the size a hundredth the size scaling adjacent multiples prime square cubed	Bead bar Tens Frame Numicon Place Value Disks Cuisenaire Base hundreds tens and ones Arrow Cards Gattegno chart Place Value Grid
	divisibility tests to identify multiples , 6, 9 8 and revise 2, 4, 10 and 5	Multiplying whole numbers I	by 10, 100 and 1000 using place va	alue grids		
and	r 6 Itiply two-digit decimals such as 0.8 × 7 pairs of multiples of 10 and 100, e.g. < 30, 600 × 20	HTh TTh Th H T O HTh 1 6 1 6 Multiplying decimals by 10 a 10 10 10	$9 \times 100 =$ $9 \times 1,000 =$ $16 \times 100 =$ $16 \times 1,000 =$ $10 \text{ using place value grids}$			

Double decimals with units and tenths, e.g. double 7.6 Scale up and down using known facts, e.g.	H T O Tths Hths 4 1 $4.1 \times 100 =$
given that three oranges cost 24p, find the cost of four oranges	H T O Tths Hths 4 1 5 $4.15 \times 100 =$
Identify numbers with an odd number of factors (square numbers), even numbers of factors and no factor pairs other than 1 and themselves (prime numbers) Explore the order of operations using brackets; eg. 2 + 1 x 3 = 5 and (2 + 1) x 3 = 9. Use multiplication facts to solve ratio and proportion problems.	Express a product as a multiple of three factors $ \begin{array}{c} 20 \\ 5 \\ x \\ 4 \\ 5 \\ x \\ 2 \\ x \\ x$
Useful IWB links for	https://www.coolmath4kids.com/manipulatives/base-ten-blocks
manipulatives	https://mathsbot.com/manipulatives/placeValueCounters
	https://mathsbot.com/manipulatives/bar https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/
	https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/
	http://www.ictgames.com/mobilePage/tenFrame/index.html

EYFS Division

						Models,
	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Images and
						resources
EYFS	The ELG states that children	Grouping Model	Grouping Model	Grouping Model	Share	100 square
	solve problems, including	Rose has 6 socks. She grouped	Children to draw the concrete	Write the number sentence		
	doubling, halving and sharing.	them into pairs – how many pairs	resources they are using.		Sharing	Number lines
		did she make?				
					grouping	Number tracks
	•		•	6 socks make 3 groups of 2 -	•	·

Children need to see and hear representations of division as both grouping and sharing.		لا در ل	Sharing Model	Equal groups	Bead strings (for children) Bead bar
Division can be introduced through halving. Count in twos; fives; tens both	Sharing Model I have 10 sweets. I want to share them with my friend. How many will we have each?	Sharing Model Children to draw the concrete resources they are using.	10 sweets shared 2 equals 5 sweets each	Left over Half halving	Tens Frame Numicon Place Value Disks Cuisenaire
aloud and with objects.	Although not explicit in the Developm introducing young children to simple Setting the problems in real life cont with concrete apparatus will suppor "I have got 5 bones to share between How many bones will they get each?	halves as fractions. ext and solving them t children's understanding. n my two dogs.	ng model is a useful way of ()		Base tens and ones
Useful IWB links for manipulatives	https://www.coolmath4kids.com/ma https://mathsbot.com/manipulatives https://mathsbot.com/manipulatives https://classroomsecrets.co.uk/free- https://www.nctm.org/Classroom-Re http://www.ictgames.com/mobilePa	s/placeValueCounters s/bar year-1-part-whole-model-iwb-add esources/Illuminations/Interactives			

Year One Division

	Mental	Concrete	Pictorial	Abstract	Vocabulary	Models, Images
	Strategies				,	and resources
Year	Share objects	Sharing using a range of objects.	Sharing using a range of objects.	Sharing using a range of objects.	Share	100 square
1	into equal	Focus on EQUAL groups	Focus on EQUAL groups	Focus on EQUAL groups		
	groups and	6 shared by 2	6 shared by 2	6 shared by 2	Sharing	Number lines
	count how			(6)		
			(\cdot, \cdot)			
				(3) (3)		

many in each group and			6	grouping	Number tracks
consider 'left over'.	****		3 3	Equal	Bead strings (for children)
Count on from				groups	Bead bar
and back to				Left over	
zero in ones,	Put small numbers into groups	Put small numbers into groups	Put small numbers into groups		Tens Frame
twos, fives or	Focus on EQUAL groups	Focus on EQUAL groups	Focus on EQUAL groups	Half	
tens	Put 8 into groups of 2	Put 8 into groups of 2	Put 8 into groups of 2 8		Numicon
		\cap \cap	2 2	halving	
Make			(2)(2)		Place Value
connections					Disks
between					
arrays, number			0 1 2 3 4 5 6 7 8 9		Cuisenaire
patterns, and counting in					Base tens and
twos, fives and	Practical problem solving activities invol	l lving equal sets or groups. Begin to under	ctand division through grouping and		ones
tens.	sharing and halving small quantities	iving equal sets of groups. Degin to under	stand division through grouping and		ones
	o o i	pieces are there? How many cakes are t	here in the box? Take half of them out.		
	Solve simple one-step problems using co	oncrete objects, pictorial representations	and finding simple fractions of objects,		
	numbers and quantities. with the suppo	ort of the teacher			
Useful IWB	https://www.coolmath4kids.com/manip	pulatives/base-ten-blocks			
links for	https://mathsbot.com/manipulatives/placeValueCounters				
manipulatives	https://mathsbot.com/manipulatives/bar				
		ar-1-part-whole-model-iwb-addition-and-			
		urces/Illuminations/Interactives/Ten-Fra	me/		
	http://www.ictgames.com/mobilePage/	<u>/tenFrame/index.html</u>			

Year Two Division

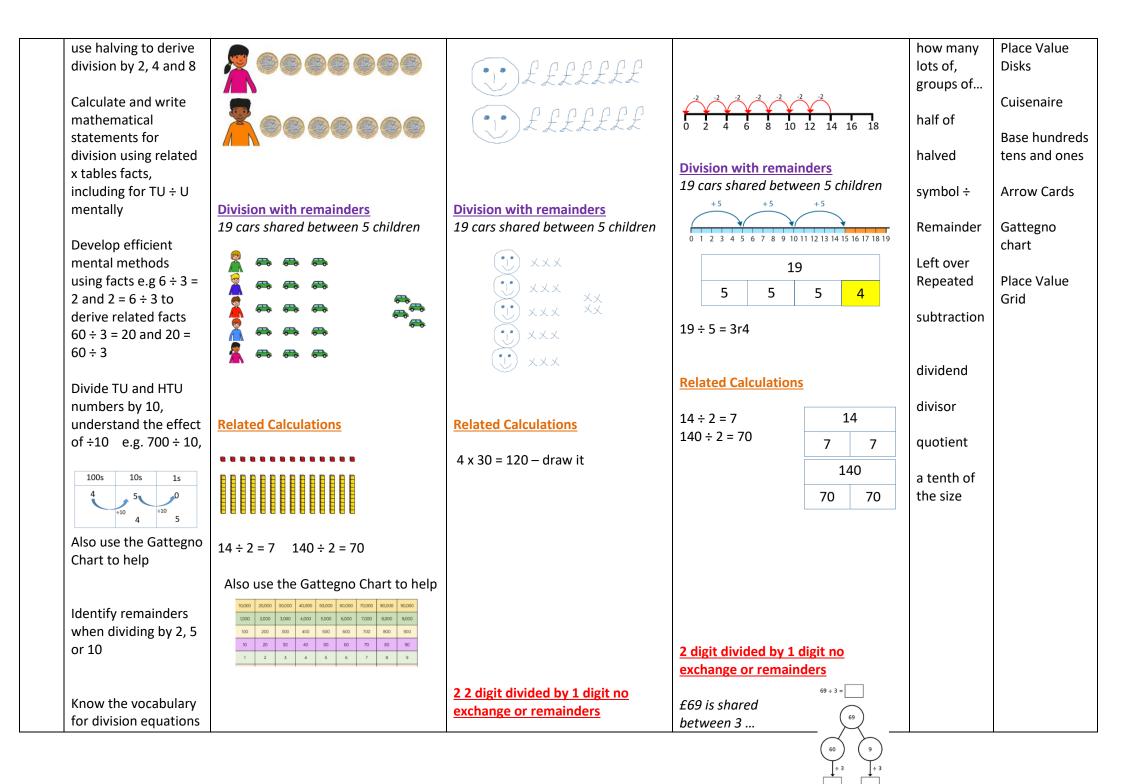
	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
Year 2	Practise to become fluent in recall and	Sharing using a range of objects.	Sharing using a range of objects.	Sharing using a range of objects.	Divide	100 square

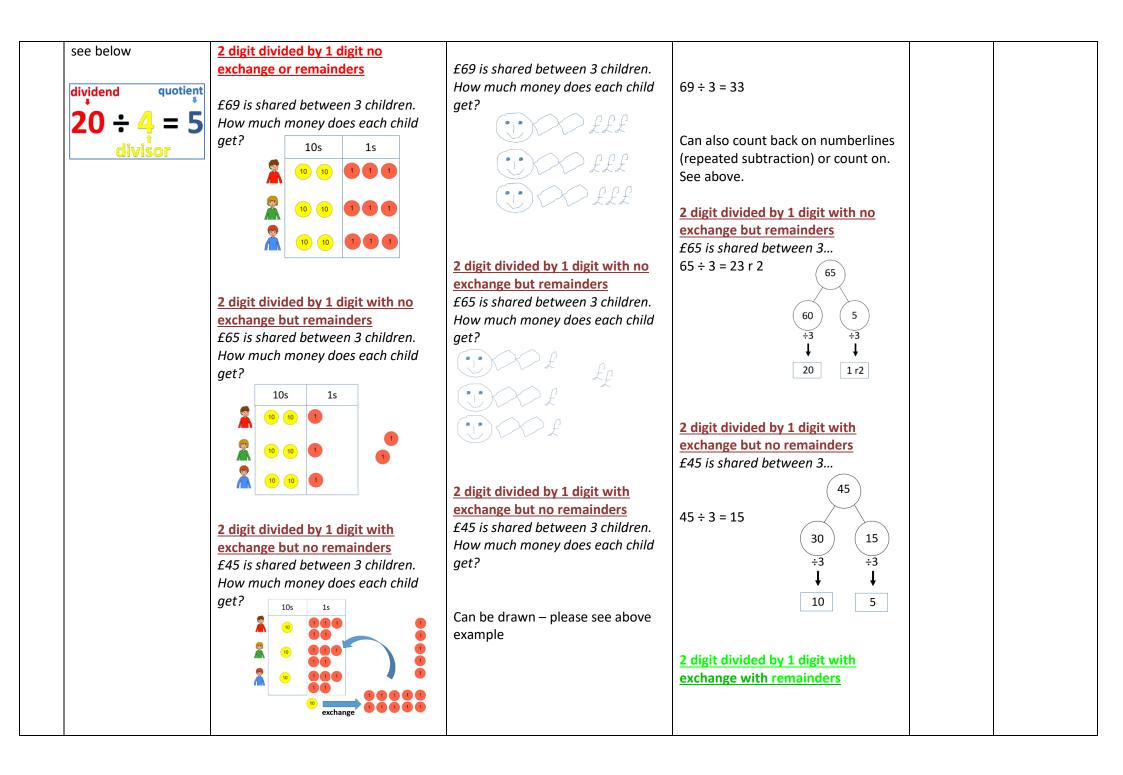
use of multiplication and division facts for	Please see the guidance for Year 1	Please see the guidance for Year 1	Please see the guidance for Year 1	Share equally,	Number lines
the 2, 5 and 10 multiplication tables,	Here is one example 30 flowers are shared equally between 5 vases.	Here is one example – hand drawn	30	one each,	Number tracks
Halve any multiple of 10 up to 100,	Su nowers are shared equally between 5 vases.		6 6 6 6	two each <i>,</i>	Bead strings (for children
			30 ÷ 5 = 6	Grouping)
Find half of even	Cubes and other manipulatives can be used also			equal groups,	Bead bar
numbers to 40	Grouping using times tables 2 5 10	Grouping using times tables 2 5 10	Grouping using times tables 2 5 10	how	Tens Frame
	40 eggs, 10 in a box. How many boxes?	Children can draw the groups of 10	See bar model or part whole model above	many lots of, groups of	Numicon Place Value
Show that			+10 +10 +10 +10	half of	Disks
multiplication of two numbers can	88888 88888 88888 88888		0 10 20 30 40 50	halved	Cuisenaire
be done in any order (commutative) and	40 divided into groups of 10. 40 ÷ 10		$40 \div 10 = 4$	symbol ÷	Base hundreds
division of one number by another			40 ÷ 10 = 4		tens and ones
cannot					Arrow Cards
Introduce the symbol for division			0 10 20 30 40 50		
÷	known, using multiplication equations w	plems where the total quantity and group vith missing factors. For example, "There v many bags will I need?" can be represer	are 15		
	the following equation: × 5 = 15				
	Pupils can use skip counting or their emo	erging 2, 5 and 10 multiplication table flu	ency tocalculate the missing factor.		

	5 5 6 5 Begin to use other x tables and division facts to perform written calculation. Relate to fractions and measures eg. 40÷2 =20, 20 is a half of 40 Check calculations using the inverse relationship between x and ÷
Useful IWB links for manipulatives	https://www.coolmath4kids.com/manipulatives/base-ten-blocks https://mathsbot.com/manipulatives/placeValueCounters https://mathsbot.com/manipulatives/bar https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/ https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/ http://www.ictgames.com/mobilePage/tenFrame/index.html

Year 3 Division

						Models,
	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Images and
						resources
Year	Halve any multiple of	Apply division facts for 2, 4, 8, 5, 10	Apply division facts for 2, 4, 8, 5,	Apply division facts for 2, 4, 8, 5, 10	Divide	100 square
3	10 up to 200, e.g.	and 3 in both contexts of grouping	10 and 3 in both contexts of	and 3 in both contexts of grouping		
	halve 170	and sharing	grouping and sharing	and sharing	Share	Number lines
	130				equally,	
		I need 14 ping-pong balls. There are	I need 14 ping-pong balls. There	I need 14 ping-pong balls		Number tracks
	$\langle \rangle$	2 ping-pong balls in a pack. How	are 2 ping-pong balls in a pack.		one each,	
	(100) (30)	many packs do I need?	How many packs do I need?	14 ÷ 2 = 7	two each,	Bead strings (
	÷2 ÷2			2 2 2 2 2 2 2		for children)
	↓ ↓				Grouping	
	50 15		AAAAAAA			Bead bar
				£ 0 2 4 6 8 10 12 14 16 18	equal	
	Recall and use			How much money aoes each chila	groups,	Tens Frame
		£14 is shared between 2 children.	£14 is shared between 2 children.	get?		
	division facts for the	How much money does each child	How much money does each child			Numicon
	3, 4 and 8 x tables,	get?	get?	14 ÷ 2 = 7 14		
			• -	7 7		





	2 digit divided by 1 digit with exchange with remainders Please see above worked examples – exactly the same principle, with a remainder and the need for exchanging tens for ones.	 2 digit divided by 1 digit with exchange with remainders Please see above worked examples exactly the same principle, with a remainder and the need for exchanging tens for ones. 	Please see above worked examples – exactly the same principle, with a remainder and the need for exchanging tens for ones.	
	Solve problems in context deciding wh missing number problems measuring and money context correspondence problems in which mo children; 40 cakes shared equally betw Use practical methods and jottings, inc	objects are connected to n objects eg veen 8.		
Useful IWB links for manipulatives	https://www.coolmath4kids.com/man https://mathsbot.com/manipulatives/ https://mathsbot.com/manipulatives/ https://classroomsecrets.co.uk/free-yee https://www.nctm.org/Classroom-Res http://www.ictgames.com/mobilePage	placeValueCounters bar ear-1-part-whole-model-iwb-addition- ources/Illuminations/Interactives/Ten		

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
Year 4	Practise and extend mental methods to	Apply division facts for all multiplication tables in contexts of	Apply division facts for all multiplication tables in contexts of	Apply division facts for all multiplication tables in contexts	Divide	100 square
	three-digit numbers to	grouping and sharing - including	grouping and sharing - including	of grouping and sharing -	Share	Number lines
	derive facts e.g. 200 × 3 = 600 into 600 ÷ 3 = 200	<u>remainders</u>	<u>remainders</u>	including remainders	equally,	
	$= 600 \text{ mto } 600 \div 3 = 200$	See Y3 guidance - same principle	See Y3 guidance - same principle	See Y3 guidance - same principle		Number tracks
	Divide multiples of 10 up				one each,	
	to 1000 by 10	2 digit divided by 1 digit all 4	2 digit divided by 1 digit all 4	2 digit divided by 1 digit all 4	two each,	Bead strings (
	E.g. 120 ÷ 10	possibilities – moving to short	possibilities – moving to short	possibilities – moving to short		for children)
	100s 10s 1s	division layout	division layout	division layout	Grouping	Deedhau
	4 5 0	For all 4 informal passibilition	For all 4 informal passibilities	For all 4 informal passibilities	agual	Bead bar
	+10 +10 4 5	For all 4 informal possibilities – please see Year 3 examples as it is	For all 4 informal possibilities – please see Year 3 examples as it is	For all 4 informal possibilities – please see Year 3 examples as it is	equal groups,	Tens Frame
	Divide multiples of 100	the same principle.	the same principle.	the same principle.	groups,	Tens France
	up to 10, 000 by 100	the sume principie.	the sume principie.	the sume principie.	how many	Numicon
	e.g. 600÷100 or	£72 shared between three using	£72 shared between three using	£72 shared between three using	lots of,	
	2800 ÷ 100	short division layout	short division layout	short division layout	groups of	Place Value
		2 2 4	2 2 4			Disks
	100s 10s 1s	3	3	2 4	half of	
	4 0 0					Cuisenaire
	÷100 4	7 tens divided by 3 is 2 12 ones divided by 3 is with one ten left over 4	7 tens divided by 3 is 2 12 ones divided by 3 is 4 vith one ten left over 4	3)7 ¹ 2	halved	
	Divide two-digit numbers				sumbol :	Base hundreds
	by 4 or 8, e.g. 296 ÷ 8	3 digit divided by 1 digit all 4	3 digit divided by 1 digit all 4	3 digit divided by 1 digit all 4	symbol ÷	tens and ones
	Identify remainders	possibilities – moving to short	possibilities – moving to short	possibilities – moving to short division layout	Remainder	Arrow Cards
	when dividing by 1 to 12	division layout	division layout		Remainder	Allow Calus
			CZOF should between three weins	£705 shared between three using	Left over	Gattegno chart
	Find halves of multiples	£705 shared between three using	£705 shared between three using short division layout	short division layout	Repeated	
	of 10 , even numbers to	short division layout		· · · · · · · · · · · · · · · · · · ·		Place Value
	200 and three-digit	1 1 4 1			subtraction	Grid
	multiples of 10 to 500 e.g. 760 ÷ 2	5)	Can be drawn just like the worked	2/1		
	0.5.700.2		example above	241		
				57205	dividend	
					divisor	
					divisor	

Know the vocabulary for division equations see below dividend quotient $20 \div 4 = 5$ divisor $5 \leftarrow quotient$ 4 20 divisor dividend	Year 1 100 100 Year 2 100 100 Year 3 100 100 Year 4 100 100 Year 5 100 100 Year 6 100 100	Related Calculations E.g. 1200 pencils shared between 6 classes Can be drawn out	Related Calculations E.g. 1200 pencils shared between 6 classes 12 2 2 2 2 2 120 20 20 20 20 20 120 20 20 20 20 120 20 20 20 20 100 120 140 150 180 12 ÷ 6 = 2 × 100 × 100 × 1,200 ÷ 6 = 200	quotient a tenth of the size
divisor-, 4 quotient Useful IWB links for manipulatives	number. (eg. 11 ÷ 2 expressed as 5 ½ increasingly harder numbers includin 10 children. Introduce dividing using subtracting 2 10 lots of 4 are 40, there will be 12 le <u>https://www.coolmath4kids.com/mathttps://mathsbot.com/manipulatives https://mathsbot.com/manipulatives https://classroomsecrets.co.uk/free-</u>	g correspondence questions such as th 10 lots of divisor and asking 'how many ft over which is another 3 lots of 4 so th anipulatives/base-ten-blocks s/placeValueCounters s/bar year-1-part-whole-model-iwb-addition esources/Illuminations/Interactives/Ter	Solve two step problems with ree cakes shared equally between more left over?' 52 ÷ 4 I know that here are 13 lots of 4 in 52	

Year 5 Division

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
Year 5	Divide numbers mentally	Apply division facts for all multiplication tables in contexts	Apply division facts for all multiplication tables in contexts	Apply division facts for all multiplication tables in contexts	Divide	100 square
	using known facts for all	of grouping and sharing –	of grouping and sharing –	of grouping and sharing –	Share	Number lines
	multiplication tables to 12 x	including remainders	including remainders	including remainders	equally,	
	12	See Y3 guidance - same principle	See Y3 guidance - same principle	See Y3 guidance - same principle		Number tracks
					one each,	
		4 digit divided by 1 digit all 4	4 digit divided by 1 digit all 4	4 digit divided by 1 digit all 4	two each,	Bead strings (
	Divide whole numbers and	<u>possibilities – moving to short</u>	possibilities – moving to short	possibilities – moving to short		for children)
	decimals by 10, 100 or 1000,	division layout	division layout	division layout	Grouping	
	e.g. 25 ÷ 10, 673 ÷ 100, 74 ÷					Bead bar
	100	Children should be confident	Children should be confident		equal	
		enough to work in the abstract	enough to work in the abstract		groups,	Tens Frame
	Some examples using place	with this due . If needed, place	with this due. If needed, place		how many	Number
	value charts	value systems can still be used.	value systems can still be used and drawings to represent the	2 8 5 3 2	lots of,	Numicon
	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	8,532 ÷ 2	values		groups of	Place Value Disks
	+10 $+10$ $+10$ $+104 \times 0.1 = 0.4 4 - 10 = 0.4$				halved	Cuisenaire Base hundreds
		Related Calculations	Related Calculations	Related Calculations	symbol ÷	tens and ones
	× 0.01 × 0.01				-,	
	1,000s 100s 10s 1s 0.1s 0.01s	Division involving decimals	Division involving decimals	Division involving decimals	Remainder	Arrow Cards
	+ 100 1 2 0	1.2 ÷ 3	1.2 ÷ 3	1.2 ÷ 3		
	+ 100 + 100				Left over	Gattegno chart
	120 × 0.01 = 1.2 120 ÷ 100 = 1.2		1s 0.1s 1s 0.1s	$(12) \div 3 = (4)$	Repeated	
	Use a place value chart to work out 136 ÷ 1.000					Place Value
	H T O Tths Hths Thths			$\times 0.1 \pm 10 \times 0.1 \pm 10$	subtraction	Grid
	1 3 6 •			(12) (22) (22)		
	Complete the calculation.	Exchange of or tenths of or tenths	Exchange for tenths	$(1.2) \div 3 = (0.4)$	dividend	
	136 ÷ 1,000 =					
					divisor	

Find the whole number			<u> </u>	
remainder after dividing a		quotient		
two-digit number by a	Practise and extend efficient written methods applying X tables and related facts confidently for larger			
single-digit number, e.g. 2	7 calculations.	a tenth of		
÷ 4 = 6 R 3		the size		
	Divide up to ThHTU by U number using efficient short division			
Know the vocabulary for	Calua maklama indudina carlina ku simula fuastiana			
division equations see below	Solve problems including scaling by simple fractions Use x and ÷ as inverses to support dividing by powers of 10 in scale drawings or in converting units e.g km to			
see below	m			
dividend 20 ÷ 4 = 5 divisor				
4 20 divisor dividend				
dividend 20 divisor - 4 = 5 quotient				
Useful IWB links for	https://www.coolmath4kids.com/manipulatives/base-ten-blocks			
manipulatives	https://mathsbot.com/manipulatives/placeValueCounters			
	https://mathsbot.com/manipulatives/bar https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/			
	https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/			
	<u>http://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/</u> <u>http://www.ictgames.com/mobilePage/tenFrame/index.html</u>			

Year 6 Division

	Mental Strategies	Concrete	Pictorial	Abstract	Vocabulary	Models, Images and resources
Year	Divide TU by U number,	Multiple digit divided by 1 digit with all 4 possibilities	Multiple digit divided by 1 digit with all 4 possibilities	Multiple digit divided by 1 digit with all 4 possibilities	Divide	100 square
6	eg. 68 ÷ 4 divide by 25 or 50, eg. 480 ÷ 25, 3200 ÷ 50	Children should be confident enough to work in the abstract with this. If needed, place value	Children should be confident enough to work in the abstract with this. If needed, place value counters can		Share equally, one each,	Number lines Number tracks
	Divide two-digit decimals eg. 4.8 ÷ 6 and find halves of decimals with units and tenths, eg. half of 15.2 Divide multiples of 100 by	counters can still be used. 8,532 ÷ 2	still be used and drawings to represent the values	2 8 5 3 2	two each, Grouping equal groups,	Bead strings (for children) Bead bar Tens Frame
	a multiple of 10 or 100 (whole number answers), e.g. 600 ÷ 20, 800 ÷ 400, 2100 ÷ 300		Lies short division to convert	Lice short division to convert	how many lots of, groups of	Numicon Place Value
	Plus related facts	Use short division to convert remainders to decimals	Use short division to convert remainders to decimals	Use short division to convert remainders to decimals	half of	Disks
	e.g. 150 ÷ 30	Children should be confident enough to work in the abstract	Children should be confident enough to work in the abstract with this. If	109 ÷ 4 = 27.25	halved	Cuisenaire
	$150 \div 30 = 5_{\text{W}}$ $\div 10 \qquad 10 \div$	with this. If needed, place value counters can still be used.	needed, place value counters can still be used.	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	symbol ÷	Base hundreds tens and ones
	• • 15 ÷ 3 = 5	Dividing with a two-digit number	Dividing with a two-digit number	Dividing with a two-digit number	Remainder	Arrow Cards
	Scale up and down using	<mark>using factors</mark> Children should be confident	using factors Children should be confident enough	using factors	Left over Repeated	Gattegno chart
	known facts, e.g. given that six oranges cost 24p, find the cost of four oranges	enough to work in the abstract with this. If needed, place value counters can still be used.	to work in the abstract with this. If needed, place value counters can still be used.	$2560 \div 16 = 2560 \div 4 \div 4$ $4) 2^{2}5^{1}6 0 \qquad 4) 6^{2}4 0$	subtraction	Place Value Grid
				r	dividend	

Know the vocabulary for				
division equations	Dividing with a two-digit number	Dividing with a two-digit number	Dividing with a two-digit number	divisor
see below	using partitioning	using partitioning	using partitioning	
	Children should be confident	When undertaking a division using	See adjacent column to support	quotient
dividend quotient	enough to work in the abstract	two-digit numbers. Create a multiple	this	
	with this. If needed, place value	chart first – start with 10 and 5, then	\bigcirc	a tenth of
$20 \div 4 = 5$	counters can still be used.	2, 4, 8. If other multiples are		the size
divisor		required, calculate when needed.	(434)	
		31 mental method	\sim	
		x1 31 x1		
5 ← quotient	Counters can also be used to	x2 62 double 31	\bigcap	
120	create the multiplication table to	x3 93 add 31 to 62	(310) (124)	
	support the division.	x4 124 double 62		
divisor dividend		x5 155 half of 310		
		x6 186 double 93	210 . 21 . 10	
dividend 20		x7 217 186 + 31	$310 \div 31 = 10$	
		x8 248 double 124	124 ÷ 31 = 4	
divisor→ 🗸 🧮 🎽		x9 279 248 + 31		
quotient		x10 310 easy to calculate	$434 \div 31 = 14$	
	Dividing with a two-digit number	Dividing with a two-digit number	Dividing with a two-digit number	
	using short division	using short division	using short division	
	Children should be confident	When undertaking a division using		
	enough to work in the abstract	two-digit numbers. Create a multiple	See adjacent column to support	
	with this. If needed, place value	chart first – start with 10 and 5, then	this	
	counters can still be used.	2, 4, 8. If other multiples are		
		required, calculate when needed.	0 1 1	
		31 mental method	014	
		x1 31 x1		
	Counters can also be used to	x2 62 double 31	31) 4 ⁴ 3 ¹² 4	
	create the multiplication table to	x3 93 add 31 to 62		
	support the division.	x4 124 double 62		
		x5 155 half of 310		
		x6 186 double 93		
		x7 217 186 + 31 x8 248 double 124		
		x9 279 248 40000 124 x9 279 248 + 31		
		x10 310 easy to calculate		

 Dividing with a two-digit number using long division Children should be confident enough to work in the abstract with this. If needed, place value counters can still be used. Counters can also be used to create the multiplication table to support the division. 	Dividing with a two-digit number using long division When undertaking a division using two-digit numbers. Create a multiple chart first – start with 10 and 5, then 2, 4, 8. If other multiples are required, calculate when needed. <u>31 mental method</u> x1 31 x1 x2 62 double 31 x3 93 add 31 to 62 x4 124 double 62 x5 155 half of 310 x6 186 double 93 x7 217 186 + 31 x8 248 double 124 x9 279 248 + 31 x10 310 easy to calculate	Dividing with a two-digit number using long division See adjacent column to support this $\begin{array}{c} 0 & 1 & 4 \\ 31 \hline 4 & 3 & 4 \\ -3 & 1 \\ \hline 1 & 2 & 4 \\ 1 & 2 & 4 \\ \hline 1 & 2 & 4 \\ \hline 0 \end{array}$	
Related Calculations	Related Calculations	Related Calculations	
Division involving decimals 1.2 ÷ 3	Division involving decimals 1.2 ÷ 3	Division involving decimals 1.2 ÷ 3	
1s 0.1s 1s 0.1s 1s 0.1s 1s 0.1s 1s 0.1s 1s 0.1s 1s 1s 1s 1s 1s 1s 1s 1s	1s 0.1s 1s 0.1s	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	

	Divide numbers up to ThHTU by a TU w interpret remainders as whole number context Other worked examples of formal written division methods – with a remainder	-		-		
		5 4 <u>4 5</u> 9	5 4 4 5 9	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		
		So, 354 ÷ 15 = 23 r 9	$\frac{9}{15} = \frac{3}{5}$ So, 354 ÷ 15 = 23 $\frac{3}{5}$	So, 354 ÷ 15 = 23.6		
Useful IWB links for manipulatives	https://www.coolmath4kids.com/manipulatives/base-ten-blocks https://mathsbot.com/manipulatives/placeValueCounters https://mathsbot.com/manipulatives/bar https://classroomsecrets.co.uk/free-year-1-part-whole-model-iwb-addition-and-subtraction-activity/ https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/ http://www.ictgames.com/mobilePage/tenFrame/index.html					