Hunsley Primary Maths Calculation Procedure[1]

Version ii

[1] *Adapted from NCETM, STEM and White Rose Maths Hub resources*

Calculation Procedure

Contents

This procedure outlines the principles, values and methods underpinning the expectations of Hunsley Primary regarding the teaching of calculation in maths lessons and across the curriculum.

Purpose and Scope

The purpose of the procedure is to ensure all methodology for the teaching of calculation is consistent across the school. The language used by all staff and pupils to define and explain calculation methods must also be used with consistency and with understanding. The structures for teaching mathematics should also allow for progression within an agreed framework, in line with how pupils are identified by school to learn best. Thus will children be given their best opportunity to master the mathematical skills, knowledge and understanding for learning at depth and for learning which lasts over time.

Roles and Responsibilities

Headteacher and the School Leadership Team
It is the responsibility of the Headteacher and the School Leadership Team

- To ensure this procedure is fully and consistently followed by Hunsley Primary staff
- To enable staff to deliver the expectations of the procedure through induction and training processes
- To set, monitor and model the whole school standards for calculation and mathematics teaching

Staff
It is the responsibility of teaching staff

- To plan, deliver and assess a programme of maths teaching in line with the Calculation Procedure methodology, appropriate to the specific needs of all children within the long-term curriculum plan

Equality and Diversity

Hunsley Primary is committed to:

- Eliminating discrimination and promoting equality and diversity in its policies, procedures and guidelines
- Delivering high quality teaching and services that meet the diverse needs of its pupil population and its workforce, ensuring that no individual or group is disadvantaged

Vision, Values and Ethos

Vision: Our Commitment

Hunsley Primary is committed to being an innovative, stimulating, forward-thinking free school that makes the most of its freedoms to impact positively on pupils' lives in the community and provide opportunities for all its children to make outstanding progress. Hunsley Primary children are capable, confident and creative thinkers and motivated, resilient, problem-solving learners. In particular, the school is committed to developing pupils as mathematicians and scientists.

Values: Our Children

At Hunsley Primary, we believe that every child is an individual, ready, able and eager to learn, and as such a member of the team. We are a fully inclusive school and we view every child as unique; we believe that all learning activities should be personalised and challenging to meet all pupils' needs and that every child should receive the care, guidance, nurture and robust support they need to overcome disadvantage or barriers to learning. It is our prime aim that all children make their best progress in an enabling learning environment, in the presence of their peers and the security of positive relationships with those around them. Our highly-trained expert classroom practitioners, from teachers, TAs, volunteers to associate Trust staff, ensure that all children have the chance to work, discuss and learn with professionals who are passionate about education.

By ensuring our children become responsible for directing, sustaining and reviewing their own learning, taking responsibility for critiquing their own and each other's work and for setting ambitious challenges, we aim to embed an understanding of the importance of refining work to its best point so that children feel a sense of high achievement as a result of the feedback they receive.

By maximising the benefits of our close relationship with South Hunsley School and Sixth Form College and its subject specialists, we aim to secure a continuum of learning and a depth of conceptual understanding necessary for excellent progress in all curriculum areas, leading to the highest achievement at Key Stage 2, GCSE and A Level and, in due course, access to the most aspirational HE institutions, courses and professions for all children.

Ethos: Our Teaching and Learning Rationale

Engagement, Enjoyment, Discovery, Reflection, Achievement

Our aim is to deliver teaching and learning which meets the needs of every single pupil in school, basing our planning on rigorous assessment and observation, mapping out challenging, supportive next steps. We plan our curriculum activities and our personalised teaching and learning approach to match the following rationale:

- Flexible, personalised timeframes for learning, based on excellent pupil-centred teaching – teachers highly conversant in the complexities and specialisms of their practice
- Real learning themes and deep-thinking investigations, which prepare our pupils for 21st Century living and engage them in learning with enjoyment and passion
- Inspirational and challenging learning activities, which have the principles of scientific enquiry and investigation ('working scientifically') at their core, generating a lifelong love of learning, enquiry and discovery and a systematic means of approaching challenging and new tasks

- A union of partnerships with cross-phase, multi-agency and multi-disciplinary expertise for planning, delivery, monitoring and review, to ensure each child has every opportunity to build successfully on their learning from 4 to 19, removing barriers to engagement and development
- Pupil resilience, independence, confidence and readiness to meet the rigours of education, through to university and beyond, and the demands of living and working in a rapidly-changing technological world
- Innovative, immersive and inclusive learning resources, combining the best of expert input, outdoor, hands-on, experiential learning and digital interfaces, to give pupils every opportunity to aspire to their full potential.

Systems and Procedures

'Research by the Department for Education demonstrates that a key feature of high performing jurisdictions is that the development of quick recall, accuracy and fluency in parallel with the development of understanding and reasoning are all required to promote sound mathematical development (DfE 2012 p70). Procedural fluency and conceptual understanding are not mutually exclusive. The Ofsted Survey of Good Practice in Primary Mathematics (Ofsted 2011) found that many of the successful schools sampled teach fluency in mental and written methods of calculation, alongside understanding of the underlying mathematical concepts.'[2] **It is essential that the following strands permeate the day-to-day teaching and learning of mathematics at Hunsley Primary.** Pupils from EYFS to Y6 must:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.'[3]

There are six key areas identified as essential prerequisites within the Framework's Year 1 to 3 teaching programmes for future learning in mathematics. The six key areas are: ordering numbers; counting on and back; partitioning and recombining; addition/subtraction facts within 20; understanding the four operations; and problem solving strategies. *'The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently*

[2] *https://www.ncetm.org.uk/resources/44577*
[3] *National curriculum in England: mathematics programmes of study*

fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.'[4]

Our key principles with regard to language, presentation and terminology in maths teaching and learning are as follows:

1) all staff use consistent terms to define and express mathematical concepts – see Appendix
2) all staff use the agreed font for written representation of number and mathematical symbols – see Appendix
3) key language will be displayed in each classroom with examples to exemplify the language
4) staff will correct pupils' inaccurate use of terminology and support others to do the same
5) praise is given for process and application, as much as for outcome
6) maths teaching is supported by resources from a range of source material, including NRICH, NCETM, White Rose and Rising Stars
7) all teaching will follow the 'Concrete; Pictorial; Abstract' model
8) staff planning is responsive to immediate learning needs as well as medium term learning progress and end goals
9) pre-learning and intervention activities are planned across the teaching team with the aim of consistency through collaboration
10) Home Learning in maths is supported by ParentLearn sessions delivered to upskill and inform parents about the curriculum and its delivery

Monitoring the effectiveness of the procedure

The **Headteacher** is responsible for overseeing the introduction, implementation, monitoring and review of this procedure

Review

The Calculation Procedure will be reviewed at regular intervals and may be adjusted as a result of that review process.

[4] *National curriculum in England: mathematics programmes of study*

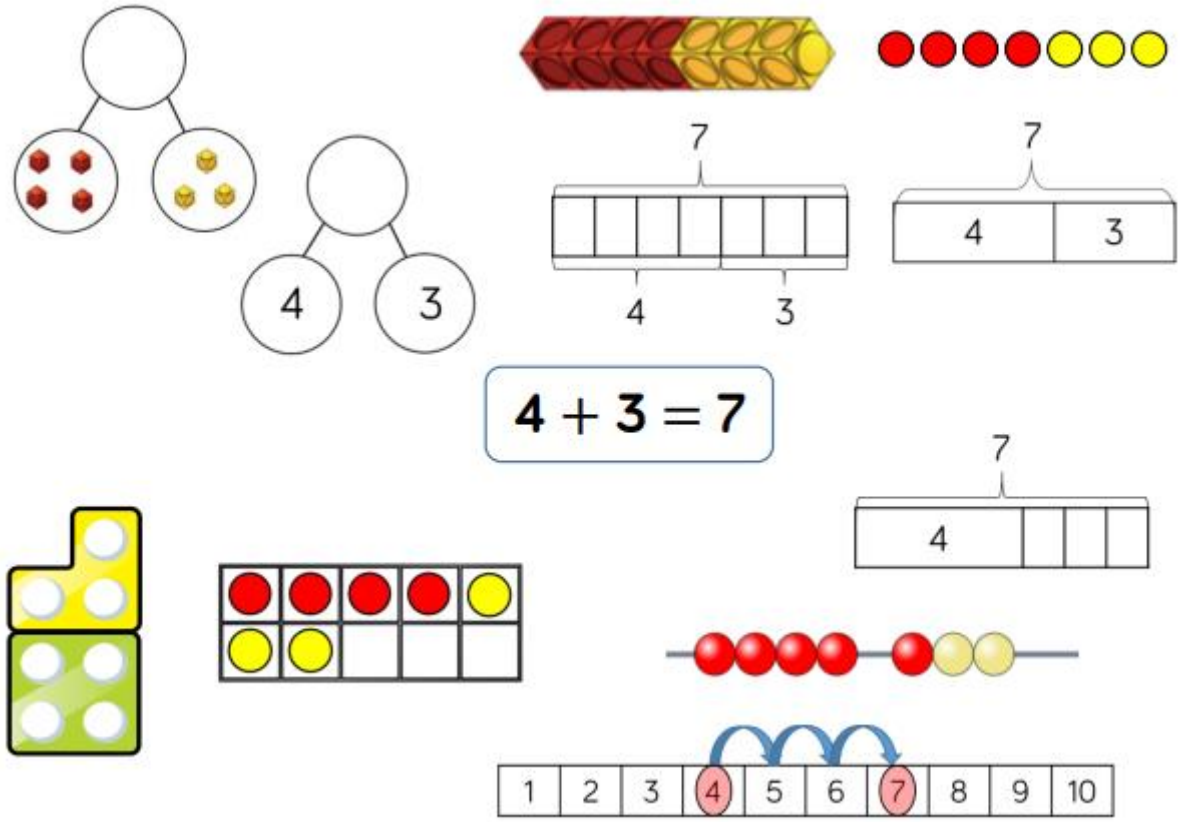
Appendix

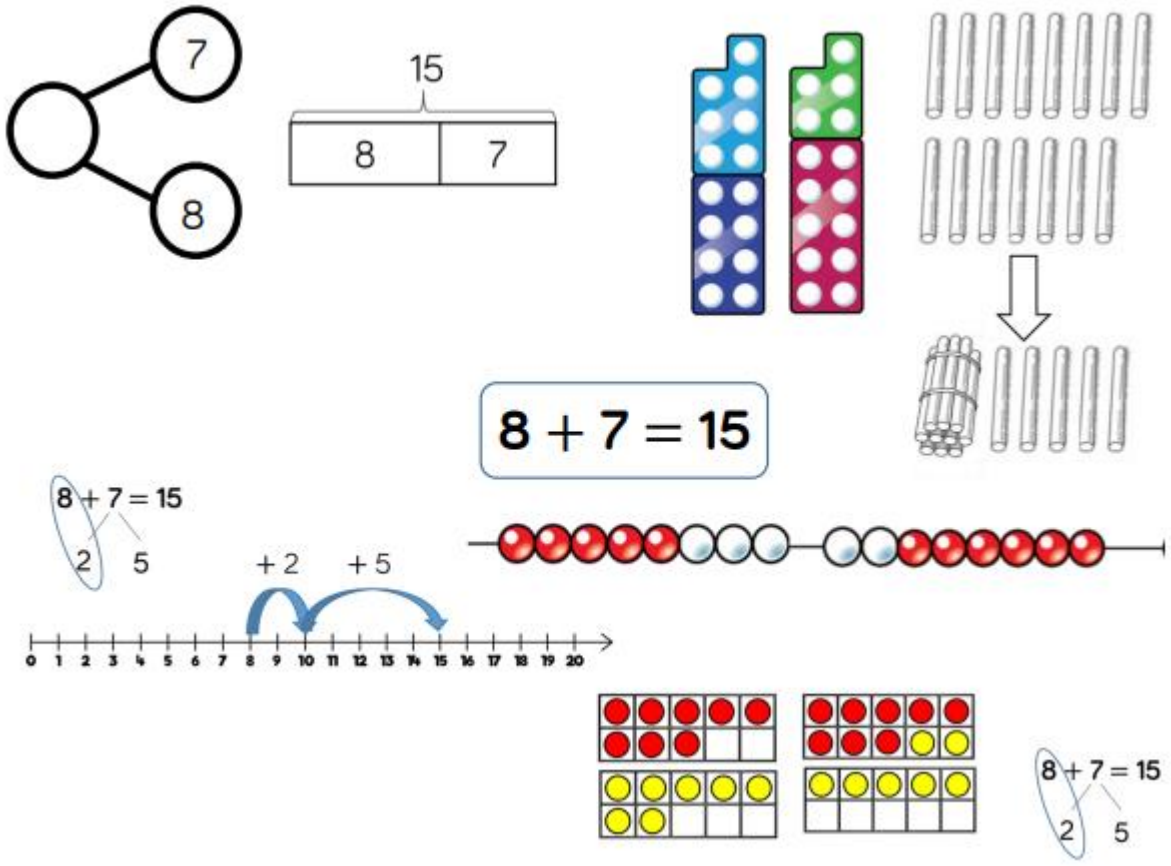
The following examples are taken from the White Rose approach to Calculation.

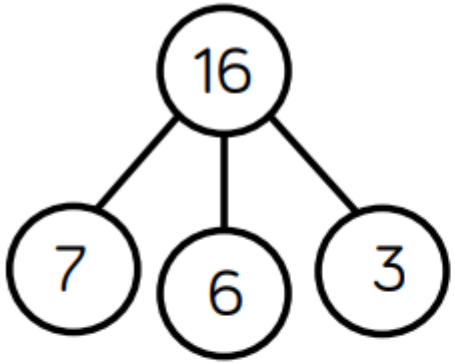
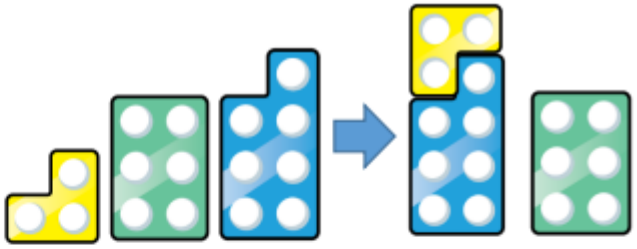
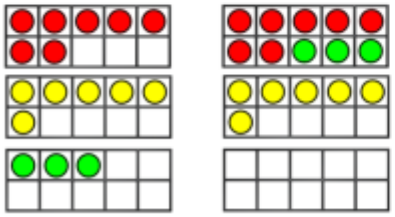
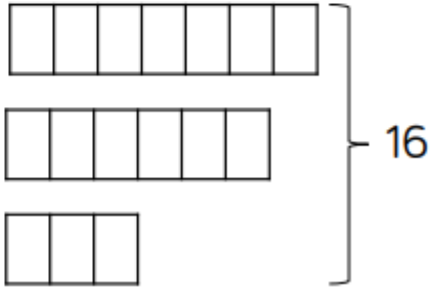
Addition and subtraction

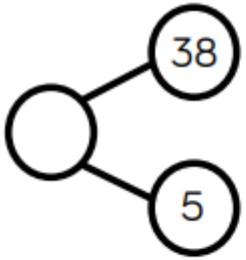
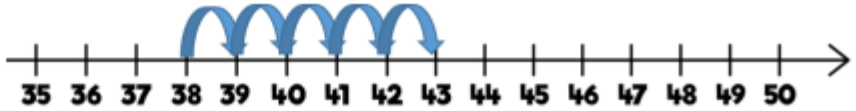
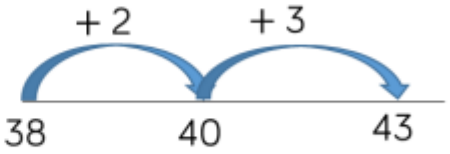
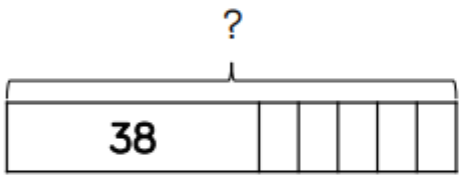
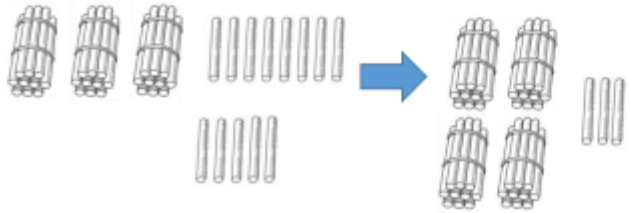
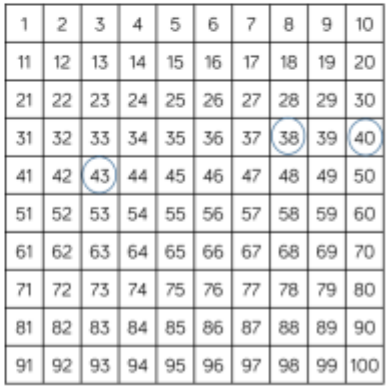
Progression of representations and models:

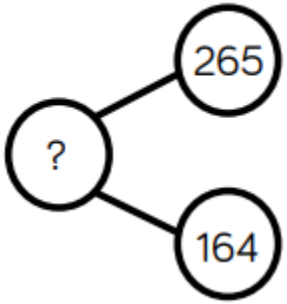
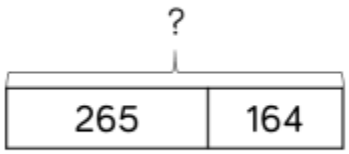
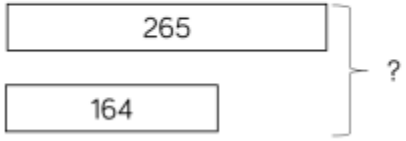
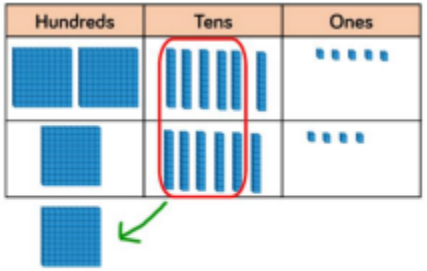
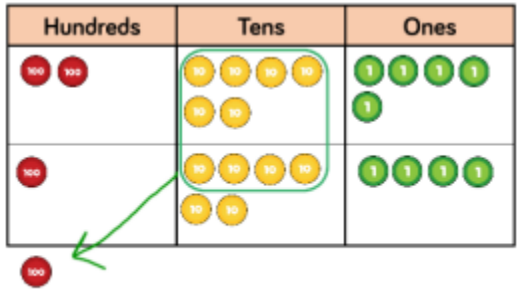
Skill	Year	Representations and models
Add two 1-digit numbers to 10	1	*Part-whole model Bar model Number shapes Ten frames (within 10) Bead strings (10) Number tracks*
Add 1 and 2-digit numbers to 20	1	*Part-whole model Bar model Number shapes Ten frames (within 20) Bead strings (20) Number tracks Number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

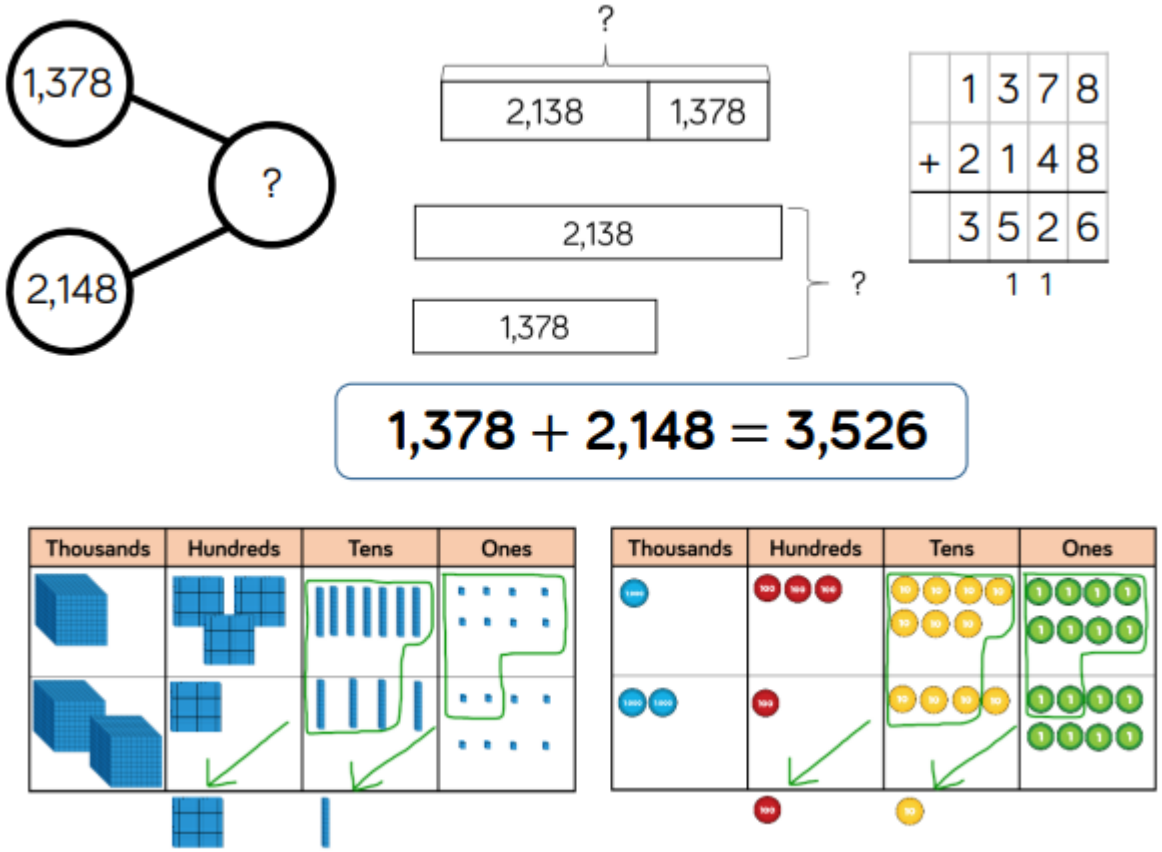
Skill: Add 1-digit numbers within 10	Year:1
	*When adding numbers to 10, children can explore both aggregation and augmentation.* *The part-whole model, discrete and continuous bar model, number shapes and ten frame support aggregation. The combination bar model, ten frame, bead string and number track all support augmentation.*

Skill: Add 1 and 2 -digit numbers to 20	**Year: 1/2**
	*When adding one - digit numbers that cross 10, it is important to highlight the importance of ten ones equalling one ten. In Year 1, this is only done just by counting on. From Year 2, use different manipulatives can be used to represent this exchange alongside number lines to support children in understanding how to partition their jumps.*

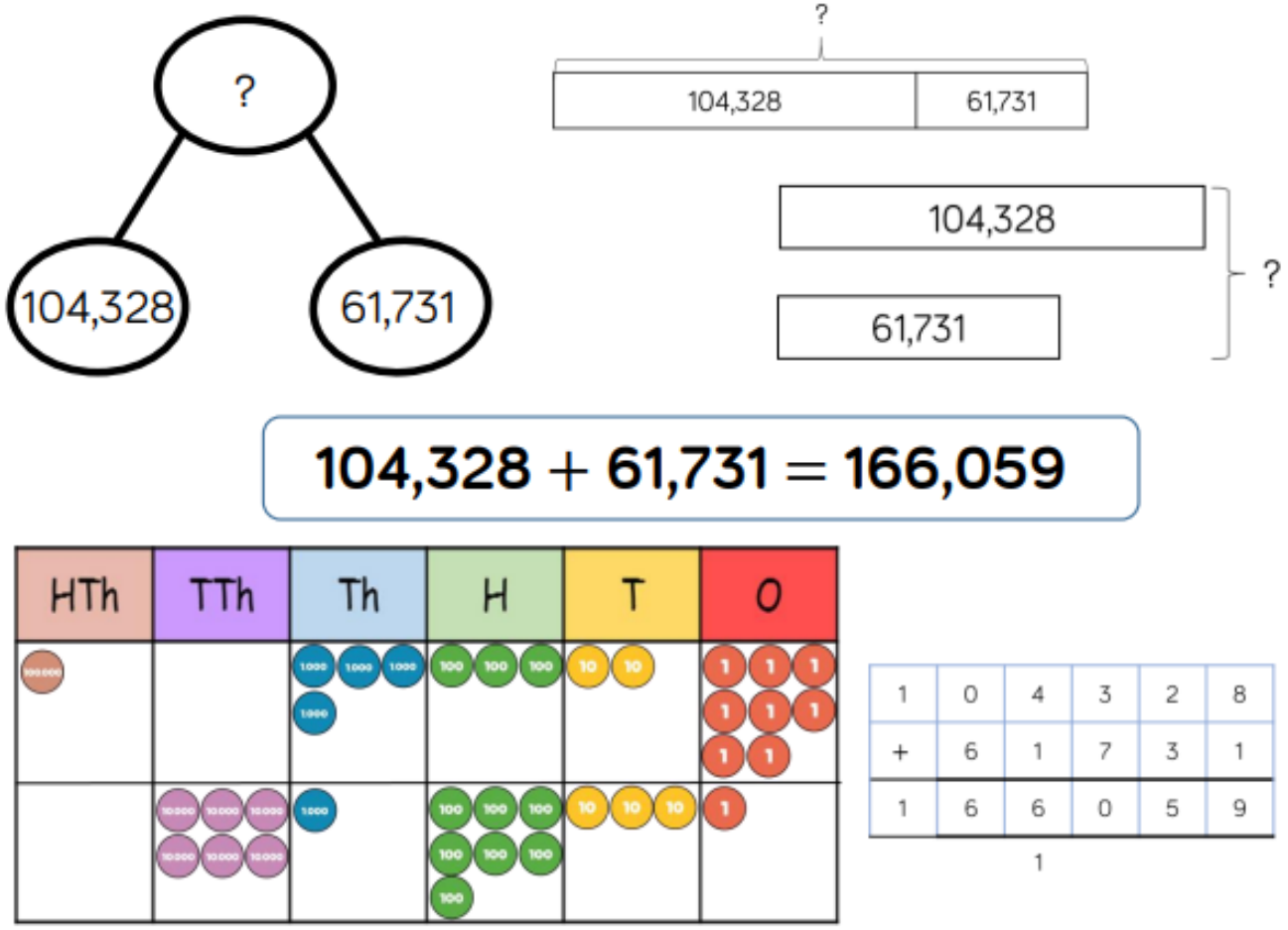
Skill: Add three 1 -digit numbers	*Year: 2*
  $7 + 6 + 3 = 16$  $7 + 6 + 3 = 16$ 10 	*When adding three 1 -digit numbers, children should be encouraged to look for number bonds to 10 or doubles to add the numbers more efficiently. This supports children in their understanding of commutativity. Manipulatives that highlight number bonds to 10 are effective when adding three 1 -digit numbers.*

Skill: Add 1-digit and 2-digit numbers to 100	*Year: 2/3*
    **38 + 5 = 43**  	*When adding single digits to a two-digit number, children should be encouraged to count on from the larger number. They should also apply their knowledge of number bonds to add more efficiently e.g. 8 + 5 = 13 so 38 + 5 = 43. Hundred squares and straws can support children to find the number bond to 10.*

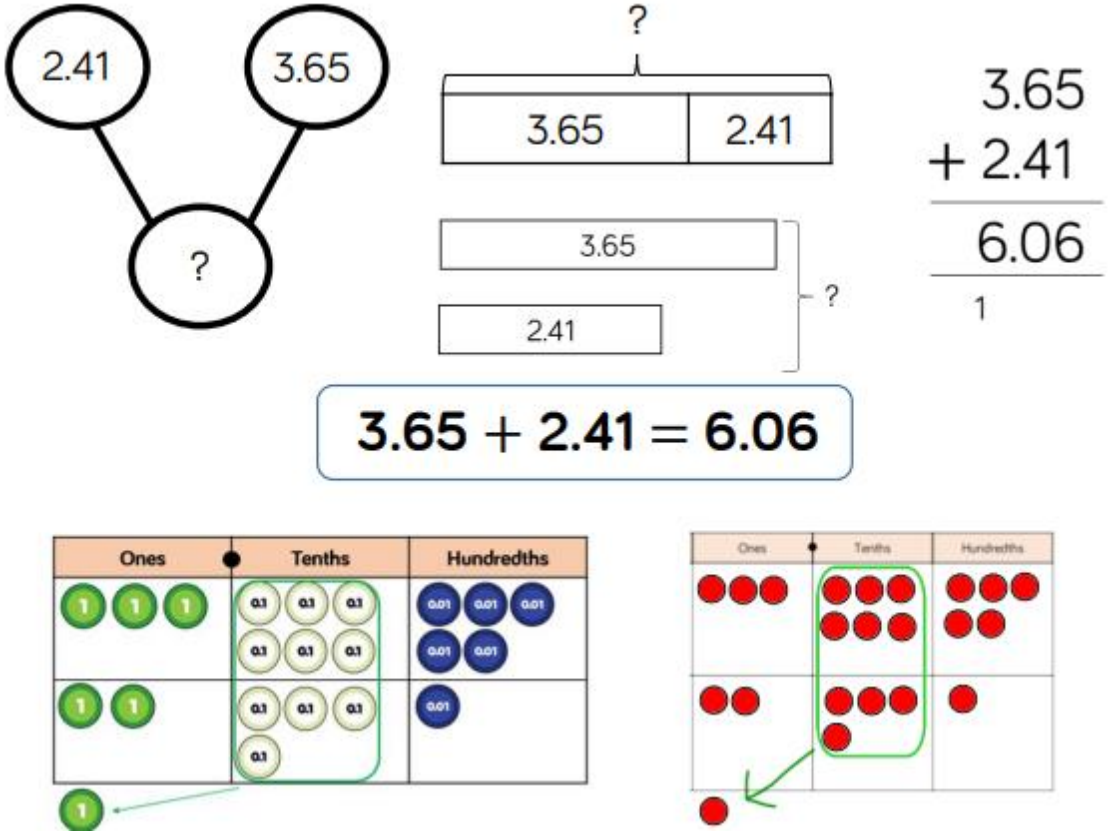
Skill: Add numbers with up to 3 digits	*Year: 3*
   **265 + 164 = 429**  265 + 164 429 1 	*Base 10 and place value counters are the most effective manipulatives when adding numbers with up to 3 digits. Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method. Plain counters on a place value grid can also be used to support learning.*

Skill: Add numbers with up to 4 digits	*Year: 4*
	*Base 10 and place value counters are the most effective manipulatives when adding numbers with up to 4 digits. Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method. Plain counters on a place value grid can also be*

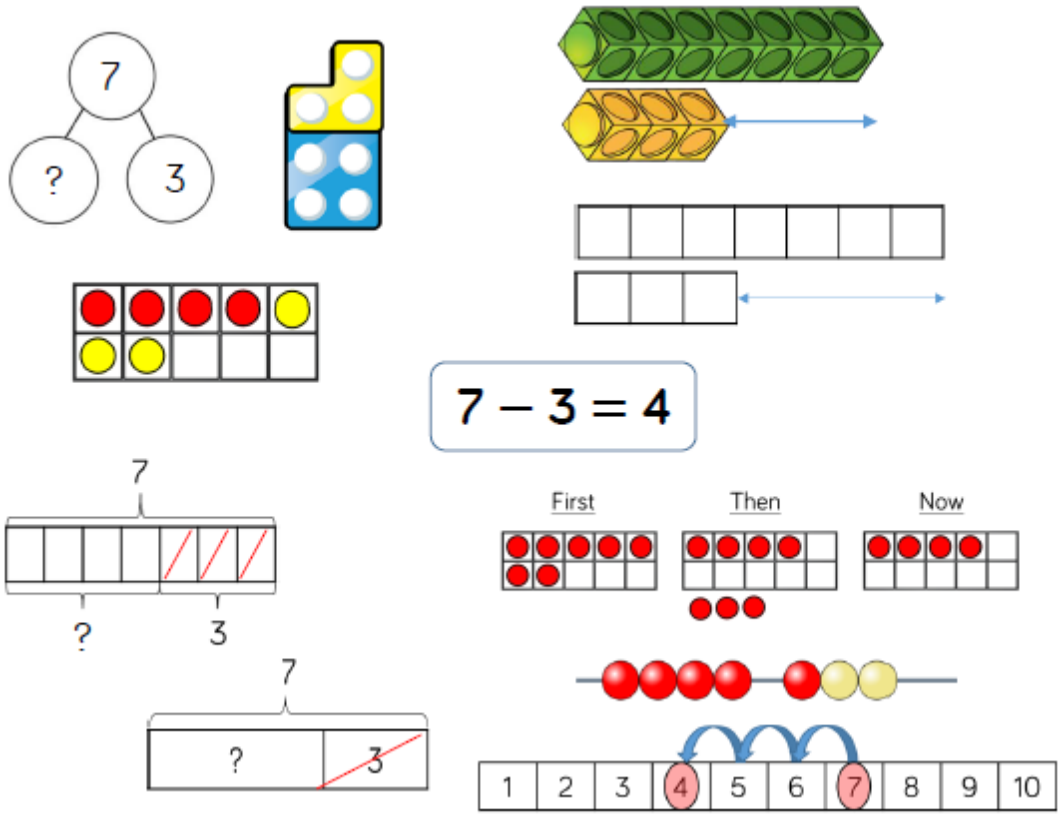
	used to support learning
Skill: Add numbers with more than 4 digits	*Year: 5/6*

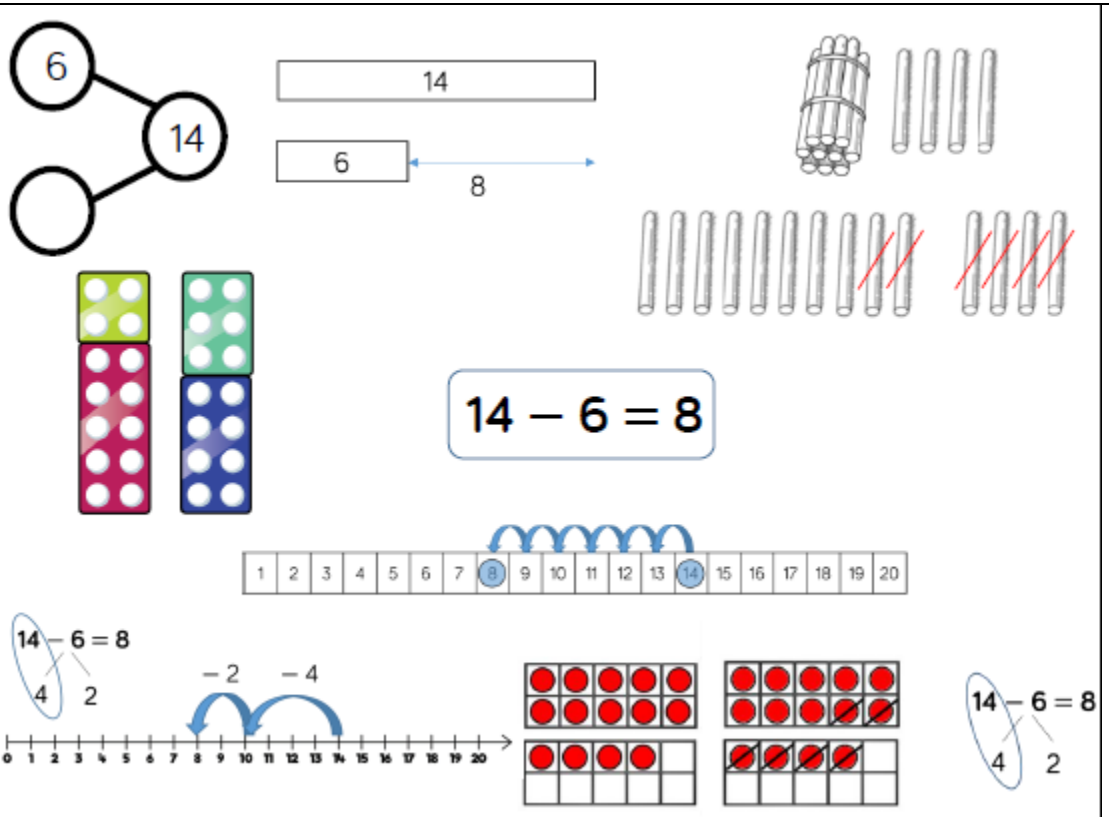


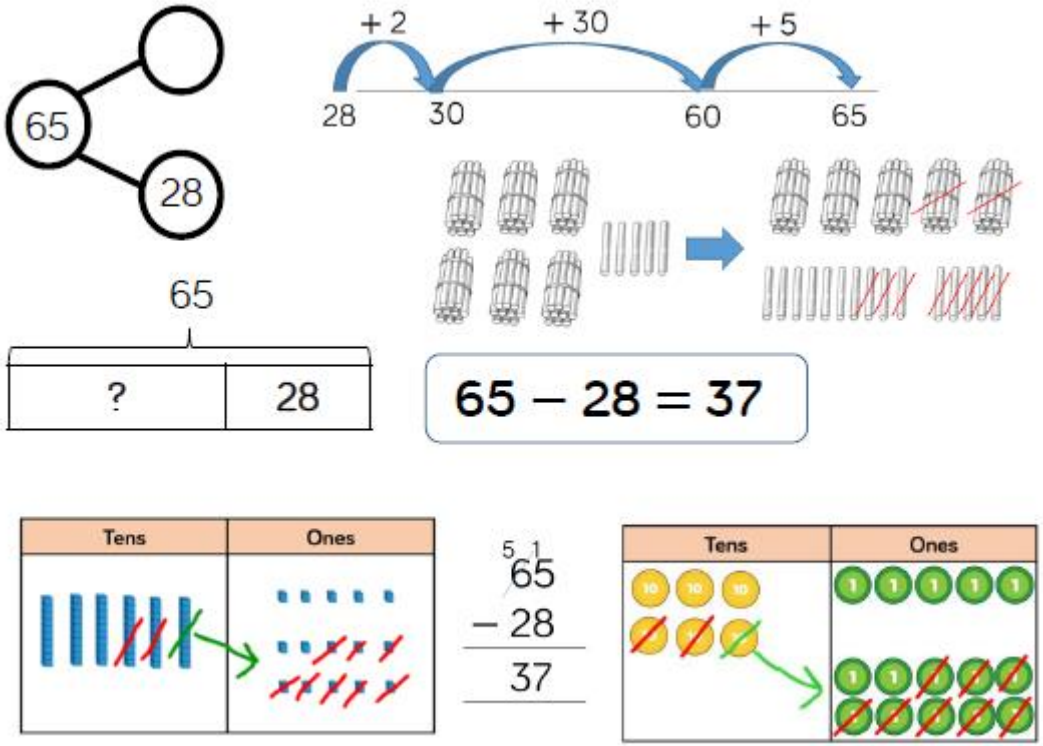
Place value counters or plain counters on a place value grid are the most effective concrete resources when adding numbers with more than 4 digits. At this stage, children should be encouraged to work in the abstract, using the column method to add larger numbers efficiently.

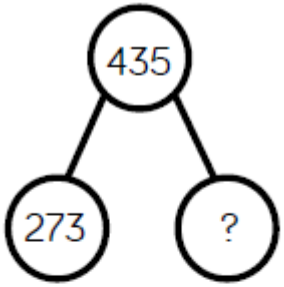
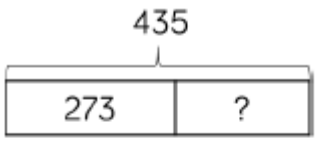
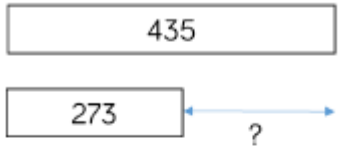
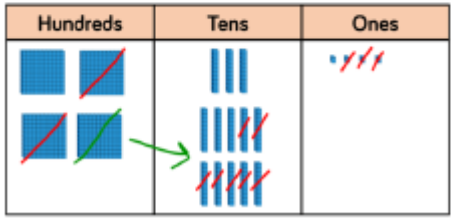
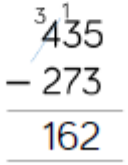
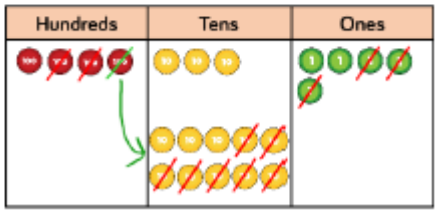
Skill: Add with up to 3 decimal places	*Year: 5*
	*Place value counters and plain counters on a place value grid are the most effective manipulatives when adding decimals with 1, 2 and then 3 decimal places. Ensure children have experience of adding decimals with a variety of decimal places. This includes putting this into context when adding money and other measures.*

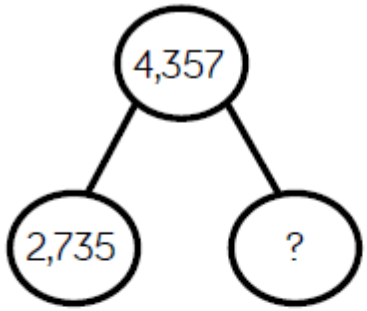
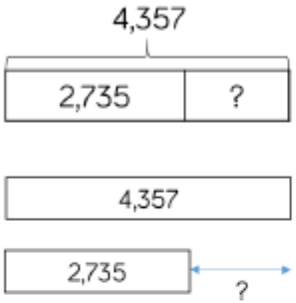
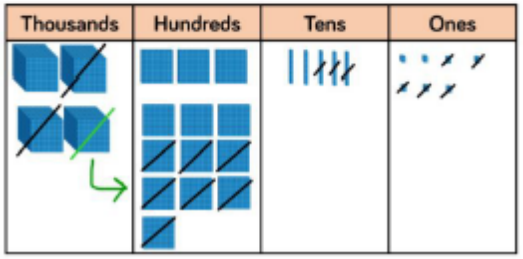
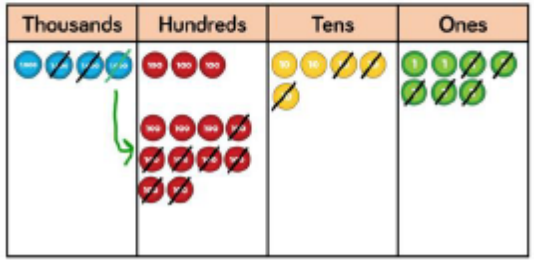
Skill	Year	Representations and models
Subtract two 1-digit numbers to 10	1	*Part-whole model Bar model Number shapes Ten frames (within 10) Bead strings (10) Number tracks*
Subtract 1 and 2-digit numbers to 20	1	*Part-whole model Bar model Number shapes Ten frames (within 20) Bead string (20) Number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

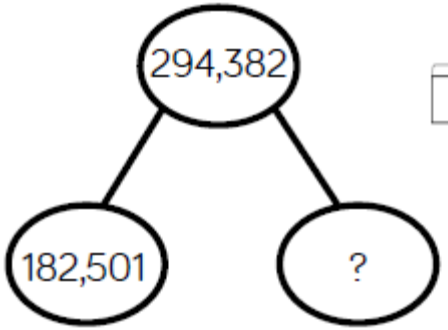
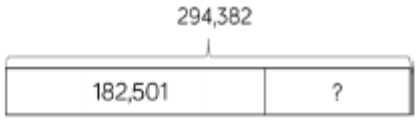
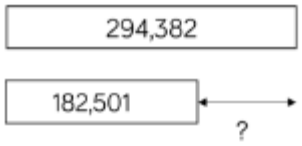
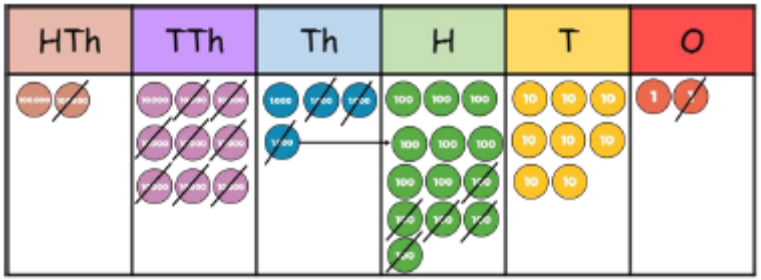
Skill:Subtract 1-digit numbers within 10	Year 1
	Part-whole models, bar models, ten frames and number shapes support partitioning. Ten frames, number tracks, single bar models and bead strings support reduction. *Cubes and bar models with two bars can support finding the difference*

Skill:Subtract 1 and 2-digit numbers to 20	Year 1 & 2
	In Year 1, subtracting one-digit numbers that cross 10, is 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 particularly useful for this. .

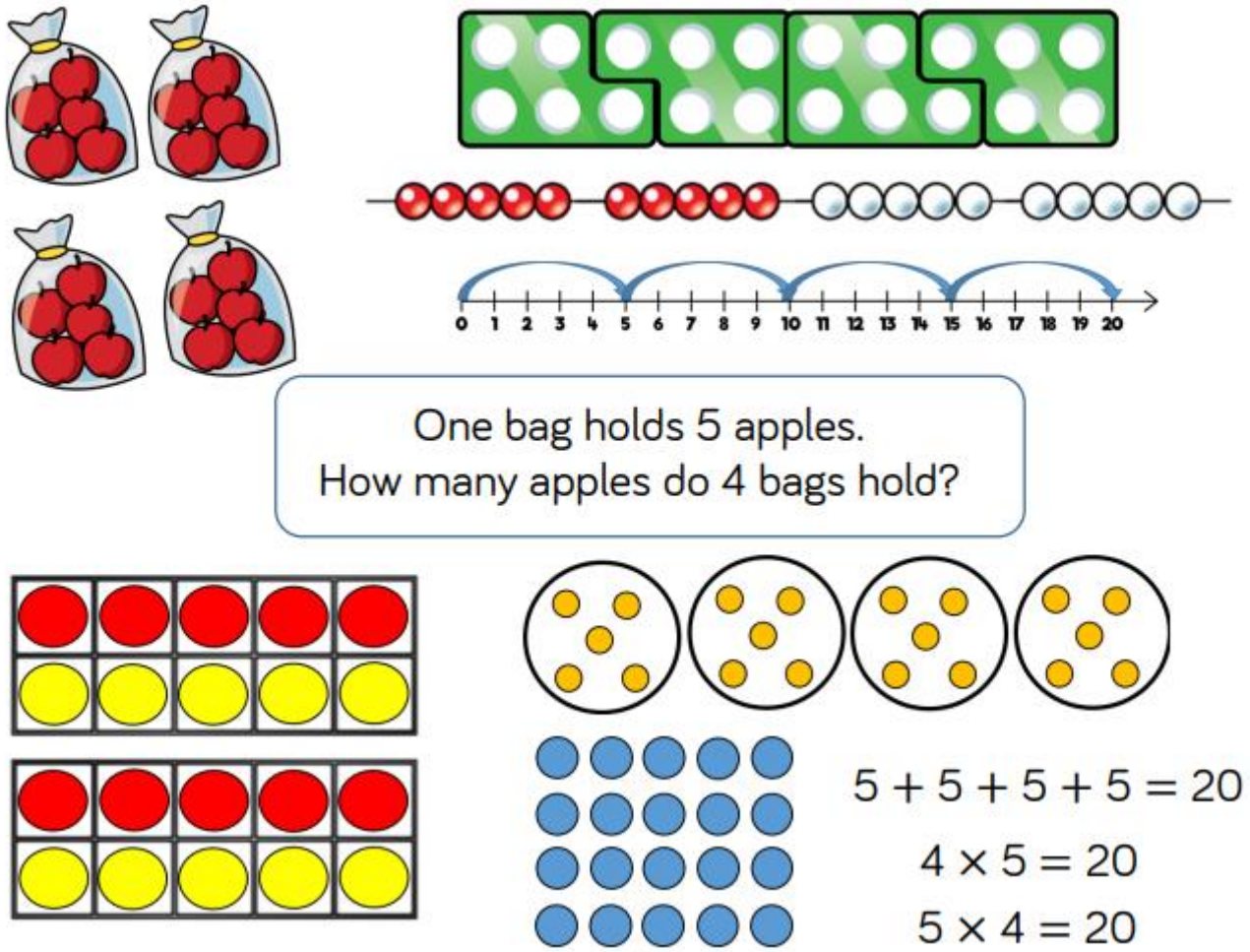
Skill:Subtract 1 and 2-digit numbers to 100	Year 2 & 3
	Children can also use a blank number line to count back to find the difference. Encourage them to jump to multiples of 10 to become more efficient. *From Year 3, encourage children to use the formal column method when calculating alongside straws, base 10 or place value counters. As numbers become larger, straws become less efficient*

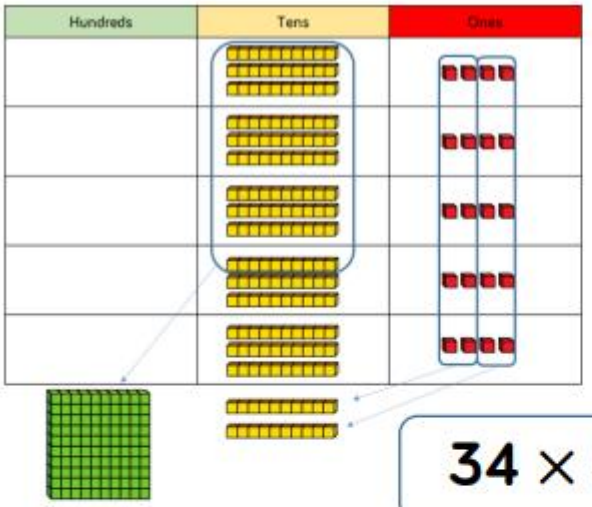
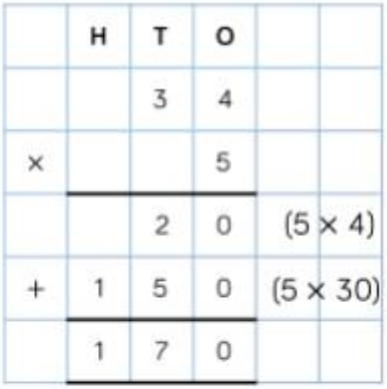
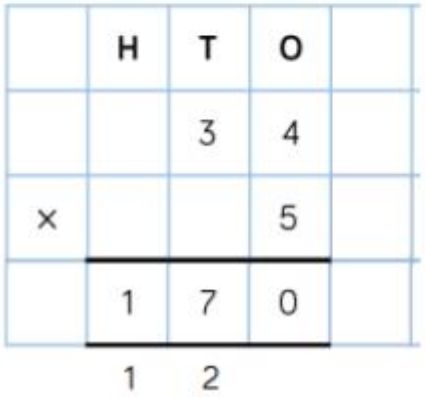
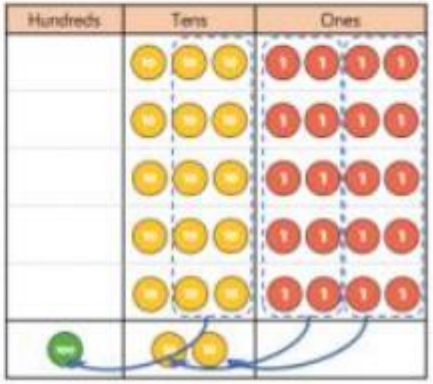
Skill:Subtract numbers with up to 3 digits	Year: 3
   $435 - 273 = 162$   	Base 10 and place value counters are the most effective manipulative when subtracting numbers with up to 3 digits. Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method. *Plain counters on a place value grid can also be used to support learning.*

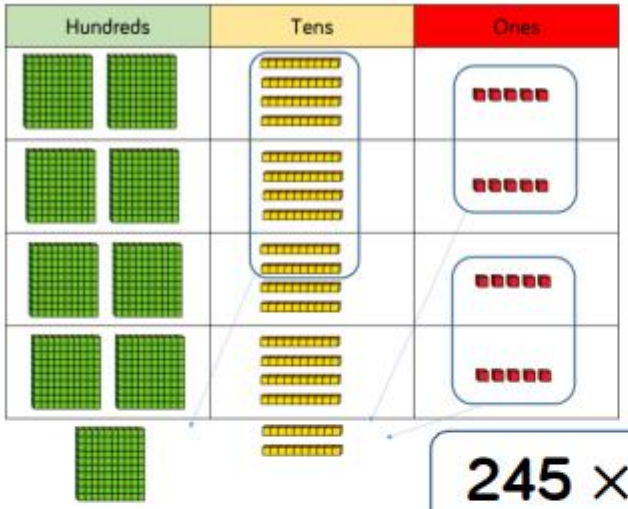
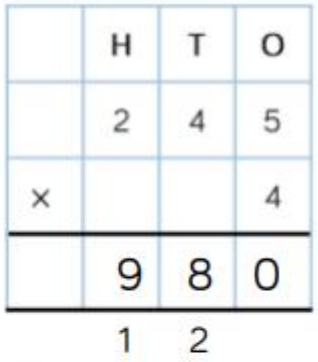
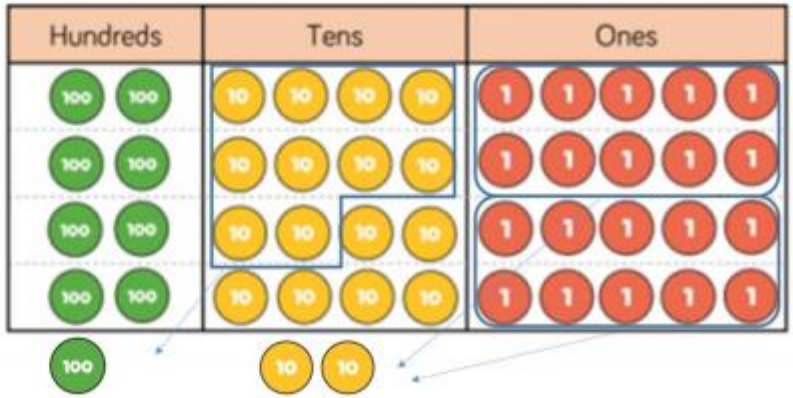
Skill:Subtract numbers with up to 4 digits	**Year 4**
  3 1 4357 − 2735 1622 **4,357 − 2,735 = 1,622**  	Base 10 and place value counters are the most effective manipulatives when subtracting numbers with up to 4 digits. Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method. *Plain counters on a place value grid can also be used to support learning.*

Skill: Subtract numbers with more than 4 digits	**Year: 5/6**
   **294,382 − 182,501 = 111,881**  	Place value counters or plain counters on a place value grid are the most effective concrete resource when subtracting numbers with more than 4 digits. *At this stage, children should be encouraged to work in the abstract, using column method to subtract larger numbers efficiently.*

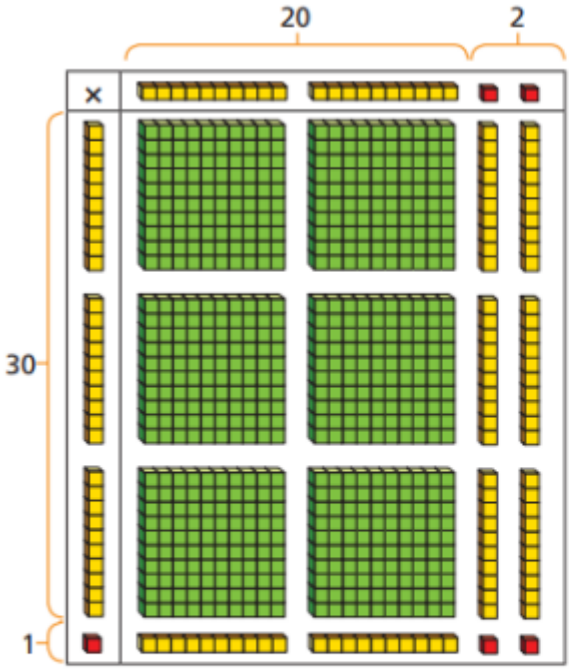
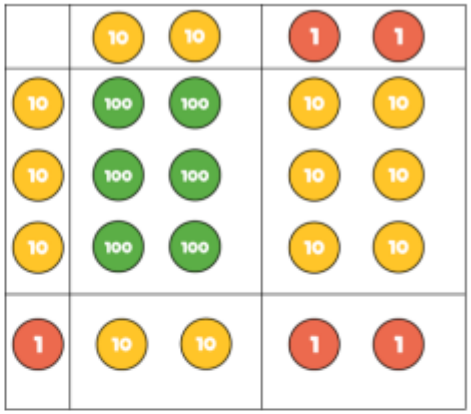
Skill	Year	Representations and models
Solve one-step problems with multiplication	**1 & 2**	*Bar model Number shapes Counters Ten frames Bead strings Number lines*
Multiply 2-digit by 1- digit numbers	**3 & 4**	*Place value counters Base 10 Expanded written method Short written method*
Multiply 3-digit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

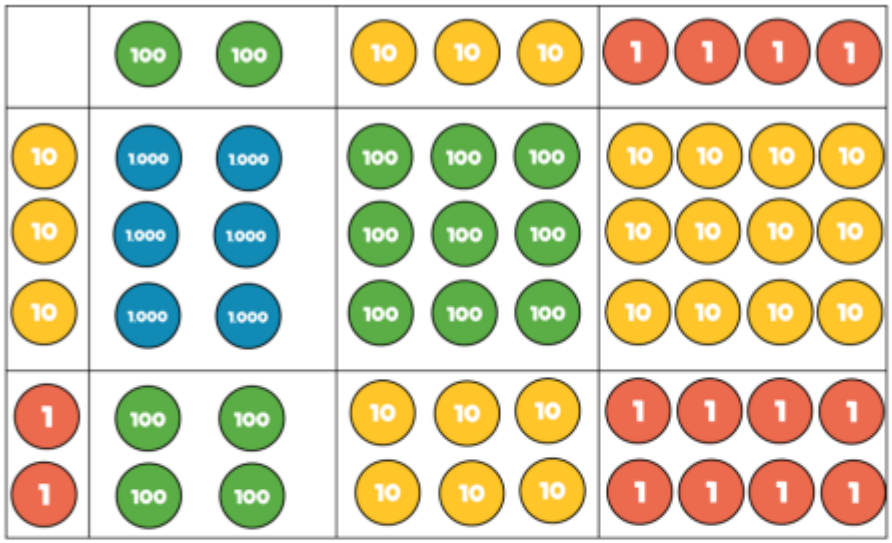
Skill: Solve 1-step problems using multiplication	Year 1 & 2
	*Children represent multiplication as repeated addition in many different ways.* *In Year 1, children use concrete and pictorial representations to solve problems. They are not expected to record multiplication formally.* *In Year 2, children are introduced to the multiplication symbol.*

Skill: Multiply 2-digit numbers by 1-digit numbers	Year 3 & 4
  $34 \times 5 = 170$  	*nformal methods and the expanded method are used in Year 3 before moving on to the short multiplication method in Year 4.* *Place value counters should be used to support the understanding of the method rather than supporting the multiplication, as children should use times table knowledge.*

Skill: Multiply 3-digit numbers by 1-digit numbers	Year 4
  $245 \times 4 = 980$ 	*When moving to 3- digit by 1-digit multiplication, encourage children to move towards the short, formal written method. Base 10 and place value counters continue to support the understanding of the written method. Limit the number of exchanges needed in the questions and move children away from resources when multiplying larger numbers.*

Skill: Multiply 4-digit numbers by 1-digit numbers	*Year 5*
 **1,826 × 3 = 5,478** | | Th | H | T | O | |---|---|---|---|---| | | 1 | 8 | 2 | 6 | | × | | | | 3 | | | 5 | 4 | 7 | 8 | | | 2 | | 1 | |	*When multiplying 4- digit numbers, place value counters are the best manipulative to use to support children in their understanding of the formal written method. If children are multiplying larger numbers and struggling with their times tables, encourage the use of multiplication grids so children can focus on the use of the written method.*

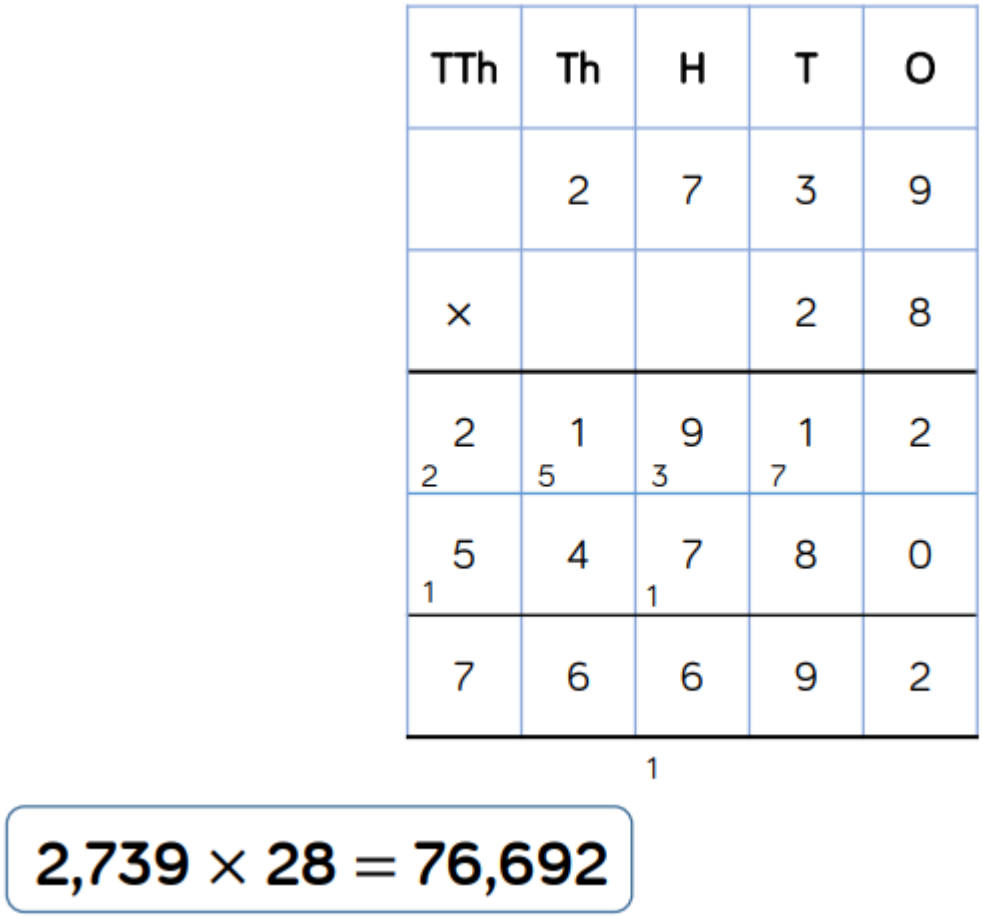
Skill: Multiply 2-digit numbers by 2-digit numbers	*Year 5*
  | × | 20 | 2 | |---|---|---| | 30 | 600 | 60 | | 1 | 20 | 2 | | | H | T | O | |---|---|---|---| | | | 2 | 2 | | × | | 3 | 1 | | | | 2 | 2 | | | 6 | 6 | 0 | | | 6 | 8 | 2 | **22 × 31 = 682**	*When multiplying a multi-digit number by 2-digits, use the area model to help children understand the size of the numbers they are using. This links to finding the area of a rectangle by finding the space covered by the Base 10. The grid method matches the area model as an initial written method before moving on to the formal written multiplication method.*

Skill: Multiply 3-digit numbers by 2-digit numbers	*Year: 5*
	*Children can continue to use the area model when multiplying 3-digits by 2-digits. Place value counters become more efficient to use but Base 10 can be used to highlight the size of numbers. Children should now move towards the formal written method, seeing the links with the grid method.*

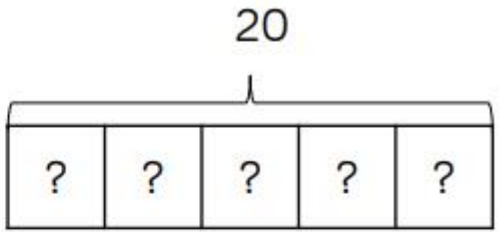
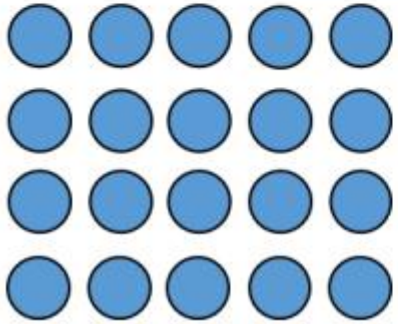
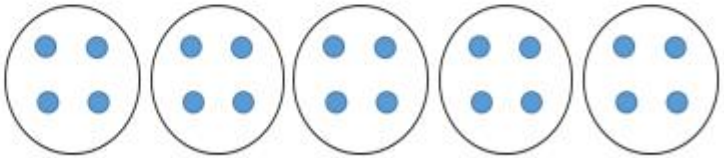
Th	H	T	O
	2	3	4
×		3	2
	4	6	8
$^{1}7$	$^{1}0$	2	0
7	4	8	8

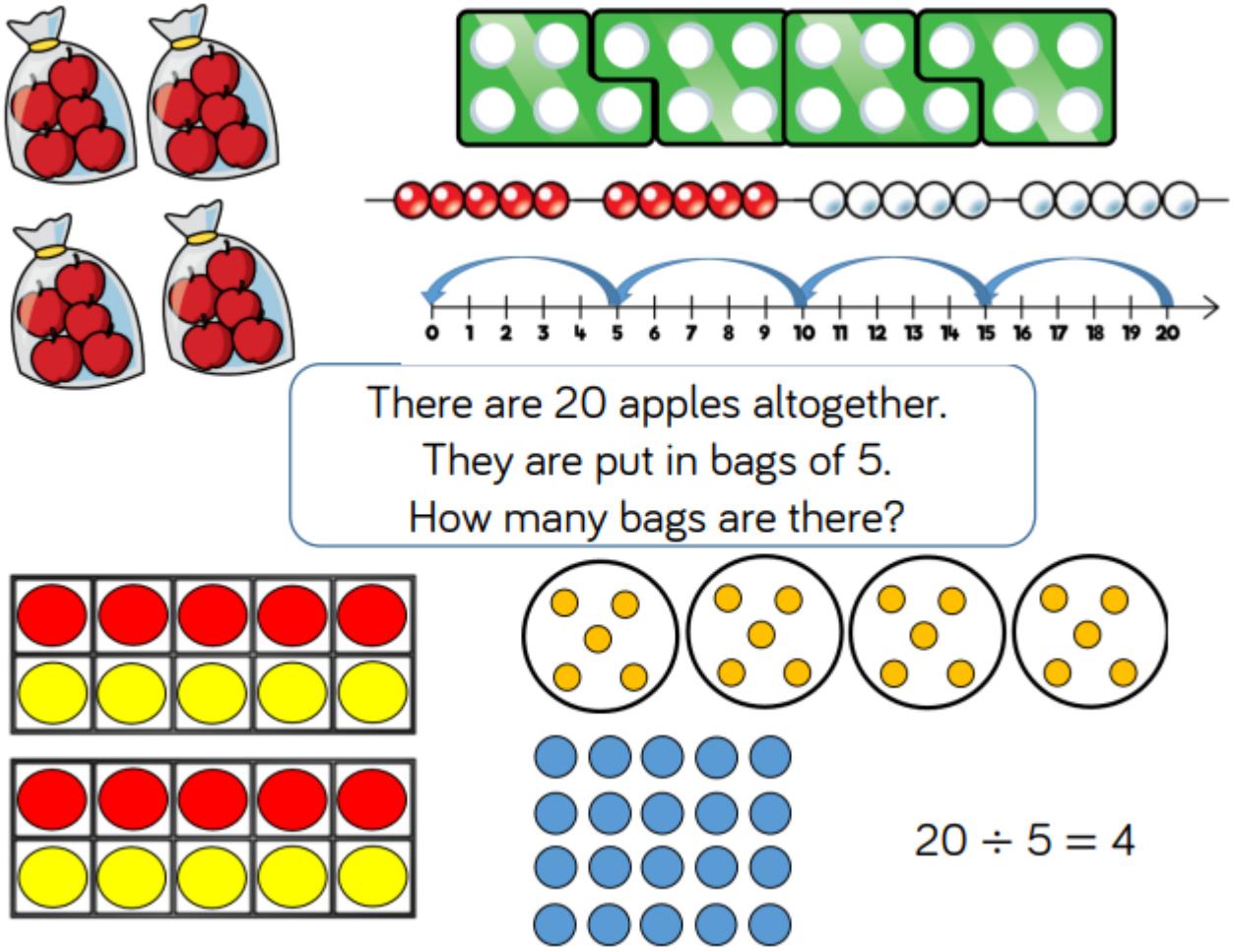
×	200	30	4
30	6,000	900	120
2	400	60	8

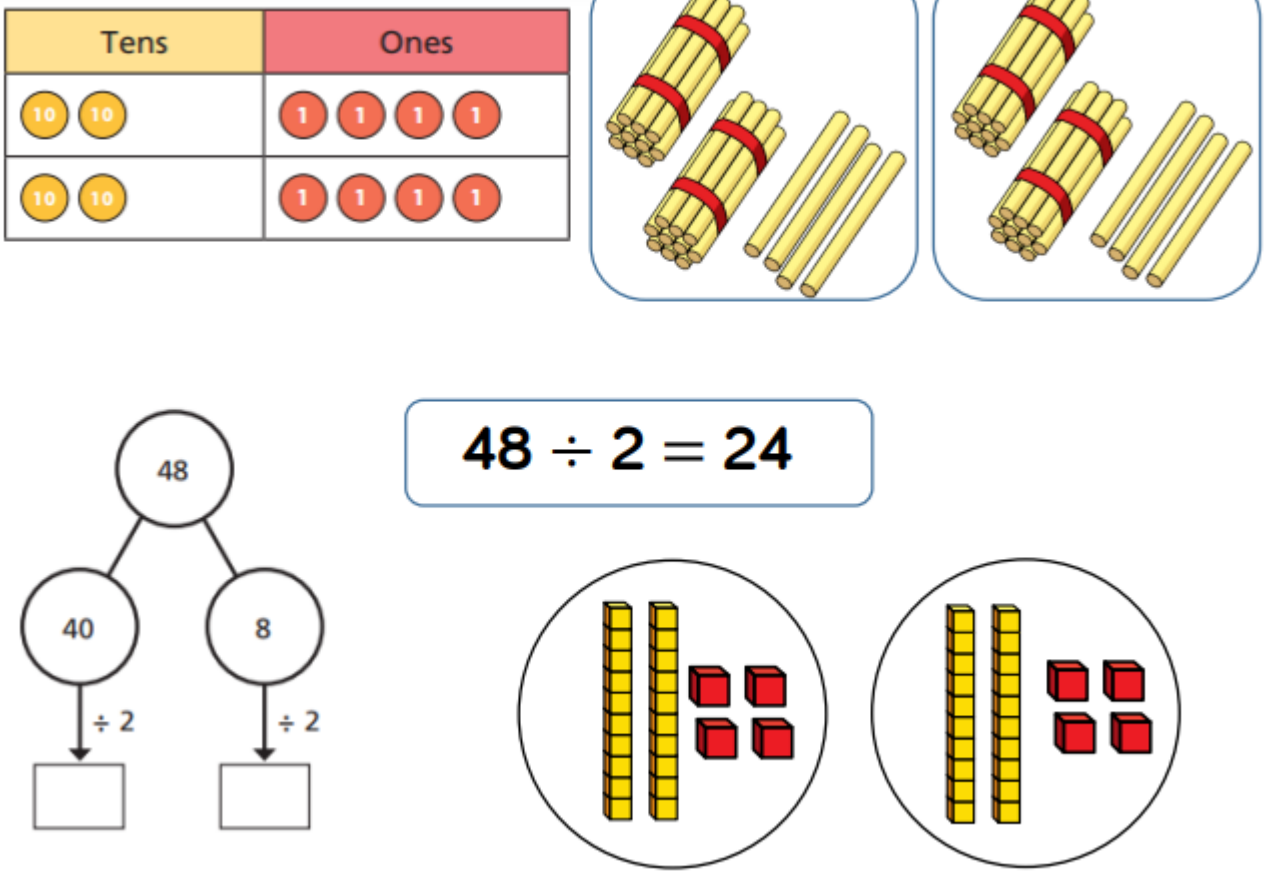
$234 \times 32 = 7{,}488$

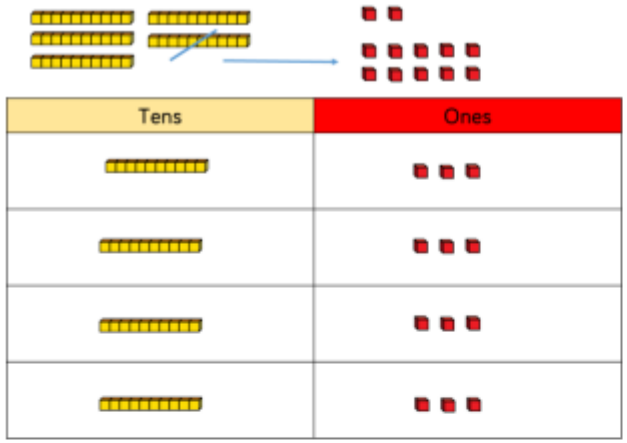
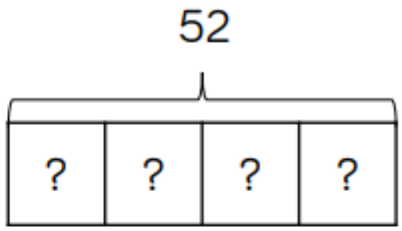
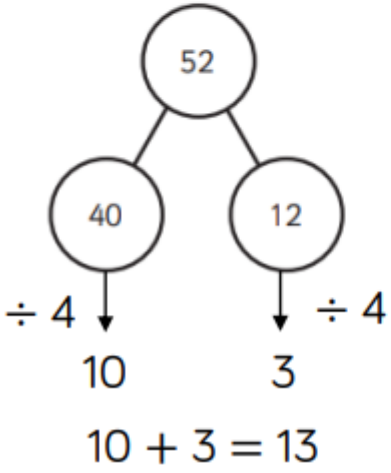
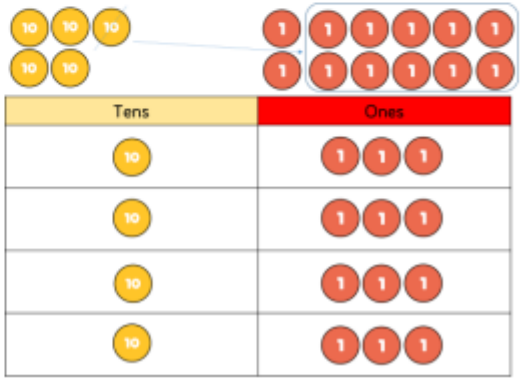
Skill: Multiply 4-digit numbers by 2-digit numbers	*Year 5/6*
	*When multiplying 4- digits by 2-digits, children should be confident in using the formal written method. If they are still struggling with times tables, provide multiplication grids to support when they are focusing on the use of the method. Consider where exchanged digits are placed and make sure this is consistent.*

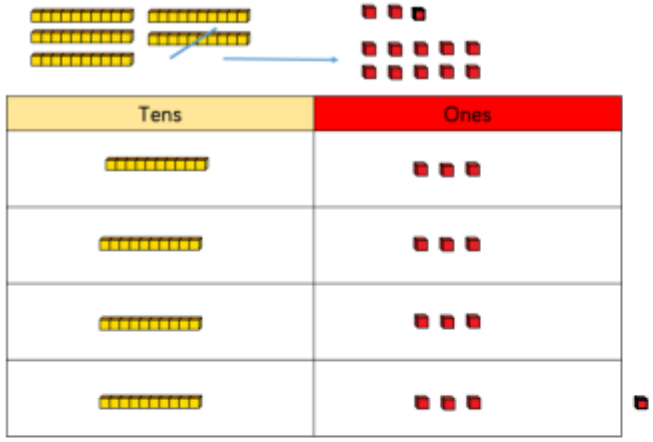
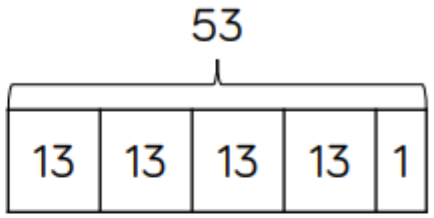
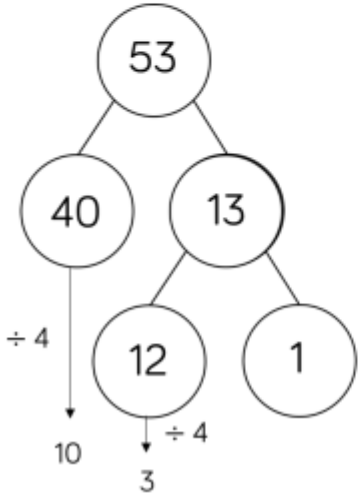
Skill	Year	Representations and models
Solve one-step problems with division (sharing)	**1 & 2**	*Bar model Real life objects Arrays Counters*
Solve one-step problems with division (grouping)	**1&2**	*Real life objects Number shapes Bead strings Ten frames Number lines Arrays Counters*
Divide 2-digits by 1- digit (no exchange sharing)	**3**	*Straws Base 10 Bar model Place value counters Part-whole model*
Divide 2-digits by 1- digit (sharing with exchange)	**3**	*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 3-digits by 1- digit (sharing with exchange)	**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*

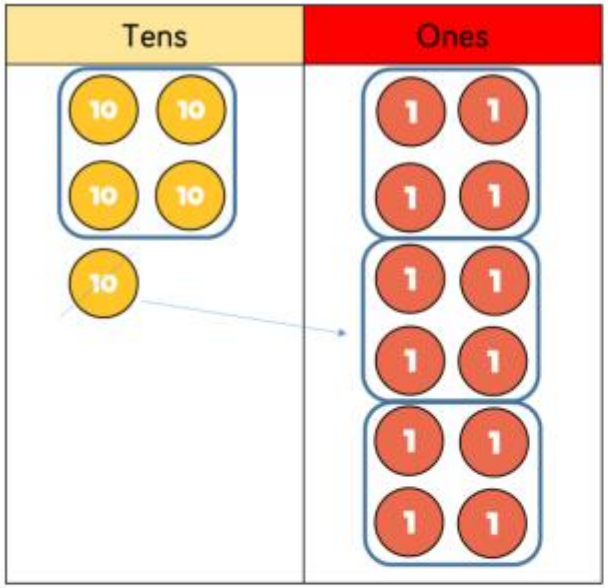
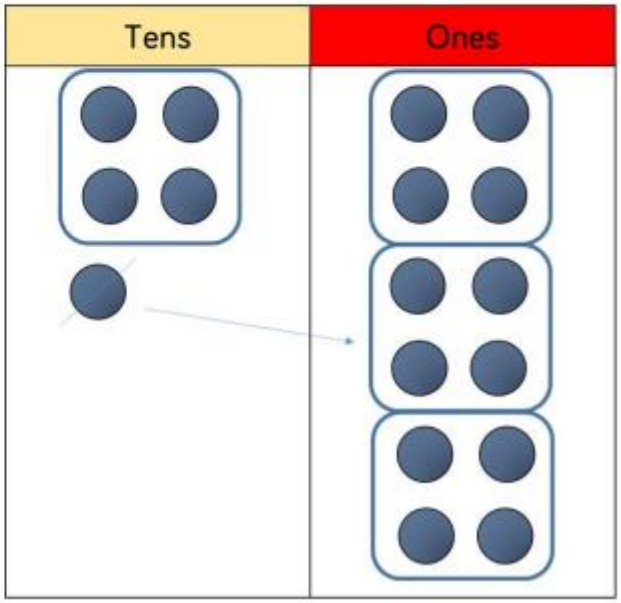
Skill: Solve 1-step problems using multiplication (sharing)	*Year: ½*
  There are 20 apples altogether. They are shared equally between 5 bags. How many apples are in each bag?   $20 \div 5 = 4$	*Children solve problems by sharing amounts into equal groups. In Year 1, children use concrete and pictorial representations to solve problems. They are not expected to record division formally. In Year 2, children are introduced to the division symbol.*

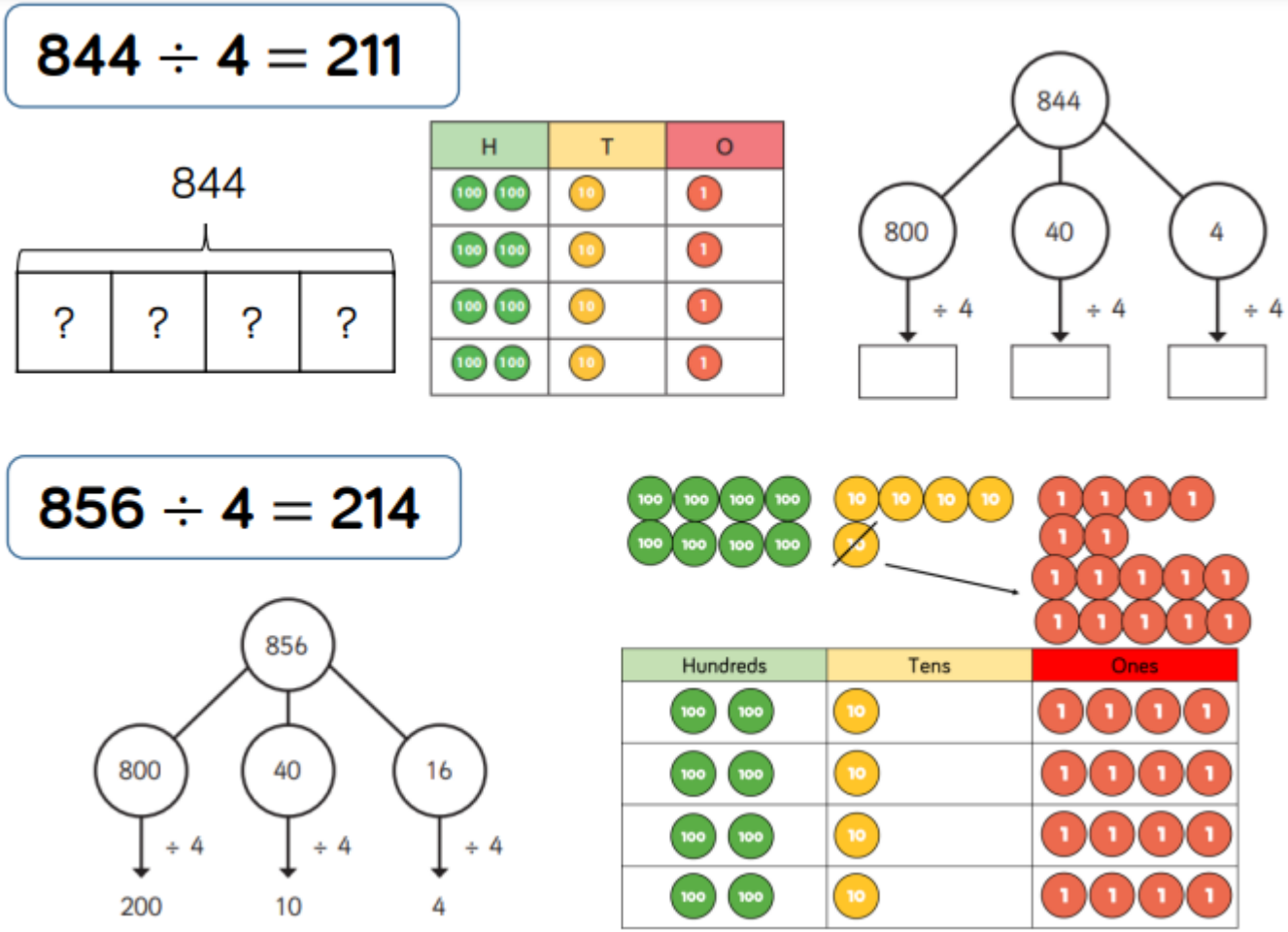
Skill: Solve 1-step problems using division (grouping)	*Skill: Solve 1-step problems using division (grouping)*
	*Children solve problems by grouping and counting the number of groups. Grouping encourages children to count in multiples and links to repeated subtraction on a number line. They can use concrete representations in fixed groups such as number shapes which helps to show the link between multiplication and division.*

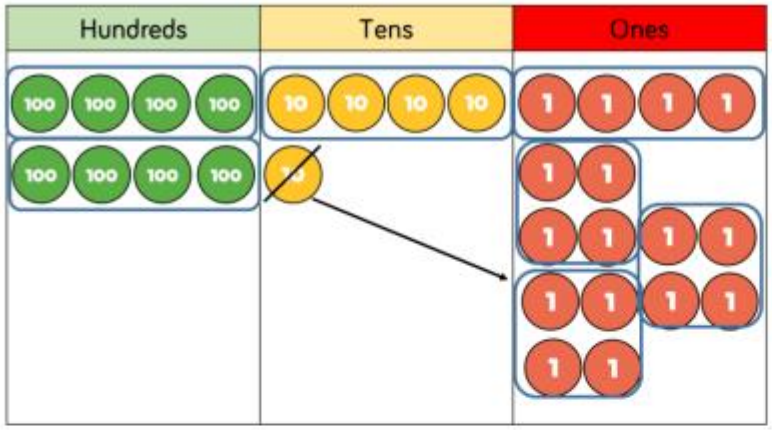
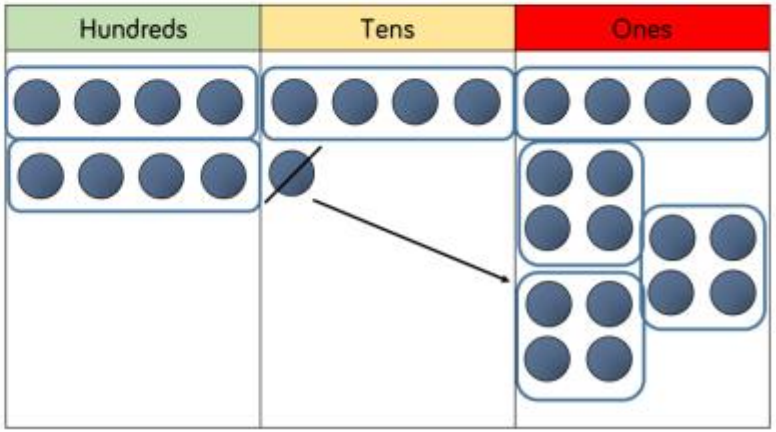
Skill: Divide 2-digits by 1-digit (sharing with no exchange)	*Year 3*
	*When dividing larger numbers, children can use manipulatives that allow them to partition into tens and ones. Straws, Base 10 and place value counters can all be used to share numbers into equal groups. Part-whole models can provide children with a clear written method that matches the concrete representation.*

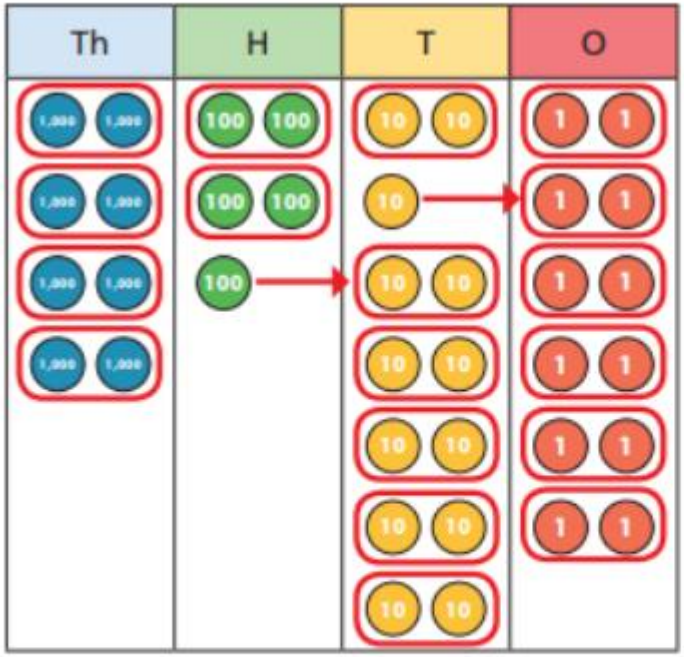
Skill: Divide 2-digits by 1-digit (sharing with exchange)	*Year: 3/4*
  **52 ÷ 4 = 13**  10 + 3 = 13 	*When dividing numbers involving an exchange, children can use Base 10 and place value counters to exchange one ten for ten ones. Children should start with the equipment outside the place value grid before sharing the tens and ones equally between the rows. Flexible partitioning in a part-whole model supports this method.*

Skill: Divide 2-digits by 1-digit (sharing with remainders)	*Year: 3/4*
   **53 ÷ 4 = 13 r1** 	*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 grid 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.*

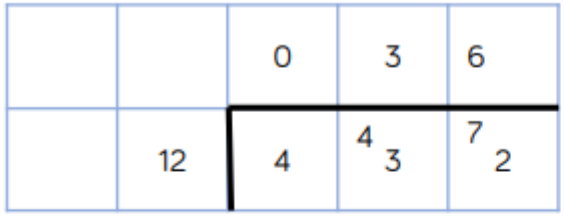
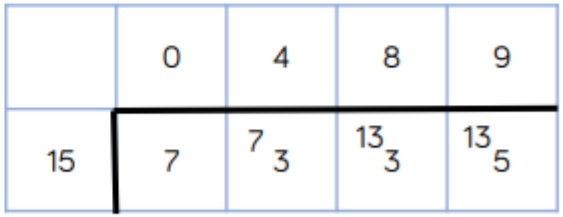
Skill: Divide 2-digits by 1-digit (grouping)	*Year 5*
   $52 \div 4 = 13$	*When using the short division method, children use grouping. Starting with the largest place value, they group by the divisor. Language is important here. Children should consider 'How many groups of 4 tens can we make?' and 'How many groups of 4 ones can we make?' Remainders can also be seen as they are left ungrouped.*

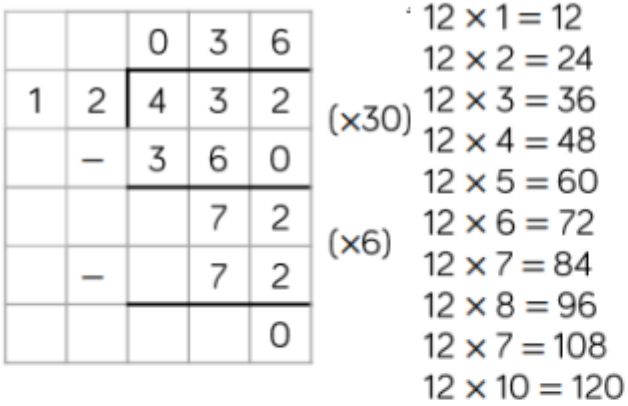
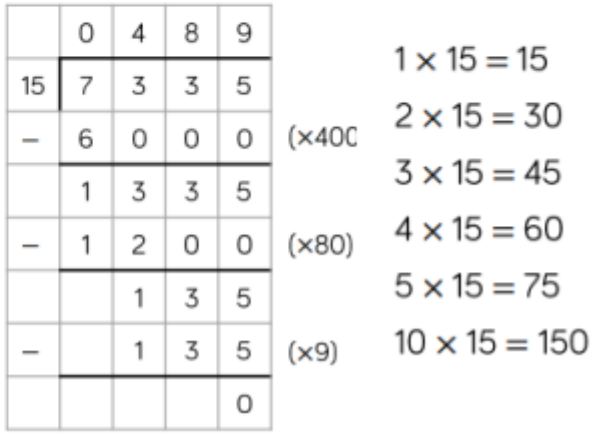
Skill: Divide 3-digits by 1-digit (sharing)	*Year: 4*
	*Children can continue to use place value counters to share 3- digit numbers into equal groups. Children should start with the equipment outside the place value grid before sharing the hundreds, tens and ones equally between the rows. This method can also help to highlight remainders. Flexible partitioning in a part-whole model supports this method.*

Skill: Divide 3-digits by 1-digit (grouping)	*Year 5*
   **856 ÷ 4 = 214**	*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.*

Skill: Divide 4-digits by 1-digit (grouping)	*Year 5*
 8,532 ÷ 2 = 4,266	*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.*

	4	2	6	6
2	8	5	$^{1}3$	$^{1}2$

Skill: Divide multi digits by 2-digits (short division)	*Year: 6*
 **432 ÷ 12 = 36** **7,335 ÷ 15 = 489**  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.*

Skill: Divide multi-digits by 2-digits (long division)	*Year: 6*
 **432 ÷ 12 = 36** **7,335 ÷ 15 = 489** 	*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.*

Skill: Divide multi digits by 2-digits (long division)	*Year 6*
372 ÷ 15 = 24 r12 1 5 | 3 7 2 → 2 4 r 1 2 – 3 0 0 7 2 – 6 0 1 2 1 × 15 = 15 2 × 15 = 30 3 × 15 = 45 4 × 15 = 60 5 × 15 = 75 10 × 15 = 150 1 5 | 3 7 2 → 2 4 $\frac{4}{5}$ – 3 0 0 7 2 – 6 0 1 2 **372 ÷ 15 = 24 $\frac{4}{5}$**	*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.*