Policy & Procedure

Mathematics & Calculations Policy

2026 v1

This policy was agreed by the Governing Body of Newcroft Primary Academy on 23rd March 2026 and will be reviewed as required.

Signed: _____ Chair of Governors

Date: _____

Non-Statutory Policy

Introduction and Aims

This policy is made up of two parts: Mathematics Policy and the Written Calculation Policy.

Mathematics teaches children how to make sense of the world around them through developing their ability to use number, calculate, reason and solve problems. It helps children understand relationships and patterns in both number and space in their everyday lives.

The Curriculum

Mathematics taught in the Early Years is based on the Early Years Foundation Framework. In Key Stage One and Two, the National Curriculum is used as a basis for teaching mathematics.

- All year groups follow the school's mathematics long and medium-term plans.
- These plans demonstrate progression in skills and knowledge in mathematics within and across each year group and key stage.
- The planning overviews demonstrate how the curriculum is re-visited, to develop fluency and support pupils in committing what they have learnt to long-term memory.
- Teachers use the Calculation Policy to ensure a consistent and progressive approach to written method.

Mathematics Lessons

- Leaders and teachers recognise the value of high-quality instruction and modelling and where appropriate, teachers may use a plenary or set of mini plenaries throughout the lesson to assess pupils' understanding and next steps.
- Leaders and Teachers have high expectations of all pupils; scaffolding is used to support all children to achieve as highly as possible. Differentiation may be used to support learners with SEND.
- Teachers may use assessment for learning before, during and post lessons to provide the right scaffolds for pupils to be successful.
- Teachers may use the concrete – pictorial – abstract approach to aid all pupils in achieving highly.
- Review activities (Flashback) support pupils in committing prior learning to their long-term memories.
- All steps in the maths medium term plan for Years 2-6 must be recorded in pupil books to aid the assessment and monitoring of pupil progress and mathematics. Year 1 should begin to record these steps from the Spring term onwards.

Assessment

Assessment in Early Years Foundation Stage

- Assessment in Foundation Stage includes daily assessment for Learning.
- The Development Matters is used throughout the academic year.
- All children are assessed against the Early Learning Goals at the end of the academic year.

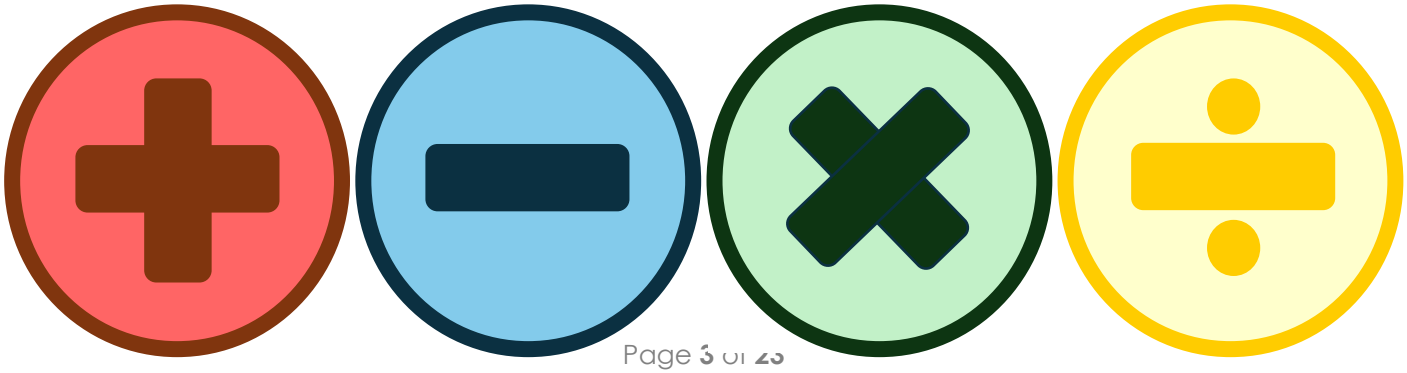
Assessment in KS1 and KS2

- On-going assessment for learning practises within lessons.
- Marking of children's work against the shared WAL and for accuracy of answer. Where appropriate, teachers will indicate clear next steps, following the school's feedback policy.
- Opportunities for children to follow up on marking and extend their learning where appropriate.

- Termly summative assessments. These are informed by formative assessments, by standardised scores testing and where appropriate to the year group, SATs tests.

Newcroft Primary Academy

Written Calculation Policy



ADDITION

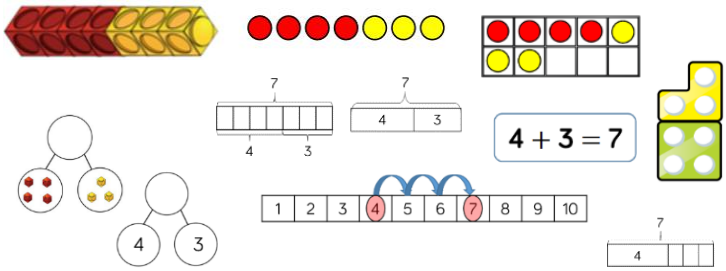
Skill:	Year:	Representations & Models	
Add 1-digit numbers within 10	1	Part-whole model Bar model Number shapes	Ten frames (within 10) Bead strings (10) Number tracks
Add 1 and 2-digit numbers to 20	1 & 2	Part-whole model Bar model Number shapes Ten frames (within 20)	Bead strings (20) Number tracks Number lines (labelled) Straws
Add three 1-digit numbers	2	Part-whole model Bar model	Ten frames (within 20) Number shapes
Add 1 and 2-digit numbers to 100	2 & 3	Part-whole model Bar model Number lines (labelled)	Number lines (blank) Straws Hundred square
Add two 2-digit numbers to 100	2 & 3	Part-whole model Bar model Number lines (blank)	Straws Base 10 Place value counters
Add numbers with up to 3 digits	3	Part-whole model Bar model Base 10	Place value counters Column addition
Add numbers with up to 4 digits	4	Part-whole model Bar model Base 10	Place value counters Column addition
Add numbers with more than 4 digits	5 & 6	Part-whole model Bar model	Place value counters Column addition
Add with up to 3 decimal places	5 & 6	Part-whole model Bar model	Place value counters Column addition

ADDITION

YEAR 1

Skill:

Add 1-digit numbers within 10



Children may explore numbers to 10 through aggregation and augmentation.

The part-whole model, discrete and continuous bar model, number shapes and ten frames support aggregation.

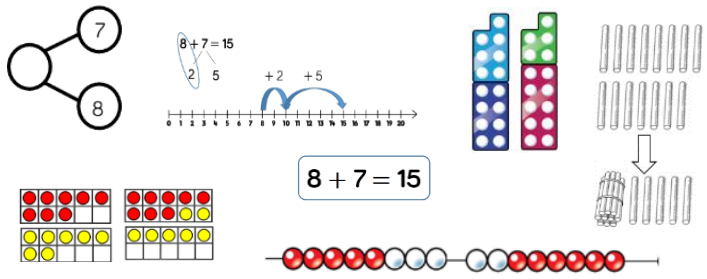
The combination bar model, ten frame, bead string and number track support augmentation.

Guidance:
- Use of pictorial representations to create number sentences **(Year 1).**

YEAR 1 & YEAR 2

Skill:

Add 1 and 2-digit numbers to 20



When adding one-digit numbers that cross 10, it is important to highlight the importance of ten ones equalling one ten.

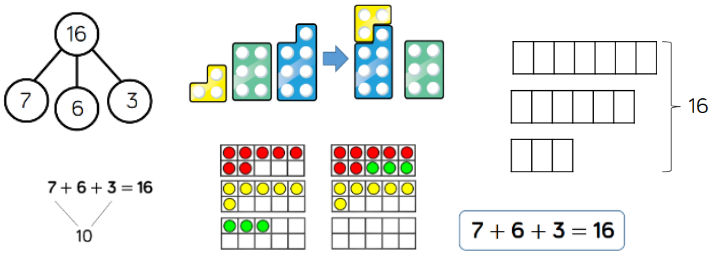
Different manipulatives can be used to represent this exchange. Use concrete resources alongside number lines to support children in understanding how to partition their jumps.

Guidance:
- Use of pictorial representations to create number sentences **(Years 1 & 2).**

YEAR 2

Skill:

Add three 1-digit numbers



Children will be encouraged to look for number bonds or doubles to add more efficiently, when adding three 1-digit numbers.

This concept will support commutativity.

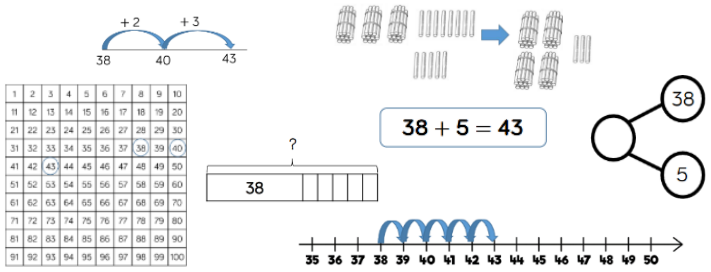
Manipulatives that highlight number bonds to 10 will be effective when adding three 1-digit numbers.

Guidance:
- Use of pictorial representations to create number sentences **(Year 2).**

YEAR 2 & YEAR 3

Skill:

Add 1 and 2-digit numbers to 100



Children will be encouraged to count on from the larger number when adding single digits to a 2-digit number.

Children may use their knowledge of number bonds to increase their efficiency when adding.

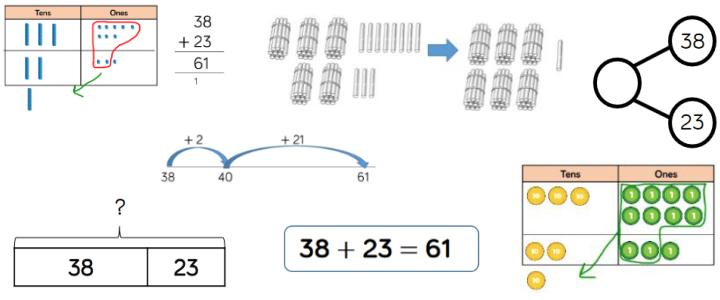
Hundred squares may be used to support children with finding the number bond to 10.

Guidance:
- Use of pictorial representations to create number sentences **(Years 2 & 3).**

YEAR 2 & YEAR 3

Skill:

Add two 2-digit numbers to 100



Children may use blank number lines and other representations to count on to find the total.

Children will be encouraged to jump to multiples of 10 to increase their efficiency.

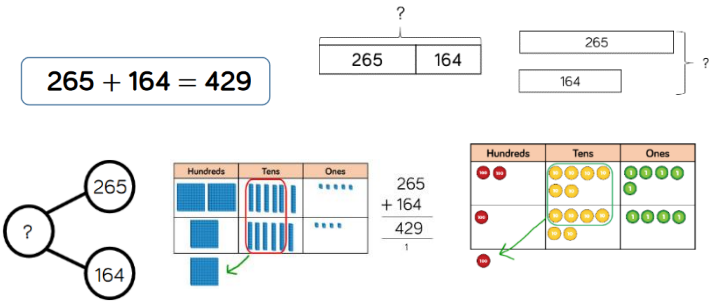
Towards the end of Year 2 and from Year 3, the formal expanded column method will be introduced, calculating alongside pictorial representations.

Guidance:
- Use of a number line **(Year 2).**
- Expanded column method **(Years 2 & 3).**

YEAR 3

Skill:

Add numbers with up to 3 digits



Base 10 and place value counters are the most effective manipulatives when adding numbers with up to 3 digits. Plain counters may also be used on a place value chart.

Children will be encouraged to write out calculations alongside concrete resources so they can make links to the written method.

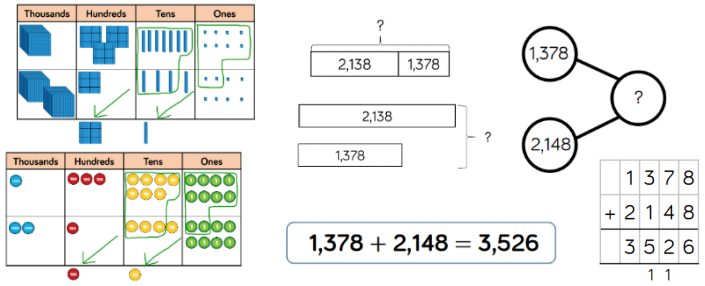
Once secure, children in Year 3 will progress onto using the formal column method.

Guidance:
- Expanded column method **(Year 3).**
- Column method **(Year 3).**

YEAR 4

Skill:

Add numbers with up to 4 digits



Base 10 and place value counters are the most effective manipulatives when adding numbers with up to 4 digits. Plain counters may also be used on a place value chart.

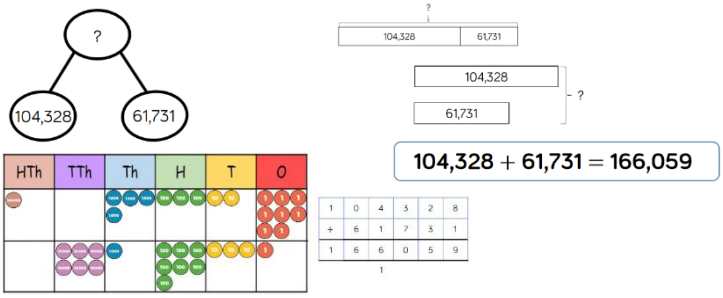
Children will be encouraged to write out calculations alongside concrete resources so they can make links to the written method.

Guidance:
- Column method **(Year 4).**

YEAR 5 & YEAR 6

Skill:

Add numbers with more than 4 digits



Place value counters or plain counters on a place value chart are the most effective manipulatives when adding numbers with more than 4 digits.

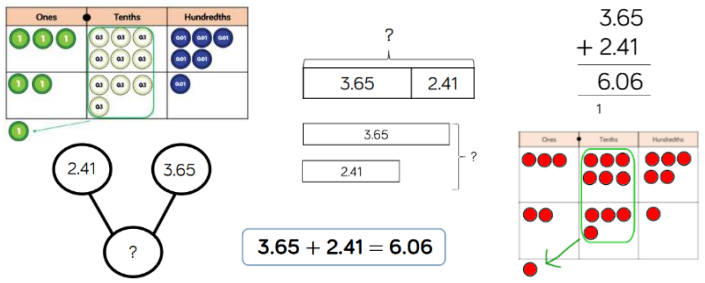
Children should be secure with addition at this point, and working in the abstract should be encouraged.

Guidance:
- Column method **(Years 5 & 6).**

YEAR 5 & YEAR 6

Skill:

Add with up to 3 decimal places



Place value counters or plain counters on a place value chart are the most effective manipulatives when adding decimals with 1, 2 and then 3 decimal places.

Children should have experience of adding decimals with varying decimal places to put money and other measures into context.

Guidance:
- Column method **(Years 5 & 6).**

SUBTRACTION

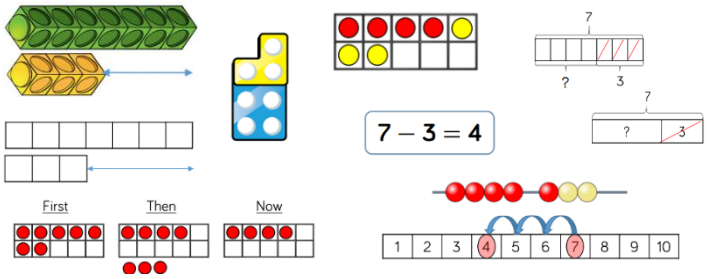
Skill:	Year:	Representations & Models	
Subtract 1-digit numbers within 10	1	Part-whole model Bar model Number shapes	Ten frames (within 10) Bead strings (10) Number tracks
Subtract 1 and 2-digit numbers to 20	1 & 2	Part-whole model Bar model Number shapes Ten frames (within 20)	Bead string (20) Number tracks Number lines (labelled) Straws
Subtract 1 and 2- digit numbers to 100	2 & 3	Part-whole model Bar model Number lines (labelled)	Number lines (blank) Straws Hundred square
Subtract numbers with up to 3 digits	3	Part-whole model Bar model Base 10	Place value counters Column subtraction
Subtract numbers with up to 4 digits	4	Part-whole model Bar model Base 10	Place value counters Column subtraction
Subtract numbers with more than 4 digits	5 & 6	Part-whole model Bar model	Place value counters Column subtraction
Subtract with up to 3 decimal places	5 & 6	Part-whole model Bar model	Place value counters Column subtraction

SUBTRACTION

YEAR 1

Skill:

Subtract 1-digit numbers within 10



Part-whole models, bar models, ten frames and number shapes support partitioning.

Ten frames, number tracks, single bar models and bead strings support reduction.

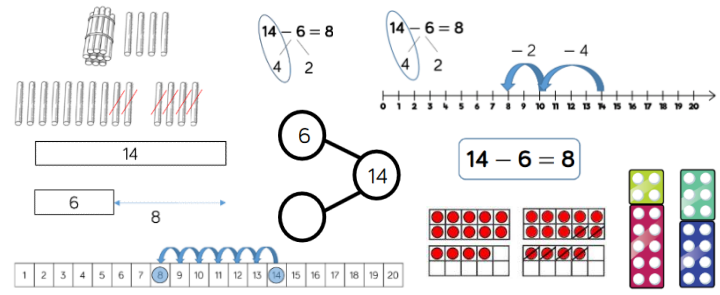
Cubes and bar models with two bars can support finding the difference.

Guidance:
- Use of pictorial representations to create number sentences **(Year 1).**

YEAR 1 & YEAR 2

Skill:

Subtract 1 and 2-digit numbers to 20



In Year 1, subtracting 1-digit numbers that cross 10, may be done by counting back, using objects, number tracks and number lines.

From year 2, children should be encouraged to find the number bond to 10 when partitioning the subtracted number.

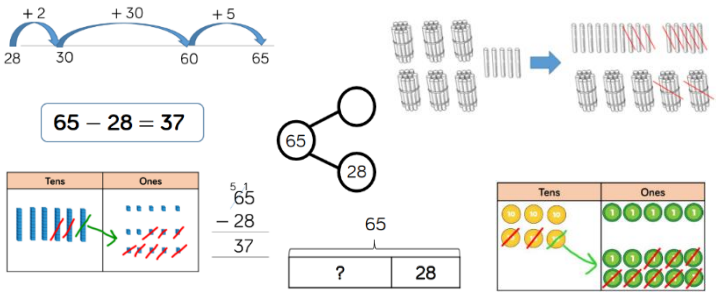
Ten frames, number shapes and number lines are useful for this.

Guidance:
- Use of pictorial representations to create number sentences **(Years 1 & 2).**

YEAR 2 & YEAR 3

Skill:

Subtract 1 and 2- digit numbers to 100



Children may use blank number lines to count back and find the difference.

Children will be encouraged to jump to multiples of 10 to become more efficient.

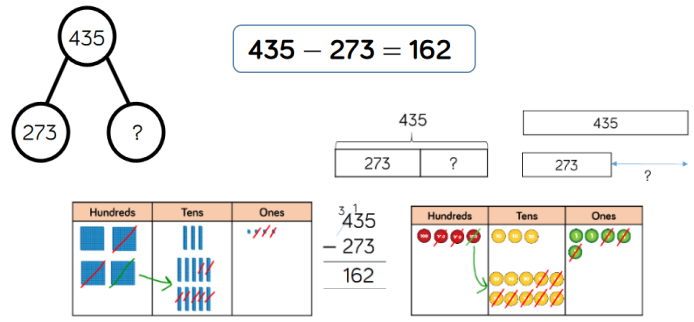
Towards the end of Year 2 and from Year 3, the formal column method will be introduced, calculating alongside pictorial representations.

Guidance:
- Use of pictorial representations to create number sentences **(Year 2).**
- Expanded column method **(Years 2 & 3).**

YEAR 3

Skill:

Subtract numbers with up to 3 digits



Base 10 and place value counters are the most effective manipulatives when subtracting numbers with up to 3 digits. Plain counters may also be used on a place value chart.

Children will be encouraged to write out calculations alongside concrete resources so they can make links to the written method.

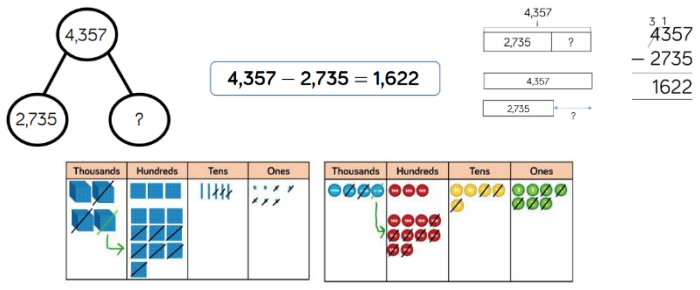
Once secure, children in Year 3 will progress onto using the formal column method.

Guidance:
- Expanded column method **(Year 3).**
- Column method **(Year 3).**

YEAR 4

Skill:

Subtract numbers with up to 4 digits



Base 10 and place value counters are the most effective manipulatives when subtracting numbers with up to 4 digits. Plain counters may also be used on a place value chart.

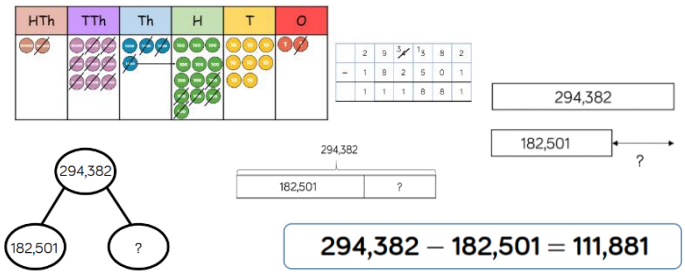
Children will be encouraged to write out calculations alongside concrete resources so they can make links to the written method.

Guidance:
- Column method **(Year 4).**

YEAR 5 & YEAR 6

Skill:

Subtract numbers with more than 4 digits



Place value counters or plain counters on a place value chart are the most effective manipulatives when subtracting numbers with more than 4 digits.

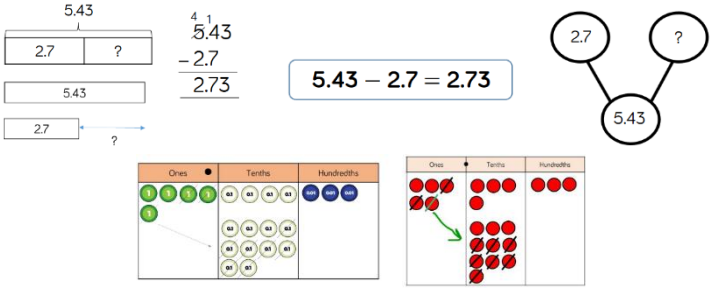
Children should be secure with addition at this point, and working in the abstract should be encouraged.

Guidance:
- Column method **(Years 5 & 6).**

YEAR 5 & YEAR 6

Skill:

Subtract with up to 3 decimal places



Place value counters or plain counters on a place value chart are the most effective manipulatives when subtracting decimals with 1, 2 and then 3 decimal places.

Children should have experience of adding decimals with varying decimal places to put money and other measures into context.

Guidance:
- Column method **(Years 5 & 6).**

Glossary	
Addend – a number to be added to another. **Aggregation –** combining two or more quantities or measures to find a total. **Augmentation –** increasing a quantity or measure by another quantity. **Commutative –** numbers can be added in any order. **Complement –** in addition, a number and its complement make a total e.g. 300 is the complement to 700 to make 1,000. **Difference –** the numerical difference between two numbers is found by comparing the quantity in each group. **Exchange –** change a number or expression for another of an equal value.	**Minuend –** a quantity or number from which another is subtracted. **Partitioning –** splitting a number into its component parts. **Reduction –** subtraction as take away. **Subitise –** instantly recognise the number of objects in a small group without needing to count. **Subtrahend –** a number to be subtracted from another. **Sum –** the result of an addition. **Total –** the aggregate or the sum found by addition.

TIMES TABLES

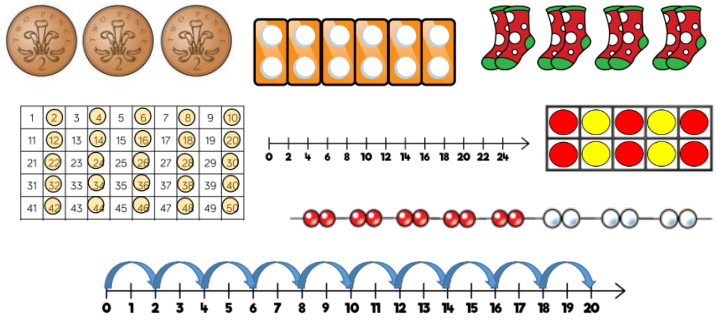
Skill:	Year:	Representations & Models	
Recall and use multiplication and division facts for the 2-times table	2	Bar model Number shapes Counters Money	Ten frames Bead strings Number lines Everyday objects
Recall and use multiplication and division facts for the 5-times table	2	Bar model Number shapes Counters Money	Ten frames Bead strings Number lines Everyday objects
Recall and use multiplication and division facts for the 10-times table	2	Hundred square Number shapes Counters Money	Ten frames Bead strings Number lines Base 10
Recall and use multiplication and division facts for the 3-times table	3	Hundred square Number shapes Counters	Bead strings Number lines Everyday objects
Recall and use multiplication and division facts for the 4-times table	3	Hundred square Number shapes Counters	Bead strings Number lines Everyday objects
Recall and use multiplication and division facts for the 8-times table	3	Hundred square Number shapes Bead strings	Number tracks Everyday objects
Recall and use multiplication and division facts for the 6-times table	4	Hundred square Number shapes Bead strings	Number tracks Everyday objects
Recall and use multiplication and division facts for the 7-times table	4	Hundred square Number shapes	Bead strings Number lines
Recall and use multiplication and division facts for the 9-times table	4	Hundred square Number shapes	Bead strings Number lines
Recall and use multiplication and division facts for the 11-times table	4	Hundred square Number shapes	Bead strings Number lines
Recall and use multiplication and division facts for the 12-times table	4	Hundred square Base 10	Place value counters Number lines

TIMES TABLES

YEAR 2

Skill:

2 times table



Daily counting in multiples both forwards and backwards will be encouraged. Number lines or hundred squares may be used to support this.

Patterns will be identified in the 5 times table, supported with concrete resources.

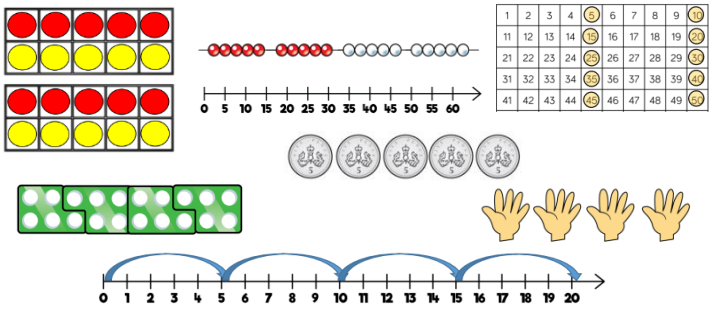
Children will be encouraged to notice that all numbers are even and there is a pattern in the ones. Different models will be used to support fluency.

Guidance:
- Use of pictorial representations **(Year 2).**
- Number sentences **(Year 2).**

YEAR 2

Skill:

5 times table



Daily counting in multiples both forwards and backwards will be encouraged. Number lines or hundred squares may be used to support this.

Patterns will be identified in the 5 times table, supported with concrete resources.

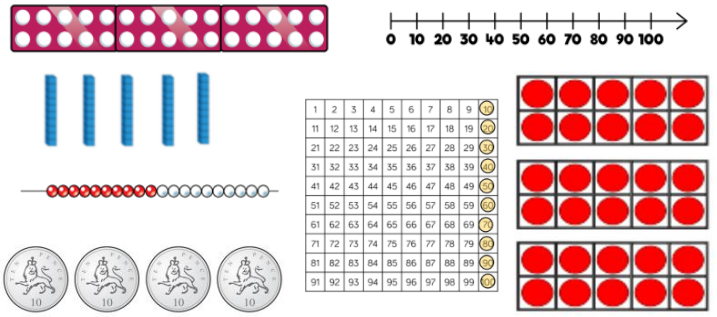
Children will be encouraged to notice the patterns in the ones as well as highlight the odd, even, odd, even pattern. Different models will be used to support fluency.

Guidance:
- Use of pictorial representations **(Year 2).**
- Number sentences **(Year 2).**

YEAR 2

Skill:

10 times table



Daily counting in multiples both forwards and backwards will be encouraged. Number lines or hundred squares may be used to support this.

Patterns will be identified in the 10 times table, supported with concrete resources.

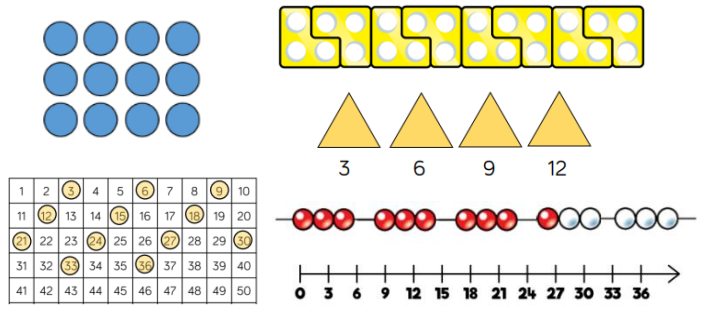
Children will be encouraged to notice the pattern that the ones are always 0 and the tens increase by 1 ten each time. Different models will be used to support fluency.

Guidance:
- Use of pictorial representations **(Year 2).**
- Number sentences **(Year 2).**

YEAR 3

Skill:

3 times table



Daily counting in multiples both forwards and backwards will be encouraged. Number lines or hundred squares may be used to support this.

Patterns will be identified in the 3 times table, supported with concrete resources.

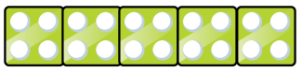
Children will be encouraged to notice the odd, even, odd, even pattern. The pattern in the ones may be highlighted in a hundred square. Different models will be used to support fluency.

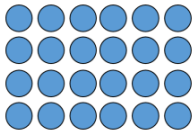
Guidance:
- Use of pictorial representations **(Year 3).**
- Number sentences **(Year 3).**

YEAR 3

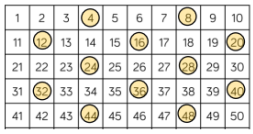
Skill:

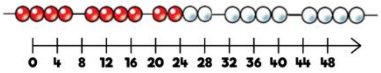
4 times table





4	8	12	16	20
24	28	32	36	40
44	48	52	56	60





Daily counting in multiples both forwards and backwards will be encouraged. Number lines or hundred squares may be used to support this.

Patterns will be identified in the 4 times table, supported with concrete resources.

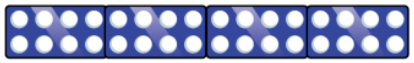
Children will be encouraged to make links to the 2 times table, seeing that each multiple is double the twos. Notice the pattern within each group of five multiples and that they are all even. Different models will be used to support fluency.

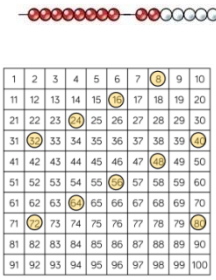
Guidance:
- Use of pictorial representations **(Year 2).**
- Number sentences **(Year 2).**

YEAR 3

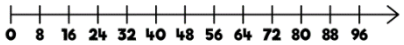
Skill:

8 times table





8	16	24	32	40
48	56	64	72	80



Daily counting in multiples both forwards and backwards will be encouraged. Number lines or hundred squares may be used to support this.

Patterns will be identified in the 8 times table, supported with concrete resources.

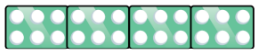
Children will be encouraged to make links to the 4 times table, seeing that each multiple is double the fours. Notice the pattern within each group of five multiples and that they are all even. Different models will be used to support fluency.

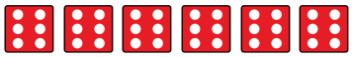
Guidance:
- Use of pictorial representations **(Year 3).**
- Number sentences **(Year 3).**

YEAR 4

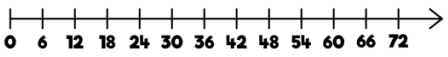
Skill:

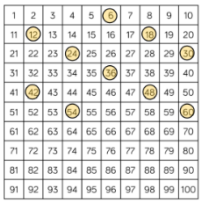
6 times table





6	12	18	24	30
36	42	48	54	60
66	72	78	84	90





Daily counting in multiples both forwards and backwards will be encouraged. Number lines or hundred squares may be used to support this.

Patterns will be identified in the 6 times table, supported with concrete resources.

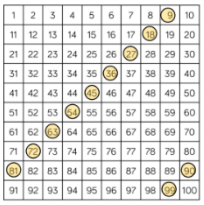
Children will be encouraged to make links to the 3 times table, seeing that each multiple is double the threes. Notice the pattern within each group of five multiples and that they are all even. Different models will be used to support fluency.

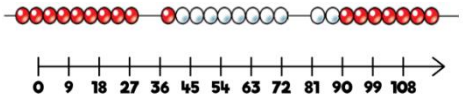
Guidance:
- Use of pictorial representations **(Year 4).**
- Number sentences **(Year 4).**

YEAR 4

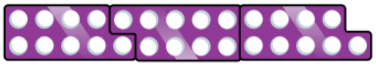
Skill:

9 times table





9	18	27	36	45
54	63	72	81	90



Daily counting in multiples both forwards and backwards will be encouraged. Number lines or hundred squares may be used to support this.

Patterns will be identified in the 9 times table, supported with concrete resources.

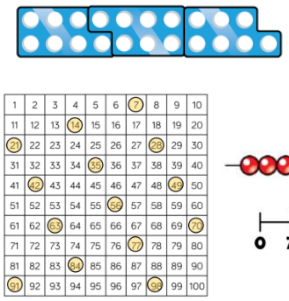
Children will be encouraged to notice the pattern in the tens and ones using a hundred square and the odd, even, odd, even pattern. Different models will be used to support fluency.

Guidance:
- Use of pictorial representations **(Year 4).**
- Number sentences **(Year 4).**

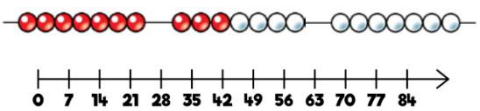
YEAR 4

Skill:

7 times table



7	14	21	28	35
42	49	56	63	70



Daily counting in multiples both forwards and backwards will be encouraged. Number lines or hundred squares may be used to support this.

Patterns will be identified in the 7 times table, supported with concrete resources.

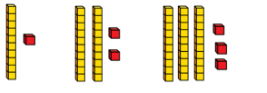
Children will be encouraged to use their commutativity facts along with the odd, even, odd, even pattern. Different models will be used to support fluency.

Guidance:
- Use of pictorial representations **(Year 4).**
- Number sentences **(Year 4).**

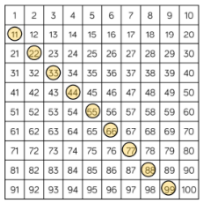
YEAR 4

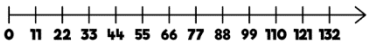
Skill:

11 times table



11	22	33	44	55	66
77	88	99	110	121	132





Daily counting in multiples both forwards and backwards will be encouraged. Number lines or hundred squares may be used to support this.

Patterns will be identified in the 11 times table, supported with concrete resources.

Children will spot patterns in the tens and ones using the hundred square to support. Different models will be used to support fluency.

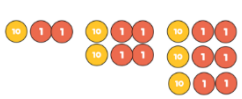
Guidance:
- Use of pictorial representations **(Year 4).**
- Number sentences **(Year 4).**

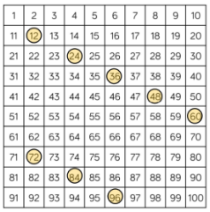
YEAR 4

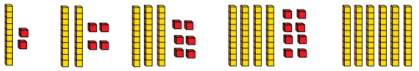
Skill:

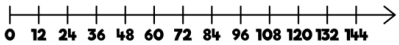
12 times table

12	24	36	48	60
72	84	96	108	120
132	144			









Daily counting in multiples both forwards and backwards will be encouraged. Number lines or hundred squares may be used to support this.

Patterns will be identified in the 12 times table, supported with concrete resources.

Children will be encouraged to make links to the 6 times table, seeing that each multiple is double the sixes. Notice the pattern within each group of five multiples. Different models will be used to support fluency.

Guidance:
- Use of pictorial representations **(Year 4).**
- Number sentences **(Year 4).**

MULTIPLICATION

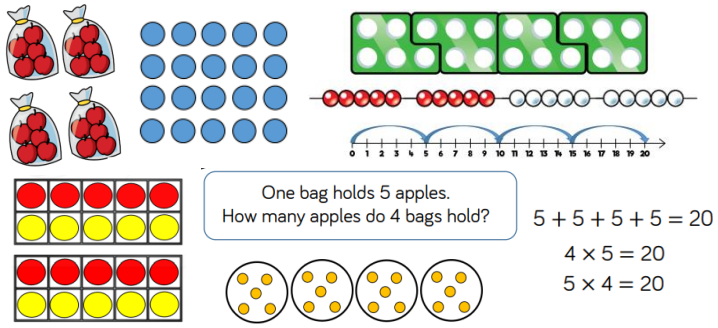
Skill:	Year:	Representations & Models	
Solve 1-step problems using multiplication	1 & 2	Bar model Number shapes Counters	Ten frames Bead strings Number lines
Multiply 2-digit numbers by 1-digit numbers	3 & 4	Place value counters Base 10	Expanded written method Short written method
Multiply 3-digit numbers by 1-digit numbers	4	Place value counters	Base 10 Short written method
Multiply 4-digit numbers by 1-digit numbers	5	Place value counters	Short written method
Multiply 2-digit numbers by 2-digit numbers	5	Place value counters Base 10	Short written method Grid method
Multiply 3-digit numbers by 2-digit numbers	5	Place value counters	Short written method Grid method
Multiply 4-digit numbers by 2-digit numbers	5 & 6	Formal written method	

MULTIPLICATION

YEAR 1 & YEAR 2

Skill:

Solve 1-step problems using multiplication



Children may represent repeated addition using pictorial representations in different ways.

In Year 1, children use concrete and pictorial representations to solve problems. No formal recording is made.

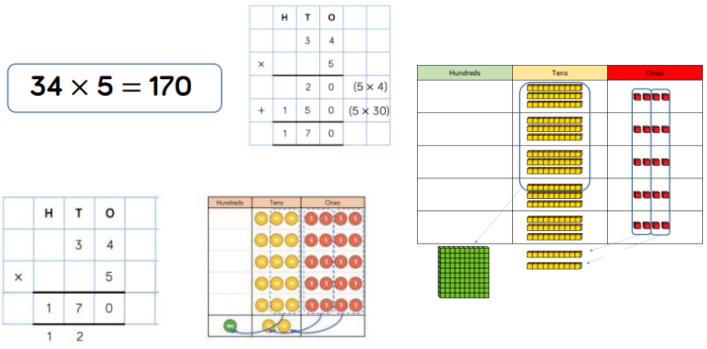
In Year 2, children are introduced to the multiplication symbol.

Guidance:
- Use of concrete and pictorial representations **(Year 1).**
- Use of pictorial representations to create number sentences **(Year 2).**

YEAR 3 & YEAR 4

Skill:

Multiply 2-digit numbers by 1-digit numbers



Base 10 and place value counters should be used to support the understanding of the method rather than the multiplication.

In Year 3, children will be using the expanded method.

In Year 4, children will be using the short multiplication method.

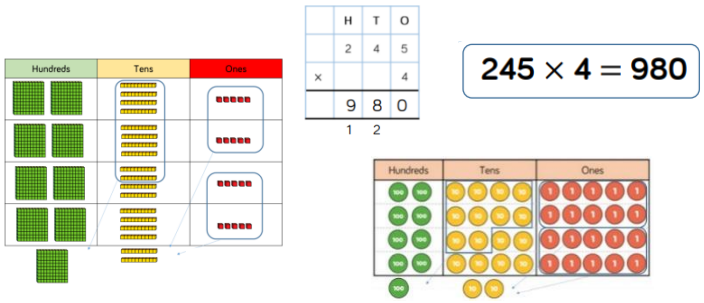
Ensure the placement of exchanged digits are consistent.

Guidance:
- Use of pictorial representations **(Years 3 & 4).**
- Expanded method **(Year 3).**
- Short multiplication method **(Year 4).**

YEAR 4

Skill:

Multiply 3-digit numbers by 1-digit numbers



Base 10 and place value counters should be used to support the understanding of the method rather than the multiplication.

The number of exchanges should be limited when multiplying larger numbers.

In Year 4, children will be using the short multiplication method.

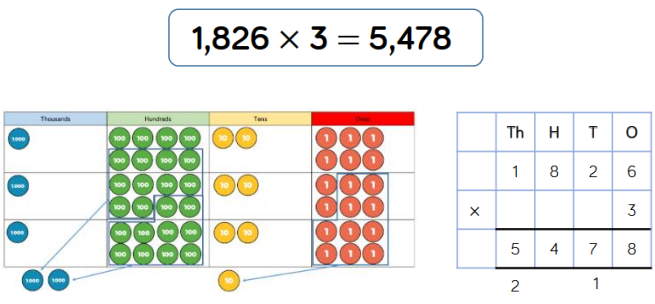
Ensure the placement of exchanged digits are consistent.

Guidance:
- Use of pictorial representations **(Year 4).**
- Short multiplication method **(Year 4).**

YEAR 5

Skill:

Multiply 4-digit numbers by 1-digit numbers



Place value counters should be used to support the understanding of the method rather than the multiplication.

If children are struggling to multiply larger numbers due to times tables knowledge, encourage the use of multiplication grids so they can focus on the use of the written method.

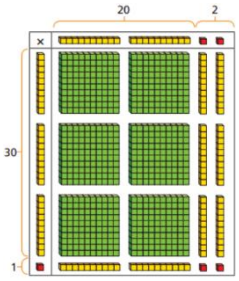
Ensure the placement of exchanged digits are consistent.

Guidance:
- Short multiplication method **(Year 5).**

YEAR 5

Skill:

Multiply 2-digit numbers by 2-digit numbers



×	20	2
30	600	60
1	20	2

	H	T	O
		2	2
×		3	1
		2	2
	6	6	0
	6	8	2

$22 \times 31 = 682$

When multiplying a multi-digit number by 2 digits, the area model will be used, using base 10, to help children understand the size of the numbers they are using.

Once secure, children will be introduced to the formal grid method, before moving onto the long multiplication method.

Ensure the placement of exchanged digits are consistent.

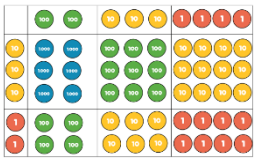
Guidance:
- Grid method **(Year 5).**
- Long multiplication method **(Year 5).**

YEAR 5

Skill:

Multiply 3-digit numbers by 2-digit numbers

×	200	30	4
30	6,000	900	120
2	400	60	8



Th	H	T	O
	2	3	4
×		3	2
	4	6	8
1	7	1 0	2	0
7	4	8	8

$234 \times 32 = 7{,}488$

When multiplying a multi-digit number by 3 digits, the area model will be used, using place value counters, to help children understand the size of the numbers they are using.

Children should now be secure in the formal written methods and will be using the long multiplication method.

Ensure the placement of exchanged digits are consistent.

Guidance:
- Long multiplication method **(Year 5).**

YEAR 5 & YEAR 6

Skill:

Multiply 4-digit numbers by 2-digit numbers

TTh	Th	H	T	O
	2	7	3	9
×			2	8
2 2	1 5	9 3	1 7	2
5 1	4	7 1	8	0
7	6	6	9	2
		1		

$2{,}739 \times 28 = 76{,}692$

At this point, children should be secure in using the formal written method.

If children are still struggling with times tables knowledge, encourage the use of multiplication grids so they can focus on the use of the written method.

Ensure the placement of exchanged digits are consistent.

Guidance:
- Long multiplication method **(Years 5 & 6).**

DIVISION

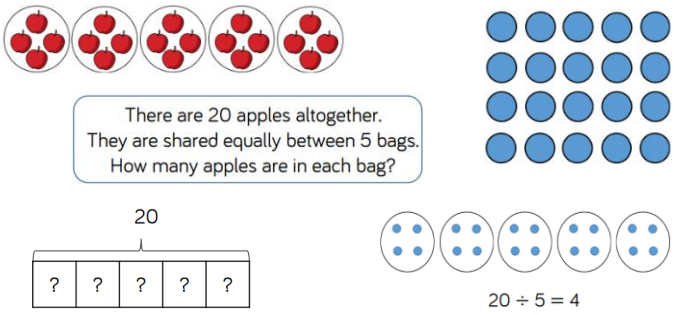
Skill:	Year:	Representations & Models	
Solve 1-step problems using multiplication (sharing)	1 & 2	Bar model Real life objects	Arrays Counters
Solve 1-step problems using multiplication (grouping)	1 & 2	Real life objects Number shapes Bead strings Ten frames	Number lines Arrays Counters
Divide 2-digits by 1-digit (sharing with no exchange)	3	Straws Base 10 Bar model	Place value counters Part-whole model
Divide 2-digits by 1-digit (sharing with exchange)	3 & 4	Straws Base 10 Bar model	Place value counters Part-whole model
Divide 2-digits by 1-digit (sharing with remainders)	3 & 4	Straws Base 10 Bar model	Place value counters Part-whole model
Divide 2-digits by 1-digit (grouping)	4 & 5	Place value counters Counters	Place value grid Written short division
Divide 3-digits by 1-digit (sharing)	4	Base 10 Bar model	Place value counters Part-whole model
Divide 3-digits by 1-digit (grouping)	4 & 5	Place value counters Counters	Place value grid Written short division
Divide 4-digits by 1-digit (grouping)	5	Place value counters Counters	Place value grid Written short division
Divide multi digits by 2-digits (short division)	6	Written short division	List of multiples
Divide multi digits by 2-digits (long division)	6	Written long division	List of multiples
Divide multi digits by 2-digits (long division with remainders)	6	Written long division	List of multiples

DIVISION

YEAR 1 & YEAR 2

Skill:

Solve 1-step problems using multiplication (sharing)



Children solve problems by sharing amounts into equal groups.

In Year 1, children use concrete and pictorial representations to solve problems. They are not expected to record division formally.

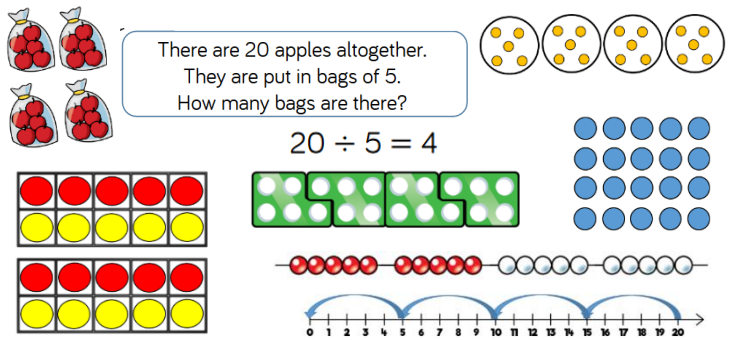
In Year 2, children are introduced to the division symbol.

Guidance:
- Use of concrete and pictorial representations **(Year 1).**
- Use of pictorial representations to create number sentences **(Year 2).**

YEAR 1 & YEAR 2

Skill:

Solve 1-step problems using multiplication (grouping)



Children solve problems by grouping and counting the number of groups.

Grouping encourages children to count in multiples and links to repeated subtraction on a number line.

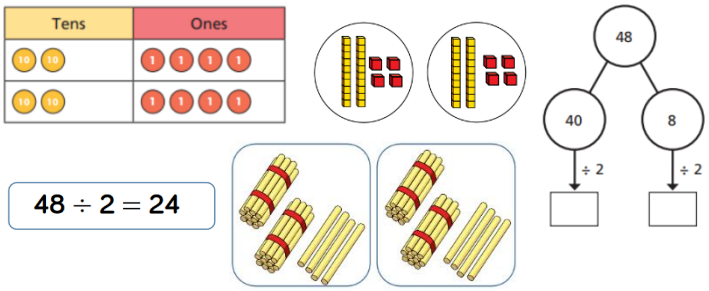
Concrete representations may be used in fixed groups such as number shapes to show the link between multiplication and division.

Guidance:
- Use of concrete and pictorial representations **(Year 1).**
- Use of pictorial representations to create number sentences **(Year 2).**

YEAR 3

Skill:

Divide 2-digits by 1-digit (sharing with no exchange)



When dividing larger numbers, children can use manipulatives that allow them to partition into tens and ones.

Straws, Base 10 and place value counters can all be used to share numbers into equal groups.

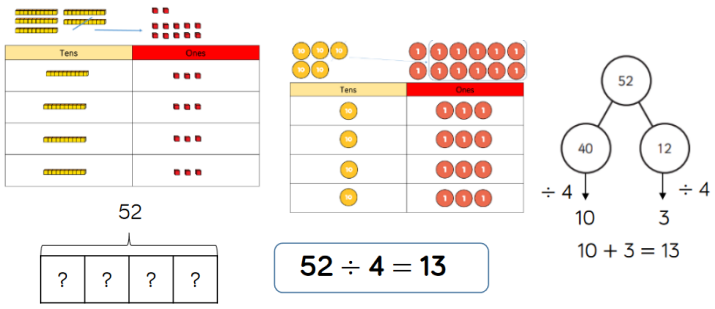
Part-whole models can provide children with a clear written method that matches the concrete representation.

Guidance:
- Use of pictorial representations to create number sentences **(Year 3).**

YEAR 3 & YEAR 4

Skill:

Divide 2-digits by 1-digit (sharing with exchange)



When dividing numbers involving an exchange, children can use Base 10 and place value counters to exchange one ten for ten ones.

Children should start with the equipment outside the place value chart before sharing the tens and ones equally between the rows.

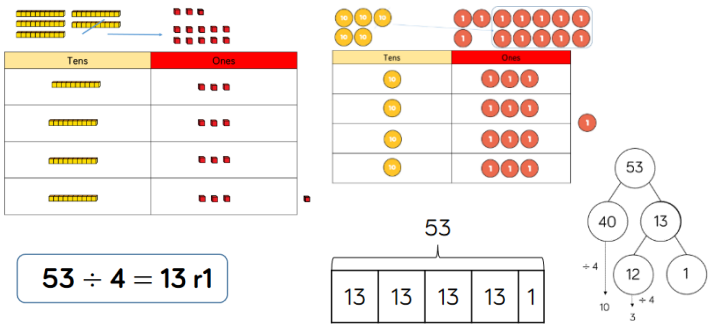
Flexible partitioning in a part-whole model supports this method.

Guidance:
- Use of pictorial representations to create number sentences **(Years 3 & 4).**

YEAR 3 & YEAR 4

Skill:

Divide 2-digits by 1-digit (sharing with remainders)



When dividing numbers with remainders, children can use Base 10 and place value counters to exchange one ten for ten ones.

Starting with the equipment outside the place value chart will highlight remainders, as they will be left outside the grid once the equal groups have been made.

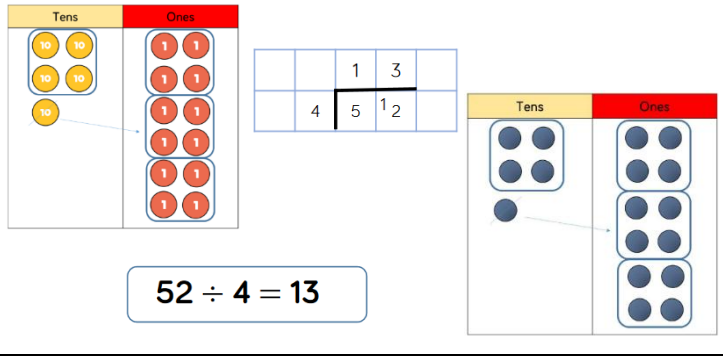
Flexible partitioning in a part-whole model supports this method.

Guidance:
- Use of pictorial representations to create number sentences **(Years 3 & 4).**

YEAR 4 & YEAR 5

Skill:

Divide 2-digits by 1-digit (grouping)



When using the short division method, children use grouping. Starting with the largest place value, they group by the divisor.

Language is important here. Children should consider, 'How many groups of 4 tens can we make?' and 'How many groups of 4 ones can we make?'

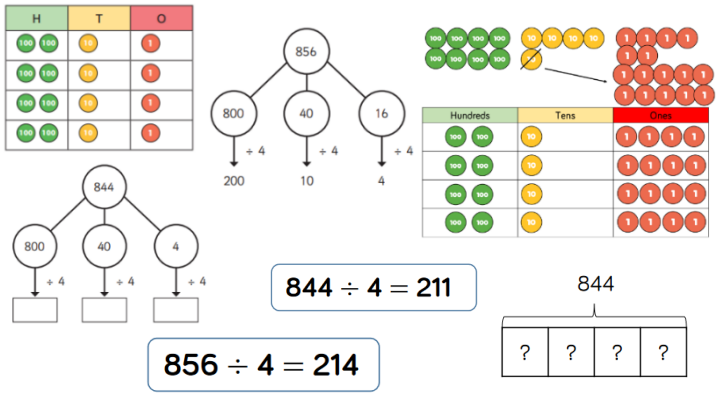
Remainders can also be seen as they are left ungrouped.

Guidance:
- Use of pictorial representations to create number sentences **(Year 5).**
- Short division method **(Year 5).**

YEAR 4

Skill:

Divide 3-digits by 1-digit (sharing)



Children can continue to use place value counters to share 3-digit numbers into equal groups.

Children should start with the equipment outside the place value chart before sharing the hundreds, tens and ones equally between the rows.

This method can also help to highlight remainders.

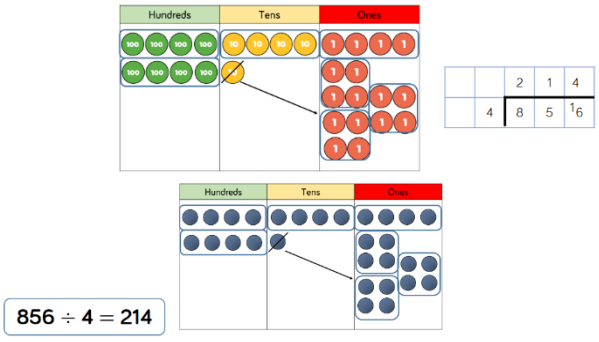
Flexible partitioning in a part-whole model supports this method.

Guidance:
- Use of pictorial representations to create number sentences **(Year 4).**

YEAR 4 & YEAR 5

Skill:

Divide 3-digits by 1-digit (grouping)



Children can continue to use grouping to support their understanding of short division when dividing a 3-digit number by a 1-digit number.

Place value counters or plain counters can be used on a place value grid to support this understanding.

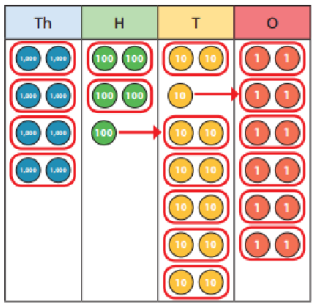
Children can also draw their own counters and group them through a more pictorial method.

Guidance:
- Use of pictorial representations to create number sentences **(Year 5).**
- Short division method **(Year 5).**

YEAR 5

Skill:

Divide 4-digits by 1-digit (grouping)



$8,532 \div 2 = 4,266$

	4	2	6	6
2	8	5	1_3	1_2

Place value counters or plain counters can be used on a place value grid to support children to divide 4-digits by 1-digit.

Children can also draw their own counters and group them through a more pictorial method.

Children should be encouraged to move away from the concrete and pictorial when dividing numbers with multiple exchanges.

Guidance:
- Use of pictorial representations to create number sentences **(Year 5).**
- Short division method **(Year 5).**

YEAR 6

Skill:

Divide multi digits by 2-digits (short division)

		0	3	6
	12	4	4_3	7_2

$432 \div 12 = 36$

$7,335 \div 15 = 489$

	0	4	8	9
15	7	7_3	13_3	13_5

15	30	45	60	75	90	105	120	135	150

When children begin to divide up to 4-digits by 2-digits, written methods become the most accurate as concrete and pictorial representations become less effective.

Children can write out multiples to support their calculations with larger remainders.

Children will also solve problems with remainders where the quotient can be rounded as appropriate.

Guidance:
- Short division method **(Year 6).**

YEAR 6

Skill:

Divide multi digits by 2-digits (long division)

		0	3	6
1	2	4	3	2
	–	3	6	0
			7	2
	–		7	2
				0

(×30)

(×6)

$12 \times 1 = 12$
$12 \times 2 = 24$
$12 \times 3 = 36$
$12 \times 4 = 48$
$12 \times 5 = 60$
$12 \times 6 = 72$
$12 \times 7 = 84$
$12 \times 8 = 96$
$12 \times 7 = 108$
$12 \times 10 = 120$

$432 \div 12 = 36$

$7,335 \div 15 = 489$

	0	4	8	9	
15	7	3	3	5	
–	6	0	0	0	(×400
	1	3	3	5	
–	1	2	0	0	(×80)
		1	3	5	
–		1	3	5	(×9)
				0	

$1 \times 15 = 15$
$2 \times 15 = 30$
$3 \times 15 = 45$
$4 \times 15 = 60$
$5 \times 15 = 75$
$10 \times 15 = 150$

Children can also divide by 2-digit numbers using long division.

Children can write out multiples to support their calculations with larger remainders.

Children will also solve problems with remainders where the quotient can be rounded as appropriate.

Guidance:
- Long division method **(Year 6).**

YEAR 6

Skill:

Divide multi digits by 2-digits (long division with remainders)

			2	4	r	1	2
1	5	3	7	2			
	–	3	0	0			
			7	2			
	–		6	0			
			1	2			

$1 \times 15 = 15$
$2 \times 15 = 30$
$3 \times 15 = 45$
$4 \times 15 = 60$
$5 \times 15 = 75$
$10 \times 15 = 150$

$372 \div 15 = 24$ r12

$372 \div 15 = 24\frac{4}{5}$

			2	4	$\frac{4}{5}$
1	5	3	7	2	
	–	3	0	0	
			7	2	
	–		6	0	
			1	2	

When a remainder is left at the end of a calculation, children can either leave it as a remainder or convert it to a fraction.

This will depend on the context of the question.

Children can also answer questions where the quotient needs to be rounded according to the context.

Guidance:
- Long division method **(Year 6).**

Glossary	
Array – an ordered collection of counters, cubes or other item in rows and columns. **Commutative –** numbers can be multiplied in any order. **Dividend –** in division, the number that is divided. **Divisor –** in division, the number by which another is divided. **Exchange –** change a number or expression for another of an equal value. **Factor –** a number that multiplies with another to make a product.	**Multiplicand –** in multiplication, a number to be multiplied by another. **Partitioning –** splitting a number into its component parts. **Product –** the result of multiplying one number by another. **Quotient –** the result of a division. **Remainder –** the amount left over after a division when the divisor is not a factor of the dividend. **Scaling –** enlarging or reducing a number by a given amount, called the scale factor.