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#### <u>Rationale:</u>

This policy lays out the expectations for mental calculations and has been created to support the teaching of a mastery approach to mathematics in line with the National Curriculum and the White Rose scheme, which forms the framework of our curriculum through its long- and medium-term planning outline and small steps. This is underpinned by the use of models and images that support conceptual understanding and this policy promotes a range of representations to be used across EYFS, KS1 and KS2. For more information on these representations with examples, please refer to our written calculation policies.

#### <u>A Mastery Approach:</u>

A mastery approach to learning involves the following five "big ideas" of effective maths teaching:

Coherence -	a coherent learning progression offering deep and connected understanding
Representation and Structure	concrete, pictorial and abstract representations are carefully structured to help pupils "see the maths"
Mathematical Thinking -	looking for patterns and relationships, making connections, conjecturing, reasoning and generalising, communicating ideas using precise vocabulary
Fluency	efficient, accurate recall of key number facts and procedures, allowing pupils to move between different contexts and representations, choosing strategies
Variation	conceptual variation presents different representations of key features, while procedural variation presents different ways of proceeding through the learning journey (via scaffolding and support, etc)

#### <u>Concrete – Pictorial – Abstract:</u>

Mathematical understanding is developed through use of representations that are initially concrete (e.g. counters, multilink cubes, dienes, etc), and then pictorial (e.g. part-whole models, place value columns with images of counters in them, etc) to then facilitate abstract working (e.g. formal written methods).

This policy is a guide through an appropriate progression of representations. If at any point a pupil is struggling with the abstract, they should revert to familiar pictorial and/or concrete materials/representations as appropriate. As children move through the different stages, representations should be modelled alongside each other to ensure a secure understanding is maintained. Children should only move onto the abstract method when they have a secure understanding of the concept through an appropriate concrete and pictorial representation. This policy should be used in conjunction with the St Anne's Mathematics policy, our Written Calculation Policies and the White Rose calculation policy, as well as our Key Instant Recall Facts documents, which we share with our families to supplement the learning children receive in school. Teachers are also encouraged to refer to the NCETM Ready-To-Progress Criteria resources in ascertaining when children are ready to move on to new learning.

#### Vocabulary:

Children will continually recap vocabulary learned in previous years to ensure that their understanding and usage of the terminology is fully developed, broad and specific in application. Vocabulary from previous years is included in each year group's columns in black, while new vocabulary that may not have been previously encountered is in green. Teachers are encouraged to check this list of vocabulary at the beginning and end of a relevant unit to ensure that they are modelling the full breadth and depth of vocabulary to the children, and that the children are using it in their verbal and written responses accurately and confidently.

Please see appendix 4 of the written calculation policies for notes on precise vocabulary, and for a comprehensive glossary, please see the separate document "NCETM Maths Glossary KS1-KS3" which is saved in PDF format with our calculation policies in the shared area.

#### <u>Contents:</u>

Mental Calculations in Reception	-	-	-	-	-	-	-	-	р3
Mental Calculations in Year 1 -	-	-	-	-	-	-	-	-	p4
Mental Calculations in Year 2-	-	-	-	-	-	-	-	-	р6
Mental Calculations in Year 3-	-	-	-	-	-	-	-	-	p8
Mental Calculations in Year 4-	-	-	-	-	-	-	-	-	p10
Mental Calculations in Year 5-	-	-	-	-	-	-	-	-	p12
Mental Calculations in Year 6-	-	-	-	-	-	-	-	-	p14

#### Mental Calculations in Reception

Place Value	Addition	Subtraction	Multiplication	Division
<u></u>				
Count objects, actions	Link the number	Take away a single	Jump along a number	Share objects into
and sounds.	symbol (numeral) with	number.	line in steps of	equal groups.
	its cardinal number			
Subitise	value.	Find one less than a	Look at patterns and	Recognise patterns.
		given number.	counting.	
Vocabulary:	Find one more than a			<u>Vocabulary:</u>
1	given number.	Recognise some	Grouping objects,	· · ·
subitise	Recall number bonds	relationships between	counting groups of the same size.	groups of, grouping,
count	to 10.	numbers and patterns.	the same size.	sharing,
number	10 10.	Count backwards in	Double numbers.	share, shared,
(1, 2, 3, etc)	Double numbers.	ones.	Double number 3.	each,
order	Double number 5.	unes.	Talk about odds and	equal,
compare	Vocabulary:	Vocabulary:	evens.	equally,
bigger				same size,
larger	add,	take (away),	Vocabulary:	same amount
biggest	more,	leave,		
smaller	altogether,	how many are	odd,	
smallest	total,	left/left over?	even,	
in the middle	double,	how many have gone?	double,	
forwards	count up/on,	one less,	groups of, ones,	
backwards	and,	two less,	twos,	
first, second, etc	make,	ten less,	tens,	
,,	part,	how many fewer is	count in	
	whole	than?		
		difference between,		
		is the same as		

			1		[
Key Instant Recall Facts	<u>Place Value</u>	<u>Addition</u>	<u>Subtraction</u>	<u>Multiplication</u>	<u>Division</u>
<b>Autumn 1:</b> Number bonds to 5	Count to and	Add one-digit and two-digit	Subtract one-	<u>Vocabulary:</u>	Find $\frac{1}{2}$ and $\frac{1}{4}$ of
Number bonds to 5	across 100, forward and	numbers to 20,	digit and two- digit numbers to	odd, even,	a set of objects
Autumn 2:	backwards,	including zero	20, including		<u>Vocabulary:</u>
Number bonds to 10	beginning with	mendaring zero	zero	double, groups	<u>vocubulary.</u>
	0 or 1, or from	Vocabulary:		of, ones, twos,	groups of,
Spring 1:	any given		<u>Vocabulary:</u>	threes,	grouping,
Recognise numbers to 50	number	add, more,		fives, tens,	sharing,
		altogether,	take (away),	count in,	share, shared,
Spring 2:	Count in	total,	leave, how many	(forwards	each,
Know halves and doubles to 10	multiples of	double,	are left/left	from/	in pairs,
10 10	twos, fives and tens	count up/on,	over? how many	backwards	ins,
Summer 1:	Tens	and, make,	have gone? one	from),	equal,
Know number bonds for	Count and read	part, whole,	less, two less,	how many	equally, same
each number up to 10	numbers to 100	plus,	ten less, how	times,	size, same
	in numerals	equals,	many fewer is	lots of,	
Summer 2:		equal to,	than?	groups of,	amount, division, divide,
Tell the time to the	Read numbers	number line,	difference	once,	
nearest half an hour	from 1 to 20 in	number bond	between, is the	twice,	divided by, dividing, divided
	numerals and words		same as	times,	into
Rapid Recall	words		minus,	multiple/s of	
	Given a number,		subtract,	/	
Represent and use	identify one		how much less	times,	
number bonds and related subtraction facts within	more and one		is?	multiply,	
20	less		half,	multiplied by,	
20			halve,	repeated	
Doubles of numbers to 10	Find 10 more		equals,	addition,	
	and 10 less of		equais,	array,	
Near doubles of numbers	numbers to 100			row,	
to 10	Order numbers			column	
	to 100				
Recall number bonds 1-10					
Recognise odd and even	<u>Vocabulary:</u>				
numbers to 20	aubitian naunt				
	subitise, count, number				
Partition and combine a	(1, 2, 3, etc),				
two digit number - tens	order, compare				
and ones.	bigger, larger				
	biggest, smaller				
Know pairs of multiples of	smallest, in the				
10 up to 100 (e.g. 40+60,	middle, forwards,				
70+30 etc.)	backwards, first,				
Find half of any	second, etc				
Find half of even numbers to 20 using	multiples,				
knowledge of doubling to	value,				
help.	numeral,				
	more,				
	greater,				
	less,				

in	equality sign,		
	equal,		
	same,		
	part-whole		
	model,		
r	number line,		
nu	umber track,		
	bar model,		
1	00-square,		
	place value,		
	column,		

Key Instant Recall	Place Value	Addition	<u>Subtraction</u>	Multiplication	Division
Facts				•	
	Count in steps of	<b>A d d u</b> u u u <b>b u</b> u <b>a</b>	Culture	Recall and use	Recall and use
Autumn 1:	2, 3, and 5 from	Add numbers	Subtract	multiplication	division facts
Number bonds to 20	0	mentally,	numbers	facts for the 2,	for the 2, 5 and
		including:	mentally,	5 and 10	10 multiplication
Autumn 2:	Count in tens	- a two-digit number and ones	including:	multiplication	tables, including
Doubles and halves for	from any		- a two-digit number and ones	tables, including	recognising odd
numbers to 20	number, forward	eg. 27 + 6	eq. 27-6	recognising odd	and even
	or backward	- a two-digit	eg. 27-0	and even	numbers
Spring 1:		number and tens	Subtract a two-	numbers	
2x table (x and ÷)	Read numbers to	eg 36 +20	digit number and		Divide any
	at least 100 in	eg 30 +20	tens eg 36-20	Show that	multiple of 10 by
Spring 2:	numerals and in	- two two-digit		multiplication of	10
10x table (x and ÷)	words	numbers	Subtract two	two numbers can	
			two-digit	be done in any	<u>Vocabulary:</u>
Summer 1:	Compare and	- adding three	numbers	order	
5x table (x and ÷)	order numbers	one-digit	(crossing 10s	(commutative)	groups of,
	from O up to	numbers	boundaries)		grouping,
Summer 2:	100; use <, > and		,	Multiply single	sharing,
Tell the time to the	= signs	- Add near	Vocabulary:	digit by x10 and	share, shared,
nearest 5 minutes		multiple of 10		use zero as a	each, in
<u>Rapid Recall</u>	Recognise the place value of	eg 9,19 11,	subtract,	place holder	pairs, ins,
Recall and use addition	each digit in a	21.	subtraction,	Vocabulary:	
and subtraction facts to	two-digit		take (away),	<u>vocabalal y.</u>	equal,
20 fluently	number (tens,	<u>Vocabulary:</u>	leave, how many	odd, even,	equally, same
	ones)		are left/left	double, groups	size, same
Derive and use related		add, more,	over? how many	of, ones, twos,	amount,
facts up to 100	Count in halves		•		division,
eg-Pairs of multiples	eg ½,1, 1 1/2 , 2,	altogether,	have gone? one	threes,	divide,
of 10 eg.	2 <sup>1</sup> / <sub>2</sub>	total, double,	less, two less,	fives, tens,	divided by,
30 + 70= 100		count up/on,	ten less, one	count in,	dividing, divided
60 + ? = 100	Round to	and, make, part,	hundred less,	(forwards	into,
	nearest 10	whole, plus,	how many or	from/backwards	left (over),
Derive all bonds to 100.		equals, equal to,	fewer is	from), how many	array
	<u>Vocabulary:</u>	number line,	than?	times, lots of,	array
Doubles of all numbers		digit,	difference	groups of, once,	
to 20	subitise, count,	tens,	between, is the	twice,	
Doubles of multiples of	number		same as	times, multiple/s	
10 and 5 eg 40+40 or	(1, 2, 3, etc),	ones,			
35+35	order, compare	greater than,	minus, subtract,	of <u> </u> , times,	
Lielf of even work and to	bigger, larger	less than,	how much less	multiply,	
Half of even numbers to	biggest, smaller	operation,	is? half, halve,	multiplied by,	
20 Half of multiples of 10	smallest, in the	partition,	equals, tens	repeated	
eg half of 60= 30, 90=45	middle, forwards,	recombine,	boundary,	addition, array,	
eg half of 00- 30, 90-45	backwards, first,	represents,	regroup,	row, column,	
Odd and even numbers	second, etc multiples, value,	inverse	exchange,	commutative	
to 100			inverse	law,	
	numeral, more, greater, less,				
To know what to add to a	inequality sign,				
number to reach the	equal, same,				
next multiple of 10 (e.g.	part-whole model,				
32+=40)	number line,				

number track, bar		
model, 100-square,		
place value,		
column,		
digit		
round		
rounding		

Key Instant Recall	Place Value	Addition	Subtraction	Multiplication	Division
Facts				<b>_</b>	
	Count from 0 in			Recall and use	Recall and use
Autumn 1:	multiples of 2, 3,	Add numbers	Subtract	multiplication	multiplication
Number bonds for each	<u>4, 5, 8, 10, 50</u>	mentally,	numbers	facts for the 2,	and division
number to 20	and <u>100</u>	including:	mentally,	<u>3, 4,</u> 5, <u>8</u> and 10	facts for the 2,
		- a three-digit number and ones	including a 3- digit number and	multiplication	<u>3, 4</u> , 5, <u>8</u> and 10
Autumn 2:	Read and write	eg 327 + 8	ones, e.g. 327 -	tables	and 10
3x table (x and ÷)	numbers to 1000	eg 527 + 0	8		multiplication
	in numerals and	- a three-digit	0	Multiple 2 digit	tables
Spring 1:	in words	number and tens	Subtract a 3-	numbers	
4x table (x and ÷)		428 + 40	digit number and	numbers by x10	Divide any
	Compare and		tens 428 - 40	and x100 using	multiple of 10 by
Spring 2:	order numbers	- a three-digit		zero as a place	10 eg 30÷ 10
8x table (x and ÷)	up to 1000	number and	Subtract a 3-	holder	Divide any
<b>C</b>		hundreds 368	digit number and	AA 11 1 1	multiple of 100
Summer 1: Recall facts about	Find 10 or 100	+200	hundreds 368 -	Multiplying a	by 10 or 100 eg 2400÷100
durations of time	more or less		200	single digit number by a	2400÷100
durations of time	than a given	<u>Vocabulary:</u>		multiple of 10 eg	Give ½ , ¼ , 1/5,
Summer 2:	number		<u>Vocabulary:</u>	7 x 30;	1/3 of any 2
Tell the time to the				7 × 30,	digit number
nearest minute	Recognise the	add, more,	subtract,	<u>Vocabulary:</u>	aigir namber
	place value of	altogether,	subtraction,	<u></u>	Vocabulary:
<u>Rapid Recall</u>	each digit in a	total, double,	take (away),	odd, even,	<u>· · · · · · · · · · · · · · · · · · · </u>
Recall of all bonds to	three-digit number	count up/on,	leave, how many	double, groups	groups of,
100 (multiples of 5 and	(hundreds, tens,	and, make, part,	are left/left	of, ones, twos,	grouping,
100 (multiples of 5 and 10)	ones)	whole, plus, equals, equal to,	over? how many	threes,	sharing,
10)	01103)	number line,	have gone? one	-	share, shared,
Double of all numbers to	Round to the	digit, tens, ones,	less, two less,	fives, tens,	
at least 20 and related	nearest 10, 100	greater than,		count in,	each, in
halves. Eg half of 5 is		less than,	ten less, one	(forwards	pairs, ins,
2.5	Count up and	operation,	hundred less,	from/backwards	equal,
	down in	partition,	how many or	from), how many	equally, same
	tenths;	recombine,	fewer is	times, lots of,	size, same
	recognise that	represents,	than?	groups of, once,	amount,
	tenths arise	inverse,	difference	twice,	division, divide,
	from dividing	hundreds,	between, is the	times, multiple/s	divided by,
	an object into 10	increase,	same as,	of, times,	dividing, divided
	equal parts and	expanded,	minus, subtract,	multiply,	into, left (over),
	in dividing one- digit numbers or	digits, augend,	how much less	multiplied by,	array,
	quantities by 10	addend, sum	is? half, halve,	repeated	guess,
	quantities by 10		equals, tens	•	estimate,
	Vocabulary:		boundary,	addition, array,	remainder,
			hundreds	row, column,	approximate,
	subitise, count,			commutative law,	approximately
	number		boundary,	multiplicand,	*
	(1, 2, 3, etc),		regroup,	multiplier,	
	order, compare		exchange,	product,	
	bigger, larger		inverse,	scale up,	
	biggest, smaller		minuend,	regroup,	
	smallest, in the		subtrahend,	exchange,	
	middle, forwards,		decrease,	er er lange,	
	backwards, first,		inverse		
	second, etc				

number line,	el,		
bar model, 100 square, place value, column, digit, round, rounding. hundreds, partition,			

Key Instant Recall	Place Value	Addition	Subtraction	Multiplication	Division
Facts		<u>//dd///d/</u>			
1.0010	Count in	Add and	Estimate and use	Recall	Recall division
Autumn 1:	multiples of 6, 7,	subtract	inverse	multiplication	facts for
Number bonds of 100	9, 25 and 1000	fractions with	operations to	facts for	multiplication
		the same	check answers	multiplication	tables up to 12 ×
Autumn 2:	Order and	denominator	to a calculation	tables up to 12 ×	12
6x and 9x tables (x and	compare			12	
÷)	numbers beyond	Know pairs of	Vocabulary:		Estimate and use
	1000	fractions that		Use place value,	inverse
Spring 1:		total 1.	subtract,	known and	operations to
7x and 11x tables (x and	Find 1000 more	10147 1.	subtraction,	derived facts to	check answers
÷)	or less than a		take (away),	multiply	to a calculation
	given number	Work out what	leave, how many	mentally,	
Spring 2:		must be added	are left/left	including:	Use place value,
All times tables up to	Recognise the	to any three		multiplying by 0	known and
12×12 (× and ÷)	place value of	digit number to	over? how many	and 1;	derived facts to
6	each digit in a	make the next	have gone? one		divide mentally,
Summer 1:	four-digit	multiple of 100	less, two less,	Multiply	including:
Multiply and divide a	number	(e.q. 521 + =	ten less, one	multiples of 10	dividing by 1;
single digit by 10 and 100	(thousands,		hundred less,	by multiples of	
100	hundreds, tens	600)	how many or	10 eg 60 x 20	Find the effect
Summer 2:	and ones)		fewer is	معنيا منتساب المتسم	of dividing a
Recognise simple	Downdow	<u>Vocabulary:</u>	than?	Multiplying	one- or two-digit
equivalent fractions	Round any number to the		difference	together three numbers eg 3 x	number by 10 and 100,
Rapid Recall	nearest 10, 100	add, more,		4 x 5	identifying the
	or 1000	altogether,	between, is the	4 × 5	value of the
Recall of all bonds to	01 1000	total, double,	same as,	Recognise and	digits in the
100 (multiples of 5 and	Count backwards	count up/on, and,	minus, subtract,	use factor pairs	answer as ones,
10)	through zero to		how much less	and	tenths and
	include negative	make, part,	is? half, halve,	commutativity in	hundredths
Double of all numbers to	numbers	whole, plus,	equals, tens	mental	
at least 20 and related		equals, equal to,	boundary,	calculations	Vocabulary:
halves. Eg half of 5 is	Count up and	number line,	hundreds		<b>i</b>
2.5	down in	digit, tens, ones,	boundary,	Vocabulary:	
	hundredths;	greater than,	ones boundary,		groups of,
	recognise that	less than,		odd, even,	grouping,
	hundredths arise	operation,	tenths boundary	double, groups	sharing,
	when dividing an	partition,	(etc), regroup,	of, ones, twos,	share, shared,
	object by a	recombine,	exchange,	threes,	each, in
	hundred and		inverse,	fives, tens,	
	dividing tenths	represents,	minuend,	count in,	pairs, ins,
	by ten	inverse,	subtrahend,		equal,
		hundreds,	decrease,	(forwards	equally, same
	Recognise and	increase,	inverse	from/backwards	size, same
	write decimal	expanded, digits,		from), how many	amount,
	equivalents to $\frac{1}{4}$ ,	augend, addend,		times, lots of,	division, divide,
	$\frac{1}{2}, \frac{3}{4}$	sum,		groups of, once,	divided by,
	Recognise and	thousands,		twice,	dividing, divided
	write decimal	decimal,		times, multiple/s	into, left (over),
	equivalents of	decimal place,		of, times,	
	any number of			multiply,	array, guess,
	tenths or	decimal point,		• •	estimate,
	hundredths	tenths		multiplied by,	remainder,
		1	I	L	l

Derived de classificada		repeated	approximate,
Round decimals with one decimal		addition, array,	approximately,
		row, column,	commutative
place to the nearest whole		commutative law,	(law),
number		multiplicand,	commutativity,
number		multiplier,	regroup,
Compare		product, scale	exchange
numbers with		up, regroup,	
the same number		exchange,	
of decimal		multiplication	
places up to two			
decimal places		facts,	
		division facts,	
<u>Vocabulary:</u>		inverse,	
		derive	
subitise, count,			
number			
(1, 2, 3, etc),			
order, compare			
bigger, larger			
biggest, smaller			
smallest, in the			
middle, forwards,			
backwards, first,			
second, etc,			
multiples, value,			
numeral, more,			
greater, less,			
inequality sign,			
equal, same,			
part-whole model,			
number line,			
number track, bar			
model, 100-square,			
place value,			
column, digit,			
round, rounding, hundreds,			
partition,			
thousands,			
positive,			
negative,			
hundredths,			
decimal,			
decimal point,			
decimal place,			
acciliar piace,			
	I		

Key Instant Recall	Place Value	Addition	Subtraction	Multiplication	Division
Facts	riace value		Jubinaction	Multiplication	DIVISION
racis	Count forwards	Add numbers	Subtract	Multiply	Divide numbers
Autumn 1:	or backwards in	mentally with	numbers	numbers	mentally drawing
Find factor pairs of a	steps of powers	increasingly	mentally with	mentally drawing	upon known
number	of 10 for any	large numbers	increasingly	upon known	facts
	given number up		large numbers	facts	10010
Autumn 2:	to 1000000	Add fractions		•	Divide whole
Recognise prime		with the same	Subtract	Multiply whole	numbers and
numbers up to 20	Read, write,	denominator and	fractions with	numbers and	those involving
	order and	denominators	the same	those involving	decimals by 10,
Spring 1:	compare	that are	denominator and	decimals by 10,	100 and 1000
Recognise equivalent	numbers to at	multiples of the	denominators	100 and 1000	
fractions and decimals	least 1 000 000	same number	that are		<u>Vocabulary:</u>
			multiples of the	<u>Vocabulary:</u>	
Spring 2:	Determine the	Know what to	same number		groups of,
Decimal number bonds	value of each	add to a decimal	Kingu and	odd, even,	grouping,
to 1 and 10	digit in numbers	with units and	Know sums and	double, groups	sharing,
Summer 1:	up to 1 000 000	tenths to make	differences of	of, ones, twos,	share, shared,
Metric conversion	Round any	the next whole	decimals (e.g.	threes,	each, in
	number up to	number (e.g. 7.2	6.5 + 2.7)	fives, tens,	pairs, ins,
Summer 2:	1 000 000 to the	+ = 8)		count in,	equal,
Square numbers to 12	nearest 10, 100,	· = 0)	Vocabulary:	(forwards	equally, same
and their square roots	1000, 10 000	Know what to		from/backwards	size, same
	and 100 000		subtract,	from), how many	amount,
Rapid Recall		add to a four	subtraction,	times, lots of,	division, divide,
	Interpret	digit number to	take (away),	groups of, once,	
Identify multiples and	negative	make the next	leave, how many	•	divided by,
factors, including	numbers in	multiple of 1000	are left/left	twice,	dividing, divided
finding all factor pairs	context, count	(e.g. 4087 +		times, multiple/s	into, left (over),
of a number and common	forwards and	= 5000)	over? how many	of <u> </u> , times,	array, guess,
factors of two numbers	backwards with		have gone? one	multiply,	estimate,
Establish whether a	positive and negative whole	Know sums and	less, two less,	multiplied by,	remainder,
number up to 100 is	numbers,	differences of	ten less, one	repeated	approximate,
prime and recall prime	including	decimals (e.g.	hundred less,	addition, array,	approximately,
numbers up to 19	through zero	6.5 + 2.7)	how many or	row, column,	commutative
		0.3 + 2.7 )	fewer is	commutative law,	(law),
Recall square numbers	Read and write		than?	multiplicand,	commutativity,
and cube numbers to 12	decimal numbers	<u>Vocabulary:</u>	difference	multiplier,	regroup,
	as fractions	add, more,	between, is the	product, scale	exchange,
Double and halve	[e.g.: 0.71 =	altogether,	same as,	up, regroup,	factor,
numbers up to 1000	71/100]	total, double,	minus, subtract,	exchange,	-
		count up/on, and,	how much less	multiplication	multiple,
	Recognise and	make, part,	is? half, halve,	facts,	square,
To know number bonds	use thousandths and relate them	whole, plus,	equals, tens	-	cube,
to 1000 in multiples of 5	to tenths,	equals, equal to,		division facts,	scale (by),
or 10.	hundredths and	number line,	boundary,	inverse,	scaling (by),
	decimal	digit, tens, ones,	hundreds	derive,	simple fraction,
	equivalents	greater than,	boundary,	most efficient	decimal
		less than,	thousands	method	remainder,
	Round decimals	operation,	boundary (etc),		simple rate
	with two decimal	partition, recombine,	ones boundary,		
	places to the				
		represents,			

ا جانب المومومو	inverse		
nearest whole	inverse,	tenths boundary	
number and to	hundreds,	(etc), regroup,	
one decimal	increase,	exchange,	
place	expanded, digits,	inverse,	
	augend, addend,	minuend,	
Read, write,	sum, thousands,	subtrahend,	
order and	decimal, decimal	decrease,	
compare	place, decimal	inverse, negative	
numbers with up	point, tenths	inverse, negative	
to three decimal			
places			
Use mental			
rounding to			
estimate and			
check answers			
<u>Vocabulary:</u>			
subitise, count,			
number			
(1, 2, 3, etc),			
order, compare			
bigger, larger			
biggest, smaller			
smallest, in the			
middle, forwards,			
backwards, first,			
second, etc,			
multiples, value,			
numeral, more,			
greater, less,			
inequality sign,			
equal, same,			
part-whole model,			
number line,			
number track, bar			
model, 100-square,			
place value,			
column, digit,			
round, rounding,			
hundreds,			
partition,			
thousands,			
positive, negative,			
hundredths,			
decimal,			
decimal point,			
decimal place,			
millions,			

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Key Instant Recall	<u>Place Value</u>	<u>Addition</u>	<u>Subtraction</u>	<u>Multiplication</u>	<u>Division</u>
<u>Facts</u>	Developments	Devices we set al	Des Commente I		Des Commente I
Autumn 1:	Read, write, order and	Perform mental	Perform mental	Perform mental	Perform mental
Identify common		calculations,	calculations,	calculations,	calculations,
factors of a pair of	compare numbers up to	including with mixed	including with mixed	including with mixed	including with mixed
numbers	10 000 000	operations and	operations and	operations and	operations and
numbers	10 000 000	large numbers	large numbers	large numbers	large numbers
Autumn 2:	Determine the	iai ye namber s	la ge number s	idi ye number s	la ge namber s
Convert between	value of each	Add fractions	Subtract	Multiply	Divide numbers
fractions, decimals and	digit in numbers	with different	fractions with	numbers by 10,	by 10, 100 and
percentages	up to 10 000	denominators	different	100 and 1000	1000 giving
	000	and mixed	denominators	giving answers	answers up to
Spring 1:		numbers, using	and mixed	up to three	three decimal
Find a fraction of an	Round any whole	the concept of	numbers, using	decimal places	places
amount	number to a	equivalent	the concept of		
	required degree	fractions	equivalent	Multiply one-	Divide proper
Spring 2:	of accuracy		fractions	digit numbers	fractions by
Find a percentage of an		<u>Vocabulary:</u>		with up to two	whole numbers
amount	Use negative		<u>Vocabulary:</u>	decimal places	[e.g.: 1/3 ÷ 2 =
	numbers in			by whole	1/6]
Summer 1:	context, and	add, more,	subtract,	numbers	
Individualised consolidation	calculate	altogether,	subtraction,		Divide integers
of skills to prepare for KS3	intervals across	total, double,	take (away),	Multiply integers	by 0.5 and 0.25,
Summer 2:	zero	count up/on, and,	leave, how many	by 0.5 and 0.25,	including mixed
Individualised consolidation	Company	make, part,	are left/left	including mixed	numbers.
of skills to prepare for KS3	Compare and	whole, plus,	over? how many	numbers.	
	order fractions, including	equals, equal to, number line,	have gone? one	Vocabulary:	<u>Vocabulary:</u>
Rapid Recall	fractions >1	digit, tens, ones,	less, two less,	vocabulary	
		greater than,		odd, even,	groups of,
Identify common	Associate a	less than,	ten less, one	double, groups	grouping,
factors, common	fraction with	operation,	hundred less,		sharing,
multiples and prime	division to	partition,	how many or	of, ones, twos,	share, shared,
numbers	calculate decimal	recombine,	fewer is	threes,	each, in
	fraction	represents,	than?	fives, tens,	pairs, ins,
Recall and use	equivalents (e.g.:	inverse,	difference	count in,	equal,
equivalences between	0.375) for a	hundreds,	between, is the	(forwards	equally, same
simple fractions,	simple fraction	increase,	same as,	from/backwards	size, same
decimals and	[e.g.: 3/8]	expanded, digits,	minus, subtract,	from), how many	
percentages, including in		augend, addend,	how much less	times, lots of,	amount, division,
different contexts	Identify the	sum, thousands,	is? half, halve,	groups of, once,	divide,
	value of each	decimal, decimal		twice,	divided by,
	digit to three	place, decimal	equals, tens	times, multiple/s	dividing, divided
	decimal places	point, tenths	boundary,	•	into, left (over),
	and multiply and divide numbers		hundreds	of <u> </u> , times,	array, guess,
	by 10, 100 and		boundary,	multiply,	estimate,
	1000 giving		thousands	multiplied by,	remainder,
	answers up to		boundary (etc),	repeated	approximate,
	three decimal		ones boundary,	addition, array,	approximately,
	places		tenths boundary	row, column,	commutative
	p		(etc), regroup,	commutative law,	
	Vocabulary:		exchange,	multiplicand,	(law),
	<del></del>		inverse,	multiplier,	commutativity,
				product, scale	regroup,
			minuend,	F. 02001, 00010	exchange,

subitise, count,	subtrahend,	up, regroup,	factor, multiple,
number	decrease,	exchange,	square, cube,
(1, 2, 3, etc),	inverse, negative	multiplication	scale (by),
order, compare	. 5	•	
bigger, larger		facts,	scaling (by),
biggest, smaller		division facts,	simple fraction,
smallest, in the		inverse,	decimal
middle, forwards,		derive,	remainder,
backwards, first,		most efficient	simple rate
second, etc,		method,	
multiples, value,		order of	
numeral, more,		operations	
greater, less,		operations	
inequality sign,			
equal, same,			
part-whole model,			
number line,			
number track, bar			
model, 100-square,			
place value,			
column, digit,			
round, rounding,			
hundreds,			
partition,			
thousands,			
positive, negative,			
hundredths,			
decimal,			
decimal point,			
decimal place,			
millions,			
degree of			
accuracy			