Maths Mastery Policy

SUBRACTION

Reception:

EHLT are implementing Mastering Number at Reception in September 2024.

The programme aims to secure firm foundations in the development of good number sense for all children from Reception through to Year 1 and Year 2. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number. Attention will be given to key knowledge and understanding needed in Reception classes, and progression through KS1 to support success in the future. Over the year, the children will experience using a range of resources and representations.

Research shows that children with secure 'number sense' early on will make more progress later on in maths and across the curriculum.

SUBTRACTION KEY VOCABULARY					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Equal to; take; take away; take from; less; minus; subtract; leaves; how many more; how many fewer; less than; most; least; count back; how many left; how much less is..	Equal to; take; take away; take from; less; minus; subtract; leaves; distance between; difference between; how many more; how many fewer; less than; most; least; count back; how many left; how much less is..; difference; count on; strategy; partition; tens; ones	Equal to; take; take away; take from; less; minus; subtract; leaves; distance between; difference between; how many more; how many fewer; less than; most; least; count back; how many left; how much less is..; difference; count on; strategy; partition; tens; ones; taking; decrease; hundreds; value; digit	Equal to; take; take away; take from; less; minus; subtract; leaves; distance between; difference between; how many more; how many fewer; less than; most; least; count back; how many left; how much less is..; difference; count on; strategy; partition; tens; ones; taking; decrease; hundreds; value; digit; inverse; thousand; exchanges; regroup	Equal to; take; take away; take from; less; minus; subtract; leaves; distance between; difference between; how many more; how many fewer; less than; most; least; count back; how many left; how much less is..; difference; count on; strategy; partition; tens; ones; taking; decrease; hundreds; value; digit; inverse; thousand; exchanges; regroup; tenths; hundredths; decimal point; decimal	Equal to; take; take away; take from; less; minus; subtract; leaves; distance between; difference between; how many more; how many fewer; less than; most; least; count back; how many left; how much less is..; difference; count on; strategy; partition; tens; ones; taking; decrease; hundreds; value; digit; inverse; thousand; exchanges; regroup; tenths; hundredths; decimal point; decimal

***This vocabulary is not an exhaustive list. Teachers will use recommended NCETM vocabulary in lessons.**

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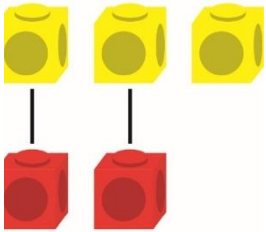
RECEPTION SUBTRACTION

	REAL-LIFE REPRESENTATION	OTHER REPRESENTATION
Comparing groups	**Children line up objects to compare the amount. They line the objects up either horizontally or vertically.**  ***Ella has more conkers.*** ***Tom has fewer conkers.***	**Children line up cubes or counters to compare the amount in each group. Lines can either be horizontal or vertical. A starting line helps to line the objects accurately.**  ***There are more yellow cubes.*** ***There are fewer red cubes.***

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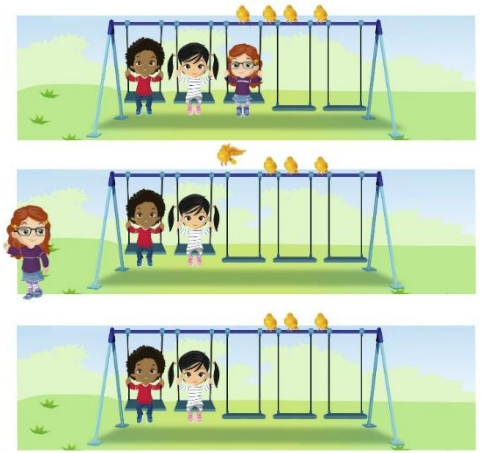
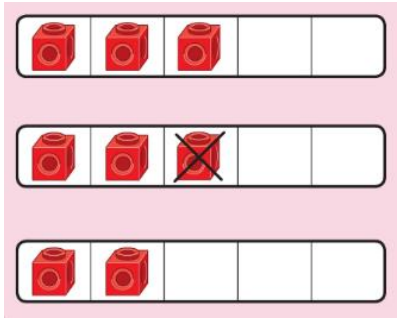
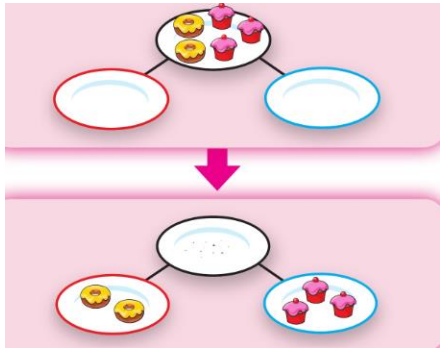
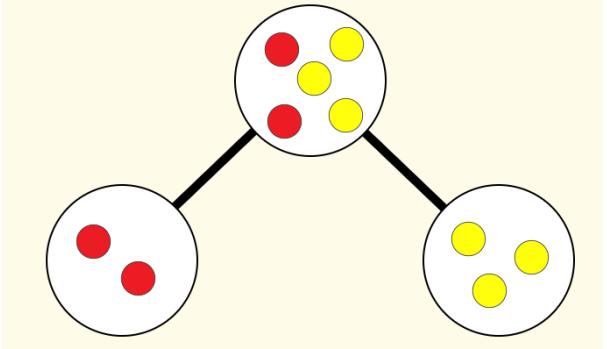
Counting back and taking away (within 5)	**Children remove one more person or object from a group to find one less.**  *First, there were 3 children.* *Then, 1 child left.* *Now, there are 2 children.*	**Children use five frames and objects to make a number. They then remove or cross out one object to find one less.**  *One less than 3 is 2.*
Introducing the part-whole model	**Children sort everyday objects into parts.**  *One part is the*  *The other part is the* 	**Children use counters or cubes to represent objects in a part-whole model.**  *The whole is 5.* *2 is a part.* *3 is a part.*

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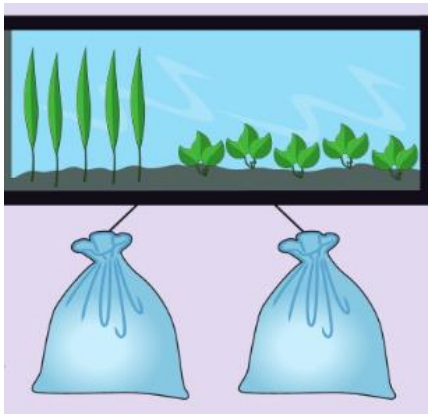
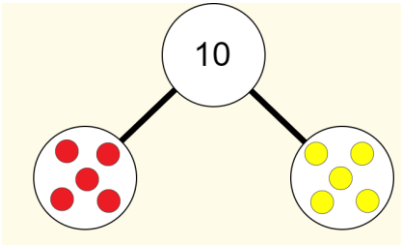
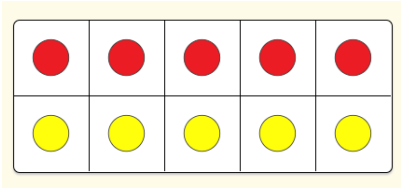
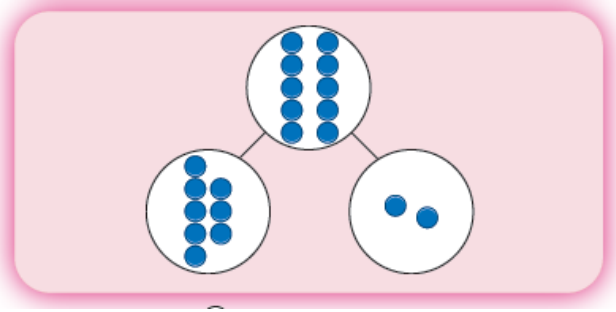
Finding number bonds to 10	**Children partition 10 into different groups to find the number bonds to 10.**  **Children begin to work with subtraction number bonds. They break apart 10 to identify different number bonds to 10.**  ***10 are bouncing.*** ***2 get off.*** ***8 are left.*** ***10 – 2 = 8***	**Children use part-whole models, ten frames and counters to find the number bonds to 10.**  ***10 is the whole.*** ***5 is a part and 5 is a part.***  ***10 is the whole.*** ***5 is a part and 5 is a part.*** **Children use part-whole models, and counters to find missing parts and the subtraction number bonds to 10.**  ***The parts are 8 and 2.*** ***10 is the whole.***

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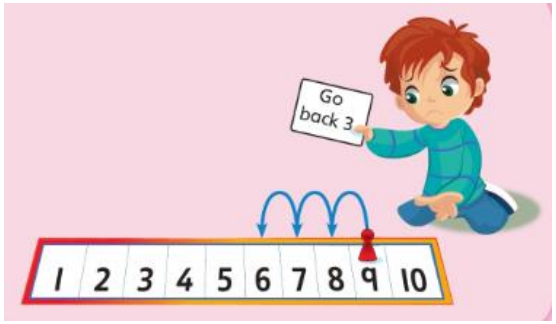
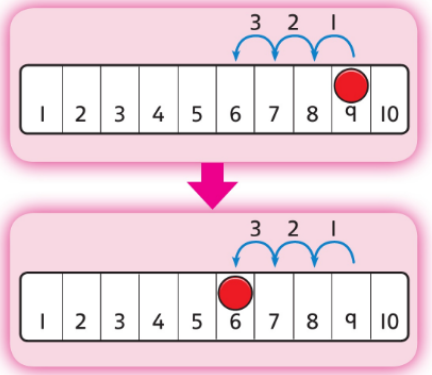
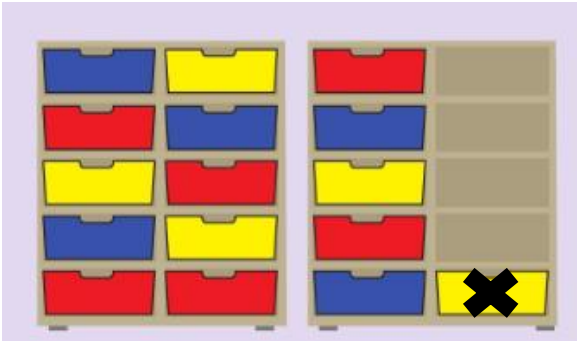
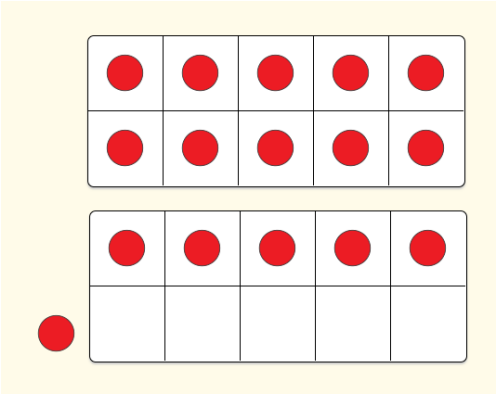
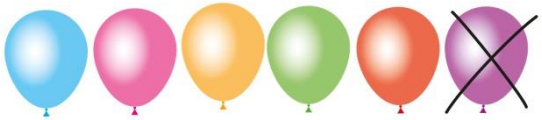
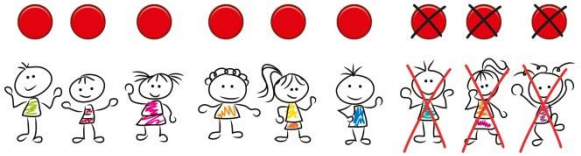
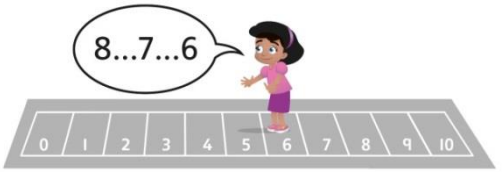
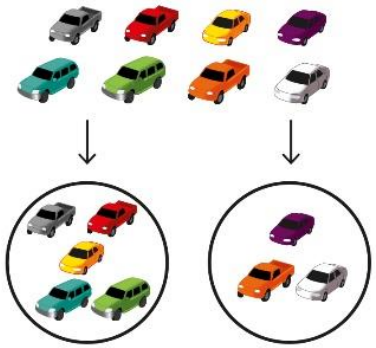
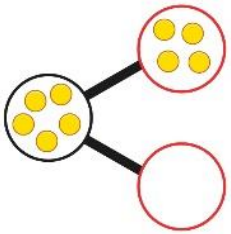
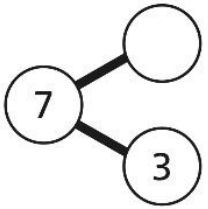
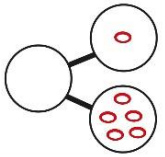
Counting back and taking away (number track)	**Children use game boards and human number tracks to subtract by counting back.**  ***9 take away 3 equals 6*** ***9…8…7…6***	**Children use a number track and a counter. They start at the larger number and count back the smaller number to find the answer.**  ***9 take away 3 equals 6*** ***9…8…7…6***
Counting back and taking away (ten frames)	**Children count backwards to find one less with numbers up to 20.**  ***One less than 16 is 15.***	**Children remove counters from ten frames to support in counting back with numbers up to 20.**  ***One less than 16 is 15.***

Maths Mastery Policy

YEAR 1 SUBRACTION

	CONCRETE	PICTORIAL	ABSTRACT
Counting back and taking away	**Children arrange objects and remove to find how many are left.**  ***1 less than 6 is 5.*** ***6 subtract 1 is 5.***	**Children draw and cross out or use counters to represent objects from a problem.**  9 – ☐ = ☐ There are ☐ children left.	**Children count back to take away and use a number line or number track to support the method.**  ***9 – 3 = 6***
Finding a missing part, given a whole and a part	**Children separate a whole into parts and understand how one part can be found by subtraction.**  ***8 – 5 = ?***	**Children represent a whole and a part and understand how to find the missing part by subtraction.**  5 – 4 = ☐	**Children use a part-whole model to support the subtraction to find a missing part.**  ***7 – 3 = ?*** **Children develop an understanding of the relationship between addition and subtraction facts in a part-whole model.**  ☐ – ☐ = ☐ ☐ – ☐ = ☐ ☐ + ☐ = ☐ ☐ + ☐ = ☐

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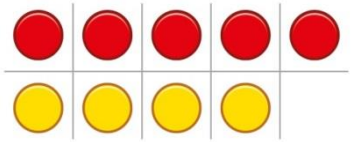
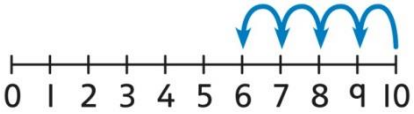
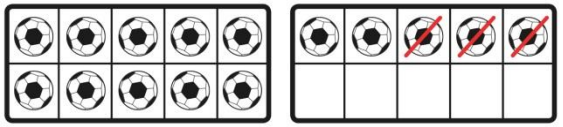
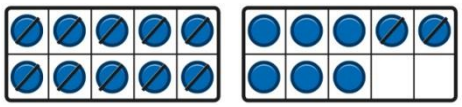
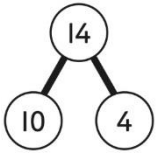
Finding the difference	**Arrange two groups so that the difference between the groups can be worked out.**  ***8 is 2 more than 6.*** ***6 is 2 less than 8.*** ***The difference between 8 and 6 is 2.***	**Represent objects using sketches or counters to support finding the difference.**  ***5 – 4 = 1*** ***The difference between 5 and 4 is 1.***	**Children understand 'find the difference' as subtraction.**  ***10 – 4 = 6*** ***The difference between 10 and 6 is 4.***
Subtraction within 20	**Understand when and how to subtract 1s efficiently.** **Use a bead string to subtract 1s efficiently.**  ***5 – 3 = 2*** ***15 – 3 = 12***	**Understand when and how to subtract 1s efficiently.**  ***5 – 3 = 2*** ***15 – 3 = 12***	**Understand how to use knowledge of bonds within 10 to subtract efficiently.** ***5 – 3 = 2*** ***15 – 3 = 12***
Subtracting 10s and 1s	**For example: 18 – 12** **Subtract 12 by first subtracting the 10, then the remaining 2.**  ***First subtract the 10, then take away 2.***	**For example: 18 – 12** **Use ten frames to represent the efficient method of subtracting 12.**  ***First subtract the 10, then subtract 2.***	**Use a part-whole model to support the calculation.**  ***19 – 14*** ***19 – 10 = 9*** ***9 – 4 = 5*** ***So, 19 – 14 = 5***

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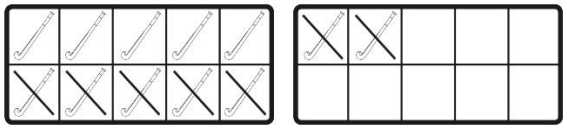
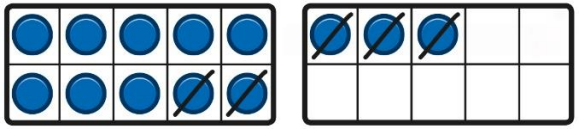
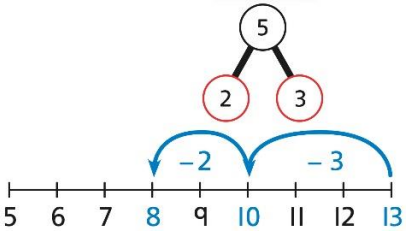
Subtraction bridging 10 using number bonds	**For example: 12 – 7** **Arrange objects into a 10 and some 1s, then decide on how to split the 7 into parts.**  ***7 is 2 and 5, so I take away the 2 and then the 5.***	**Represent the use of bonds using ten frames.**  ***For 13 – 5, I take away 3 to make 10, then take away 2 to make 8.***	**Use a number line and a part-whole model to support the method.** ***13 – 5*** 

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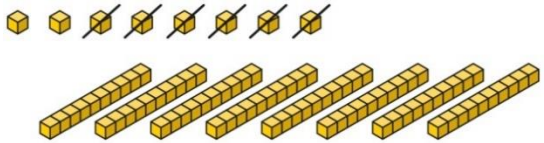
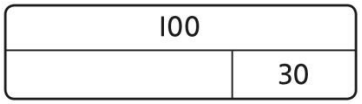
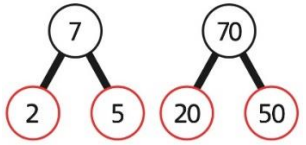
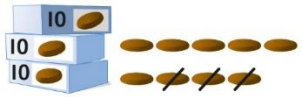
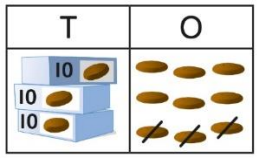
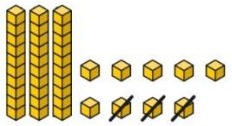
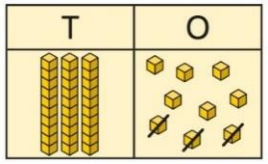
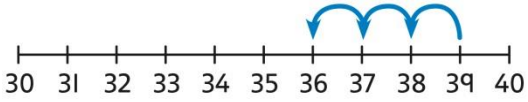
YEAR 2 SUBRACTION

	CONCRETE	PICTORIAL	ABSTRACT
Subtracting multiples of 10	**Use known number bonds and unitising to subtract multiples of 10.**  ***8 subtract 6 is 2.*** ***So, 8 tens subtract 6 tens is 2 tens.***	**Use known number bonds and unitising to subtract multiples of 10.**  ***10 – 3 = 7*** ***So, 10 tens subtract 3 tens is 7 tens.***	**Use known number bonds and unitising to subtract multiples of 10.**  ***7 tens subtract 5 tens is 2 tens.*** ***70 – 50 = 20***
Subtracting a single-digit number	**Subtract the 1s. This may be done in or out of a place value grid.**  	**Subtract the 1s. This may be done in or out of a place value grid.**  	**Subtract the 1s. Understand the link between counting back and subtracting the 1s using known bonds.**  T O 3 9 – 3 3 6 ***9 – 3 = 6*** ***39 – 3 = 36***

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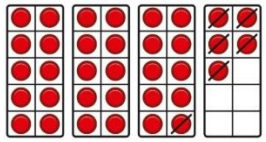
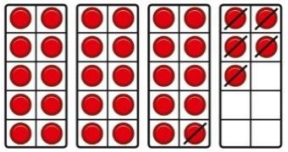
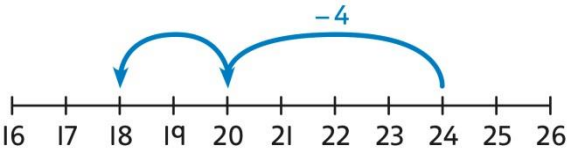
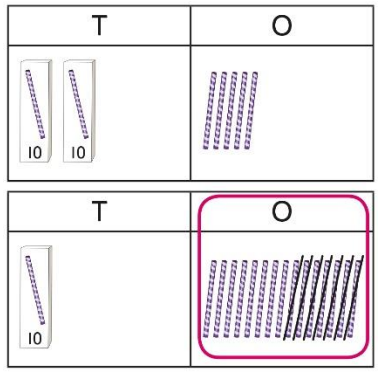
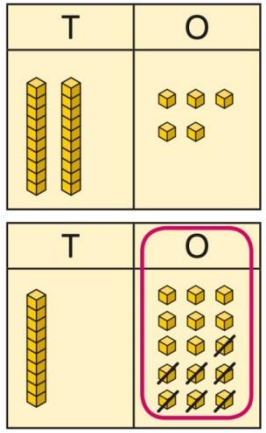
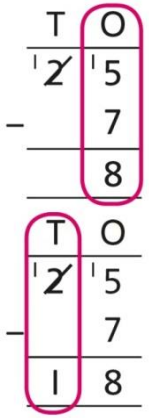
Subtracting a single-digit number bridging 10	**Bridge 10 by using known bonds.**  ***35 – 6*** ***I took away 5 counters, then 1 more.***	**Bridge 10 by using known bonds.**  ***35 – 6*** ***First, I will subtract 5, then 1.***	**Bridge 10 by using known bonds.**  ***24 – 6 = ?*** ***24 – 4 – 2 = ?***
Subtracting a single-digit number using exchange	**Exchange 1 ten for 10 ones. This may be done in or out of a place value grid.** 	**Exchange 1 ten for 10 ones.** 	**Exchange 1 ten for 10 ones.**  ***25 – 7 = 18***

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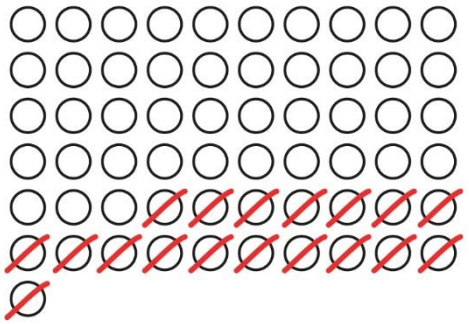
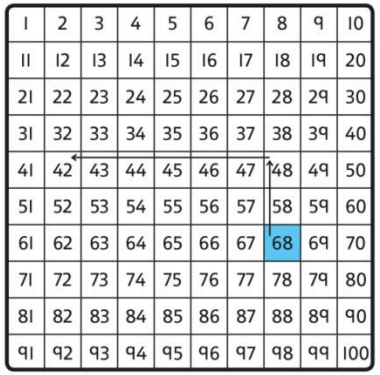
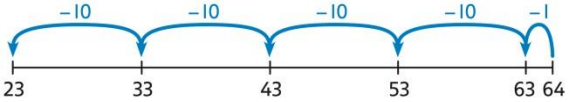
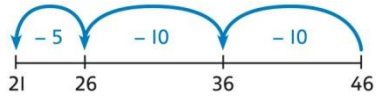
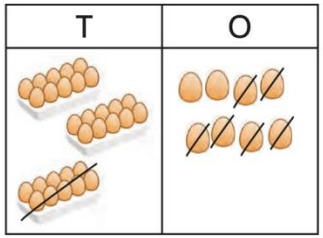
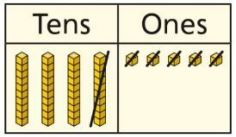
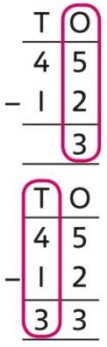
Subtracting a 2-digit number	**Subtract by taking away.**  ***61 – 18*** ***I took away 1 ten and 8 ones.***	**Subtract the 10s and the 1s.** **This can be represented on a 100 square.**  	**Subtract the 10s and the 1s.** **This can be represented on a number line.**  ***64 – 41 = ?*** ***64 – 1 = 63*** ***63 – 40 = 23*** ***64 – 41 = 23*** ***46 – 20 = 26*** ***26 – 5 = 21*** ***46 – 25 = 21*** 
Subtracting a 2-digit number using place value and columns	**Subtract the 1s. Then subtract the 10s. This may be done in or out of a place value grid.**  ***38 – 16 = 22***	**Subtract the 1s. Then subtract the 10s.**  	**Using column subtraction, subtract the 1s. Then subtract the 10s.** 

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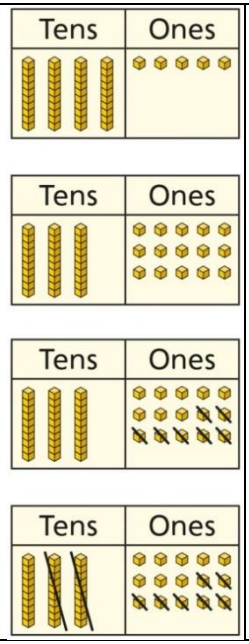
Subtracting a 2-digit number with exchange		**Exchange 1 ten for 10 ones.** **Then subtract the 1s.** **Then subtract the 10s.**	

Using column subtraction, exchange 1 ten for 10 ones.
Then subtract the 1s.
Then subtract the 10s.

T	O
4	5
− 2	7

T	O
$^{3}\not{4}$	$^{1}5$
− 2	7

T	O
$^{3}\not{4}$	$^{1}5$
− 2	7
	8

T	O
$^{3}\not{4}$	$^{1}5$
− 2	7
1	8

Maths Mastery Policy

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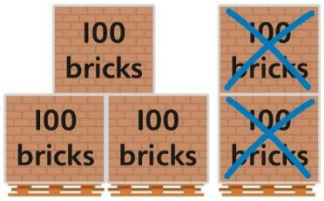
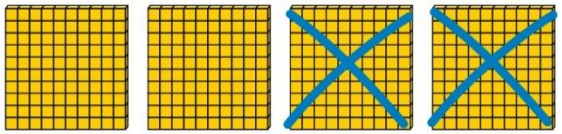
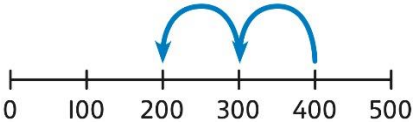
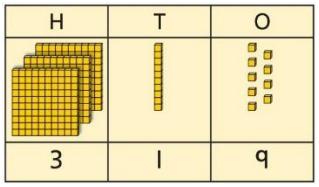
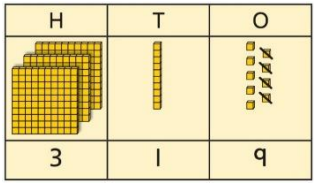
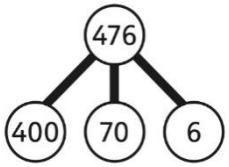
YEAR 3 SUBRACTION

	CONCRETE	PICTORIAL	ABSTRACT
Subtracting 100s	**Use known facts and unitising to subtract multiples of 100.**  ***5 – 2 = 3*** ***500 – 200 = 300***	**Use known facts and unitising to subtract multiples of 100.**  ***4 – 2 = 2*** ***400 – 200 = 200***	**Understand the link with counting back in 100s.**  ***400 – 200 = 200*** **Use known facts and unitising as efficient and accurate methods.** **I know that 7 – 4 = 3. Therefore, I know that 700 – 400 = 300.**
3-digit number – 1s, no exchange	**Use number bonds to subtract the 1s.**  ***214 – 3 = ?***  ***4 – 3 = 1*** ***214 – 3 = 211***	**Use number bonds to subtract the 1s.**  ***319 – 4 = ?***  ***9 – 4 = 5*** ***319 – 4 = 315***	**Understand the link with counting back using a number line.** **Use known number bonds to calculate mentally.** ***476 – 4 = ?***  ***6 – 4 = 2*** ***476 – 4 = 472***

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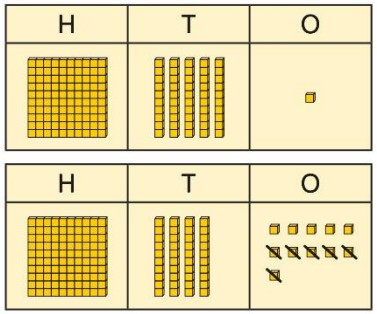
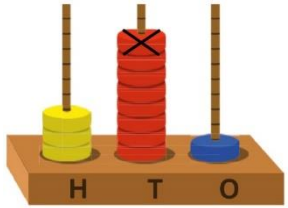
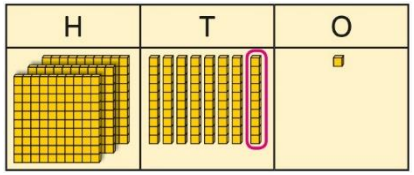
3-digit number – 1s, exchange or bridging required	**Understand why an exchange is necessary by exploring why 1 ten must be exchanged.** **Use place value equipment.**	**Represent the required exchange on a place value grid.** ***151 – 6 = ?*** 	**Calculate mentally by using known bonds.** ***151 – 6 = ?*** **151 – 1 – 5 = 145**
3-digit number – 10s, no exchange	**Subtract the 10s using known bonds.**  ***381 – 10 = ?*** ***8 tens with 1 removed is 7 tens.*** ***381 – 10 = 371***	**Subtract the 10s using known bonds.**  ***8 tens – 1 ten = 7 tens*** ***381 – 10 = 371***	**Use known bonds to subtract the 10s mentally.** ***372 – 50 = ?*** ***70 – 50 = 20*** ***So, 372 – 50 = 322***

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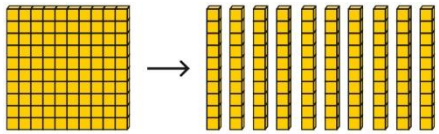
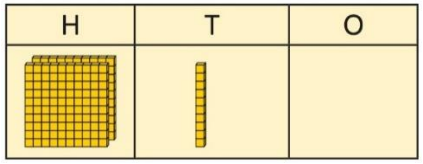
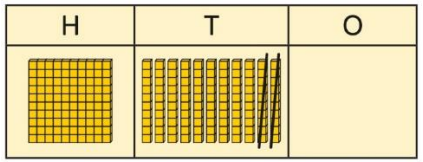
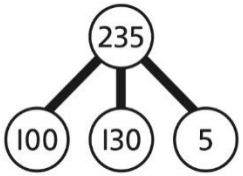
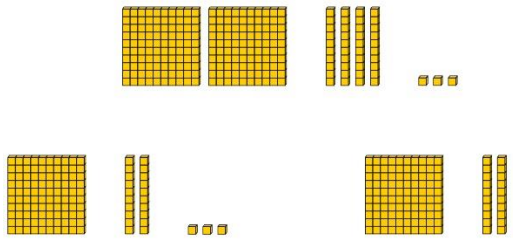
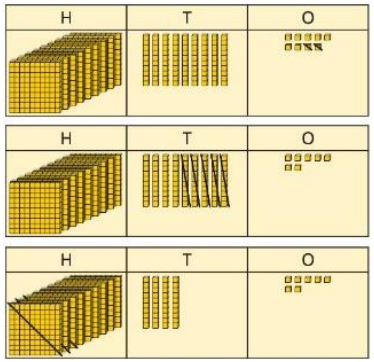
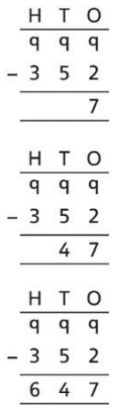
3-digit number – 10s, exchange or bridging required	**Use equipment to understand the exchange of 1 hundred for 10 tens.** 	**Represent the exchange on a place value grid using equipment.** ***210 – 20 = ?***  ***I need to exchange 1 hundred for 10 tens, to help subtract 2 tens.***  ***210 – 20 = 190***	**Understand the link with counting back on a number line.** **Use flexible partitioning to support the calculation.** ***235 – 60 = ?***  ***235 = 100 + 130 + 5*** ***235 – 60 = 100 + 70 + 5*** **= 175**
3-digit number – up to 3-digit number	**Use place value equipment to explore the effect of splitting a whole into two parts, and understand the link with taking away.** 	**Represent the calculation on a place value grid.**  	**Use column subtraction to calculate accurately and efficiently.** 

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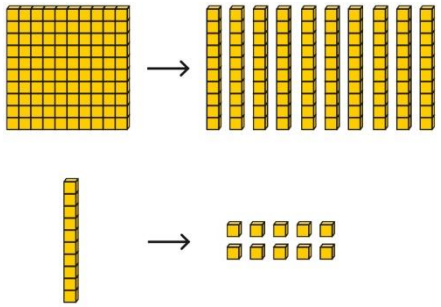
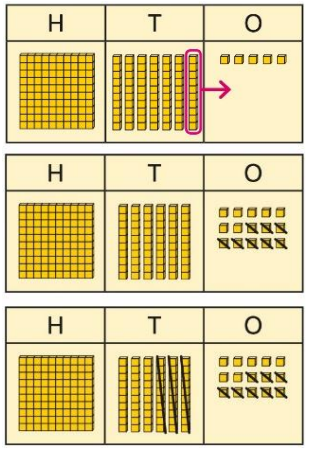
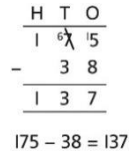
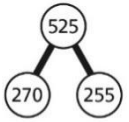
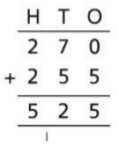
3-digit number – up to 3-digit number, exchange required	**Use equipment to enact the exchange of 1 hundred for 10 tens, and 1 ten for 10 ones.** 	***Model the required exchange on a place value grid.*** ***175 – 38 = ?*** ***I need to subtract 8 ones, so I will exchange a ten for 10 ones.*** 	**Use column subtraction to work accurately and efficiently.** **If the subtraction is a 3-digit number subtract a 2-digit number, children should understand how the recording relates to the place value, and so how to line up the digits correctly.**  175 – 38 = 137 **Children should also understand how to exchange in calculations where there is a zero in the 10s column.** 
Representing subtraction problems		**Use bar models to represent subtractions.** **'Find the difference' is represented as two bars for comparison.**  **Bar models can also be used to show that a part must be taken away from the whole.**	**Children use alternative representations to check calculations and choose efficient methods.** **Children use inverse operations to check additions and subtractions.** **The part-whole model supports understanding.**   ***I have completed this subtraction.*** ***525 – 270 = 255*** ***I will check using addition.***

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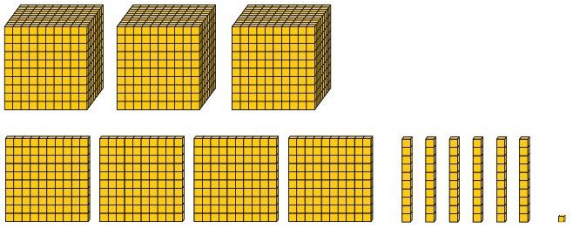
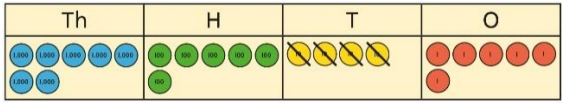
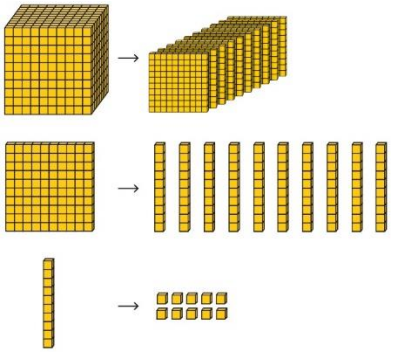
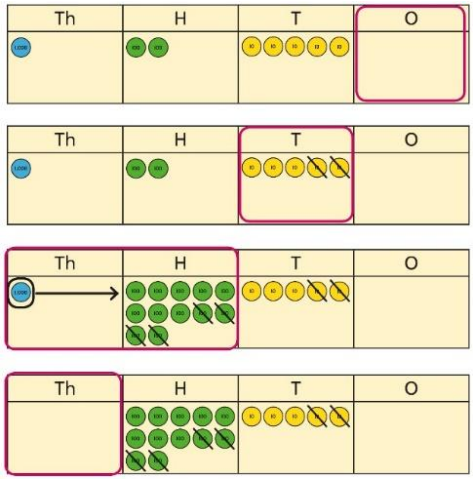
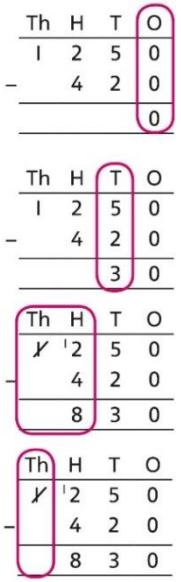
YEAR 4 SUBRACTION

	CONCRETE	PICTORIAL	ABSTRACT
Choosing mental methods where appropriate	**Use place value equipment to justify mental methods.**  ***What number will be left if we take away 300?***	**Use place value grids to support mental methods where appropriate.**  ***7,646 – 40 = 7,606***	**Use knowledge of place value and unitising to subtract mentally where appropriate.** ***3,501 – 2,000*** ***3 thousands – 2 thousands = 1 thousand*** **3,501 – 2,000 = 1,501**
Column subtraction with exchange	**Understand why exchange of a 1,000 for 100s, a 100 for 10s, or a 10 for 1s may be necessary.** 	**Represent place value equipment on a place value grid to subtract, including exchanges where needed.** 	**Use column subtraction, with understanding of the place value of any exchange required.** 

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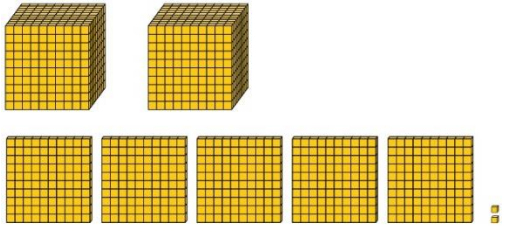
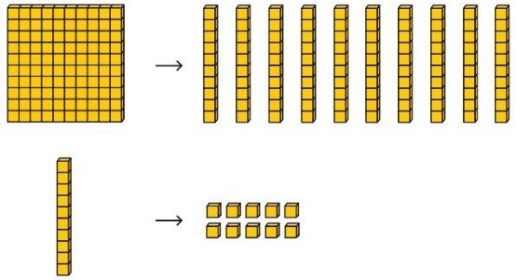
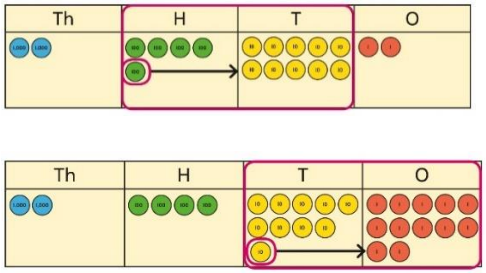
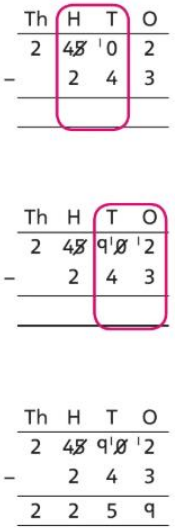
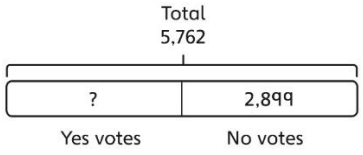
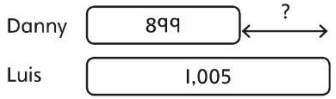
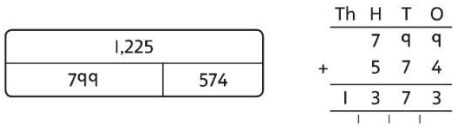
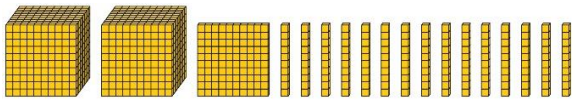
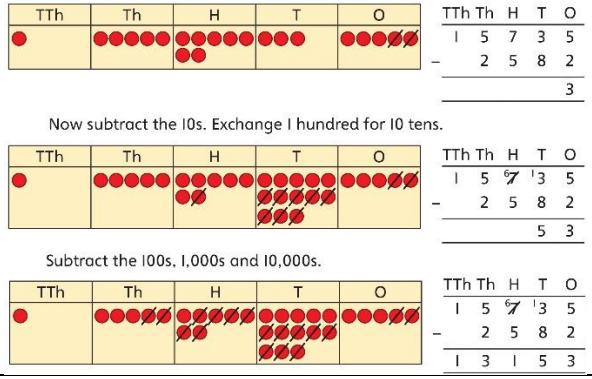
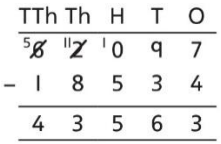
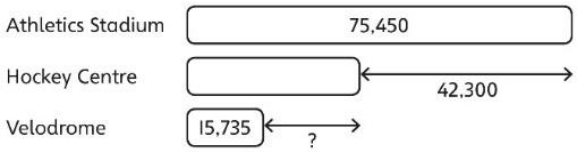
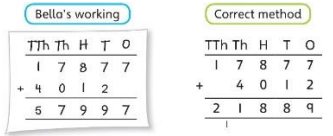
Column subtraction with exchange across more than one column	**Understand why two exchanges may be necessary.** ***2,502 – 243 = ?***  ***I need to exchange a 10 for some 1s, but there are not any 10s here.*** 	**Make exchanges across more than one column where there is a zero as a place holder.** ***2,502 – 243 = ?*** 	**Make exchanges across more than one column where there is a zero as a place holder.** ***2,502 – 243 = ?*** 
Representing subtractions and checking strategies		**Use bar models to represent subtractions where a part needs to be calculated.** ***I can work out the total number of Yes votes using 5,762 – 2,899.***  **Bar models can also represent 'find the difference' as a subtraction problem.** 	**Use inverse operations to check subtractions.** ***I calculated 1,225 – 799 = 574.*** ***I will check by adding the parts.***  ***The parts do not add to make 1,225.*** ***I must have made a mistake.***

Maths Mastery Policy

YEAR 5 SUBRACTION

	CONCRETE	PICTORIAL	ABSTRACT
Column subtraction with whole numbers	**Use place value equipment to understand where exchanges are required.** ***2,250 – 1,070*** 	**Represent the stages of the calculation using place value equipment on a grid alongside the calculation, including exchanges where required.** ***15,735 – 2,582 = 13,153***  	**Use column subtraction methods with exchange where required.**  **62,097 – 18,534 = 43,563**
Checking strategies and representing subtractions		**Bar models represent subtractions in problem contexts, including 'find the difference'.**  	**Children can explain the mistake made when the columns have not been ordered correctly.**  **Use approximation to check calculations.** ***I calculated 18,000 + 4,000 mentally to check my subtraction.***

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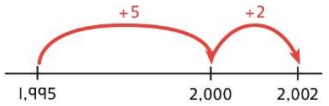
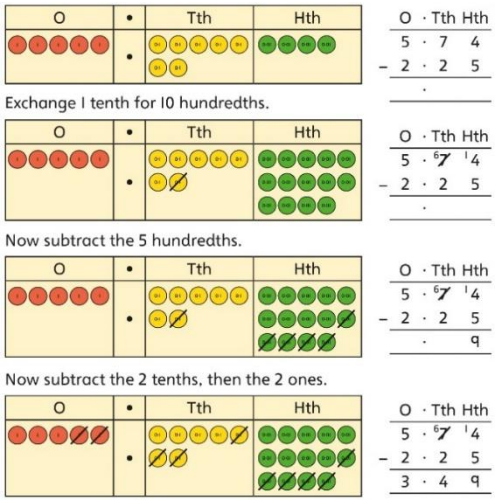
Choosing efficient methods			**To subtract two large numbers that are close, children find the difference by counting on.** ***2,002 – 1,995 = ?***  **Use addition to check subtractions.** ***I calculated 7,546 – 2,355 = 5,191.*** ***I will check using the inverse.***
Subtracting decimals	**Explore complements to a whole number by working in the context of length.**  1 m – ☐ m = ☐ m ***1 – 0·49 = ?***	**Use a place value grid to represent the stages of column subtraction, including exchanges where required.** ***5·74 – 2·25 = ?***  	**Use column subtraction, with an understanding of place value, including subtracting numbers with different numbers of decimal places.** ***3·921 – 3·75 = ?*** O · Tth Hth Thth 3 · 9 2 1 – 3 · 7 5 0

Maths Mastery Policy

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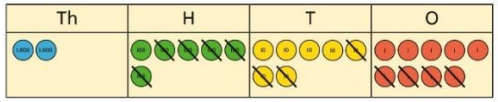
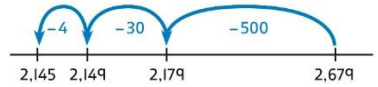
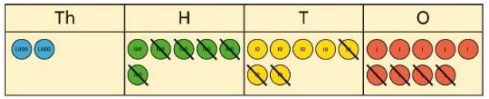
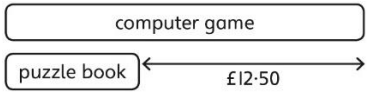
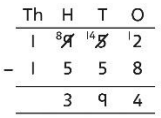
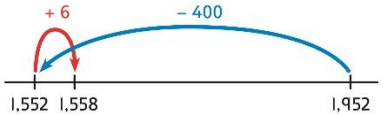
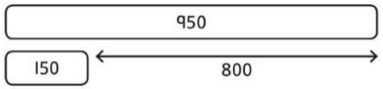
YEAR 6 SUBRACTION

	CONCRETE	PICTORIAL	ABSTRACT
Comparing and selecting efficient methods	**Use counters on a place value grid to represent subtractions of larger numbers.** 	**Compare subtraction methods alongside place value representations.**   Th H T O 2 6 7 9 − 5 3 4 2 1 4 5 **Use a bar model to represent calculations, including 'find the difference' with two bars as comparison.** 	**Compare and select methods.** **Use column subtraction when mental methods are not efficient.** **Use two different methods for one calculation as a checking strategy.**   **Use column subtraction for decimal problems, including in the context of measure.** H T O · Tth Hth 3 0 9 · 6 0 − 2 0 6 · 4 0 1 0 3 · 2 0
Subtracting mentally with larger numbers		**Use a bar model to show how unitising can support mental calculations.** ***950,000 − 150,000*** ***That is 950 thousands − 150 thousands***  ***So, the difference is 800 thousands.*** ***950,000 − 150,000 = 800,000***	**Subtract efficiently from powers of 10.** ***10,000 − 500 = ?***