Maths Policy

Policy produced by Go Shine CE Federation

Adopted by Governors -Academic year 2025/26 updated 01.09.23

Review date- As changes are made

Intent of our curriculum

Curriculum design

A high quality maths curriculum will ensure that pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

- **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

- can **speak** about what they have learned in a knowledgeable and **articulate** way, using their **'public voice'.**

We always start with the National Curriculum.

Teachers follow White Rose Maths Schemes of Work which have been written in line with the National Curriculum.

Teachers refer to the curriculum map and to the White Rose Scheme of Work. They read this to be clear on what they have to teach and how they have to teach it (the White Rose Maths Scheme of Work outlines the resources to use and the visuals that will support teaching) in order for children to reach the expected national standards. We always aim to teach all of our class at the expected national level (except those with SEND), and support lower attaining children to reach that level.

Teachers plan directly from the White Rose Maths Scheme of Work. White Rose Maths is a Scheme of Learning that is designed to provide an example overview of a year's teaching sequence, broken down into a series of 'small steps' to support teachers plan lessons. Teachers decide on what they will do over a series of lessons in order for the children to grasp the objectives outlined in the 'Small Steps'. The teacher will consider how to split the learning up into manageable chunks i.e. they think about the component parts that need to be taught in order to reach the composite learning. What will be the A to B to C of the lessons, both over one lesson and over the series of lessons? This means how will the teacher present new material in small steps with pupil practice after each step. Teachers need to limit the amount that is delivered at one time to minimise strain on to the child's working memory. This means they will think carefully about what they will model and what the children will practise in order to meet the learning objectives. Teachers think about how they will deepen the learning for the children. Teachers consider what are the key questions which they can use to recall prior learning and then to assess what the children's new learning has been. They consider how they will get children to problem solve and reason. Teachers also consider which mental strategies they will practise which will support the children to become fluent.

In order that pupils have enough opportunity to reason and problem solve, White Rose provide problem solving and reasoning resources for every 'Small Step' of Learning. They also provide a bank of resources for every year group organised termly of Problem Solving and Reasoning Questions. Teachers also have access to a Maths folder in the maths shared area called Problem Solving and Reasoning Resources with a bank of high-quality resources, question stems and activities that support good problem solving and reasoning. It is important that teachers acknowledge how much problem solving and reasoning is at the heart of good maths teaching and build this into their lessons.

Times Tables

We ensure that there is a focus on times tables and children learning these off by heart, both chanting the times tables and knowing the multiplication and related division facts off by heart.

By the end of Year 2, children should know X2, X5, X10 and the related division facts

By the end of Year 3, children should know X2, X3, X4, X5, X8, X10 and the related division facts

By the end of Year 4, children should know all times tables up to 12x12 and the related division facts

In Year 5 and Year 6, children should be given regular opportunity to recall the times tables up to 12x12 and the related division facts.

Teachers use regular times tables practice in maths lessons.

Maths resources to support planning

- White Rose Scheme of work breaking teaching and learning into 'small steps' with clear guidance on mathematical talk, varied fluency (making sure children see concepts in the concrete, visual and abstract form)
- A maths area in every classroom with high quality resources that match the resources used in White Rose Maths
- Maths folder in the maths shared area called Problem Solving and Reasoning Resources with a bank of high-quality resources, question stems and activities that support good problem solving and reasoning
- Maths folder in the maths shared area called fluency practice 10 minutes a day for Year 3 to Year 6 (Years 1 and 2 have access to White Rose Fluency Bee)
- Abacus text books (for the practice part of the lesson)
- Maths on Target books which are useful to practise what has been taught. There are text books from Year 3-6 and folders for years 1-2.
- Smartboard Notebook Interactive Whiteboard Resources on the White Rose website which supports the teaching of the 'small steps'

Timetabling

Over a week we will teach at least **four maths lessons** and **one arithmetic lesson.** As part of the maths lesson, there is a ten-minute slot for practising the key skills and developing fluency e.g. times tables, counting up and back on 100 square, number bonds etc with whiteboards, doubling, halving etc. Years 1 and 2 have access to Fluency Bee on the White Rose Maths website to support this part of the lesson. For Year 3 upwards, we have written a maths fluency scheme to support this part of the

lesson. This ensure continuity, progression and that teachers have a wide range of resources to support this important part of maths. The teacher can choose to do this at the beginning or end of the lesson.

The daily mathematics lesson

Fluency – 10-minute practice

This is usually taught at the start of the lesson but can be at the end of the lesson.

Retrieval practice

The teacher then moves onto the main content of the lesson. The teacher begins this part of the lesson by activating relevant prior learning, in preparation for building on this in the lesson. This is called retrieval practice.

Modelling

Teachers then explain and model (exposition) the new learning clearly using think aloud strategies and worked examples. The teacher often uses scaffolds such as concrete and pictorial supports, scaffolded frames, exemplars etc.
The teacher uses steps to success with the children to support their working memory.

Guided Practice and Independent Practice

The teacher then moves into the first stage of practice whereby pupils practise the process under close guidance from the teacher before beginning any independent practice. This means that the teacher can check pupil work and provide immediate corrective feedback to pupils during guided practice to minimise errors and misconceptions. We encourage the children to explain their maths thinking clearly using partner talk, or targeted questions.

The teacher checks that pupils are obtaining a high success rate in questioning and practice – around 80% - to make sure that pupils build fluency and confidence.

We then move into the second part of practice which is independent practice. The teacher provides opportunity for independent practice to pupils who have already demonstrated success during guided practice

The independent practice is successful in building confidence and leading to knowledge and skills becoming automatic.

When the children have grasped the concept taught, they should be confident with the skill. This could be at the end of one lesson or at the end of a series of lessons over the week. Higher attainers should move quickly on to harder work/tasks and should not have to sit through multiple explanations which other children may need e.g. on day two they may have grasped the ideas from the day before or they may have grasped the content very quickly and after a few worked examples, are ready for more challenge.

We always want to go from the concrete to the pictorial to the abstract. This is very important. We know that this is what makes teaching memorable and

makes the learning "stick" in the children's minds. Concrete resources should always be available to all children. With this in mind, we provide opportunities for children to do maths out of the classroom and into the real world. Where appropriate children can measure the playground with trundle wheels, use real pie charts/graphs, use real discount offers when calculating % off sale items, mixing real paint/orange squash for ratios, sorting real objects into hoops.

There is a big focus on children being able to reason. Therefore we aim to have opportunities for reasoning in every lesson or series of lessons.

We always have a plenary. These don't just have to happen at the end of the lesson. A class can be 'gathered together' during a lesson to re-focus work, ask more questions. During a plenary we target different questions at different attainment groups. We will ask the children to share their mathematical thinking and their work by explaining a good strategy with a talk partner, or quiz the children using the mini whiteboards to answer. We give opportunities to reason in the plenary too.

Children are given time to respond to marking during "fix it time" so that they can address any issues, correct or "have another try" at something they have misunderstood, learn from their mistakes and apply their new understanding. (Yr3 upwards). For Nursery, Reception and Year 1, verbal feedback is crucial alongside marking.

Arithmetic lessons

When teaching the four operations, there is progression in the methodology and in the content of what is taught using the White Rose Maths Scheme of Learning.

We always follow White Rose Maths when teaching the four operations to ensure that the children are not confused with a range of different methods and are using the correct concrete apparatus to support their understanding. It is also important for the children to have continuity and consistency in their learning from year to year. We have calculation guidance as part of our policy which directly matches White Rose, which outlines how children record standard written methods in our school so that they are not confused. This is attached at the end of this policy.

One lesson every week is devoted to arithmetic to support our children with knowing more and remembering more. The arithmetic lesson involves the children doing a range of questions on arithmetic using methods that they have been taught. The questions are presented to the children in the same format as the Year 2 and Year 6 end of key stage tests.

We start this in Year 2. In Year 2 the questions involve the four rules of addition, subtraction, multiplication and division plus fractions.

For Year 3, Year 4 and Year 5 the questions involve the four rules of addition subtraction, multiplication and division as well as fractions, decimals and percentages.

Once the children have completed the arithmetic questions, the teacher considers each question in turn together with the class. The teacher will look at how the children answered the questions, how the children worked them out, how to show any working out, standard methods etc. The teacher may need to do revision on the board, get children to have a go on whiteboards, extend the question out through discussion or get children to try a harder / different one on their whiteboards.

The children are able to use concrete resources for the lesson and the teacher keeps a record of the weekly marks in their mark book.
This allows children to have regular practice and ensure arithmetic and calculation methods are in their long-term memory.
Year 5 and Year 6 have their arithmetic lesson every second week. On the alternative week, the teacher focuses on mental arithmetic and using mental methods to calculate.

A high priority is set on the learning of addition and subtraction facts, and times tables, with an aim that children know all of their times tables by heart in Year 4. There is a strong focus therefore on our children learning their times tables during Year 3 and Year 4. We use maths games and mental / oral activities to rehearse key facts. We use a range of methods to teach times tables including chanting, using the number stick, games, quick fire practice and using the times tables rock stars online program. This allows children to practise individually to beat their own score or to go up against another pupil. It allows children to practise for speed and accuracy and also to see the times tables in different formats, for example finding missing numbers, using division facts and recognising the inverse.

We make sure that there are many opportunities given to children to problem solve and reason. This can be as a whole lesson or as a part of a lesson. We ask children to explain their thinking in maths lessons**.** If children are recording problem solving and reasoning in their maths books, it is clearly labelled. For example:

Problem Solving and Reasoning

$5 \times 3 = 10 + 5$

This number sentence says that 5x3 is the same as 10+5.

Make the number sentences below correct.

$\square \times 4 = \square + 2$ $\square \times 10 = 79 + 1$

$\square \times \square = 20 + 5$ $2 \times \square = \square + 8$

1.) Complete the calculations in your book.

2.) How many ways can you find to balance the calculations? Is there a **systematic** way of doing this?

Maths vocabulary
We ensure that we model correct mathematical vocabulary for the children and specifically get them to repeat and use the maths language too e.g. the language

words for - subtract, take-away, difference, minus. We model using whole sentences in maths. We take every opportunity to promote mathematical talking. We want our children to become fluent in their mathematical language use, as this leads to their fluency in mathematical thinking. We give children regular opportunities to present their thinking to the rest of the class.

Assessment

Assessment for learning techniques are always used to ensure that assessment takes place on a daily and ongoing basis and informs all planning i.e. using flip up whiteboards, targeted questioning etc. at the end of exposition and modelling, during guided practice and before the children do independent practice.

For any child/group the teacher or the support teacher has worked with, they record on top of their page M (moderate level of assistance) or H (high level of assistance). When a pupil has worked independently, the teacher records an I.

We use **our Mark book to record** the children's learning throughout a week.

We always aim for all the children to have grasped the age appropriate concepts except those exceeding them or those with SEND. If teachers need to spend more time on something then we do so. For example, the teacher may revisit this concept in the daily practise of mental strategies (fluency), or 2-3 problems on this concept for part of another maths lesson.

We regularly return to maths previously taught with ten minutes of maths fluency every day and also in our arithmetic lesson We are checking if what was taught has 'stuck' i.e. gone into the long-term memory. We use check its (saved on the shared area – Maths – Everything you need to know) or 'Flash – back fours' to keep learning fresh.

Check -its take about 5-10 mins and can be used after a unit has been taught to check has learning stuck? We are checking if what was taught has 'stuck' i.e. gone into the long-term memory.

We use the Assessment Guidance for the Spring term and the Summer term data collection to support end of term judgments for the Spring term and the Summer term (summative assessment.)
We assess against the Maths Assessment Statements to say where a child is for Maths and this is tracked across the school. (See maths assessment statements.)
We moderate the judgments teachers are making against the fundamentals twice a year with the four-school partnership moderation (every January and June.)

In Maths books:

Children have a squared A4+ book for mathematics.
Reception will use A4+ lined books for maths.
Children will always write the short date (this is good practice of number formation for KS1).
From Year 2 upwards children will draw a margin with a ruler in their books.

We support children to produce neat and clear work, spaced appropriately so that the child can “read” what they’ve recorded in their maths work and talk about it.

All children have a ‘What I should know by the end of the year’ list for the back of their book that relates to their year group (unless they are Above Expected Standard when they may have the year above. This is in exceptional cases with children who are working at least a whole curriculum year group above their peers.) These are relevant to the child’s expected national curriculum class outcomes for the year. SEND children may have an individual series of skills/knowledge linked to their own targets if appropriate.

A typical week of maths looks something like this:

Monday	Tuesday	Wednesday	Thursday	Friday
Fluency Practice (10 minutes)	Fluency Practice (10 minutes)	Fluency Practice (10 minutes)	Fluency Practice (10 minutes)	Fluency Practice (10 minutes)
White Rose Maths Scheme of Learning	White Rose Maths Scheme of Learning	White Rose Maths Scheme of Learning	Calculation Lesson	White Rose Maths Scheme of Learning
Plenary	Plenary	Plenary	Plenary	Plenary

The teacher and Head of School knows how a particular class’ timetable works best. Teachers may choose to have the Arithmetic lesson on a different day because it is about being fit for purpose.
Ten minutes of fluency practice may sit better after the main maths lesson and not always before.
The expectation is that what we have identified above is happening every week.

Implementation of our curriculum

The implementation of our curriculum is greatly supported by the **carefully structured White Rose Maths Scheme of Learning, leading pupils through component knowledge and skills to composite knowledge and skills** in all subjects. It is important that the teacher draws from the White Rose examples and does not use all of them as this is cognitive overload. It is important that the teacher uses the worked examples to build their own lesson.
Teachers do prepare learning frames for their children (not just photocopy worksheets!) Children in Year 1 and in the autumn term of year 2 will generally be working on teacher prepared learning frames. Children from Year 2 upwards must be

given opportunities to work directly into books wherever possible. We do not want to restrict children, particularly when recording their working out when reasoning.

Our pedagogical approach is based on **Rosenshine's Principles of Direct Instruction**. The brilliant clarity and simplicity of this approach supports teachers to engage with cognitive science and the wider world of educational research.
The Principles of Direct Instruction

1. Daily Review
2. Present new material using small steps
3. Ask questions
4. Provide models
5. Guide student practice
6. Check for student understanding
7. Obtain a high success rate
8. Provide scaffolds for difficult tasks
9. Independent practice
10. Weekly and monthly review

Resources

Classroom resources:

Classroom drawers are sorted, tidy and labelled. There are some drawer labels in the 'Maths everything you need' area. We do not keep old, broken or tatty equipment. We start every lesson with everything that we need for each class in place.

Other resources:

We do have some resources which are too large to be efficiently stored in every class e.g. trundle wheels, capacity jugs, pan balances. These are kept in the resources room. There is an expectation that what we always teach beginning with the concrete, then moving to the pictorial to the abstract.

Teacher Resource books.

All maths teacher resource books are in one labelled box. Text books are stored neatly in the classroom.

Staff training

Staff receive termly support and training through a programme of PDMs and 1-1 coaching opportunities, keeping their knowledge, skills and understanding up to date and relevant for delivering the curriculum.

Parent involvement

Through parents' meetings, the school newsletter and the school website parents are encouraged to support their children's learning in history. We also send out Curriculum overviews to parents of what children will be learning about over the coming term. We run Parents Working Alongside Children where parents can attend a lesson in their

child's class with a dialogue with the teacher afterwards. We run Presentation to Parents Sessions where parents are invited into class and children present their learning. We also invite parents in to workshops or to our weekly coffee mornings and run sessions about how they can help their child at home with maths.

The role of the subject coordinator

Subject leaders

- provide continuous professional development for staff
- monitor the quality of provision in the maths curriculum and report to senior leaders
- monitor pupil outcomes in maths and report to senior leaders
- provide 1:1 coaching and feedback to teachers

Monitoring and evaluation

The quality of provision in maths is monitored and evaluated according to the annual school monitoring and evaluation plan.

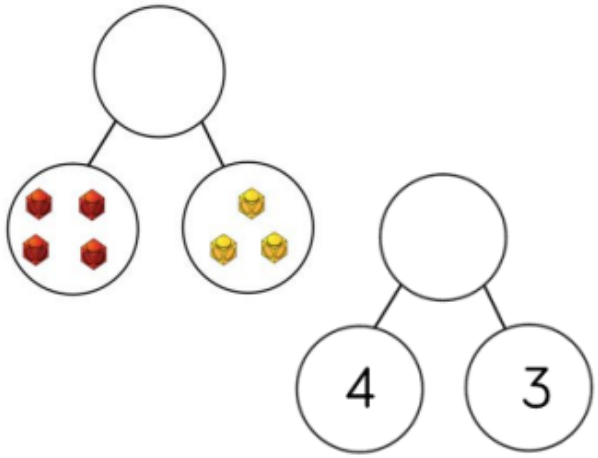
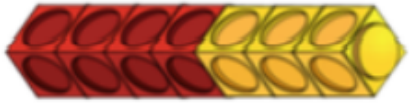
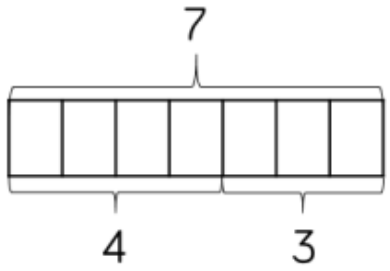
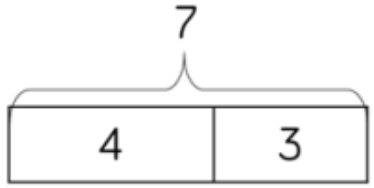
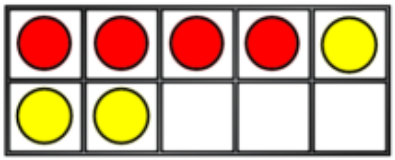
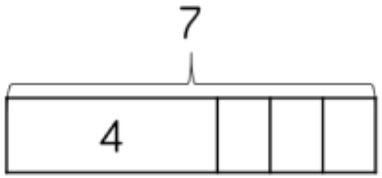
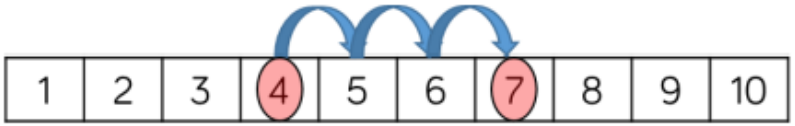
Teaching Calculation in our school- Our Calculation Policy

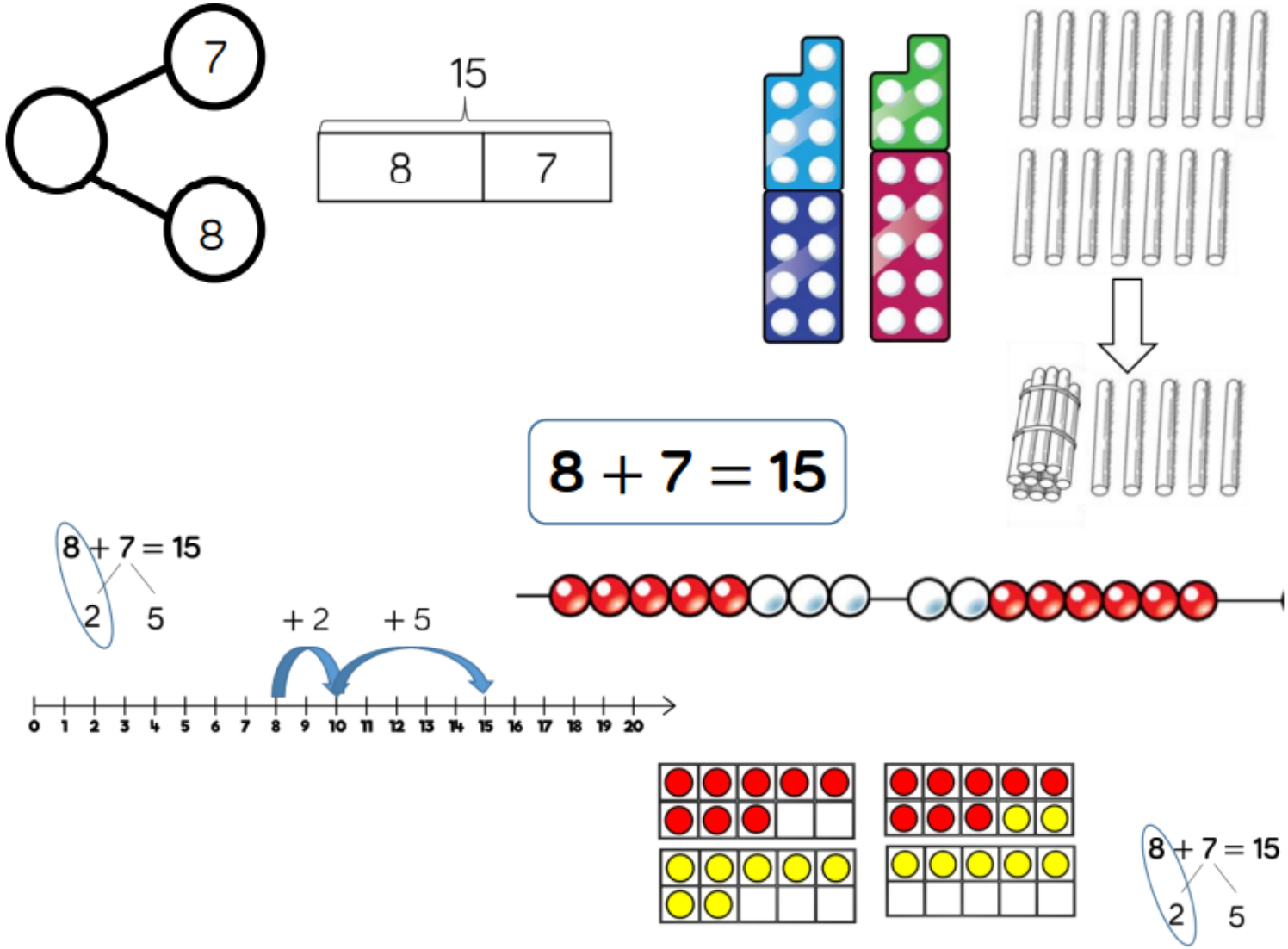
Please see below – this is directly matched to the White Rose scheme of learning

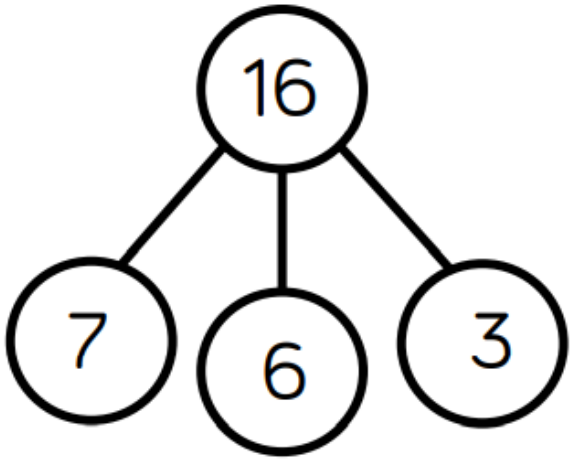
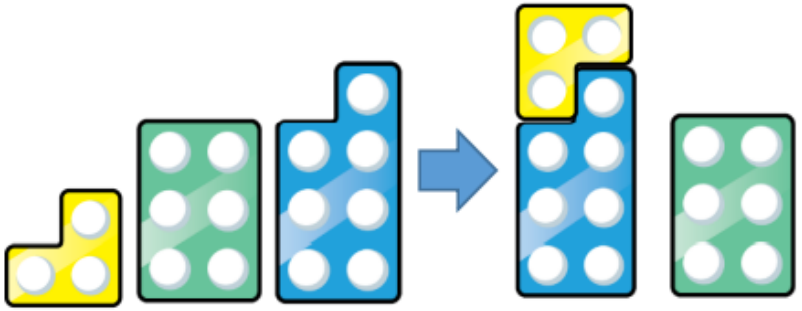
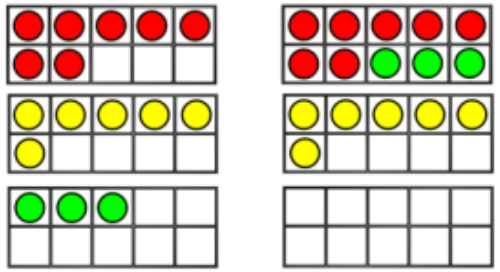
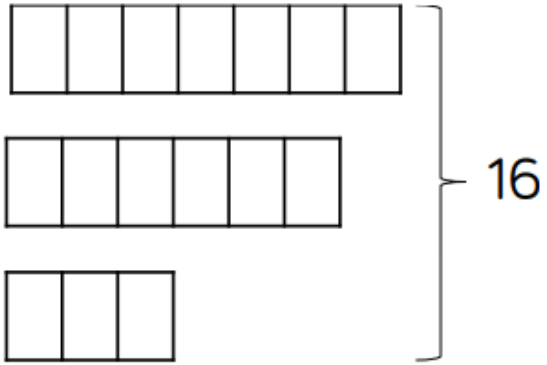
Addition

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

Skill	Year	Representations and models	
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

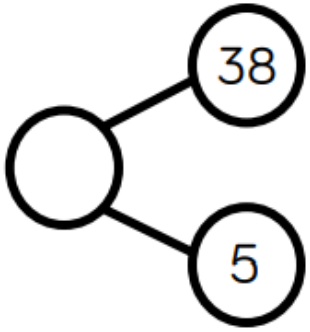
Skill: Add 1-digit numbers within 10	Year: 1
     $4 + 3 = 7$     	When adding numbers to 10, children can explore both aggregation and augmentation. The part-whole model, discrete and continuous bar model, number shapes and ten frame support aggregation. The combination bar model, ten frame, bead string and number track all support augmentation.

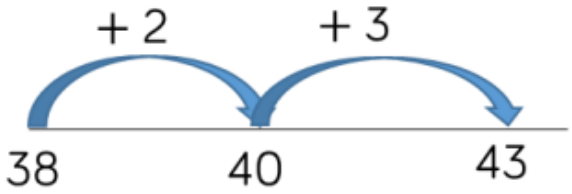
Skill: Add 1 and 2-digit numbers to 20	Year: 1/2
	When adding one-digit numbers that cross 10, it is important to highlight the importance of ten ones equalling one ten. In Year 1, this is only done just by counting on. From Year 2, use different manipulatives can be used to represent this exchange alongside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

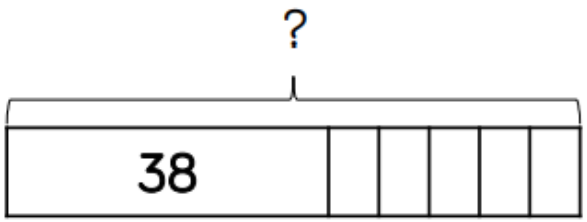
Skill: Add three 1-digit numbers	Year: 2
  **7 + 6 + 3 = 16**  7 + 6 + 3 = 16 10 	When adding three 1-digit numbers, children should be encouraged to look for number bonds to 10 or doubles to add the numbers more efficiently. This supports children in their understanding of commutativity. Manipulatives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

Skill: Add 1-digit and 2-digit numbers to 100

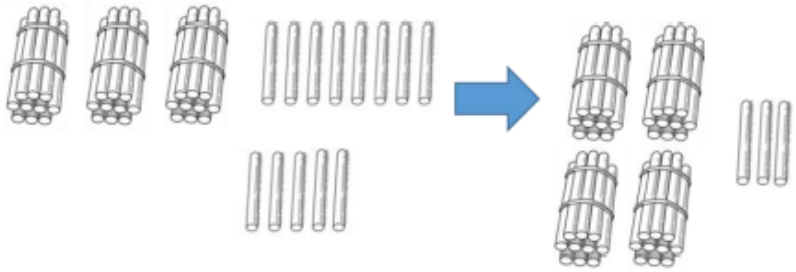
Year: 2/3







38 + 5 = 43

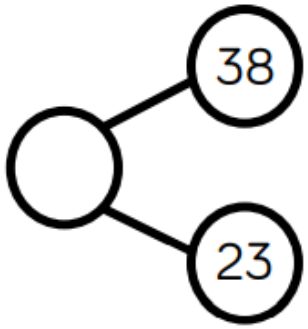
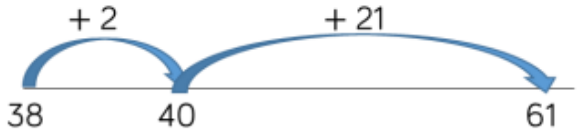
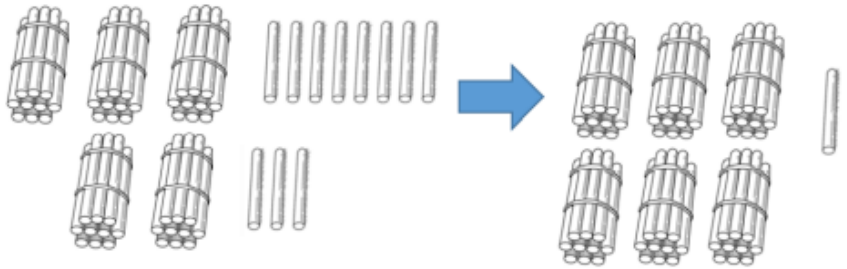
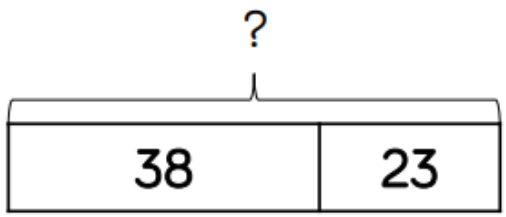
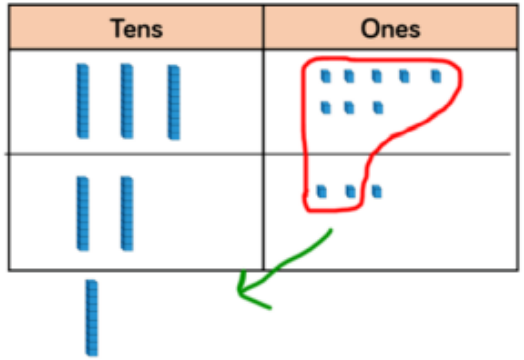
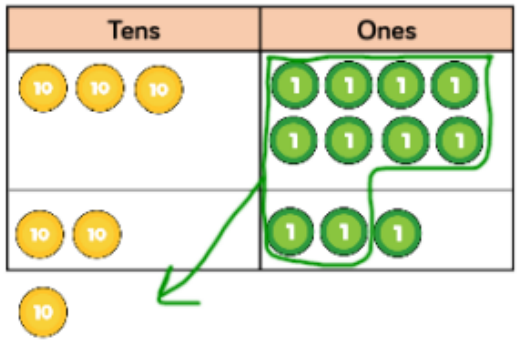


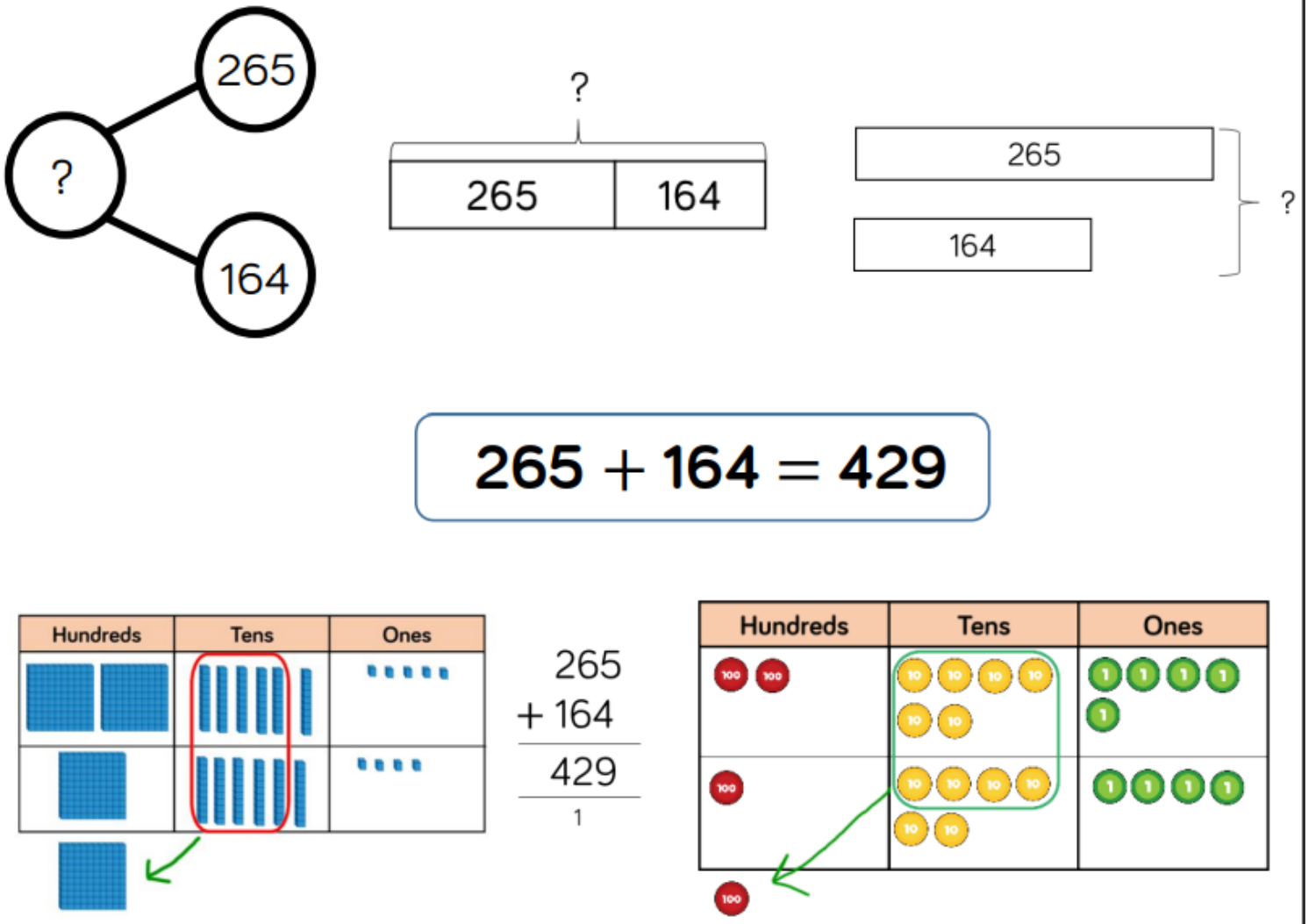
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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.

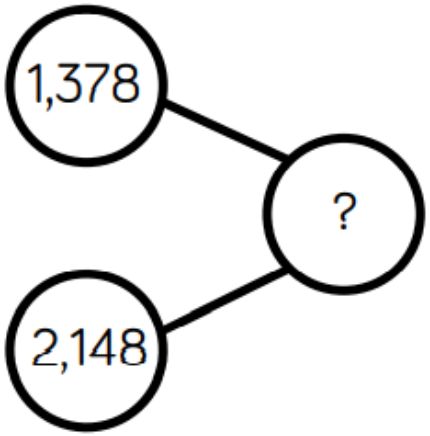
Hundred squares and straws can support children to find the number bond to 10.

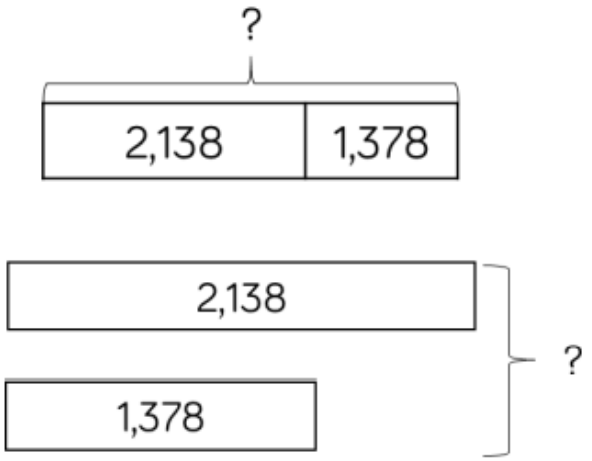
Skill: Add two 2-digit numbers to 100	Year: 2/3
    **38 + 23 = 61**  38 + 23 61 1 	Children can use a blank number line and other representations to count on to find the total. Encourage them to jump to multiples of 10 to become more efficient. From Year 3, encourage children to use the formal column method when calculating alongside straws, base 10 or place value counters. As numbers become larger, straws become less efficient.

Skill: Add numbers with up to 3 digits	Year: 3
	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

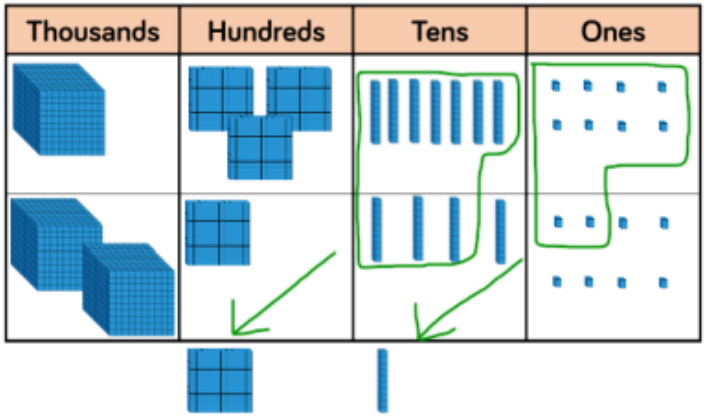
Year: 4

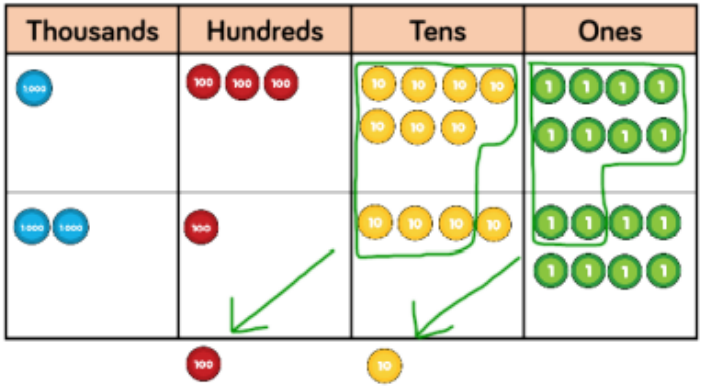




	1	3	7	8
+	2	1	4	8
	3	5	2	6
	1	1		

1,378 + 2,148 = 3,526





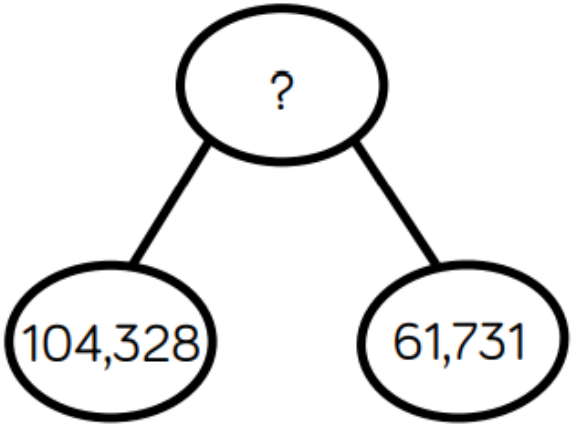
Base 10 and place value counters are the most effective manipulatives when adding numbers with up to 4 digits.

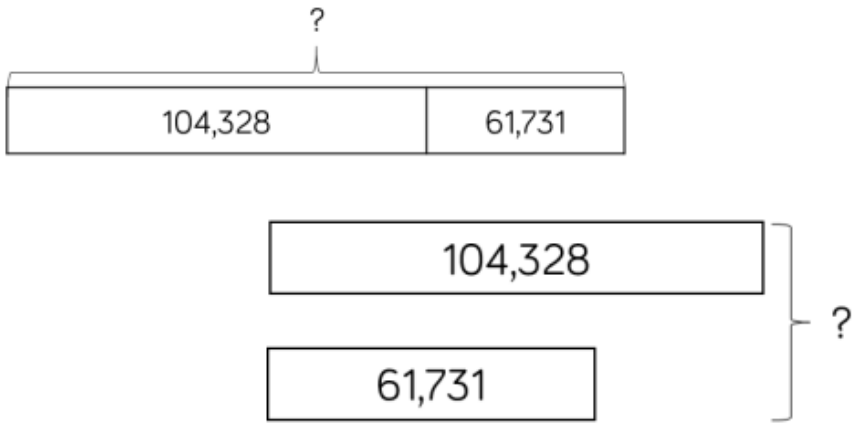
Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method.

Plain counters on a place value grid can also be used to support learning.

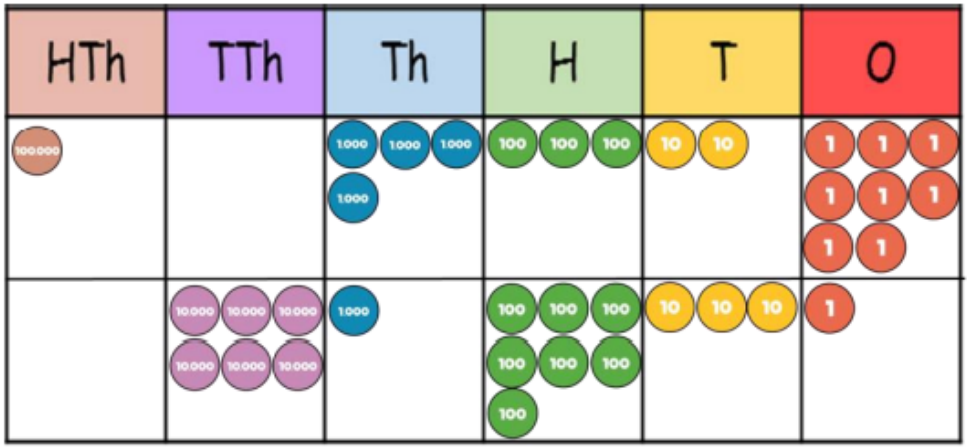
Skill: Add numbers with more than 4 digits

Year: 5/6





104,328 + 61,731 = 166,059



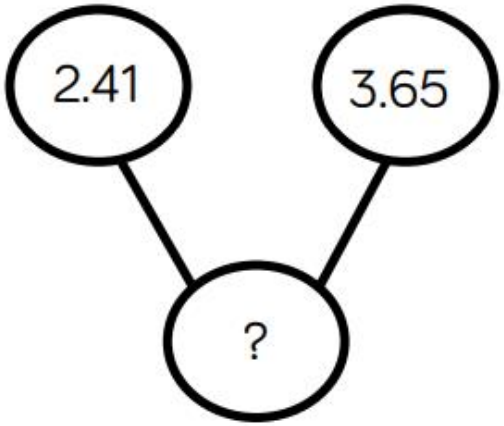
1	0	4	3	2	8
+	6	1	7	3	1
1	6	6	0	5	9
			1		

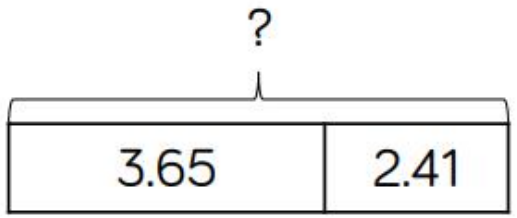
Place value counters or plain counters on a place value grid are the most effective concrete resources when adding numbers with more than 4 digits.

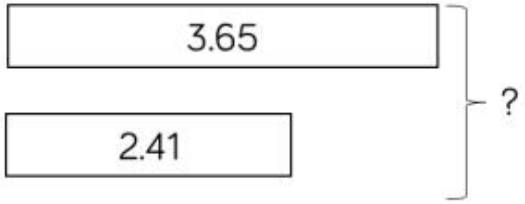
At this stage, children should be encouraged to work in the abstract, using the column method to add larger numbers efficiently.

Skill: Add with up to 3 decimal places

Year: 5

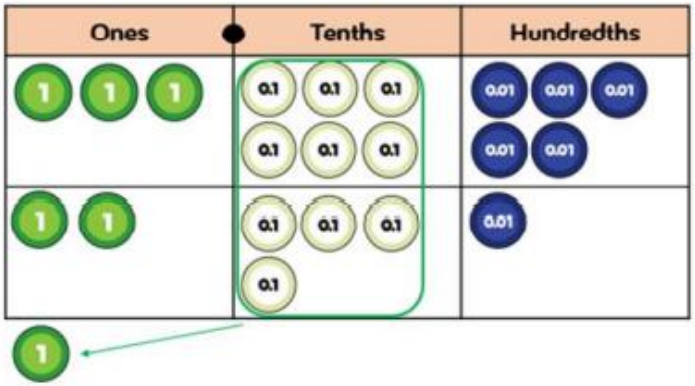


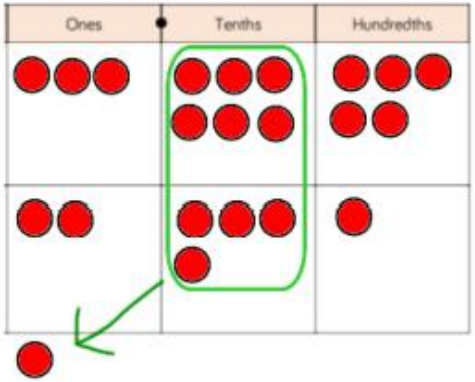




$$\begin{array}{r} 3.65 \\ +\ 2.41 \\ \hline 6.06 \\ \hline 1 \end{array}$$

3.65 + 2.41 = 6.06





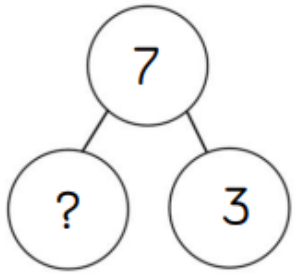
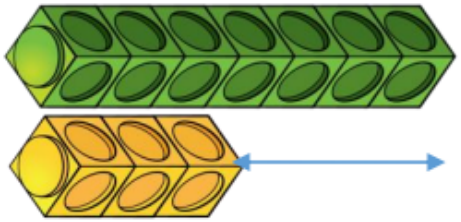
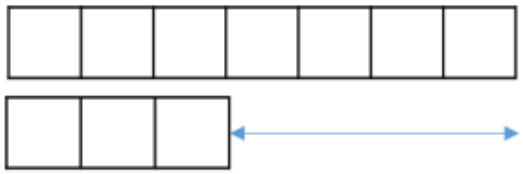
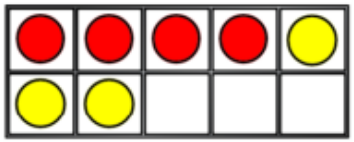
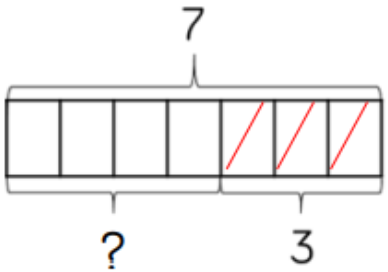
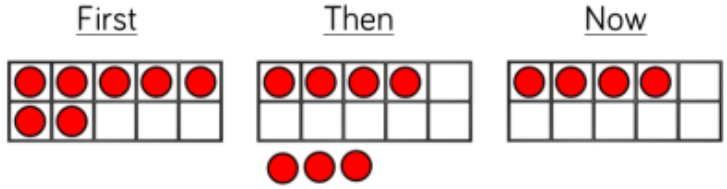
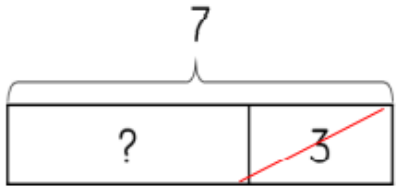
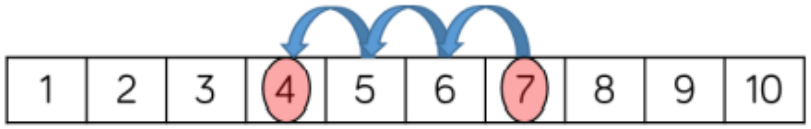
Place value counters and plain counters on a place value grid are the most effective manipulatives when adding decimals with 1, 2 and then 3 decimal places.

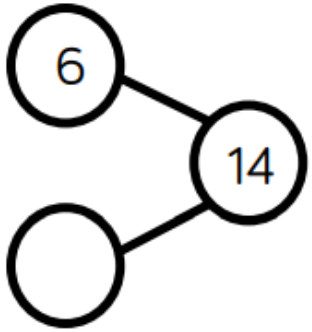
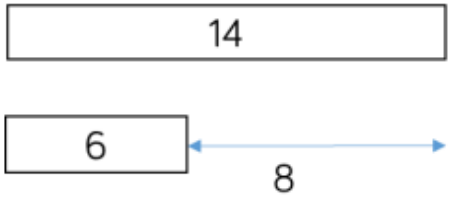
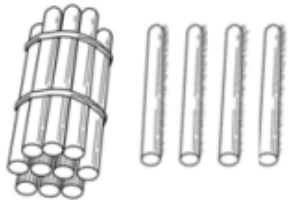
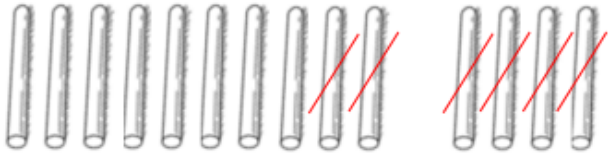
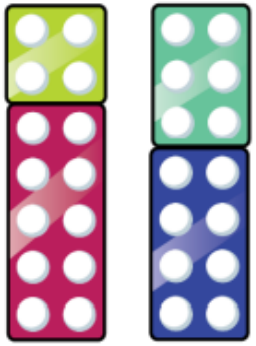
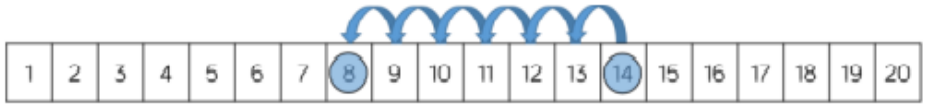
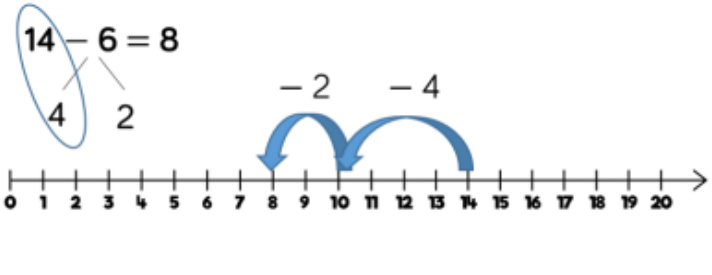
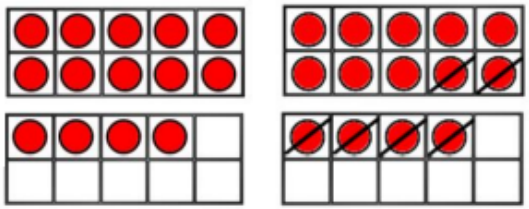
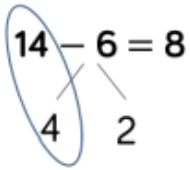
Ensure children have experience of adding decimals with a variety of decimal places. This includes putting this into context when adding money and other measures.

Subtraction

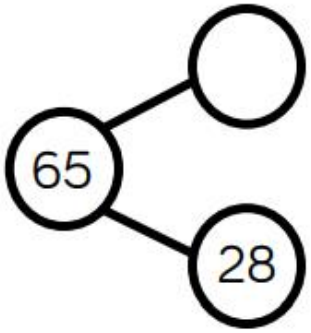
Skill	Year	Representations and models	
Subtract two 1-digit numbers to 10	1	Part-whole model Bar model Number shapes	Ten frames (within 10) Bead strings (10) Number tracks
Subtract 1 and 2-digit numbers to 20	1	Part-whole model Bar model Number shapes Ten frames (within 20)	Bead string (20) Number tracks 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

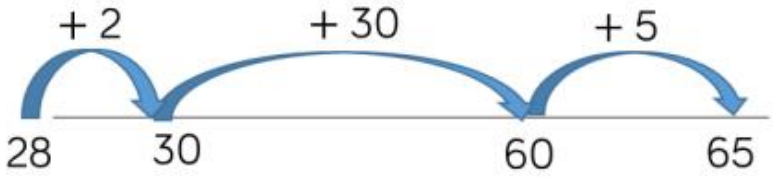
Skill	Year	Representations and models	
Subtract with up to 3-digits	3	Part-whole model Bar model	Base 10 Place value counters Column subtraction
Subtract with up to 4-digits	4	Part-whole model Bar model	Base 10 Place value counters Column subtraction
Subtract with more than 4 digits	5	Part-whole model 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

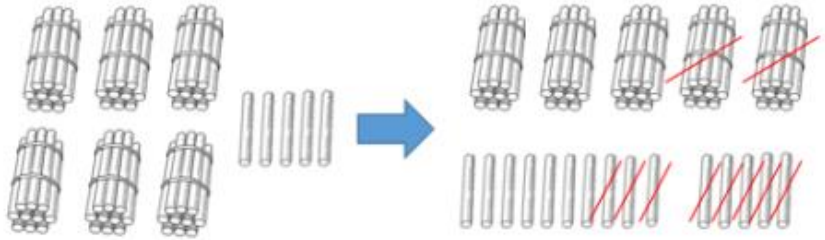
Skill: Subtract 1-digit numbers within 10	Year: 1
     $7 - 3 = 4$     	Part-whole models, bar models, ten frames and number shapes support partitioning. Ten frames, number tracks, single bar models and bead strings support reduction. Cubes and bar models with two bars can support finding the difference.

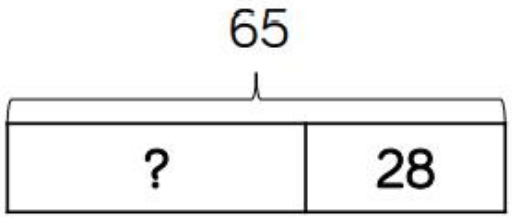
Skill: Subtract 1 and 2-digit numbers to 20	Year: 1/2
     **14 − 6 = 8**    	In Year 1, subtracting one-digit numbers that cross 10, is done by counting back, using objects, number tracks and number lines. From Year 2, children should be encouraged to find the number bond to 10 when partitioning the 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

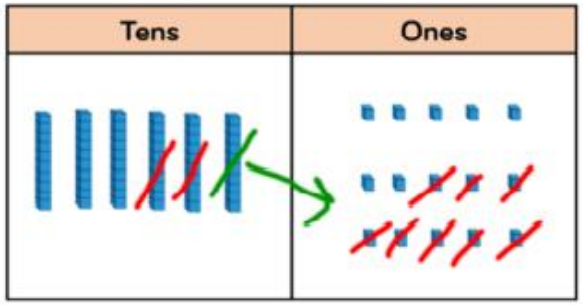




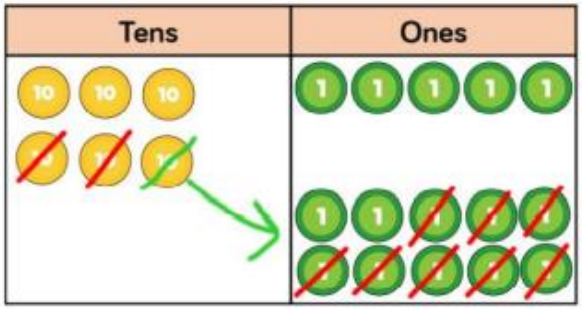




65 − 28 = 37



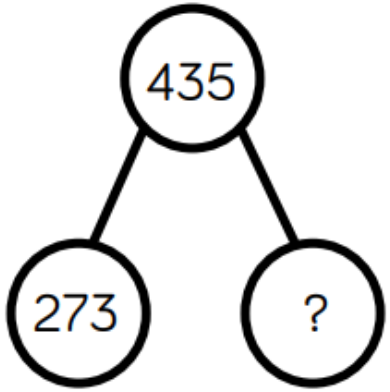
$$\begin{array}{r} {}^{5}\not{6}\,{}^{1}\not{5} \\ -\ 2\ 8 \\ \hline 3\ 7 \end{array}$$

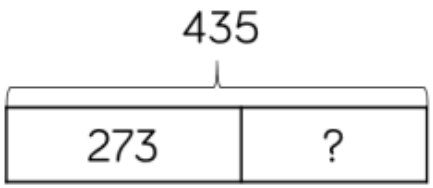


Children can also use a blank number line to count back to find the difference. Encourage them to jump to multiples of 10 to become more efficient.
From Year 3, encourage children to use the formal column method when calculating alongside straws, base 10 or place value counters. As numbers become larger,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

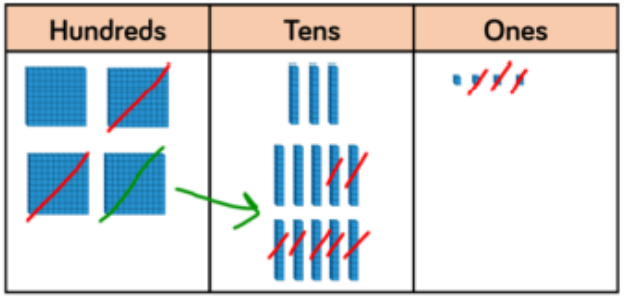
Skill: Subtract numbers with up to 3 digits

Year: 3

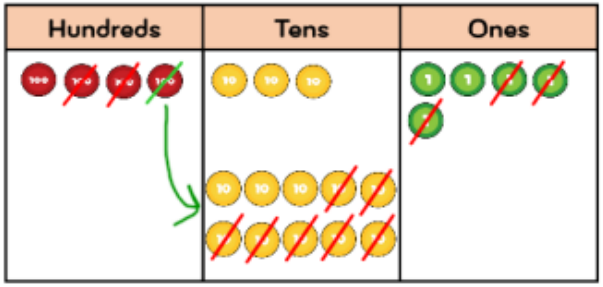




435 − 273 = 162



$$\begin{array}{r} {}^{3}\cancel{4}^{1}35 \\ -\ 273 \\ \hline 162 \end{array}$$

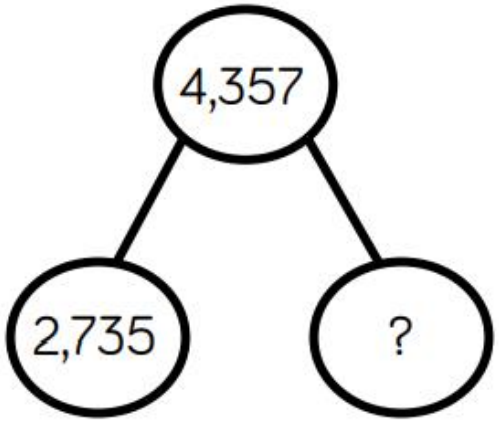


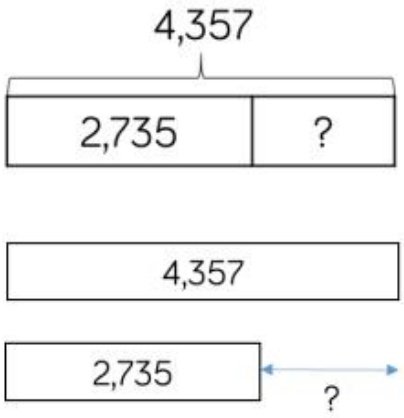
Base 10 and place value counters are the most effective manipulative when subtracting numbers with up to 3 digits.

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.

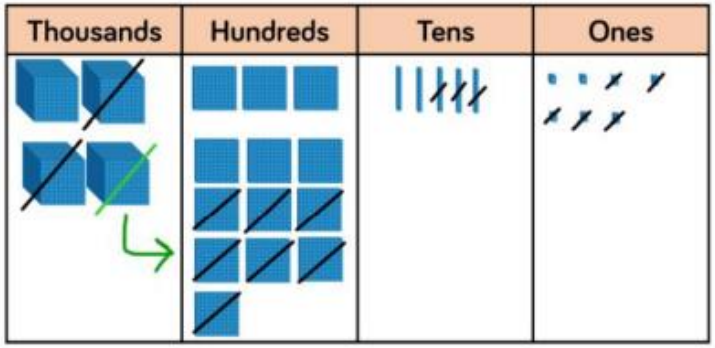
Skill: Subtract numbers with up to 4 digits	Year: 4

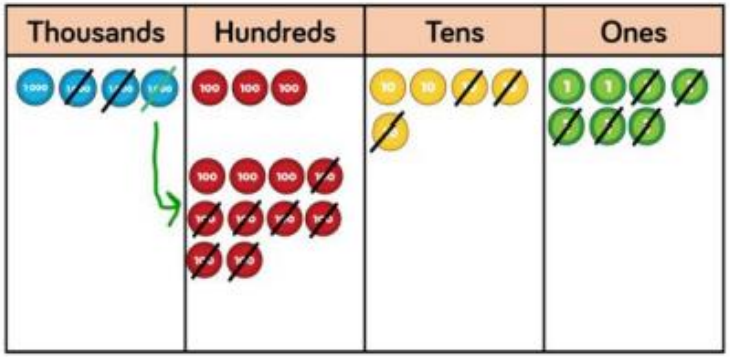




$$\begin{array}{r} {}^{3}\not{4}\,{}^{1}\not{3}\not{5}\not{7} \\ -\ 2735 \\ \hline 1622 \end{array}$$

4,357 − 2,735 = 1,622





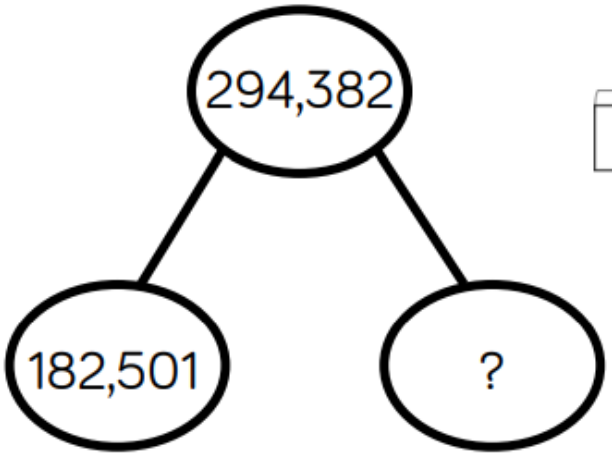
Base 10 and place value counters are the most effective manipulatives when subtracting numbers with up to 4 digits.

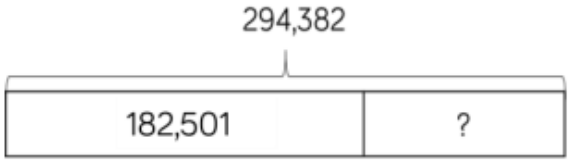
Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method.

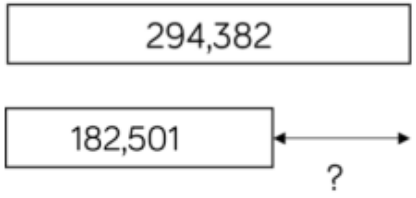
Plain counters on a place value grid can also be used to support learning.

Skill: Subtract numbers with more than 4 digits

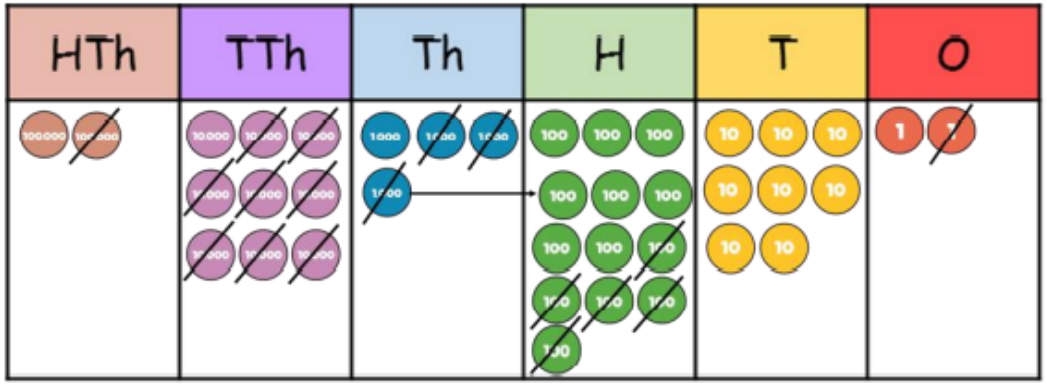
Year: 5/6







294,382 − 182,501 = 111,881



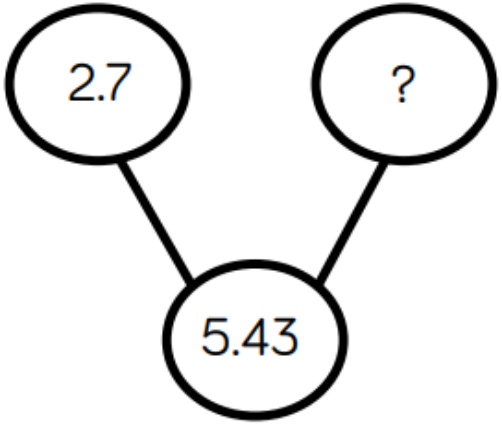
	2	9	$\cancel{3}\,4$	$^{1}3$	8	2
−	1	8	2	5	0	1
	1	1	1	8	8	1

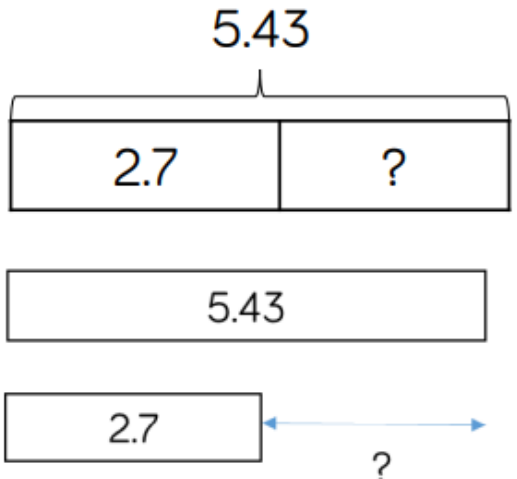
Place value counters or plain counters on a place value grid are the most effective concrete resource when subtracting numbers with more than 4 digits.

At this stage, children should be encouraged to work in the abstract, using column method to subtract larger numbers efficiently.

Skill: Subtract with up to 3 decimal places

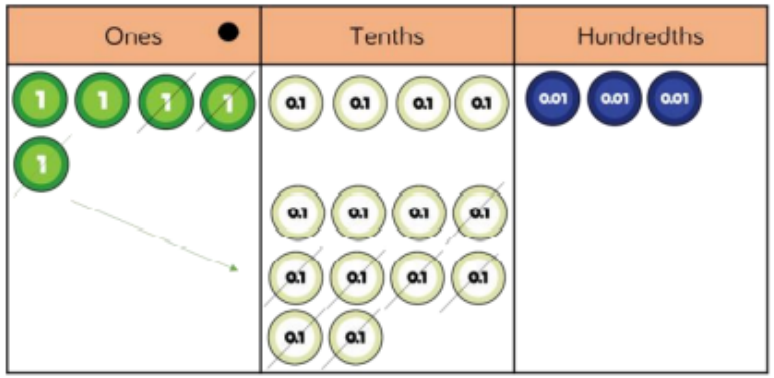
Year: 5/6

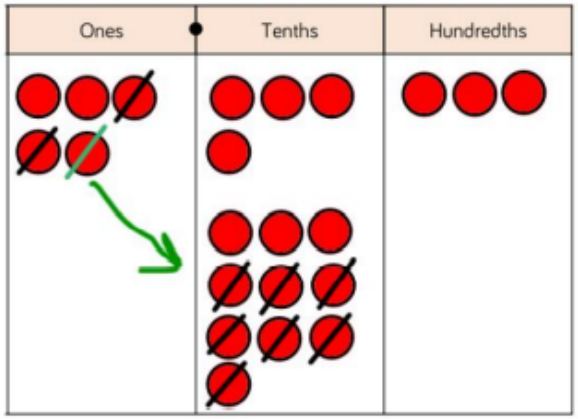




$$\begin{array}{r} {}^{4}\cancel{5}.{}^{1}43 \\ -\ 2.7 \\ \hline 2.73 \end{array}$$

5.43 − 2.7 = 2.73





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

Ensure children have experience of subtracting decimals with a variety of decimal places. This includes putting this into context when subtracting money and other measures.

Times Tables

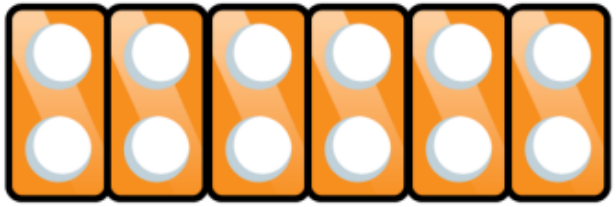
Skill	Year	Representations and models	
Recall and use multiplication and division facts for the 2-times table	2	Bar model Number shapes Counters Money	Ten frames Bead strings Number lines Everyday objects
Recall and use multiplication and division facts for the 5-times table	2	Bar model Number shapes 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

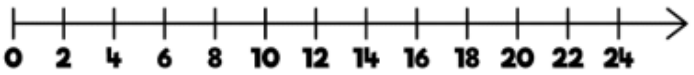
Skill	Year	Representations and models	
Recall and use multiplication and division facts for the 3-times table	3	Hundred square Number shapes Counters	Bead strings Number lines Everyday objects
Recall and use multiplication and division facts for the 4-times table	3	Hundred square Number shapes Counters	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

Skill	Year	Representations and models	
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 Base 10	Place value counters Number lines
Recall and use multiplication and division facts for the 12-times table	4	Hundred square Base 10	Place value counters Number lines

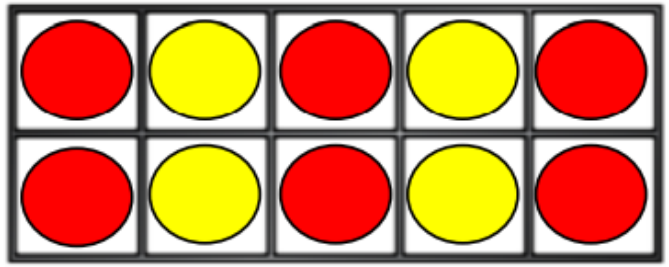
Skill: 2 times table

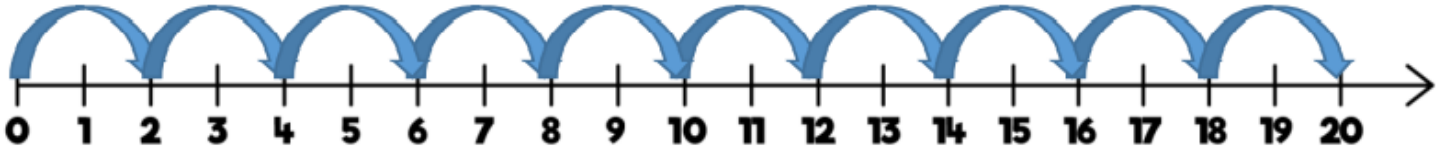
Year: 2





1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

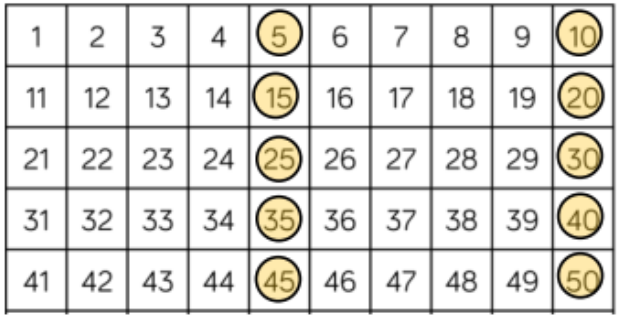
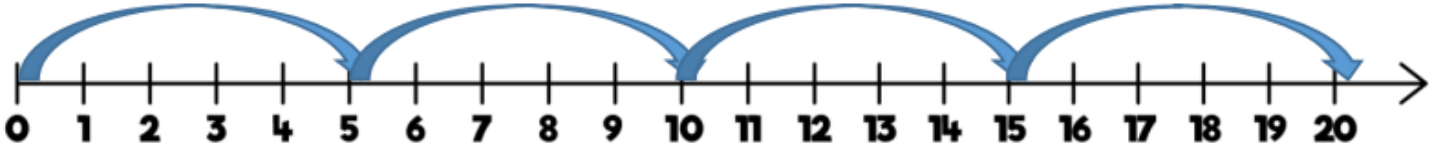
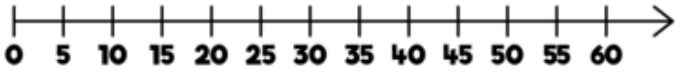
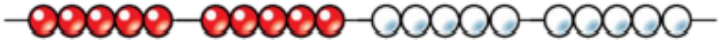
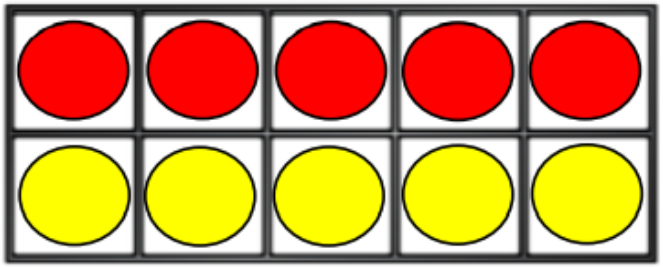
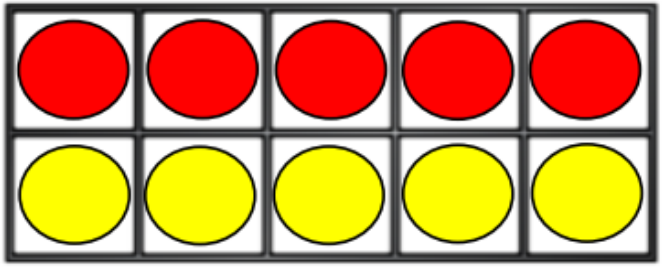




Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square.

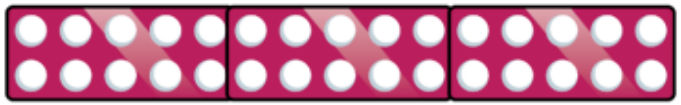
Look for patterns in the two times table, using concrete manipulatives to support. Notice how all the numbers are even and there is a pattern in the ones.

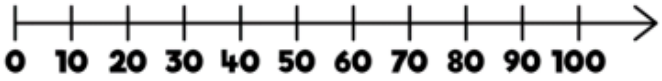
Use different models to develop fluency.

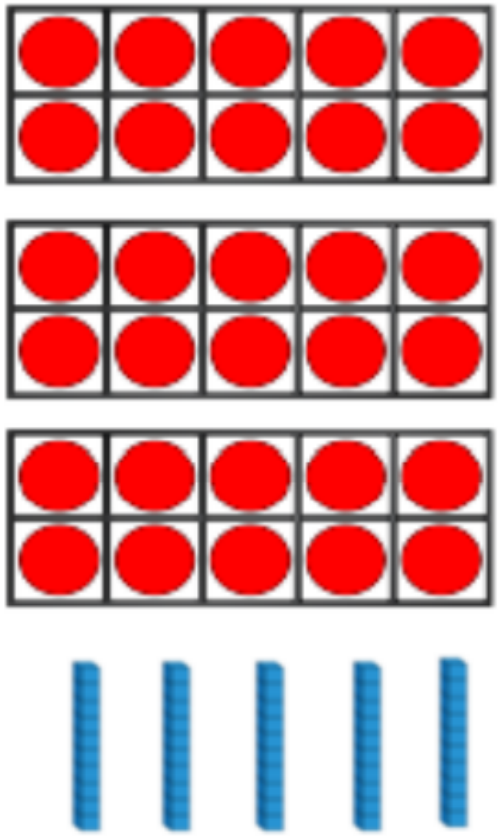
Skill: 5 times table	Year: 2
        	Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square. Look for patterns in the five times table, using concrete manipulatives to support. Notice the pattern in the ones as well as highlighting the odd, even, odd, even pattern.

Skill: 10 times table

Year: 2



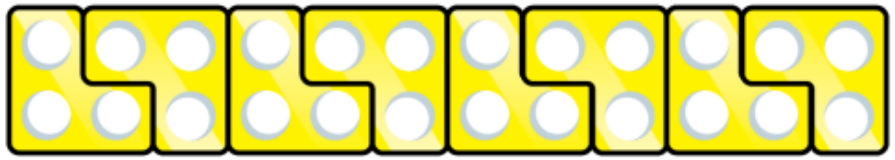
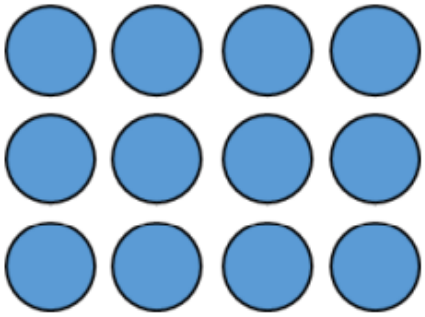
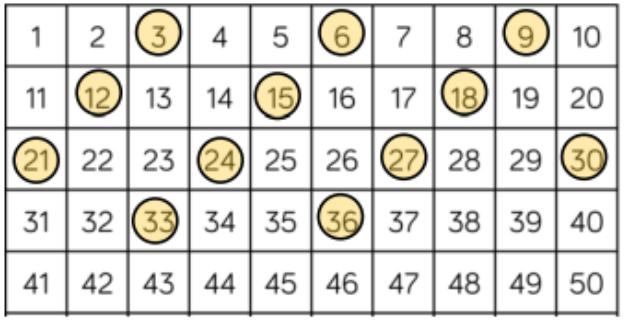
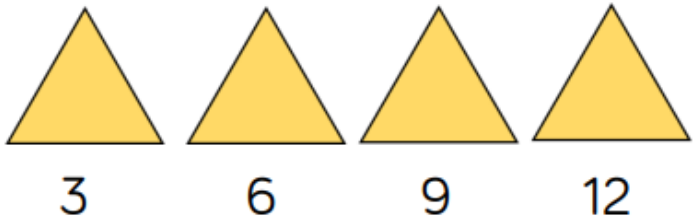
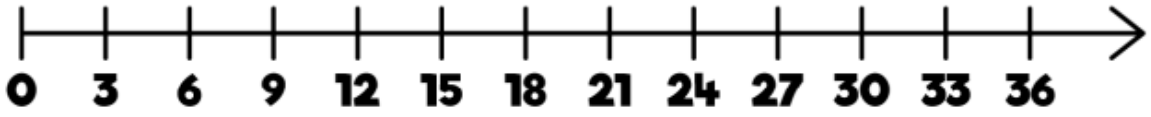


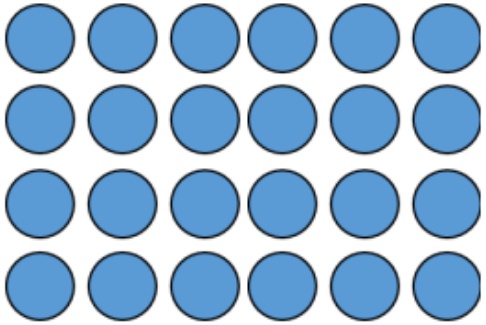
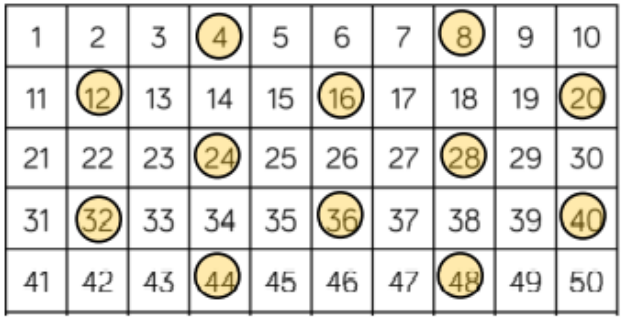
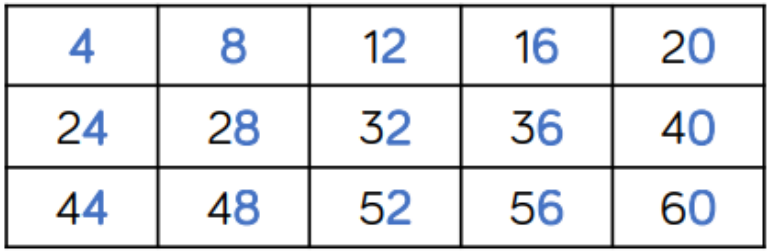
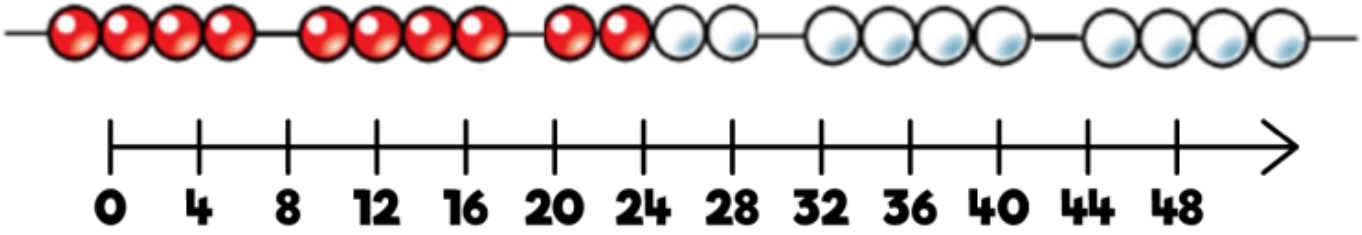


1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square.

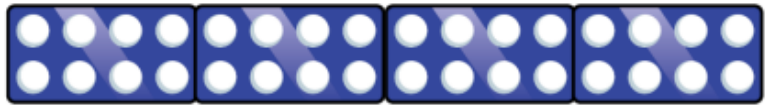
Look for patterns in the ten times table, using concrete manipulatives to support. Notice the pattern in the digits- the ones are always 0, and the tens increase by 1 ten each time.

Skill: 3 times table	Year: 3
     	Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square. Look for patterns in the three times table, using concrete manipulatives to support. Notice the odd, even, odd, even pattern using number shapes to support. Highlight the pattern in the ones using a hundred square.

Skill: 4 times table	Year: 3
     	Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the four times table, using manipulatives to support. Make links to the 2 times table, seeing how each multiple is double the twos. Notice the pattern in the ones within each group of five multiples. Highlight that all the multiples are even using number shapes to support.

Skill: 8 times table

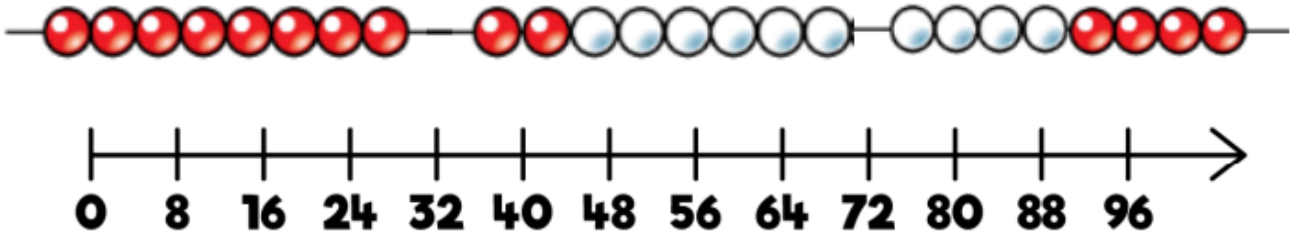
Year: 3



8 16 24 32

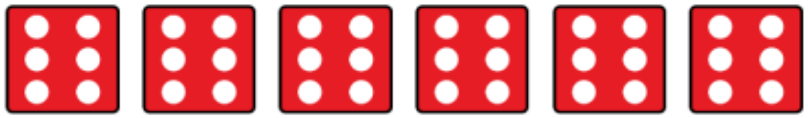
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

8	16	24	32	40
48	56	64	72	80



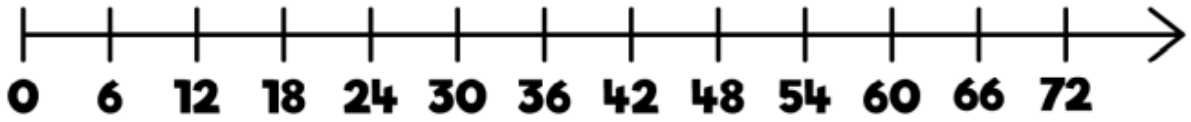
Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the eight times table, using manipulatives to support. Make links to the 4 times table, seeing how each multiple is double the fours. Notice the pattern in the ones within each group of five multiples. Highlight that all the multiples are even using number shapes to support.

Skill: 6 times table	Year: 4



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

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

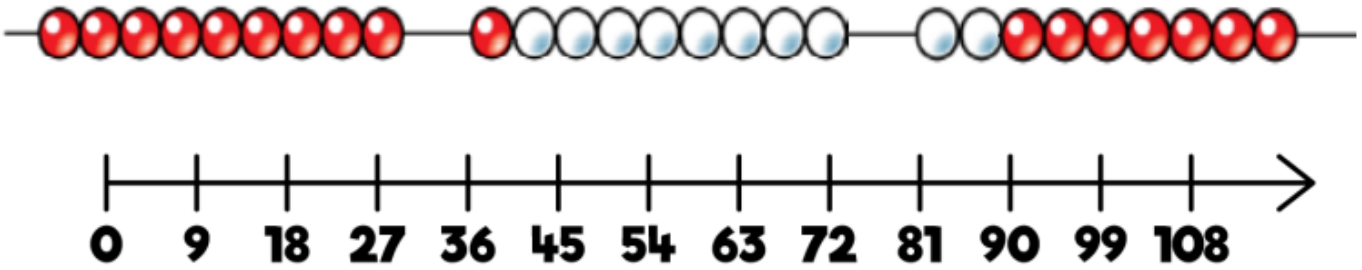


Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the six times table, using manipulatives to support. Make links to the 3 times table, seeing how each multiple is double the threes. Notice the pattern in the ones within each group of five multiples. Highlight that all the multiples are even using number shapes to support.

Skill: 9 times table	Year: 4

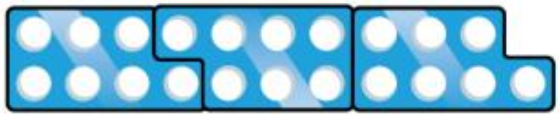
9	18	27	36	45
54	63	72	81	90

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



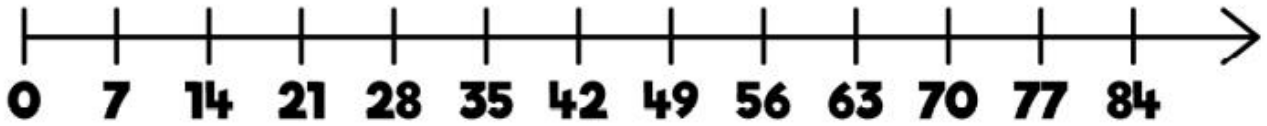
Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square. Look for patterns in the nine times table, using concrete manipulatives to support. Notice the pattern in the tens and ones using the hundred square to support as well as noting the odd, even pattern within the multiples.

Skill: 7 times table	Year: 4



7	14	21	28	35
42	49	56	63	70

1	2	3	4	5	6	**7**	8	9	10
11	12	13	**14**	15	16	17	18	19	20
21	22	23	24	25	26	27	**28**	29	30
31	32	33	34	**35**	36	37	38	39	40
41	**42**	43	44	45	46	47	48	**49**	50
51	52	53	54	55	**56**	57	58	59	60
61	62	**63**	64	65	66	67	68	69	**70**
71	72	73	74	75	76	**77**	78	79	80
81	82	83	**84**	85	86	87	88	89	90
91	92	93	94	95	96	97	**98**	99	100

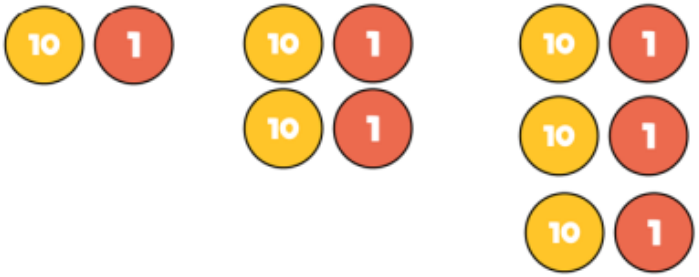


Encourage daily counting in multiples both forwards and backwards, supported by a number line or a hundred square.
The seven times table can be trickier to learn due to the lack of obvious pattern in the numbers, however they already know several facts due to commutativity.
Children can still see the odd, even pattern in the multiples using number shapes to support.

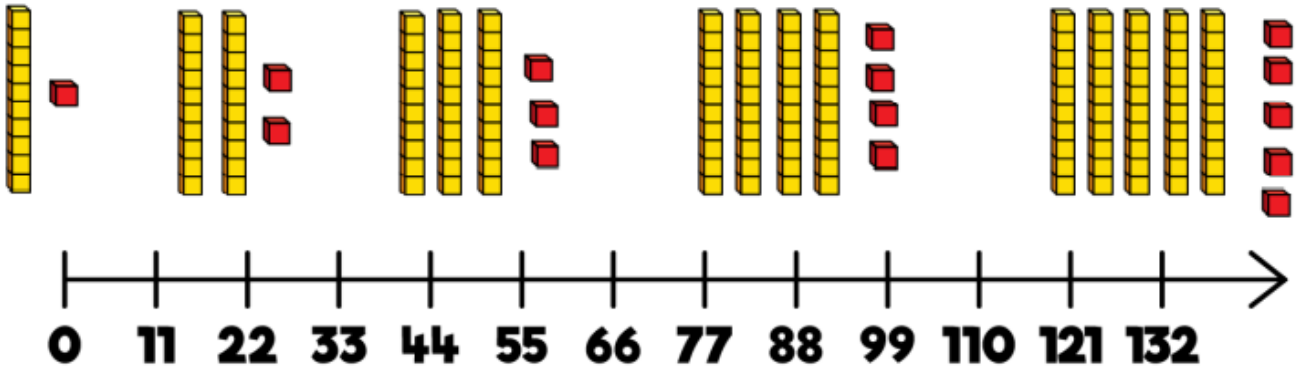
Skill: 11 times table

Year: 4

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



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square.

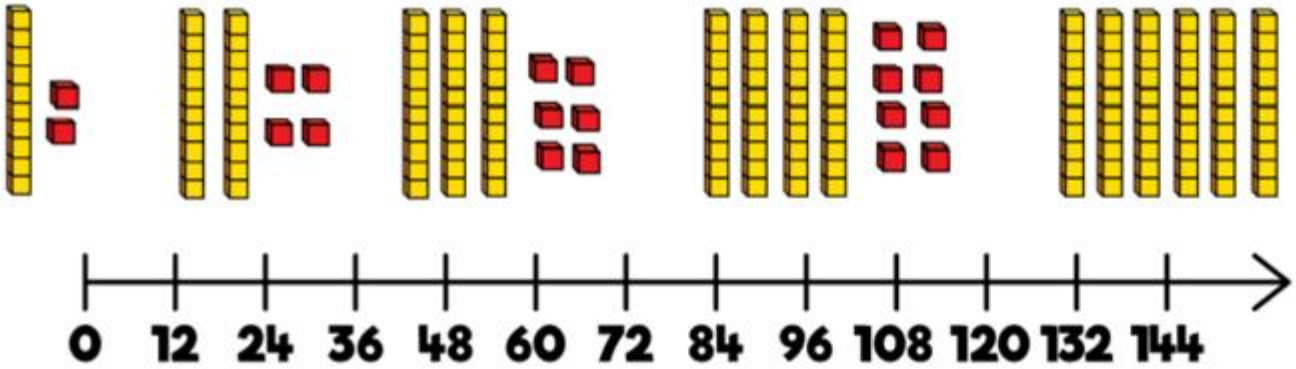
Look for patterns in the eleven times table, using concrete manipulatives to support. Notice the pattern in the tens and ones using the hundred square to support. Also consider the pattern after crossing 100

Skill: 12 times table

Year: 4

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

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the 12 times table, using manipulatives to support. Make links to the 6 times table, seeing how each multiple is double the sixes. Notice the pattern in the ones within each group of five multiples. The hundred square can support in highlighting this pattern.

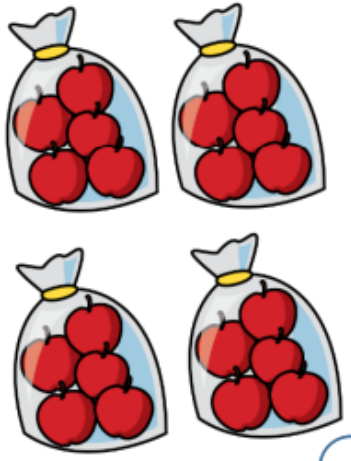
Multiplication

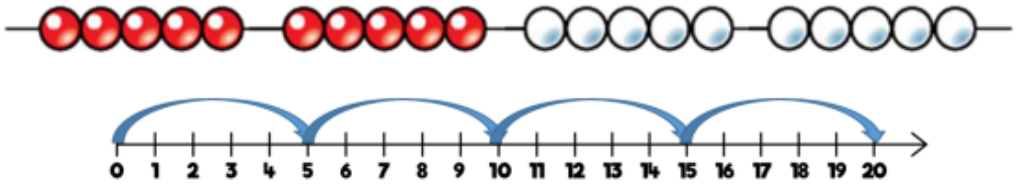
Skill	Year	Representations and models	
Solve one-step problems with multiplication	1/2	Bar model Number shapes Counters	Ten frames Bead strings Number lines
Multiply 2-digit by 1-digit numbers	3/4	Place value counters Base 10	Expanded written method Short written method
Multiply 3-digit by 1-digit numbers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

Skill	Year	Representations and models	
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	

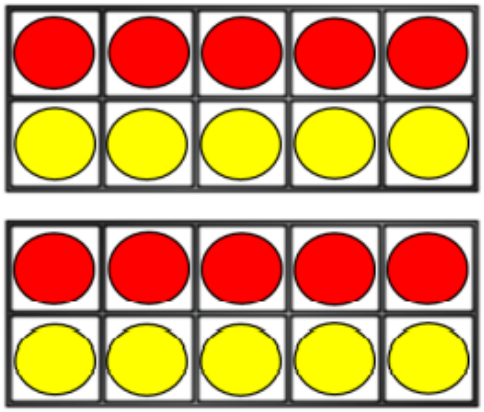
Skill: Solve 1-step problems using multiplication

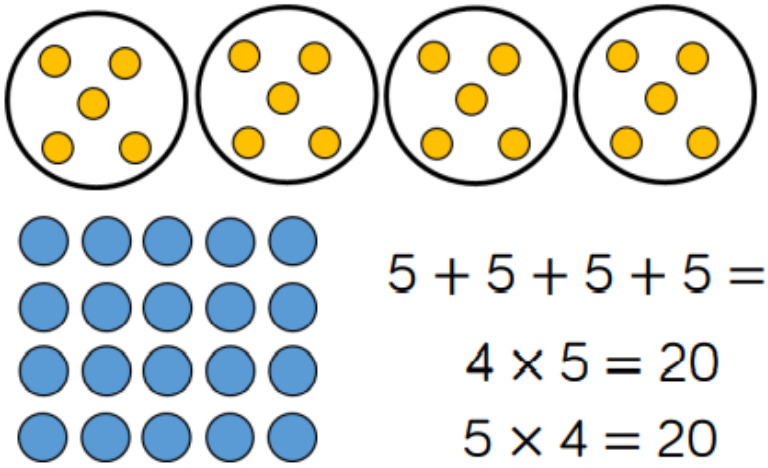
Year: 1/2





One bag holds 5 apples.
How many apples do 4 bags hold?





$5 + 5 + 5 + 5 = 20$

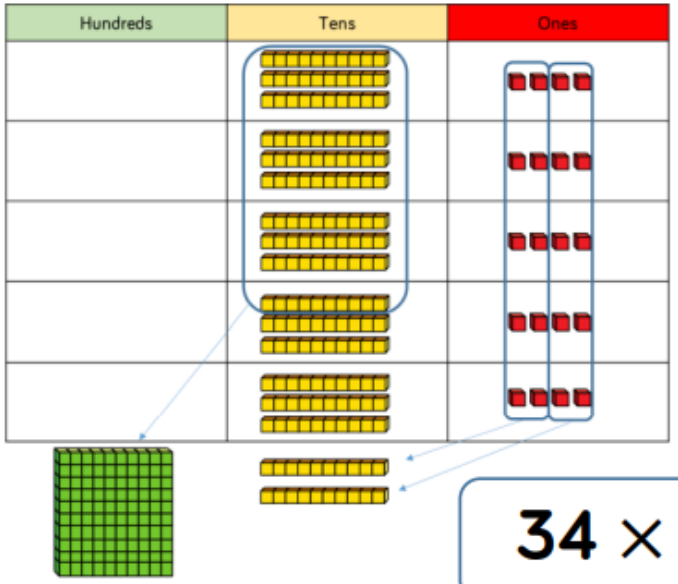
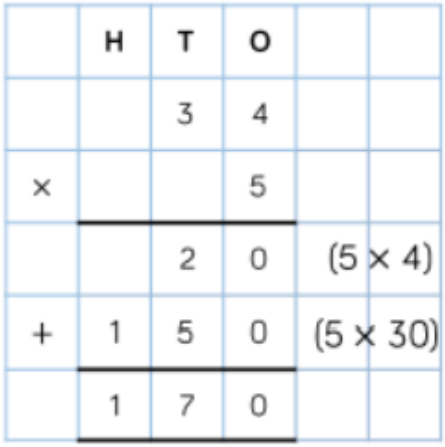
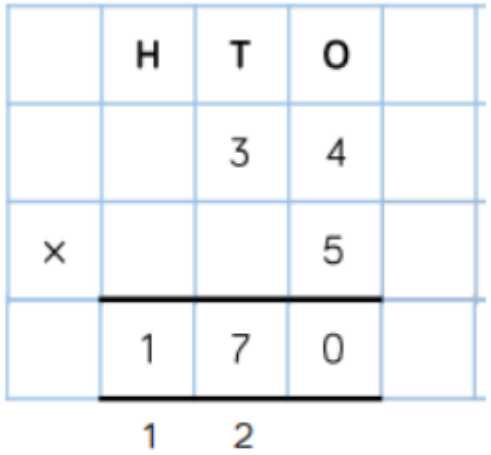
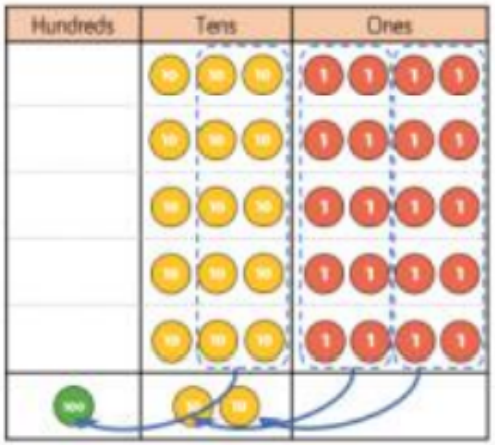
$4 \times 5 = 20$

$5 \times 4 = 20$

Children represent multiplication as repeated addition in many different ways.

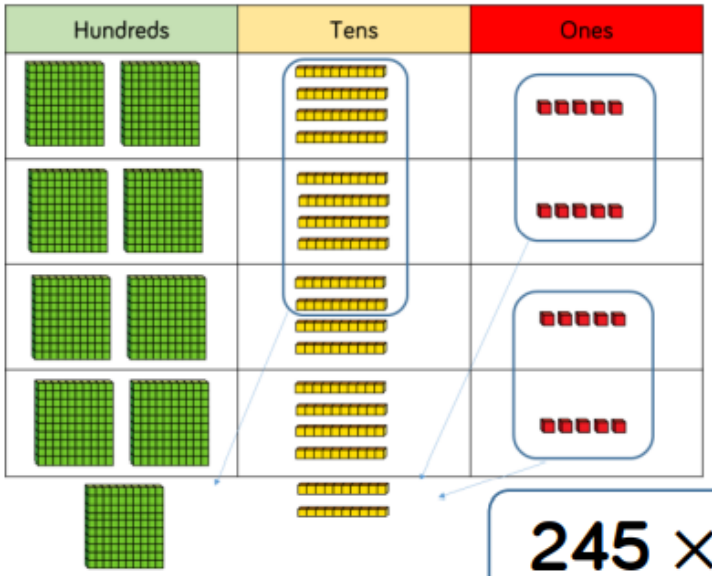
In Year 1, children use concrete and pictorial representations to solve problems. They are not expected to record multiplication formally.

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

Skill: Multiply 2-digit numbers by 1-digit numbers	Year: 3/4
  $34 \times 5 = 170$  	Informal 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.

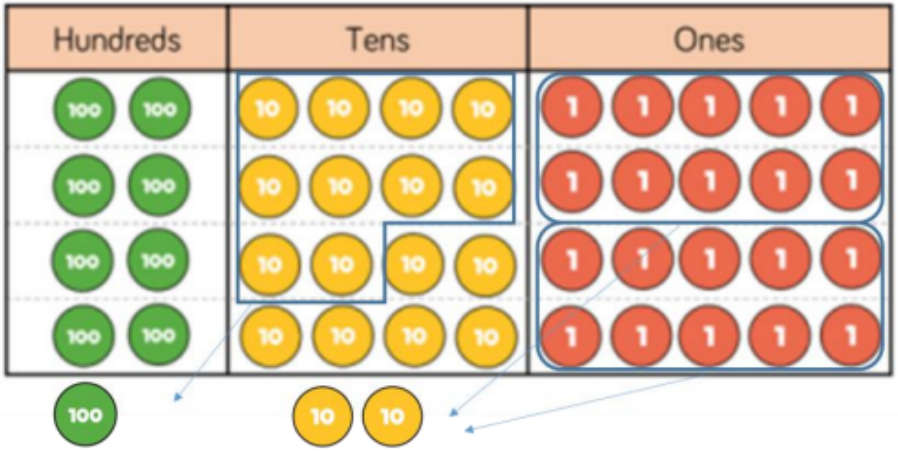
Skill: Multiply 3-digit numbers by 1-digit numbers

Year: 4



	H	T	O
	2	4	5
×			4
	9	8	0
	1	2	

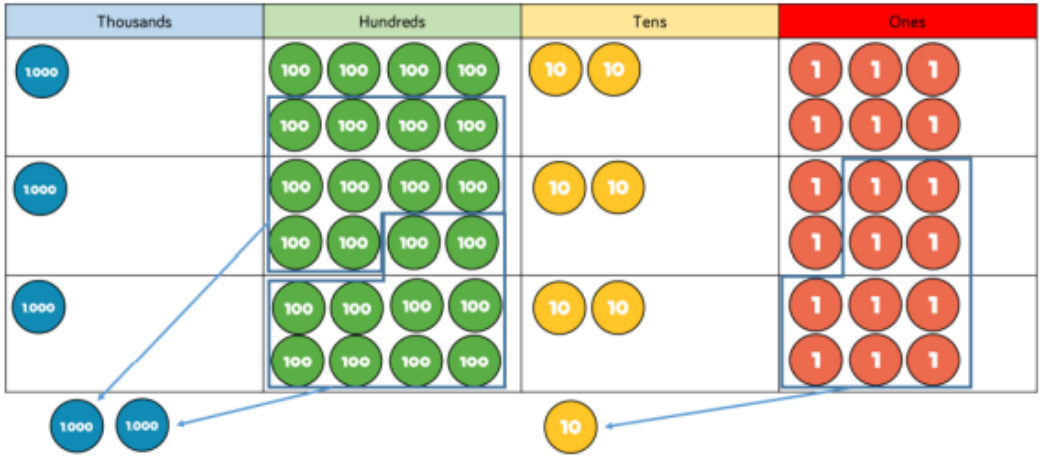
$$245 \times 4 = 980$$



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



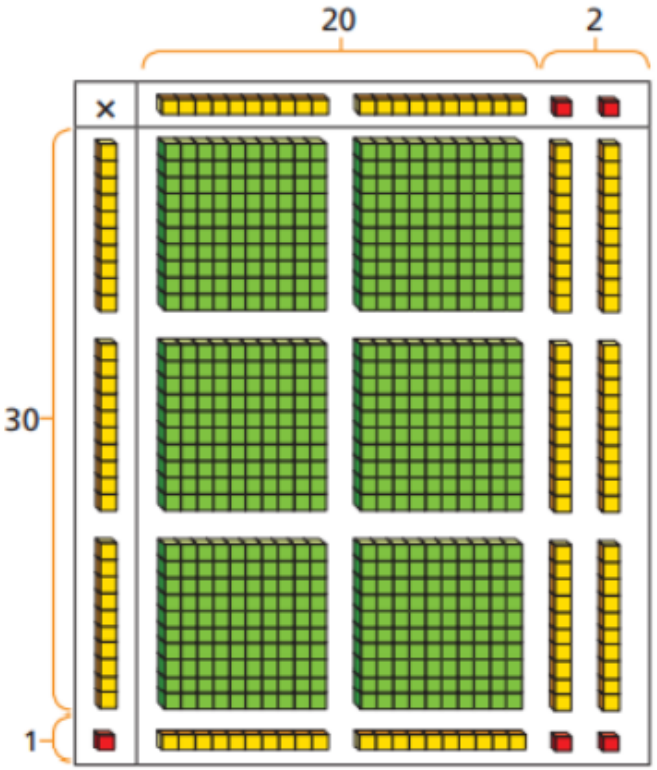
$$1{,}826 \times 3 = 5{,}478$$

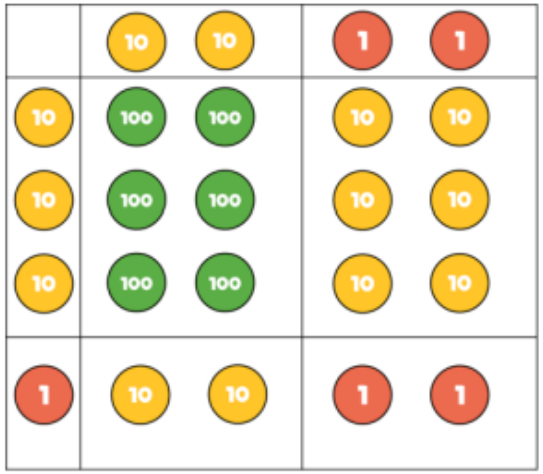
	Th	H	T	O
	1	8	2	6
×				3
	5	4	7	8
	2		1	

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

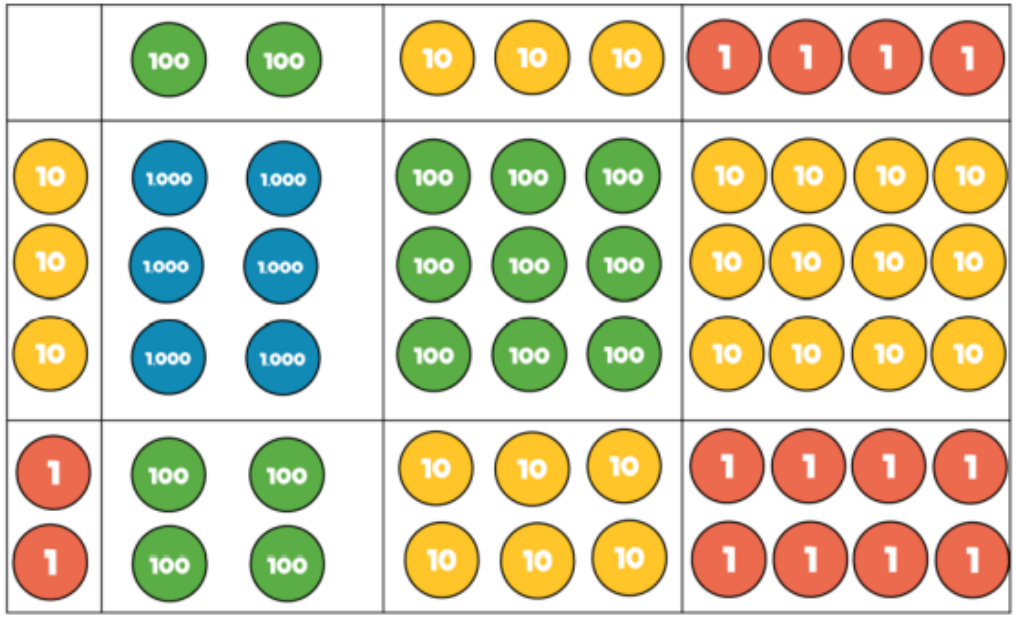
	H	T	O
		2	2
×		3	1
		2	2
	6	6	0
	6	8	2

$$22 \times 31 = 682$$

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



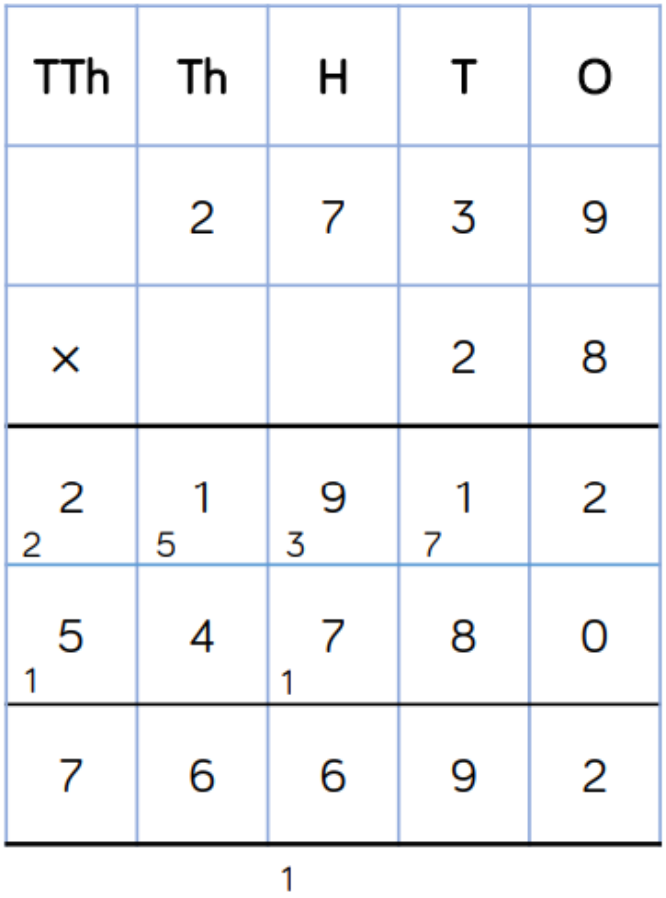
Th	H	T	O
	2	3	4
×		3	2
	4	6	8
$^{1}7$	$^{1}0$	2	0
7	4	8	8

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

234 × 32 = 7,488

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.

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.

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		

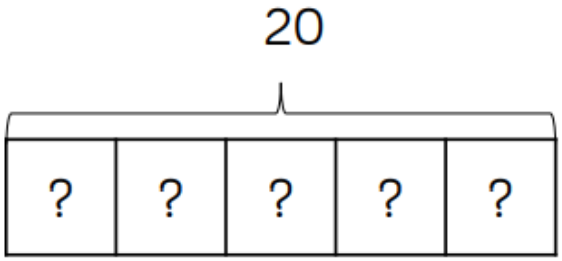
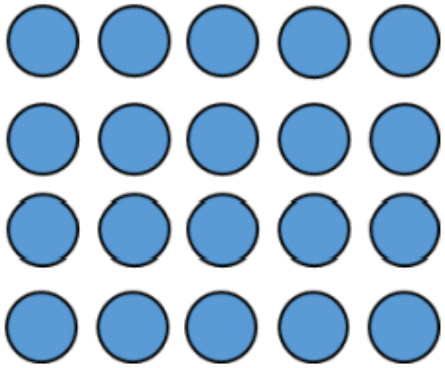
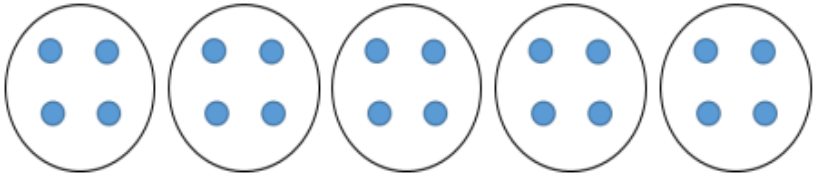
$$2{,}739 \times 28 = 76{,}692$$

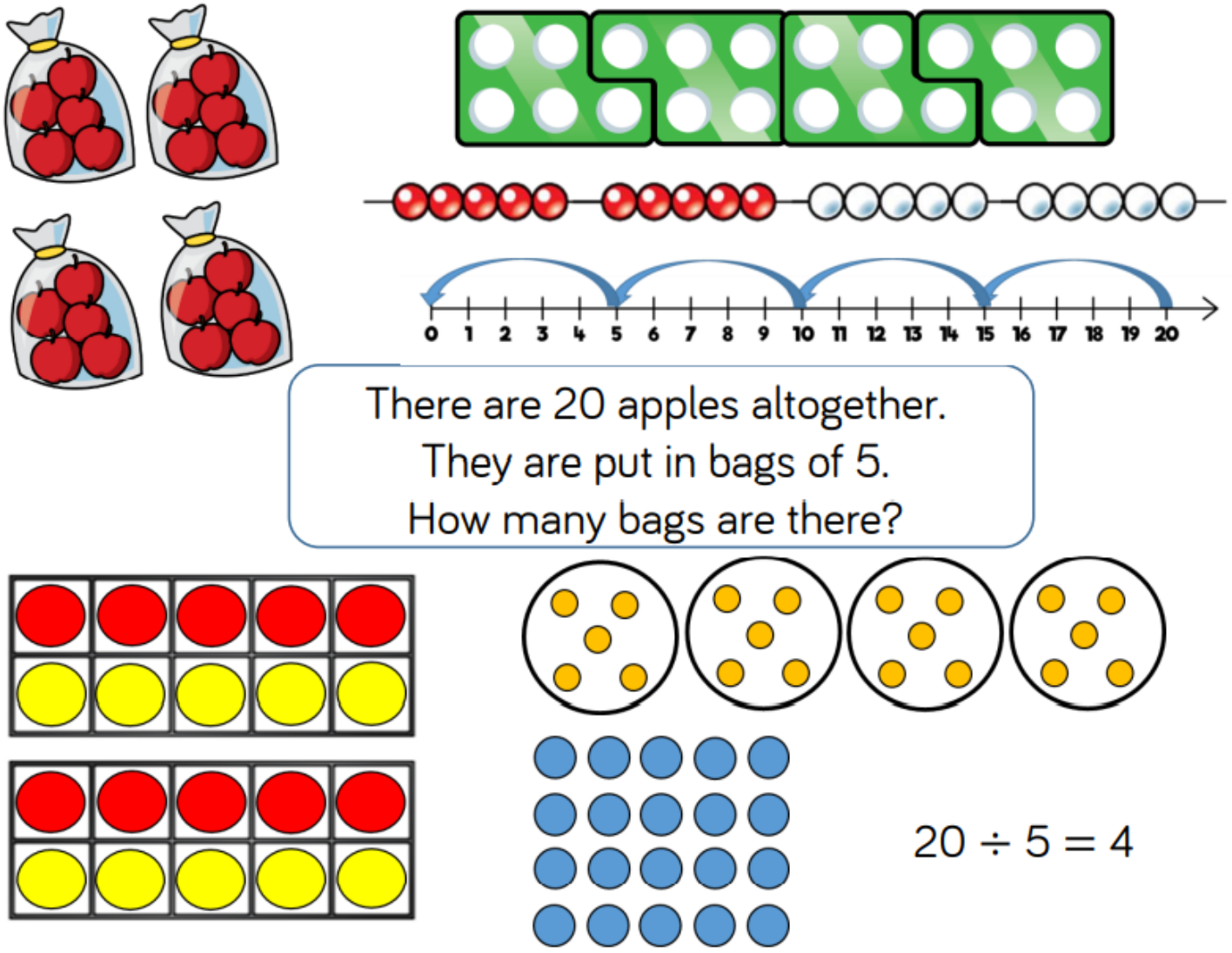
Division

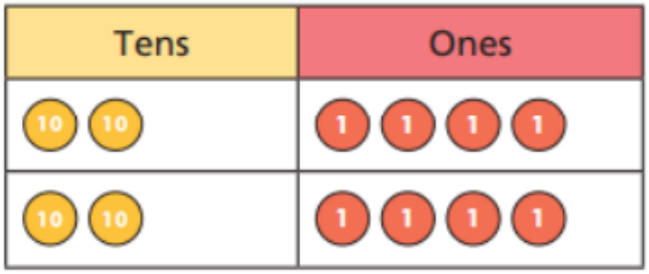
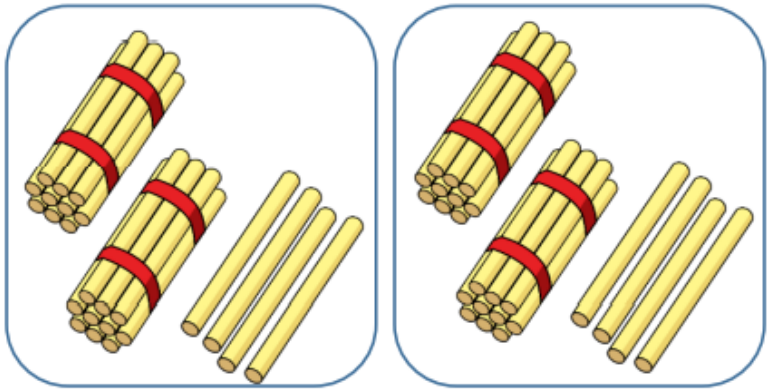
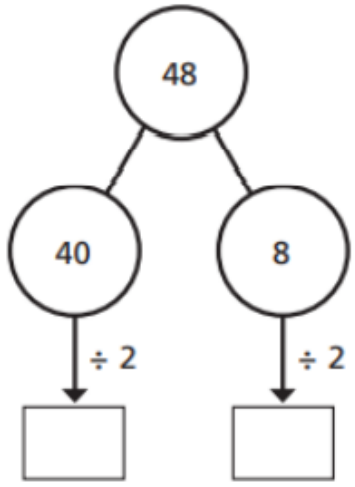
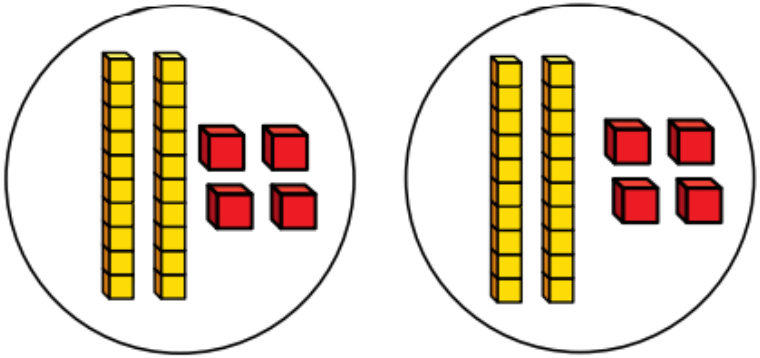
Skill	Year	Representations and models	
Solve one-step problems with division (sharing)	1/2	Bar model Real life objects	Arrays Counters
Solve one-step problems with division (grouping)	1/2	Real life objects Number shapes Bead strings Ten frames	Number lines Arrays Counters
Divide 2-digits by 1-digit (no 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

Skill	Year	Representations and models	
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 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

Skill	Year	Representations and models	
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: 1/2
  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.

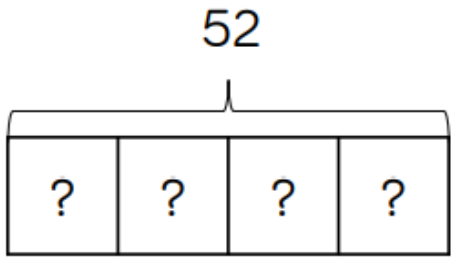
Skill: Solve 1-step problems using division (grouping)	Year: 1/2
	Children solve problems by grouping and counting the number of groups. Grouping encourages children to count in multiples and links to repeated subtraction on a number line. They can use concrete representations in fixed groups such as 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
   **48 ÷ 2 = 24** 	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.

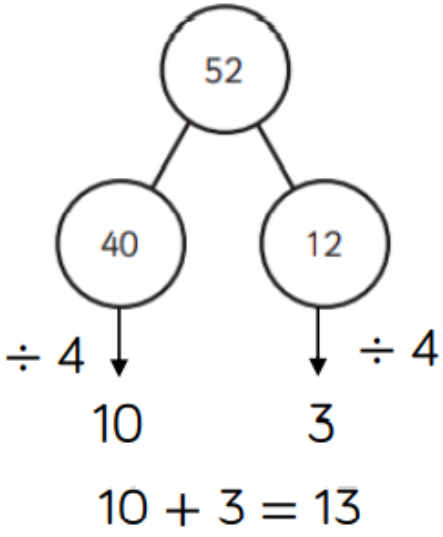
Skill: Divide 2-digits by 1-digit (sharing with exchange)

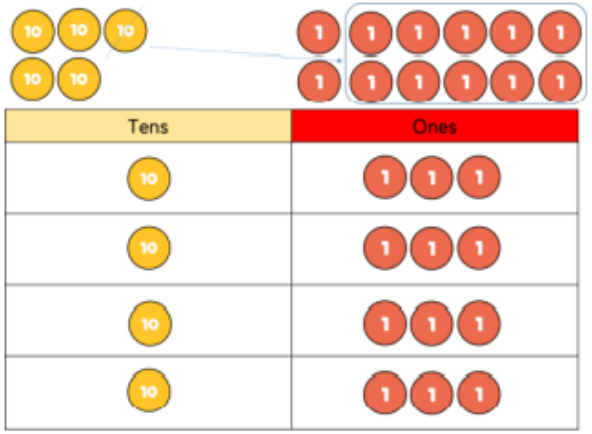
Year: 3/4

Tens	Ones



52 ÷ 4 = 13





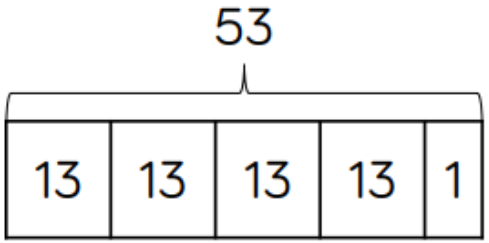
When dividing numbers involving an exchange, children can use Base 10 and place value counters to exchange one ten for ten ones.
Children should start with the equipment outside the place value grid before sharing the tens and ones equally between the rows.

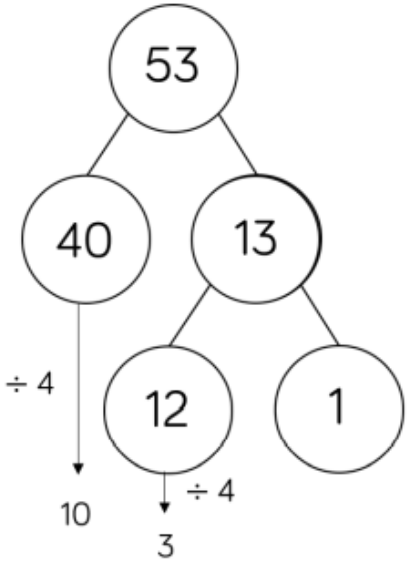
Flexible partitioning in a part-whole model supports this method.

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

Year: 3/4

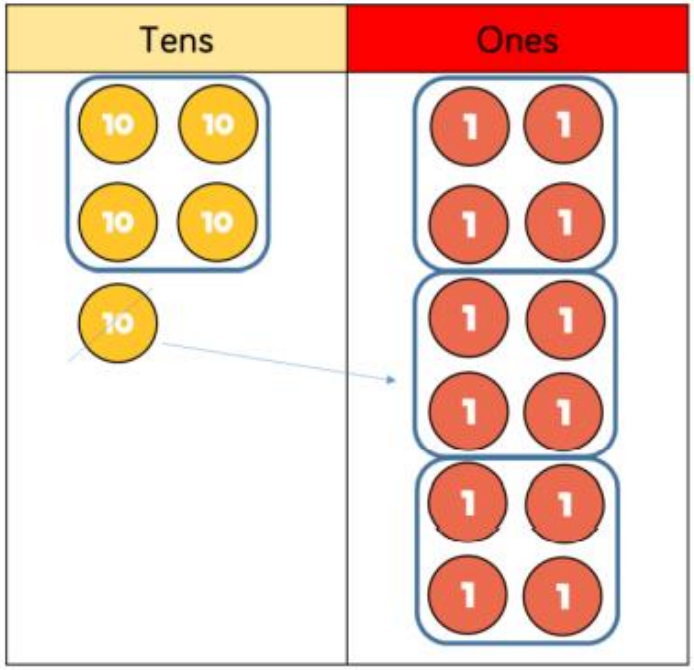
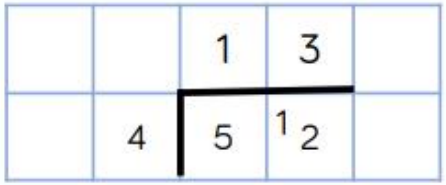
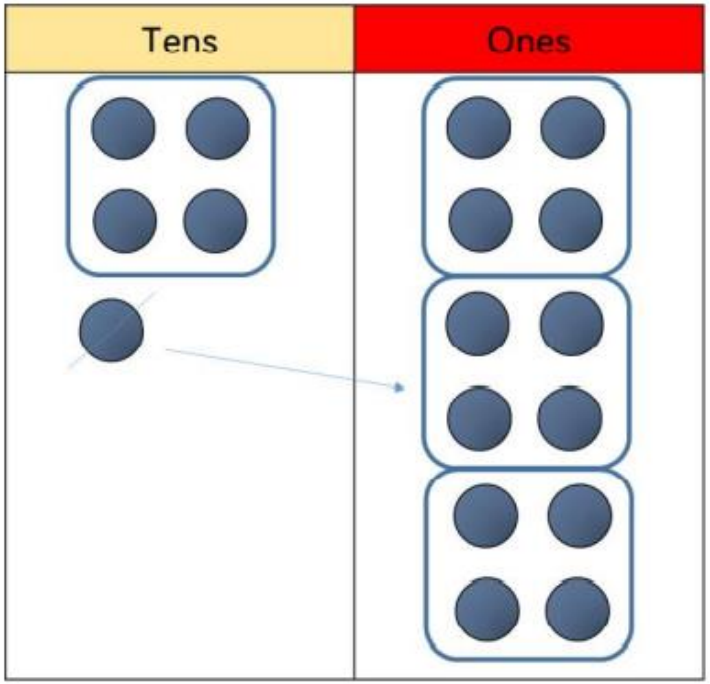
Tens	Ones





53 ÷ 4 = 13 r1

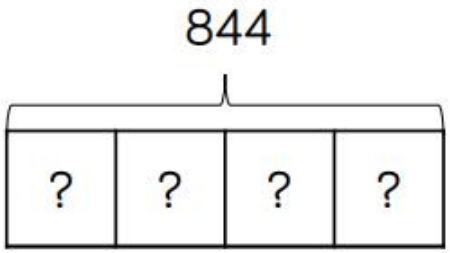
When dividing numbers with remainders, children can use Base 10 and place value counters to exchange one ten for ten ones.
Starting with the equipment outside the place value grid will highlight remainders, as they will be left outside the grid once the equal groups have been made.
Flexible partitioning 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.

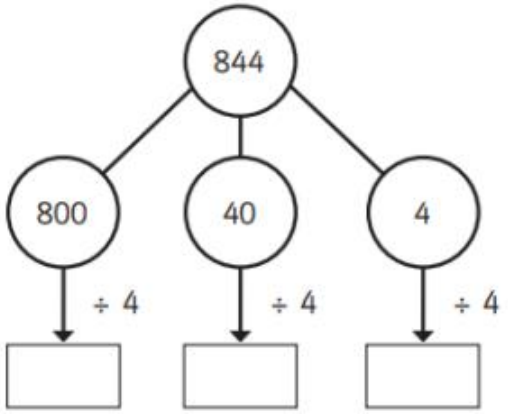
Skill: Divide 3-digits by 1-digit (sharing)

Year: 4

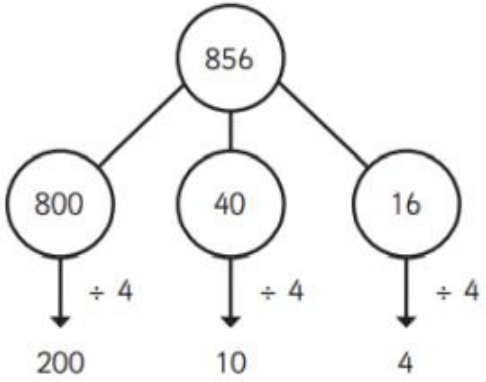
844 ÷ 4 = 211

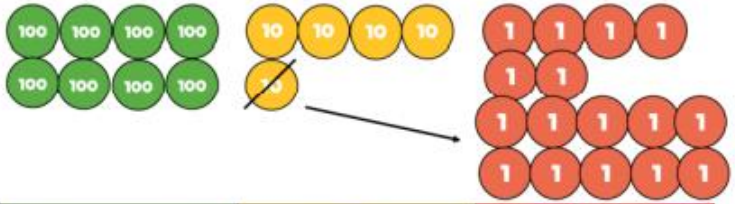


H	T	O
100 100	10	1
100 100	10	1
100 100	10	1
100 100	10	1



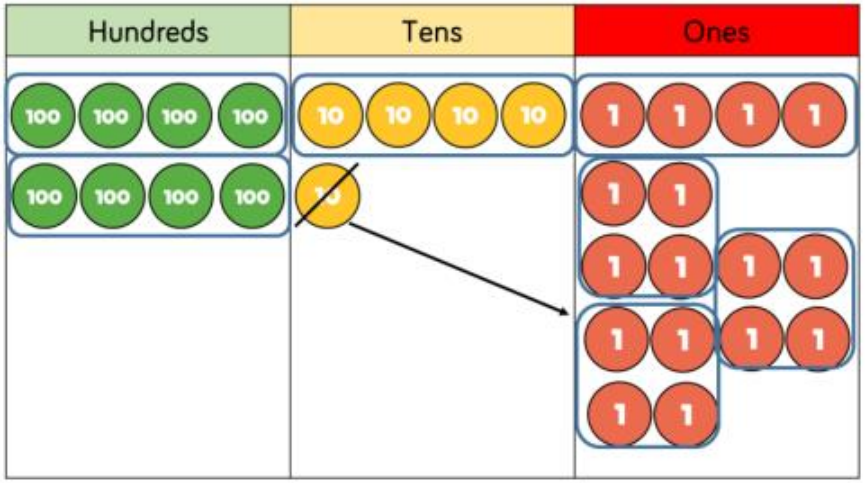
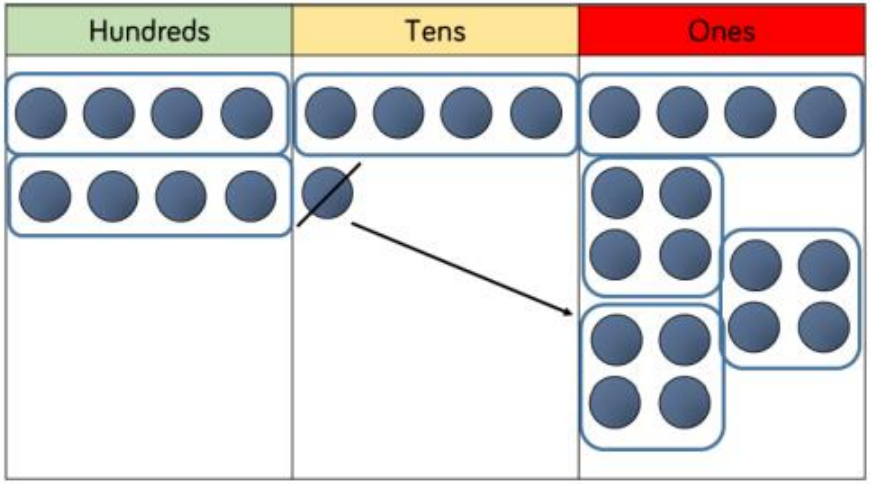
856 ÷ 4 = 214

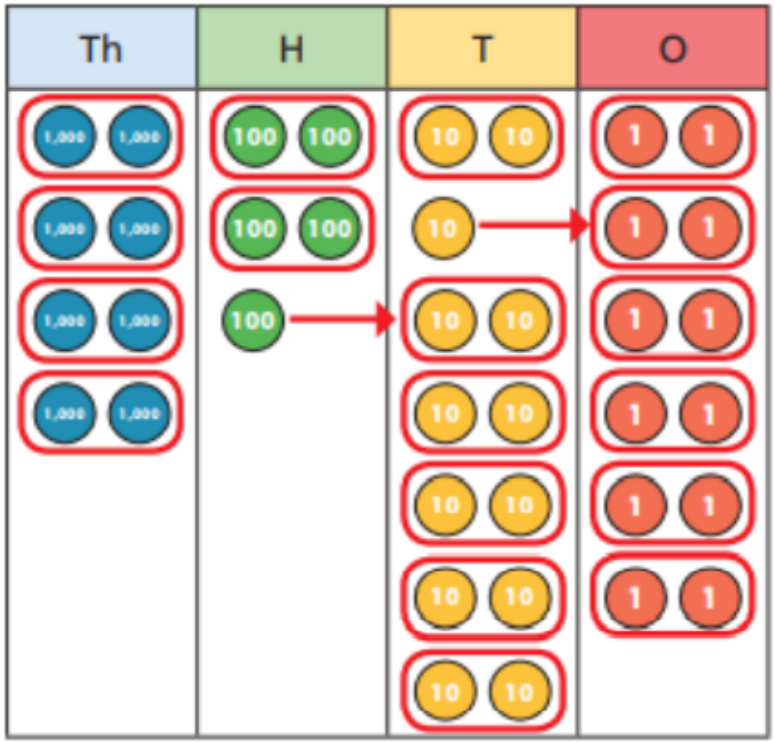




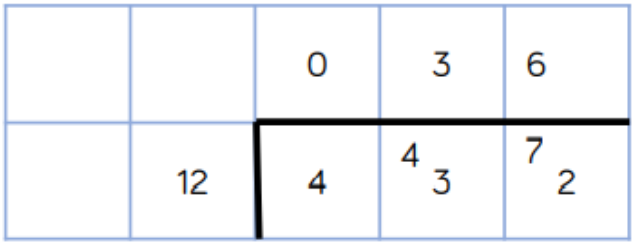
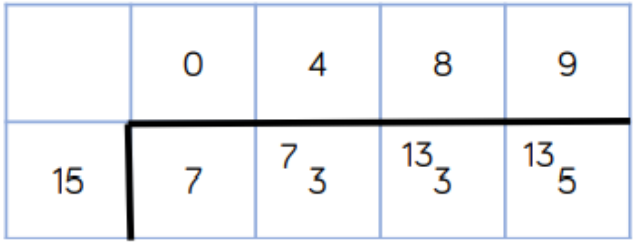
Hundreds	Tens	Ones
100 100	10	1 1 1 1
100 100	10	1 1 1 1
100 100	10	1 1 1 1
100 100	10	1 1 1 1

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

		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
	1	3	3	5
–	1	2	0	0
		1	3	5
–		1	3	5
				0

(×400)

(×80)

(×9)

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

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.

Skill: Divide multi digits by 2-digits (long division)	Year: 6

$372 \div 15 = 24\ r12$

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

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

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.

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

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

Progression through the maths curriculum in our school **UPDATED** – 6.10.20

Rec	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Place Value - Counting							
- Count, recognise and order numbers to 20 -to use one to one correspondence (touch each object and give it a number) -count objects in a line- beginning to count beyond 10 - Understand when counting, numbers are said in a certain order -count actions or objects without physically touching them . Know that the last number said identifies how many are in a set -count objects in a group/	-Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number -Count numbers to 100 in numerals; count in multiples of twos , fives and tens	-Count in steps of 2, 3, and five and from 0 and in tens from any number, forward and backward	-Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number	-Count in multiples of 6, 7, 9, 25,1000 Count backwards through zero to include negative numbers	-Count forward or backwards in steps of powers of 10 for any given numbers up to 1 000 000		

irregular arrangement. (using first same objects/ then different objects) start from a given number name and stop at another. (start with 2, hold it in your head, count on to 8) -count on several numbers from a given number (using fingers to help: count on three numbers from 4)							
Place value- represent							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
-Identify and represent numbers using objects and pictorial representations	-Identify and represent numbers using objects and pictorial representations -Read and write numbers to 100 in numerals -Read and write numbers from 1 to 20 in numerals and words	-Read and write numbers to at least 100 in numerals and in words -Identify, represent and estimate numbers using different representations, including the number line	-Identify, represent and estimate numbers using different representations -Read and write number up to 1000 in numerals and in words	-Identify, represent and estimate numbers using different representations -Read Roman numerals to200 (I to C) and know that over time, the	-Read and write, (order and compare) numbers to at least 1 000 000 and determine the value of each digit -Read Roman numerals to	-Read, write, (order and compare) numbers up to 10 000 000 and determine the value of each digit	

				numeral system changed to include the concept of zero and place value	1000 (M) and recognise years written in Roman numerals		
Place Value: Use place value and Compare							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
-Compare quantities of identical and non-identical objects -	Given a number identify one more and one less	Recognise the place value of each digit in a two-digit number (tens, ones) Compare and order numbers from 0 up to 100; use <,> and = signs	Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) Compare and order numbers up to 1000	Find 1000 more or less than a given number Recognise the place value of each digit in s four-digit number (thousands , hundreds, tens and ones Order and compare numbers beyond 1000	(Read, write) order and compare numbers to at least 1 000 000 and determine the value of each digit	(Read, write) order and compare numbers up to 10 000 000 and determine the value of each digit	-order positive and negative integers, decimals and fractions -use the numberline as a model for ordering integers, decimals and fractions - use the symbols =, ≠, <, >, ≤, ≥ to make order statements about positive and negative integers, decimals and fractions -Understand and use

							place value for decimals, measures and integers of any size -Understand and use place value for decimals, measures and integers of any size
Place Value: problems and Rounding							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
		-Use place and value and number facts to solve problems	-Solve number problems and practical problems involving these ideas	-Round any number to the nearest 10, 100 or 1000 -Solve number and practical problems that involve all of the above and with increasingly large positive numbers	-Interpret negative numbers in context -Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 -Solve number problems and practical problems that involved all of the above	-Round any whole number to a required degree of accuracy -Use negative numbers in context, and calculate intervals across zero -Solve number and practical problems that involve all of the above	-round numbers and measures to different degrees of accuracy, for example to the nearest whole number or to one decimal place - round numbers and measures to an appropriate degree of accuracy, for example to the nearest

							whole number or to one decimal place - use approximation, through rounding to the nearest whole number or to one decimal place, to estimate answers -extend their understanding of the number system; make connections between number relationships, and their algebraic and graphical representations

Addition and Subtraction: Recall, Represent, Use							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
-rapid recall of doubles -use of songs and rhymes to do 1 more and 1 less	-Read and write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs -Represent and use number bonds related subtraction facts within 20	-Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 -Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot -Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number	-Estimate the answer to a calculation and use inverse operations to check answers	-Estimate and use inverse operations to check answers to a calculation	-Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy		
Addition and Subtraction: calculations							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
-recognise and name + and - and = signs	-Add and subtract one-digit and two-digit numbers to 20 including zero	-Add and subtract numbers using concrete objects, pictorial representations	-Add and subtract numbers mentally, including:	-Add and subtract numbers with up to 4 digits using the	-Add and subtract whole numbers with more than 4 digits,	-Perform mental calculations, including with mixed	-use the four operations, including formal written methods,

-read an addition number sentence -solve an addition number sentence - arrange an addition number sentence -read a subtraction number sentence -solve a subtraction number sentence -calculate by adding 2 single digit numbers and count on or back to find the answer		and mentally, including: A two-digit number and ones A two-digit number an tens Two two-digit numbers Adding three one-digit numbers	A three-digit number and ones A three digit number and tens A three digit number and hundreds Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	formal written methods of columnar addition and subtraction where appropriate	including using formal written methods (columnar addition and subtraction) Add and subtract numbers mentally with increasingly large numbers	operations and large numbers -Use their knowledge of the order of operation to carry out of calculations involving the four operations	applied to integers and decimals; multiply proper and improper fractions, and mixed numbers, all both positive and negative -recognise and use relationships between the operations +, –, ×, ÷, including inverse operations
Addition and Subtraction –Solve Problems							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
-use number to solve problems -using concrete objects to sort into groups based on size, colour or shape	-Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number	-Solve problems with addition and subtraction: Using concrete objects and pictorial representations, including those	-Solve problems including missing number problems using number facts, place value, and more complex	-Solve addition and subtraction two-step problems in contexts, deciding which operations and	-Solve addition and subtraction multi-step problems in contexts, deciding which operations and	-Solve addition and subtraction multi-step problems in contexts deciding which	

-Solve problems and know that a group of things changes quantity when something is added or taken away -use language of difference, more/less	problems such as 7 = □ - 9	involving numbers, quantities and measures -Applying their increasing knowledge of mental and written methods	addition and subtraction	methods to use and why	methods to use and why Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	operations and methods to use and why	
Multiplication and Division – Recall, Represent, Use							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
-count in tens (recite the sequence ten, twenty, thirty… one hundred.) Do the same backwards -rapid recall of doubles -count patterns involving equal groups	count in twos, fives and tens (recite the sequences and do the same backwards	-Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers -Show that multiplication of two numbers can be done in any order (commutative) and division of one	-Recall and use multiplication and division facts for 3, 4 and 8 multiplication tables	-Recall multiplication and division facts for multiplication tables up to 12 x 12 -Use place value, known and derived facts to multiply and divide mentally, including: multiplying by	-Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers -Know and use the vocabulary of prime numbers, prime factors	-Identify common factors, common multiples and prime numbers -Use estimation to check answers to calculations and determine, in the context of a problem,	-recognise and use relationships between the operations +, –, ×, ÷, including inverse operations

		number by another cannot		0 and 1; dividing by 1; multiplying together three numbers -Recognise and use factor pairs and commutativity in mental calculations	and composite (non-prime) numbers -Establish whether a number up to 100 is prime and recall prime numbers up to 19 -Recognise and use square numbers and cube numbers, and the notation for squared(^{2})and cubed (^{3})	and appropriation degree of accuracy.	
Multiplications and Division: Calculations							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
		-Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equal (=) signs	-Write and calculate mathematical statements for multiplication and division using multiplication tables that they know, including for two-digit numbers times	-Multiply two-digit and three-digit numbers by a one-digit number using formal written layout	-Multiply numbers up to 4 digits by a one-or two-digit number using a formal written method, including long multiplication for two-digit numbers	-Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication	-use the four operations, including formal written methods, applied to integers and decimals; multiply proper and improper fractions, and

			one-digit numbers, using mental and progressing to formal written methods		-Multiply and divide numbers mentally drawing upon known facts -Divide numbers up to 4 digits by a one- digit number using the formal written method of short division and interpret remainders appropriately for the context -Multiply and divide whole numbers and those involving decimals by 10, 100, and 1000	-Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding as appropriate for the context -Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders	mixed numbers, all both positive and negative

						according to the context -Perform mental calculations, including with mixed operations and large numbers	
Multiplication and Division: Solve Problems							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
-solve real life problems involving doubling, halving and sharing -Represent mathematical thinking through pictures and drawings	-Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representation and arrays with the support of the teacher	-Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	-Solve problems including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems In which n objects are connected to m objects	-Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	-Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes Solve problems involving multiplication and division, including scaling by simple fractions and problems	-Solve problems involving addition, subtraction, multiplication and division	-use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple use square, cube, square root and cube root

					involving simple rates		
Multiplication and Division – Combined Operations							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
					-Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	-Use their knowledge of the order of operations to carry out calculations involving the four operations	-use conventional notation for the priority of operations, including brackets -recognise and use relationships between the operations +, –, ×, ÷, including inverse operations - express one quantity as a whole-number multiple of another, and by reversing the expression of the same relationship express one quantity as a

							unit fraction of another
Fractions: Recognise and Write							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
-share a quantity of objects between two. -Identify half a group of objects -Identify half a shape (not always circular) -Put together halves to make whole shapes -Break an object in half -Begin to count to ten in halves. (zero, half, one, one and a half, two, two and a half, three, three and a half…)	-Recognise, find and name a half as one of two equal parts of an object, shape or quantity -Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	-Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity	-Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 -Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators -Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators	-Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	-Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths -Recognise mixed numbers and improper fractions and covert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]		

Fractions: Compare							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
.		-Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$	-Recognise and show, using diagrams, equivalent fractions with small denominators -Compare and order unit fractions, and fractions with the same denominators	-Recognise and show, using diagrams, families of common equivalent fractions	-Compare and order fractions whose denominators are all multiples of the same number	-Use common factors to simplify fractions; use common multiples to express fractions in the same denomination -Compare and order fractions; including fractions >1	-define percentage as 'number of parts per hundred', and know their decimal and fraction equivalents -work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and 7/2 or 0.375 and 3/8) express one quantity as a whole-number multiple of another, and by reversing the expression of the same relationship express one

							quantity as a unit fraction of another
Fractions: Calculations							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
Can recognise 'fair share' of an item e.g. a banana or a set of objects -can describe a part and a whole e.g. a piece of cake / pizza and a whole cake / pizza		-Write simple fractions for example, $\frac{1}{2}$ of 6 = 3	-Add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]	-Add and subtract fractions with the same denominator	-Add and subtract fractions with the same denominator and denominators that are multiples of the same number -Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	-Add and subtract fractions with different denominators and mixed numbers using the concept of equivalent fractions -Multiply simple pairs of proper fractions, writing the answer in the simplest form [for example, $\frac{1}{4} x \frac{1}{2} = \frac{1}{8}$] Divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$]	

Fractions: Solve Problems							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
			-Solve problems that involve all of the above	-Solve problems involving increasingly harder fractions to calculate quantities and fractions to divide quantities, including non-unit fractions where the answer is a whole number			-recognise and use relationships between the operations +, –, ×, ÷, including inverse operations - express one quantity as a whole-number multiple of another, and by reversing the expression of the same relationship express one quantity as a unit fraction of another
Decimals: Recognise and Write							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
				-Recognise and write decimal equivalents of any number of	-Read and write decimal numbers as fraction [for example, $0.71=\frac{71}{100}$]	-Identify the value of each digit in numbers given to three	

				tenths or hundredths -Recognise and write decimal equivalents to $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$	-Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	decimal places	
Decimals: Compare							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
				-Round decimals with one decimal place to nearest whole number -Compare numbers with the same number of decimal places up to two decimal places	-Round decimals with two decimal places to the nearest whole number and to one decimal place -Read, write, order and compare numbers with up to three decimal places		

Decimals: Calculations and Problems							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
				-Find the effect of dividing a one- or two digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths	-Solve problems involving number up to three decimal places	-Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places -Multiply one-digit numbers with up to two decimal places by whole numbers -Use written division methods in cases where the answer has up to two decimal places -Solve problems which require answers to be rounded to specified degrees of accuracy	

Fractions, Decimals and Percentages							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
				-Solve simple measures and money problems involving fractions and decimals to two decimal places	-Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal -Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25	-Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] -Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	-define percentage as 'number of parts per hundred', and know their decimal and fraction equivalents -work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and 7/2 or 0.375 and 3/8) express one quantity as a whole-number multiple of another, and by reversing the expression of the same relationship express one

							quantity as a unit fraction of another
Ratio and Proportion							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
						-Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts -Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison -Solve problems	-express one quantity as a whole-number multiple of another, and by reversing the expression of the same relationship express one quantity as a unit fraction of another - understand that a multiplicative relationship between two quantities that can be expressed as a ratio of the form 1 : n where n is an integer can also be expressed as

						involving similar shapes where the scale factor is known or can be found -Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.	the unit fraction 1/n - use ratio notation, including reduction to simplest form - use scale factors of scale diagrams and maps in everyday contexts - relate the language of ratios and the associated calculations to the arithmetic of fractions - relate dividing a given quantity into two parts in a given part:whole ratio to finding a fraction of a quantity; relate part:part

							ratios of quantities to the corresponding part:whole ratios -use the idea of compound units (A 'per' B), as in unit pricing, to solve problems
Algebra							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
-Problem solving that involves sequencing and recognising patterns	Solve on-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7= ☐ - 9	Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems	Solve problems including missing number problems			Use simple formulae Generate and describe linear number sequences Express missing number problems algebraically Find pairs of numbers that satisfy an equation with two unknowns Enumerate possibilities	use and interpret algebraic notation, including: ab in place of a × b, 3y in place of y + y + y and 3 × y a2 in place of a × a, a3 in place of a × a × a; a2b in place of a × a × b a/b in place of a ÷ b brackets

						of combinations of two variables	- understand the correct and incorrect use of '='; understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors - simplify and manipulate algebraic expressions to maintain equivalence by: -collecting like terms -multiplying a single term over a bracket -use algebraic methods to solve linear equations in one variable - interpret simple linear mathematical

							relationships, such as y equals 5 times x or p is 3 more than twice q, both algebraically and graphically -substitute positive integer values into formulae and expressions, including scientific formulae - understand and use standard mathematical formulae -model simple situations or procedures involving two variables by translating them into linear algebraic expressions

							or formulae and by using graphs - generate terms of a sequence with a simple linear position-to-term rule (such as ‘an expression for the value of the nth term is n + 2’) from either the term-to-term or the position-to-term rule
Measurement: Using Measures							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**

use every day language to compare quantities and objects. order two items by mass (using everyday language) order two or three items by length or height. use everyday language to compare quantities and objects and talk about distance. order two items by capacity (using everyday language). -order and sequences familiar events. -use everyday language related to time (days of week & begins to identify o'clock). use everyday language to talk about money.	-Compare, describe and solve practical problems for: • Lengths and heights [for example, long/ short, longer/ shorter, tall/ short, double/half] • Mass/weight [for example, heavy/light, heavier than, lighter than] • Capacity and volume [for example full/empty, more than, less than, half, half full, quarter • Time [for example, quicker, slower, earlier, later] -Measure and begin to record the following: Lengths and heights Mass/weight	-Choose and use appropriate standard units to estimate and measure lengths/ height in any direction (m/cm); mass (kg/g); temperature (℃); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales thermometers and measuring vessels -Compare and order lengths, mass, volume/ capacity/ and record the results using >, < and =	-Measure and compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/ capacity (l/ml)	-Convert between different units of measure [for example, kilometre to metre; hour to minute] Estimate, compare and calculate different measures	-Convert between different units of metric measure (for example, kilometre and metre centimetre and metre ; centimetre and millimetre; gram and kilogram; litre and millilitre) -Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints -Use all four operations to solve problems involving measure [for example, length, mass, volume, money]using	-Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate -Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places	-change freely between related standard units, for example: time (4 hours = 4 × 360 seconds), length (7 mm = 7 × 0.1 cm), area (9 m2 = 9 × 10000 cm2), volume/capacity (3 mm3 = 3 x 0.001 cm3) , mass (5 kg = 5 × 1000 g) - use standard units of mass, length, time, money and other measures, including with decimal quantities

demonstrates understanding that £1 has greater value than pennies. know and name different coins – 1p, 2p, 5p, 10p, 20p, 50p, £1 and £2. can use 1p, 5p and 10p coins to make amounts up to 20	Capacity and volume Time(hours, minutes, seconds)				decimal notation, including scaling	-Convert between miles and kilometres	
Measurement: Money							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
-Understand that coins can be used to buy things -Use coins in real life and practical contents -recognise names and know the value of different coins -Know an item can be used to represent more	-Recognise and know the value of different denominations of coins and notes	-Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value -Find different combinations of coins that equal the same amounts of money -Solve simple problems in a practical context	-Add and subtract amounts of money to give change, using both £ and p in practical contexts	-Estimate, compare and calculate different measures, including money in pounds and pence	-Use all four operations to solve problems involving measure [for example money]		

than one object e.g. 2p coin		involving addition and subtraction of money of the same unit, including giving change					
Measurement: Time							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
-Measure short periods of time in different ways	-Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon, and evening] -Recognise and use language relating to dates, including days of the week, weeks -Tell the time to the hour and half past the hour and draw the hand on a clock face to show these times	-Compare and sequence intervals of time. -Tell and write the time to five minutes, including quarter past/ to the hour and draw the hands on a clock face to show these times -Know the number of minutes in an hour and the number of hours in a day	-Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24 hour clocks -Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock a.m./p.m., morning,	-Read, write and convert time between analogue and digital 12- and 24 hour clocks -Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	-Solve problems involving converting between units of time	-Use, read, write and convert, between standard units, converting measurement of time from a smaller unit, and vice versa	

			afternoon, noon, and midnight -Know the number of seconds in a minute and the number of days in a month, year and leap year -Compare durations of events [for example to calculate the time taken by particular events and tasks]				
Measurement: Perimeter, Area, Volume							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
			-Measure the perimeter of simple 2-D shapes	-Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres Find the area of rectilinear shapes by counting squares	-Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres -Calculate and compare the area of rectangles (including squares), and	-Recognise that shapes with the same areas can have different perimeters and vice versa -Recognise when it is possible to use formulae for area and	- derive and apply formulae to undertake calculations and solve problems involving perimeter and area of rectangles

					including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes -Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water]	volume of shapes -Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3]	
Geometry: 2-D shapes							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
-Select a particular named shape -Begins to use mathematical names and 'flat' 2D shapes. -Use familiar objects and common shapes	-Recognise and name common 2-D shapes [for example, rectangles (including square), circles and triangles	-Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line -Identify 2-D shapes of the	-Draw 2-D shapes	-Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	-Distinguish between regular and irregular polygons based on reasoning about equal sides and angels.	-Draw 2-D shapes using given dimensions and angles -Compare and classify geometric shapes based on	-describe, sketch and draw: points, lines, parallel lines, perpendicular lines, right angles, regular polygons,

to create and recreate patterns. -Use mathematical terms to describe 2-D shapes. -Recognise, create and describe patterns. -Use everyday language to solve problems.-explores characteristics of/uses mathematical language for everyday objects and shapes. -Understand that regular and irregular shapes can be categorised and ordered in different ways e.g. size, number of sides -Order and arrange combinations of		surface of 3-D shapes, [for example a circle on a cylinder and a triangle on a pyramid -Compare and sort common 2-D shapes and everyday objects		-Identify lines of symmetry in 2-D shapes presented in different orientations	-Use the properties of triangles to deduce related facts and find missing lengths and angles	their properties and sizes -Illustrate and name parts of circles , including radius, diameter and circumference and know that the diameter is twice the radius	and other polygons that are reflectively and rotationally symmetric; use conventional terms and notations, such as using 'dashes' to indicate equal lengths and (multiple) arrows to indicate parallel lines - use the standard conventions for labelling the sides and angles of triangle ABC

shapes in patterns and sequences -Understand that a shape doesn't change when it's in a different orientation e.g. a rotated square							
Geometry:3-D Shapes							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
-Recognise common 3-d shapes e.g. cylinders, cubes, cuboids, spheres -Know that 2-d shapes can be made from the faces of a 3D shape	-Recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]	-Recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]. Compare and sort common 3-D shapes and everyday objects	-Make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them		-Identify 3-D shapes including cubes and other cuboids, from 2-D representations	-Recognise, describe and build simple 3-D shapes, including making nets	
Geometry: Angles and Lines							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
-			-Recognise angles as a property of shape or a description of a turn identify right angles,	-Identify acute and obtuse angles and compare and order angles up to two right angels by size	-Know angles are measured in degrees; estimate and compare acute, obtuse	Find unknown angles in any triangles, quadrilaterals, and regular polygons	-derive and illustrate properties [for example, equal lengths and angles] of triangles,

			recognise that two right angels makes a half-tur, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle -Identify horizontal and vertical lines and pairs of perpendicular and parallel	Identify lines of symmetry in 2-D shapes presented different orientations -Complete a simple symmetric figure with respect to a specific line of symmetry	and reflex angles -Draw given angles, and measure them in degrees -Identify: Angles at a point and one whole turn (total $360°$) Angles at a point on a straight line and $\frac{1}{2}$ a turn (total $180°$) Other multiples of $90°$	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angels	quadrilaterals, and other plane figures using appropriate language and technologies --apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles - draw and measure line segments and angles in geometric figures; calculate lengths represented by line segments in scale drawings given scale factors as ratios in the form 1 : n, and understand

							that the lengths are approximate
Geometry: Position and Direction							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
-Can say what is different and what is the same. -Begins to categorise according to properties such as size. -Uses positional language ('below', 'above', 'next to', 'beside', 'in front', 'behind' and 'on top' -Describes their relative position such as 'behind' or 'next to'. -Uses everyday language to talk about position . -Uses everyday language to solve problems.	-Describe position, direction and movement, including whole, half and quarter and three-quarter turns **Summer 3**	-Order and arrange combinations of mathematical objects in patters and sequences -Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)		-Describe positions on a 2-D grid ad coordinates in the first quadrant -Describe movements between positions as translations of a given unit to the left/right and up down -Plot specified points and draw sides to complete a given polygon	-Identify, describe and represent the position of shape following a reflection or translation, using the appropriate language, and know that the shape has not changed	-Describe positions on the full coordinate grid (all four quadrants) -Draw and translate simple shapes on the coordinate plane. And reflect them in the axes	-work with coordinates in all four quadrants -model simple situations or procedures involving two variables by translating them into linear algebraic expressions or formulae and by using graphs - apply translations, rotations and reflections to given figures, and identify examples of translations, rotations and reflections (for example, be able to

							pick out from a group of shapes those that are translations, rotations or reflections of a given shape)
Statistics: Present and Interpret							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
		-Interpret and construct simple pictograms, tally charts, block diagrams and simple tables	-Interpret and present data using bar charts, pictograms and tables	-Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	-Complete, read and interpret information in tables including timetables	-Interpret and construct pie charts and line graphs and use these to solve problems	- produce graphs of linear functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane - use linear graphs to estimate values of y for given values of x and vice versa - from given linear graphs find approximate

							answers to simple contextual questions - construct and interpret frequency tables, bar charts, pie charts, and pictograms for simple categorical data, and vertical line (or bar) charts for small sets of ungrouped numerical data and numerical data grouped into a small number of groups
Statistics: Solve Problems							
Rec	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**
		-Ask and answer simple questions by counting the number of objects in each category and sorting the	-Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?']	-Solve comparison, sum and difference problems using information	-Solve comparison sum and difference problems using information	-Calculate and interpret the mean as an average	-describe, interpret and compare observed distributions of a single variable

		categories by quantity -Ask and answer questions about totalling and comparing categorical data	-Using information presented in scaled bar charts and pictograms and tables	presented in bar charts, pictograms, tables and other graphs	presented in a line graph		through: appropriate graphical representation involving discrete, including grouped, data; and appropriate measures of central tendency (mean, mode, median) and spread (range) - describe mathematical relationships between two variables that are easily visible in the data derived from experiments or observations

Maths Assessment Statements
Year 1
Name:

Expected standard Year 1

Statements of assessment	February	July
Place Value		
Count Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number		
Count numbers to 100 in numerals;		
Count in multiples of twos, fives and tens		
Represent Identify and represent numbers using objects and pictorial representations		
Read and write numbers to 100 in numerals		
Read and write numbers from 1 to 20 in numerals and words		
Use and Compare Given a number, identify one more and one less		
Addition and Subtraction		
Calculations Add and subtract one-digit and two digit numbers to 20, including zero		
Problems solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher		
Multiplication and Division		
Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers		
Problems Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher		
Fractions		
Recognise and write Recognise, find and name a half as one of two equal parts of an object, shape or quantity		
Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity		
Algebra		
Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ☐ -9		
Measurement		
Using Measures Compare, describe and solve practical problems for: • lengths and heights • mass/weight • capacity and volume and time		

Measure and begin to record the following: • lengths and heights • mass/weight • capacity and volume • time (hours, minutes, seconds)		
Money Recognise and know the value of different denominations of coins and notes		
Time Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening		
Recognise and use language relating to dates, including days of the week, weeks, months and years		
Tell the time to the hour and half past the hour and draw the hands on a clock face to show		
Geometry		
2-D shapes Recognise and name common 2- D shapes [for example, rectangles (including squares), circles and triangles]		
3-D shapes Recognise and name common 3- D shapes [for example, cuboids (including cubes), pyramids and spheres		
Position and Direction Describe position, direction and movement, including whole, half, quarter and three-quarter turns		

February assessment point

On track to _____

July assessment point

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Maths Assessment Statements
Year 2
Name:

Expected standard Year 2

Statements of assessment	February	July
Place Value		
Count Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward		
Represent Read and write numbers to at least 100 in numerals and in words		
Identify, represent and estimate numbers using different representations, including the number line		
Use and Compare Recognise the place value of each digit in a two-digit number (tens, ones)		
Compare and order numbers from 0 up to 100; use and = signs		
Problems / Rounding Use place value and number facts to solve problems		
Addition and Subtraction:		
Calculations Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: • a two-digit number and ones • a two-digit number and tens • two two-digit numbers • adding three one-digit number		
Problems Solve problems with addition and subtraction: • using concrete objects and pictorial representations, including those involving numbers, quantities and measures • applying their increasing knowledge of mental and written methods		
Multiplication and Division		
Recall / use Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers		
Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot		
Calculations Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs		
Problems Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and		

multiplication and division facts, including problems in contexts		
Fractions, Decimals and Percentages		
Fractions: Recognise and write Recognise, find, name and write fractions 1/ 3 , 1 / 4 , 2/ 4 and 3/ 4 of a length, shape, set of objects or quantity		
Fractions : Compare Recognise the equivalence of 2 /4 and 1 / 2		
Fractions : Calculations Write simple fractions for example, 1 /2 of 6 =3		
Algebra		
Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems		
Measurement		
Using Measures Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels		
Compare and order lengths, mass, volume/capacity and record the results using >, < and =		
Money Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value		
Find different combinations of coins that equal the same amounts of money		
Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change		
Time Compare and sequence intervals of time		
Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times		
Know the number of minutes in an hour and the number of hours in a day		
Geometry		
2-D shapes Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line		
Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]		
Compare and sort common 2-D shapes and everyday objects		
3-D shapes Recognise and name common 3- D shapes [for example, cuboids (including cubes), pyramids and spheres]		
Compare and sort common 3-D shapes and everyday objects		
Position and Direction Order and arrange combinations of mathematical objects in patterns and sequences		

Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise)		
Statistics		
Represent and interpret data Interpret and construct simple pictograms, tally charts, block diagrams and simple tables		
Solve Statistical Problems Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity		
Ask and answer questions about totalling and comparing categorical data		

February assessment point

On track to _____

July assessment point

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Maths Assessment Statements (these statements are not hierarchical)
Year 3
Name:

Expected standard Year 3

Statements of assessment	February	July
Place Value		
Count Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number		
Represent Identify, represent and estimate numbers using different representations		
Read and write numbers up to 1000 in numerals and in words		
Use and Compare Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)		
Compare and order numbers up to 1000		
Problems / Rounding Solve number problems and practical problems involving these ideas		
Addition and Subtraction:		
Calculations Add and subtract numbers mentally, including: • a three-digit number and ones • a three-digit number and tens • a three-digit number and hundreds • add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction		
Problems Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction		
Multiplication and Division		
Recall / use Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables		
Calculations Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written method		
Problems Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects		
Fractions, Decimals and Percentages		
Fractions: Recognise and write Count up and down in tenths		

Recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10		
recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators		
recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators		
Fractions : Compare Recognise and show, using diagrams, equivalent fractions with small denominators		
Compare and order unit fractions, and fractions with the same denominators		
Add and subtract fractions with the same denominator within one whole, (for example, 5/7 + 1/7 = 6/7)		
Fractions : Solve Problems Solve problems that involve all of the above		
Algebra		
Solve problems, including missing number problems		
Measurement		
Using Measures Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)		
Money Add and subtract amounts of money to give change, using both £ and p in practical contexts		
Time Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12- hour and 24-hour clocks		
Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight		
Know the number of seconds in a minute and the number of days in each month, year and leap year		
Compare durations of events [for example to calculate the time taken by particular events or tasks]		
Perimeter, area, volume Measure the perimeter of simple 2-D shapes		
Geometry		
2-D shapes Draw 2-D shapes		
3-D shapes Make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them		
Angles and lines Recognise angles as a property of shape or a description of a turn		
Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn;		

Identify whether angles are greater than or less than a right angle		
Identify horizontal and vertical lines and pairs of perpendicular and parallel lines		
Statistics		
Represent and interpret data Interpret and present data using bar charts, pictograms and tables		
Solve Statistical Problems Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables		

February assessment point

On track to _____

July assessment point

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Maths Assessment Statements (these statements are not hierarchical)
Year 4
Name:

Expected standard Year 4

Statements of assessment	February	July
Place Value		
Count Count in multiples of 6, 7, 9, 25 and 1000		
Count backwards through zero to include negative numbers		
Represent Identify, represent and estimate numbers using different representations		
Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value		
Use and Compare Find 1000 more or less than a given number		
Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)		
Order and compare numbers beyond 1000		
Problems / Rounding Round any number to the nearest 10, 100 or 1000		
solve number and practical problems that involve all of the above and with increasingly large positive numbers		
Addition and Subtraction:		
Calculations Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate		
Multiplication and Division		
Recall / use Recall multiplication and division facts for multiplication tables up to 12 × 12		
Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers		
recognise and use factor pairs and commutativity in mental calculations		
Calculations		
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout		
Problems		
Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects		
Fractions, Decimals and Percentages		
Fractions: Recognise and write		

Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.		
Fractions : Compare Recognise and show, using diagrams, families of common equivalent fractions		
Fractions : Calculations Add and subtract fractions with the same denominator		
Fractions : Solve Problems Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number		
Decimals: Recognise, write, compare Recognise and write decimal equivalents of any number of tenths or hundredths		
Recognise and write decimal equivalents to 1/4 , 1/2 , 3/4		
Round decimals with one decimal place to the nearest whole number		
Compare numbers with the same number of decimal places up to two decimal places		
Fractions, Decimals and Percentages		
Solve simple measure and money problems involving fractions and decimals to two decimal places		
Measurement		
Using Measures Convert between different units of measure [for example, kilometre to metre; hour to minute]		
Estimate, compare and calculate different measure		
Money Estimate, compare and calculate different measures, including money in pounds and pence		
Time Read, write and convert time between analogue and digital 12- and 24-hour clocks		
Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days		
Perimeter, area, volume Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres		
Find the area of rectilinear shapes by counting squares		
Geometry		
2-D shapes Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes		
Identify lines of symmetry in 2-D shapes presented in different orientations		
Angles and lines Identify acute and obtuse angles and compare and order angles up to two right angles by size		

Identify lines of symmetry in 2-D shapes presented in different orientations		
Complete a simple symmetric figure with respect to a specific line of symmetry		
Position and Direction		
Describe positions on a 2-D grid as coordinates in the first quadrant		
Describe movements between positions as translations of a given unit to the left/right and up/down		
Plot specified points and draw sides to complete a given polygon		
Statistics		
Represent and interpret data Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs		
Solve Statistical Problems Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs		

February assessment point

On track to _____

July assessment point

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Maths Assessment Statements (these statements are not hierarchical)
Year 5
Name:

Expected standard Year 5

Statements of assessment	February	July
Place Value		
Count Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000		
Count forwards and backwards with positive and negative whole numbers, including through zero		
Represent Read, write, (order and compare) numbers to at least 1 000 000 and determine the value of each digit		
Read Roman numerals to 1000 (M) and recognise years written in Roman numerals		
Use and Compare (Read, write) order and compare numbers to at least 1 000 000 and determine the value of each digit		
Problems / Rounding Interpret negative numbers in context		
Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000		
Solve number problems and practical problems that involve all of the above		
Addition and Subtraction:		
Calculations Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)		
Add and subtract numbers mentally with increasingly large numbers		
Problems Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why		
Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign		
Multiplication and Division		
Recall / use identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers		
know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers		
establish whether a number up to 100 is prime and recall prime numbers up to 19		
recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})		
Calculations		

Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers		
Multiply and divide numbers mentally drawing upon known facts		
Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context		
Multiply and divide whole numbers and those involving decimals by 10, 100 and 100		
Problems Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes		
Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates		
Multiplication and division combined Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign		
Fractions, Decimals and Percentages		
Fractions: Recognise and write Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths		
Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/ 5 + 4/ 5 = 6/ 5 = 1 1/ 5]		
Fractions : Compare Compare and order fractions whose denominators are all multiples of the same number		
Fractions : Calculations Add and subtract fractions with the same denominator and denominators that are multiples of the same number		
Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagram		
Decimals: Recognise, write, compare Read and write decimal numbers as fractions [for example, 0.71 = 71 /100]		
Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents		
Round decimals with two decimal places to the nearest whole number and to one decimal place		
Read, write, order and compare numbers with up to three decimal		
Fractions, Decimals and Percentages Recognise the per cent symbol (%) and understand that per cent relates to ‘number of parts per hundred’, and write percentages as a fraction with denominator 100, and as a decimal		

Solve problems which require knowing percentage and decimal equivalents of 1 /2 , 1/ 4 , 1/5 , 2/ 5 , 4/ 5 and those fractions with a denominator of a multiple of 10 or 25		
Measurement		
Using Measures Convert between different units of metric measure		
Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints		
Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling		
Money Use all four operations to solve problems involving measure [for example, money]		
Time Solve problems involving converting between units of time		
Perimeter, area, volume Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres		
Calculate and compare the area of rectangles (including squares) and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes		
Estimate volume [for example, using blocks to build cuboids] and capacity [for example, using water]		
Geometry		
2-D shapes Distinguish between regular and irregular polygons based on reasoning about equal sides and angles		
Use the properties of rectangles to deduce related facts and find missing lengths and angles		
3-D shapes Identify 3-D shapes, including cubes and other cuboids, from 2-D representations		
Angles and lines Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles		
Draw given angles, and measure them in degrees		
Identify: • angles at a point and one whole turn (total 360°) • angles at a point on a straight line and 1/ 2 a turn (total 180°) • other multiples of 90°		
Position and Direction Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed		
Statistics		
Represent and interpret data Complete, read and interpret information in tables, including timetables		

Solve Statistical Problems Solve comparison, sum and difference problems using information presented in a line graph		

February assessment point

On track to _____

July assessment point

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Maths Assessment Statements (these statements are not hierarchical)
Year 6
Name:

Expected standard Year 6

Statements of assessment	February	July
Place Value		
Represent Read, write, (order and compare) numbers up to 10 000 000 and determine the value of each digit		
Use and Compare (Read, write), order and compare numbers up to 10 000 000 and determine the value of each digit		
Problems / Rounding Round any whole number to a required degree of accuracy		
Use negative numbers in context, and calculate intervals across zero		
Solve number and practical problems that involve all of the above		
Addition and Subtraction:		
Calculations Perform mental calculations, including with mixed operations and large numbers		
Use their knowledge of the order of operations to carry out calculations involving the four operations		
Problems Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why		
Multiplication and Division		
Recall / use Identify common factors, common multiples and prime numbers		
Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy		
Calculations Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication		
Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context		
Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context		
Perform mental calculations, including with mixed operations and large numbers		
Problems Solve problems involving addition, subtraction, multiplication and division		

Multiplication and division combined Use their knowledge of the order of operations to carry out calculations involving the four operations		
Fractions, Decimals and Percentages		
Fractions : Compare Use common factors to simplify fractions; use common multiples to express fractions in the same denomination		
Compare and order fractions, including fractions > 1		
Fractions : Calculations Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions		
Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example,1 4 × 1 2 = 1 /8]		
Divide proper fractions by whole numbers [for example 1/ 3 ÷ 2 = 1 /6]		
Decimals: Recognise, write, compare Identify the value of each digit in numbers given to three decimal places		
Fractions, Decimals and Percentages Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/ 8]		
Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts		
Ratio and Proportion		
Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts		
Solve problems involving the calculation/use of percentages for comparison		
Solve problems involving similar shapes where the scale factor is known or can be found		
Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples		
Algebra		
Use simple formulae		
Generate and describe linear number sequences		
Express missing number problems algebraically		
Find pairs of numbers that satisfy an equation with two unknowns		
Enumerate possibilities of combinations of two variables		
Measurement		
Using Measures Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 d.p. where appropriate		
Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 d.p.		
Convert between miles and kilometres		

Time Use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa		
Perimeter, area, volume Recognise that shapes with the same areas can have different perimeters and vice versa		
Recognise when it is possible to use formulae for area and volume of shapes		
Calculate the area of parallelograms and triangles		
Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units		
Geometry		
2-D shapes Draw 2-D shapes using given dimensions and angles		
Compare and classify geometric shapes based on their properties and sizes		
Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius		
3-D shapes Recognise, describe and build simple 3-D shapes, including making nets		
Angles and lines Find unknown angles in any triangles, quadrilaterals, and regular polygons		
Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angle		
Position and Direction Describe positions on the full coordinate grid (all four quadrants)		
Draw and translate simple shapes on the coordinate plane, and reflect them in the axes		
Statistics		
Represent and interpret data Interpret and construct pie charts and line graphs and use these to solve problems		
Solve Statistical Problems Calculate and interpret the mean as an average		

February assessment point

On track to _____

July assessment point _____