



Calculation Policy

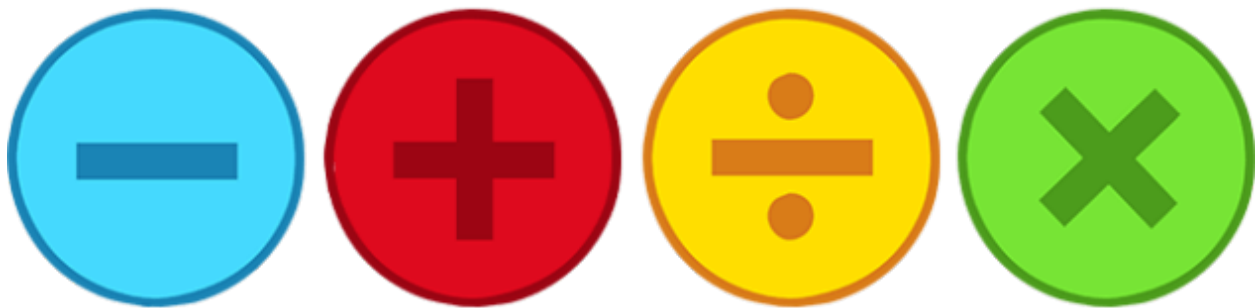
Updated: February 2025

Introduction

The purpose of this booklet is to provide guidance and information about the types of calculation methods that the children at Ranches Primary School are being taught and are using from Foundation Stage to Year 6. Mathematics is a subject that can be taught in multiple ways, using multiple different methods. This variety can cause confusion for some students. This policy ensures that teachers, support staff, and parents use consistent methods in teaching mathematics. At RPS, we follow the British National Curriculum; therefore we will take the objectives covered from White Rose but resourcing and flow of the lesson is determined by the class teacher.

This calculation policy is based on the policy from White Rose and is split into sections: addition, subtraction, multiplication and division. You will see the use of concrete, pictorial and abstract (in that order) displayed for each year group and skill.

At the start of a new mathematics unit, a knowledge organiser will be shared with students and parents on the Weekly SWAY document. This organiser is to support students and parents with the language used, worked examples and deepen their knowledge of the topic being covered in school.



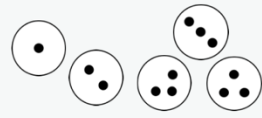
ADDITION  altogether plus total sum add combined	SUBTRACTION  minus less left difference take away
MULTIPLICATION  groups of by times lots of multiply	DIVISION  divide evenly each groups share break



Addition – Progression of Skills

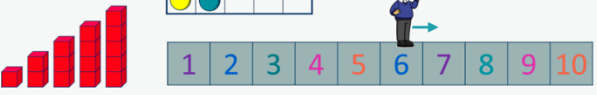
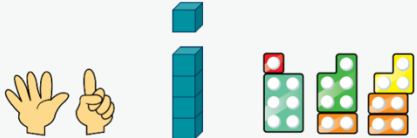
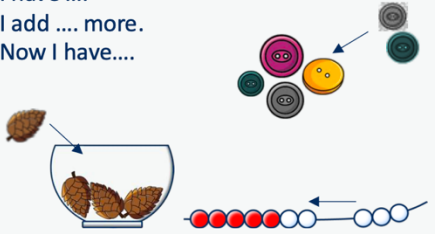
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FS2	• Conceptually subitise to 5 • 1 more • Notice the composition of numbers within 10 • Combine 2 groups • Add more
Year 1	• Add together • Add more • Bonds within 10 • Related facts within 20 • Missing numbers
Year 2	• Add 1s to any number (related facts) • Add three 1-digit numbers • Add across a 10 • Add multiples of 10 • Add 10s to any number • Add two 2-digit numbers (not across a ten) • Add two 2-digit numbers (across a ten) • Missing numbers
Year 3	• Add 1s, 10s and 100s to a 3-digit number • Add two numbers (no exchange) • Add two numbers across a 10 or 100 • Complements to 100 • Add fractions with the same denominator within 1 whole • Calculate the duration of events
Year 4	• Add 1s, 10s and 100s to a 4-digit number • Add up to two 4-digit numbers • Add decimal numbers in the context of money • Add fractions and mixed numbers with the same denominator beyond 1 whole
Year 5	• Add using mental strategies • Add whole numbers with more than 4 digits • Add decimals with up to 2 decimal places • Complements to 1 • Add fractions with denominators that are a multiple of one another
Year 6	• Add integers up to 10 million • Add decimals with up to 3 decimal places • Order of operations • Negative numbers • Add fractions

FS1	• Subitise to 3 • Count how many • Make numbers to 5 • Add 1 more (through songs and rhymes)
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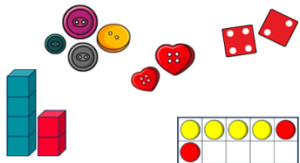
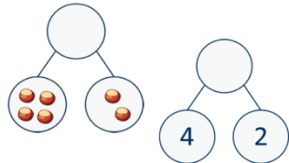
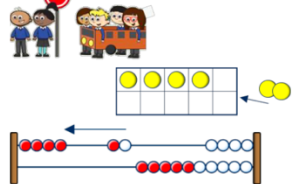
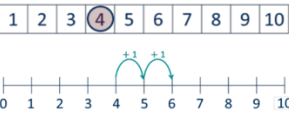
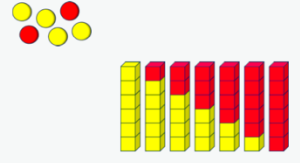
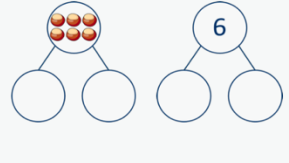
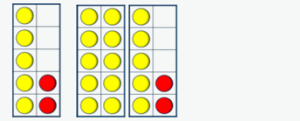
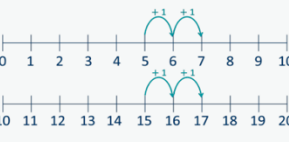
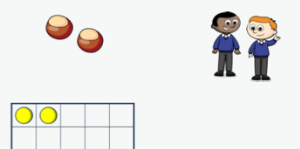
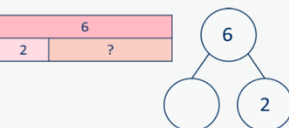
Progression of skills	Key representations	
Subitise to 3 Instantly see how many.	How many do you see?     	
Count how many Begin to count objects using 1-1 correspondence.	How many are there? 	Count out ... from a larger group. E.g. Collect 3 beanbags for a game. 
Make numbers to 5 Start by showing 1, 2 and 3 using fingers.	Show me...  	Begin to link numerals to quantities. 
Add 1 more Through stories, songs and rhymes.	How many do I have now? 	

FS2

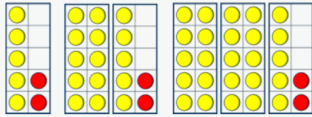
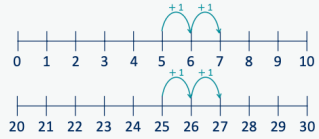
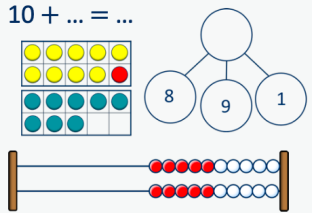
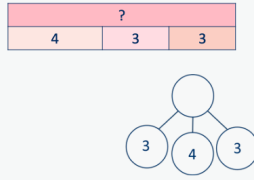
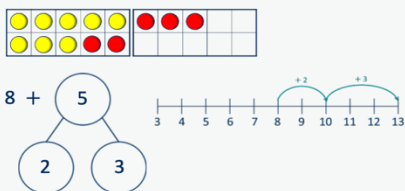
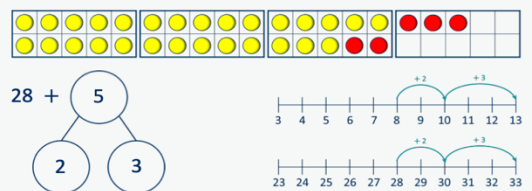
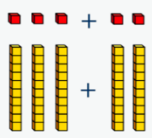
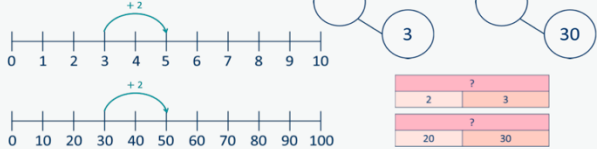
- Conceptually subitise to 5
- 1 more
- Notice the composition of numbers within 10
- Combine 2 groups
- Add more

Progression of skills	Key representations	
Conceptually subitise to 5 Notice the parts that make up the whole.	What do you see? How do you see it?  	
1 more Continue to link to stories, songs and rhymes.	1 more than ... is ... 	
Notice the composition of numbers within 10 Link to stories, songs and rhymes.	How many...? How many...? How many altogether? 	How many ways can you make...? 
Combine 2 groups 2 groups are combined to find the total.	There are There are There are altogether. 	 and make 
Add more A quantity is increased.	First... Then.... Now.... 	I have I add more. Now I have.... 

Year 1	• Add together • Add more • Bonds within 10 • Related facts within 20 • Missing numbers
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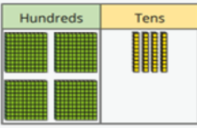
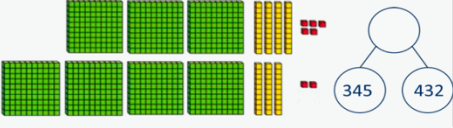
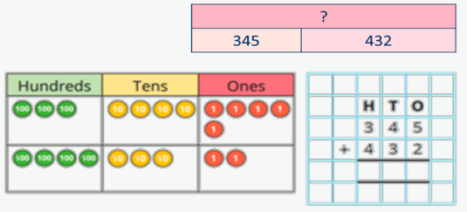
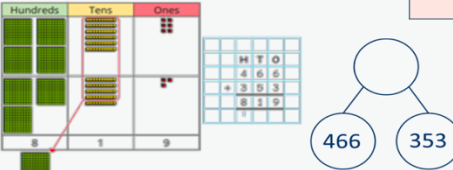
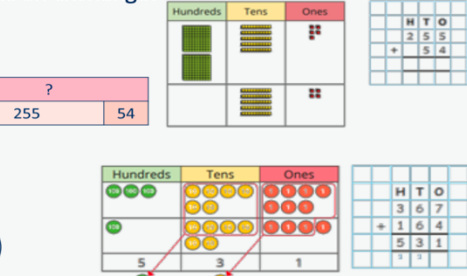
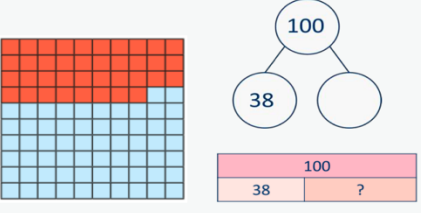
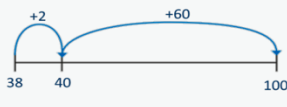
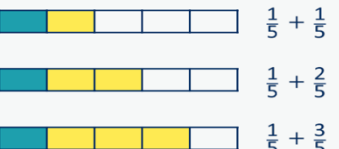
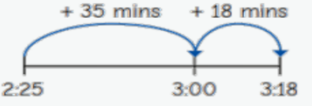
Progression of skills	Key representations		
Add together (aggregation) 2 quantities are combined to find the total.	There are ... There are ... There are ... altogether. 	... is a part. ... is a part. ... is the whole. 	... plus ... is equal to is equal to ... + ... $4 + 2 = 6$ $2 + 4 = 6$ $6 = 4 + 2$ $6 = 2 + 4$
Add more (augmentation) A quantity is increased.	First... Then... Now... 	I start at ... I jump on ... I land on ... 	... plus ... is equal to is equal to ... + ... $4 + 2 = 6$ $2 + 4 = 6$ $6 = 4 + 2$ $6 = 2 + 4$
Bonds within 10 Include bonds for each number within 10 Encourage children to notice patterns.	... is made of ... and and ... make ... 	... can be partitioned into ... and ... 	... plus ... is equal to ... $6 + 0 = 6$ $5 + 1 = 6$ $4 + 2 = 6$ $3 + 3 = 6$ $2 + 4 = 6$ $1 + 5 = 6$ $0 + 6 = 6$
Related facts within 20 Make links to known facts.	I know that ... and ... = ... so ... and ... = ... 	... more than ... is ... so ... more than ... is ... 	What patterns do you notice? $5 + 2 = 7$ $15 + 2 = 17$ $7 = 5 + 2$ $17 = 15 + 2$
Missing numbers Make links to known facts.	How many more do you need to make ...? 	If ... is the whole and ... is a part, the other part must be... 	... plus ... is equal to ... $2 + \square = 6$ $6 = 2 + \square$ 

Year 2	• Add 1s to any number (related facts) • Add three 1-digit numbers • Add across a 10 • Add multiples of 10 • Add 10s to any number • Add two 2-digit numbers (not across a ten) • Add two 2-digit numbers (across a ten) • Missing numbers
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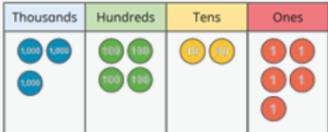
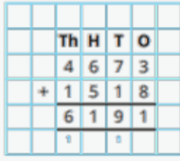
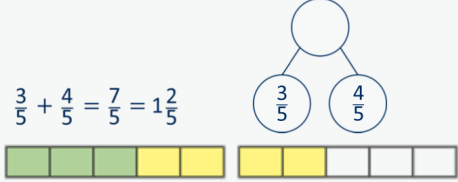
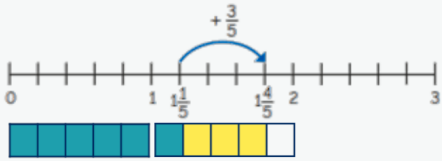
Progression of skills	Key representations		
Add ones to any number (related facts) Make links to known facts.	I know that ... and ... = ... so ... and ... = ... 	... more than ... is ... so ... more than ... is ... 	What do you notice? Can you continue the pattern? $5 + 2 = 7$ $15 + 2 = 17$ $25 + 2 = 27...$
Add three 1-digit numbers Prompt children to understand that addition can be done in any order and to make links to known facts.	... and ... are a bond to 10 $10 + ... = ...$ 	Double ... + ... = ... 	What do you notice? Which addition is the easiest to calculate? $8 + 9 + 1 =$ $8 + 1 + 9 =$ $9 + 1 + 8 =$
Add across a 10 Partition the number being added to make a full ten.	... can be partitioned into ... and ... 	I add ... to get to ... then I add ... $8 + 5 = 13$ $28 + 5 = 33$ 	
Add multiples of 10 Make links to known facts within ten.	... ones + ... ones = ... ones so ... tens + ... tens = ... tens  $3 + 2 = 5$ $30 + 20 = 50$	What is the same? What is different? 	
Add 10s to any number Make links to known facts.	... tens + ... tens = ... tens ... tens and ... ones = ... 	To add ... I need to add 10 ... times. 	I know that ... and ... = ... so ... and ... = ... $30 + 20 = 50$ $34 + 20 = 54$

Year 3

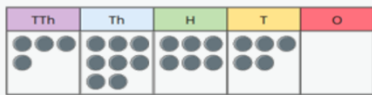
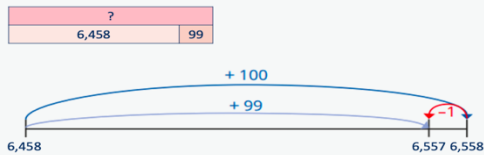
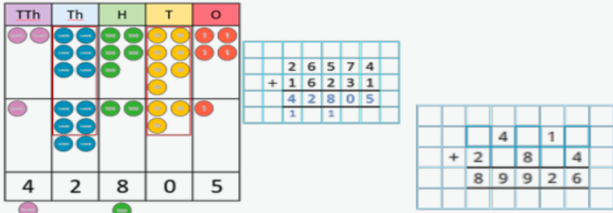
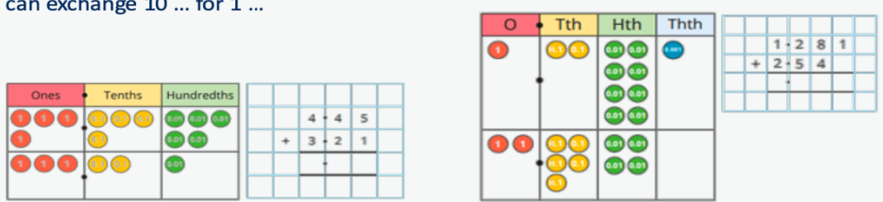
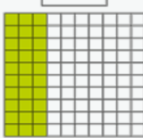
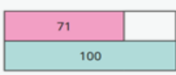
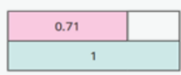
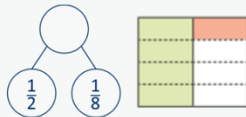
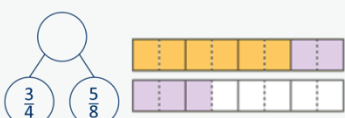
- Add 1s, 10s and 100s to a 3-digit number
- Add two numbers (no exchange)
- Add two numbers across a 10 or 100
- Complements to 100
- Add fractions with the same denominator within 1 whole
- Calculate the duration of events

Progression of skills	Key representations	
Add 1s, 10s or 100s to a 3-digit number Emphasis on mental strategies including number bonds and related facts. Prompt children to notice which digit changes.	The ones/tens/hundreds column will increase by ...  $444 + 5 =$ $444 + 50 =$ $444 + 500 =$	What patterns do you notice? $235 + 3 =$ $235 + 30 =$ $235 + 300 =$ $111 + \square = 118$ $111 + \square = 181$ $111 + \square = 811$
Add two numbers (no exchange) Mental strategies and introduction of formal written method.	... ones + ... ones = ... ones ... tens + ... tens = ... tens ... hundreds + ... hundreds = ... hundreds 	
Add two numbers across a 10 or 100 Formal written method involving up to 2 exchanges including 3-digit plus 2-digit numbers.	There are ... ones, so I do/do not need to make an exchange. There are ... tens, so I do/do not need to make an exchange. ... ones = ... ten and ... ones. ... tens = ... hundred and ... tens. 	
Complements to 100 Pairs of numbers which total 100	... plus ... is equal to 100 	I add ... to get to the next 10, then ... to get to 100  $38 + 62 = 100$ $62 + 38 = 100$ $100 = 38 + 62$ $100 = 62 + 38$
Add fractions with the same denominator within 1 whole Make links with known facts.	When adding fractions with the same denominator, I only add the numerator. ... fifths + ... fifths = ... fifths 	
Calculate the duration of events Find durations of time between a given start and end point. Children will need to calculate complements to 60	From ... to ... o'clock is ... minutes. From ... o'clock to ... is ... minutes. The total time taken is ... minutes. 	

Year 4	• Add 1s, 10s and 100s to a 4-digit number • Add up to two 4-digit numbers • Add decimal numbers in the context of money • Add fractions and mixed numbers with the same denominator beyond 1 whole
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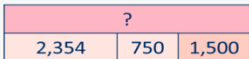
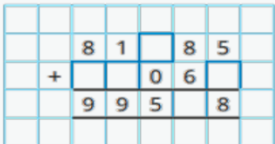
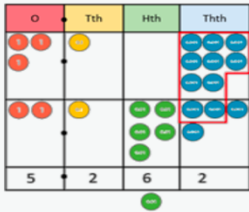
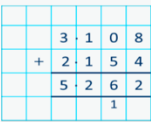
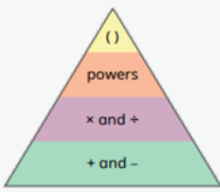
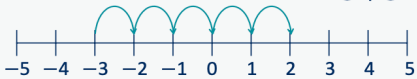
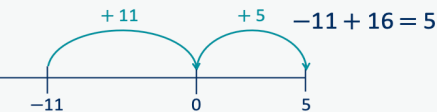
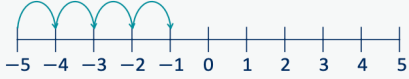
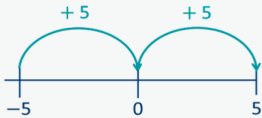
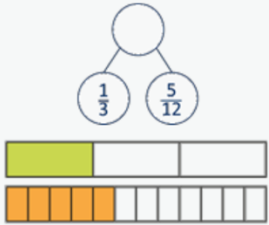
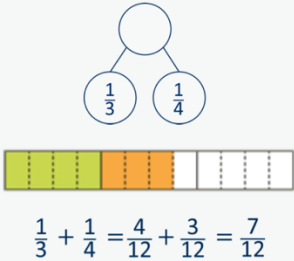
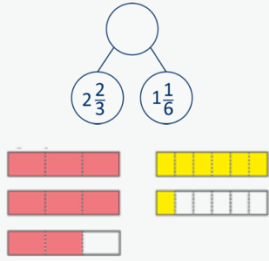
Progression of skills	Key representations	
Add 1s, 10s and 100s to a 4-digit number Emphasis on mental strategies including number bonds and related facts. Prompt children to notice which digit changes.	The ones/tens/hundreds/thousands column will increase by ...  $3,425 + 3 =$ $3,425 + 300 =$ $3,425 + 30 =$ $3,425 + 3,000 =$	What patterns do you notice? $2,350 + 3 =$ $2,350 + 30 =$ $2,350 + 300 =$ $2,350 + 3,000 =$ $6,040 + 200 =$ $2,211 + \square = 2,251$ $6,040 + 500 =$ $2,211 + \square = 2,215$ $6,040 + 900 =$ $2,211 + \square = 2,511$
Add up to two 4-digit numbers Formal written method with up to 3 exchanges. Encourage children to estimate and use inverse operations to check answers to calculations.	There are ... ones/tens/hundreds so I do/do not need to make an exchange. I can exchange 10 ... for 1 ...	 
Add decimal numbers in the context of money Emphasis on partitioning and use of number lines rather than formal written calculations.	... pence + ... pence = ... pence ... pounds + ... pounds = ... pounds  $45p + 25p = 70p$ $£2 + £3 = £5$ $£5 + 70p = £5.70$	$£3.25$ can be partitioned into $£3 + 20p + 5p$ 
Add fractions and mixed numbers with the same denominator beyond 1 whole	When adding fractions with the same denominator, I only add the numerator. ... fifths + ... fifths = ... fifths  	

Year 5	• Add using mental strategies • Add whole numbers with more than 4 digits • Add decimals with up to 2 decimal places • Complements to 1 • Add fractions with denominators that are a multiple of one another
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Progression of skills	Key representations
Add using mental strategies Add 1s, 10s, 100s, etc. to any number. Use number bonds and related facts.	 $48,650 + 300 =$ $48,650 + 30,000 =$ $48,650 + 30 =$ To add ..., I can add ... then subtract ... 
Add whole numbers with more than 4 digits Encourage children to estimate and use inverse operations to check answers to calculations.	I can exchange 10 ... for 1 ... 
Add decimals with up to 2 decimal places Progress from the same number of decimal places to a different number of decimal places, and from no exchange to exchange.	I do/do not need to make an exchange because ... I can exchange 10 ... for 1 ... 
Complements to 1 Pairs of numbers with up to 3 decimal places which total 1 Encourage children to make links with bonds to 10 and complements to 100 and 1,000	$0.3 + \square = 1$  $71 + \square = 100$  $0.35 + \square = 1$  $0.71 + \square = 1$   $4 + 6 = 10$ $44 + 56 = 100$ $444 + 556 = 1,000$ $0.4 + 0.6 = 1$ $0.44 + 0.56 = 1$ $0.444 + 0.556 = 1$
Add fractions with denominators that are a multiple of one another Encourage children to convert fractions to the same denominator before adding. Progress from adding fractions within 1 whole to adding fractions beyond 1 whole.	The denominator has been multiplied by ..., so the numerator needs to be multiplied by... for the fractions to be equivalent.  $\frac{1}{2} + \frac{1}{8} = \frac{4}{8} + \frac{1}{8} = \frac{5}{8}$  $\frac{3}{4} + \frac{5}{8} = \frac{6}{8} + \frac{5}{8} = \frac{11}{8} = 1\frac{3}{8}$

Year 6

- Add integers up to 10 million
- Add decimals with up to 3 decimal places
- Order of operations
- Negative numbers
- Add fractions

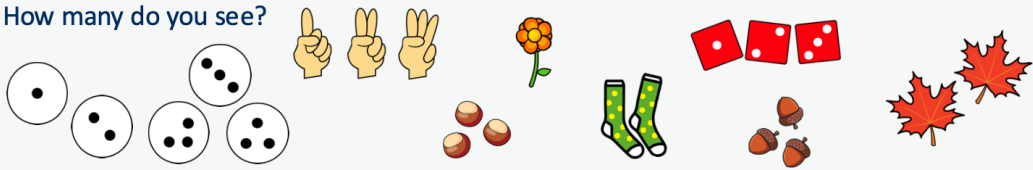
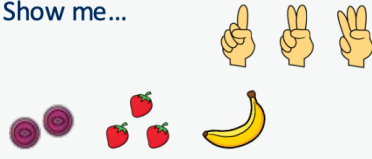
Progression of skills	Key representations		
Add integers up to 10 million Encourage children to estimate and use inverse operations to check answers to calculations.	  		
Add decimals with up to 3 decimal places Progress to numbers with digits in different place value columns. Encourage children to check that they have lined up the columns correctly.	I do/do not need to make an exchange because ...   		
Order of operations Calculations in brackets should be done first. Multiplication and division should be performed before addition and subtraction. *When no brackets are shown and the operations have the same priority, work left to right.	... has greater priority than ..., so the first part of the calculation I need to do is ...   $(3 + 4) \times 2 = 14$  $3 + 4 \times 2 = 11$  $3 \times 4 + 2 = 14$		
Negative numbers Children add to negative numbers and carry out calculations which cross 0	... plus ... is equal to ...  $-3 + 5 = 2$  $-11 + 16 = 5$  The difference between -5 and -1 is 4  The difference between -5 and 5 is 10		
Add fractions Convert fractions to the same denominator before adding. Progress from fractions where one denominator is a multiple of the other, to any fractions and then to mixed numbers.	The denominator has been multiplied by ..., so the numerator needs to be multiplied by ... 	The lowest common multiple of ... and ... is ...  $\frac{1}{3} + \frac{1}{4} = \frac{4}{12} + \frac{3}{12} = \frac{7}{12}$	...is made up of ... wholes and ... 



Subtraction – Progression of Skills

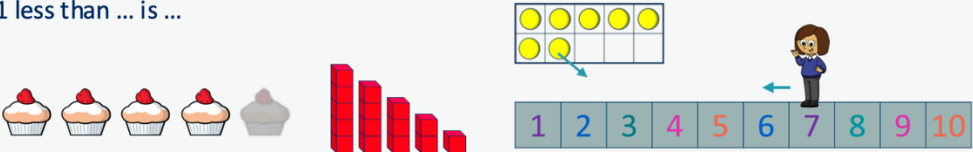
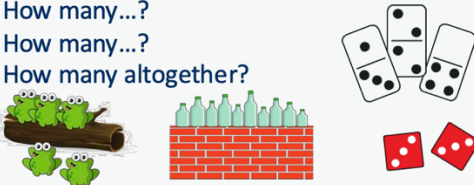
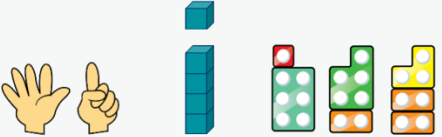
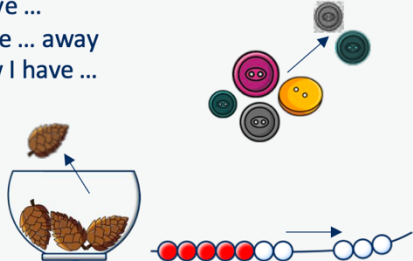
FS1	• Subitise to 3 • Count how many • Make numbers to 5 • Take 1 more (through songs and rhymes)
FS2	• Conceptually subitise to 5 • 1 less • Notice the composition of numbers within 10 • Partition • Take away
Year 1	• Find a part • Take away • Bonds within 10 • Related facts within 20 • Missing numbers
Year 2	• Subtract 1s to any number (related facts) • Subtract across a 10 • Subtract multiples of 10 • Subtract 10s from any number • Subtract two 2-digit numbers (not across a ten) • Subtract two 2-digit numbers (across a ten) • Missing numbers
Year 3	• Subtract 1s, 10s and 100s from a 3-digit number • Subtract two numbers (no exchange) • Subtract two numbers across a 10 or 100 • Complements to 100 • Subtract fractions with the same denominator within 1 whole
Year 4	• Subtract 1s, 10s and 100s and 1000s from a 4-digit number • Subtract up to two 4-digit numbers • Subtract decimal numbers in the context of money • Subtract fractions and mixed numbers with the same denominator
Year 5	• Subtract whole numbers with more than 4 digits • Subtract using mental strategies • Subtract decimals with up to 2 decimal places • Complements to 1 • Subtract fractions with denominators that are a multiple of one another
Year 6	• Subtract integers up to 10 million • Subtract decimals with up to 3 decimal places • Order of operations • Negative numbers • Subtract fractions

FS1	• Subitise to 3 • Count how many • Make numbers to 5 • Take 1 more (through songs and rhymes)
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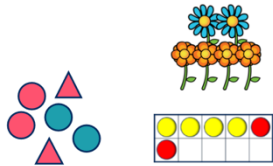
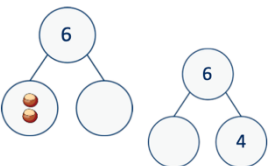
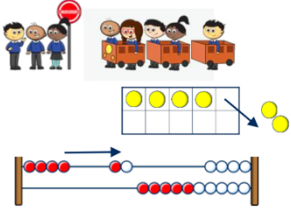
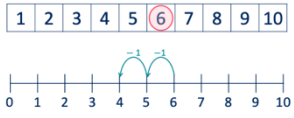
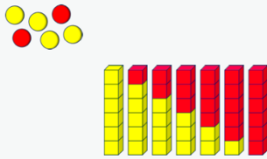
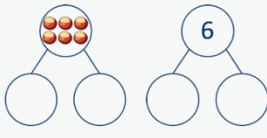
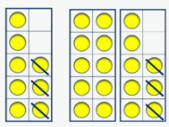
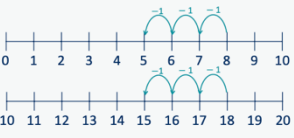
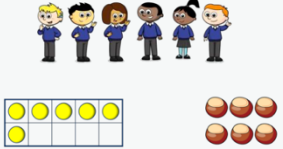
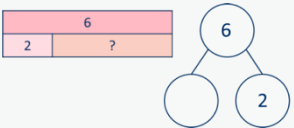
Progression of skills	Key representations	
Subitise to 3 Instantly see how many.	How many do you see? 	
Count how many Begin to count objects using 1-1 correspondence.	How many are there? 	Count out ... from a larger group. E.g. Collect a cup for everyone at the table. 
Make numbers to 5 Start by showing 1, 2 and 3 using fingers.	Show me... 	Begin to link numerals to quantities. 
Take 1 away Through stories, songs and rhymes.	How many do we have now? 	

FS2

- Conceptually subitise to 5
- 1 less
- Notice the composition of numbers within 10
- Partition
- Take away

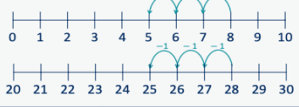
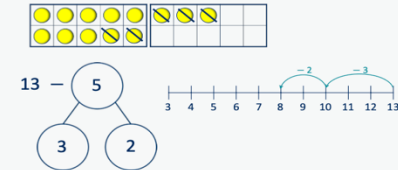
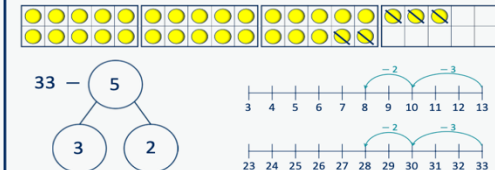
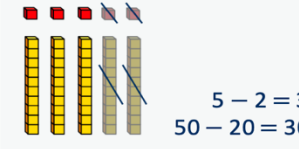
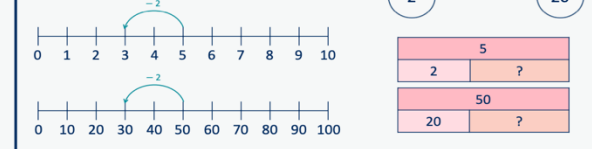
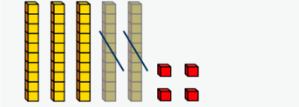
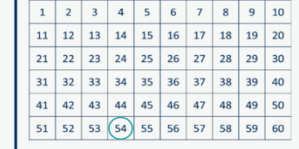
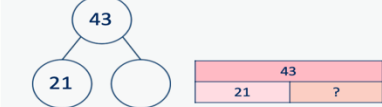
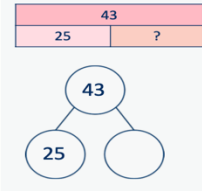
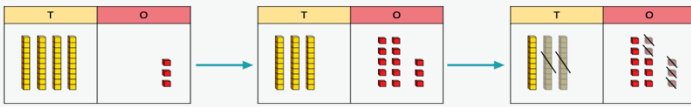
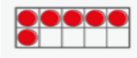
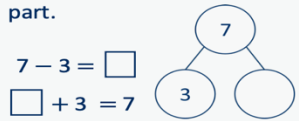
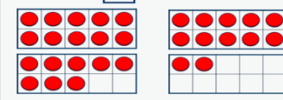
Progression of skills	Key representations	
Conceptually subitise to 5 Notice the parts that make up the whole.	What do you see? How do you see it? 	
1 less Continue to link to stories, songs and rhymes.	1 less than ... is ... 	
Notice the composition of numbers within 10 Link to stories, songs and rhymes.	How many...? How many...? How many altogether? 	How many ways can you make...? 
Partition Using objects, explore different ways to partition a number into 2 or more parts.	There are ... altogether. I can see ... here and ... there. 	... and ... make ... 
Take away A quantity is reduced.	First... Then... Now... 	I have ... I take ... away Now I have ... 

Year 1	- Find a part - Take away - Bonds within 10 - Related facts within 20 - Missing numbers
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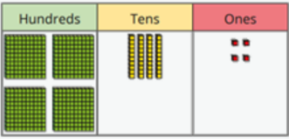
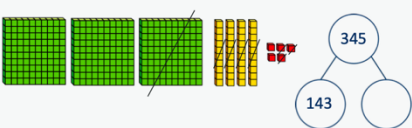
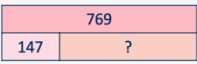
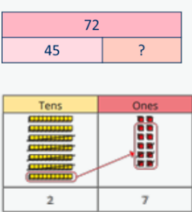
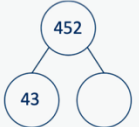
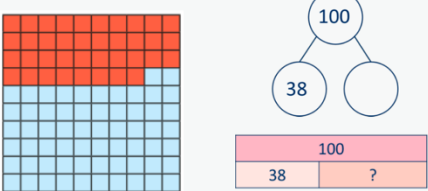
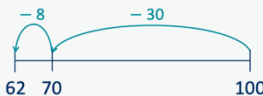
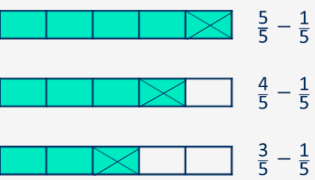
Progression of skills	Key representations		
Find a part Link to number bonds and known facts. E.g. $2 + 4 = 6$ so if 6 is the whole and 4 is a part, the other part must be 2	There are ... in total. ... are ... How many are not ...? 	... is the whole. ... is a part. ... is a part. 	... subtract ... is equal to is equal to ... - ... $6 - 2 = 4$ $6 - 4 = 2$ $4 = 6 - 2$ $2 = 6 - 4$
Take away A quantity is decreased.	First... Then... Now... 	I start at ... I jump back ... I land on ... 	... minus ... is equal to is equal to ... - ... $6 - 2 = 4$ $6 - 4 = 2$ $4 = 6 - 2$ $2 = 6 - 4$
Bonds within 10 Focus on subtraction facts. Encourage children to notice patterns.	... is made of ... and and ... make ... 	... can be partitioned into ... and ... 	... minus ... is equal to ... $6 - 0 = 6$ $6 - 1 = 5$ $6 - 2 = 4$ $6 - 3 = 3$ $6 - 4 = 2$ $6 - 5 = 1$ $6 - 6 = 0$
Related facts within 20 Make links to known facts.	I know that ... minus ... = ... so ... minus ... = ... 	... less than ... is ... so ... less than ... is ... 	What patterns do you notice? $8 - 3 = 5$ $18 - 3 = 15$ $5 = 8 - 3$ $15 = 18 - 3$
Missing numbers Make links to known facts.	How many do you need to subtract to make ...? 	If ... is the whole and ... is a part, the other part must be... 	... minus ... is equal to ... $6 - \square = 2$ $2 = 6 - \square$ 

Year 2

- Subtract 1s to any number (related facts)
- Subtract across a 10
- Subtract multiples of 10
- Subtract 10s from any number
- Subtract two 2-digit numbers (not across a ten)
- Subtract two 2-digit numbers (across a ten)
- Missing numbers

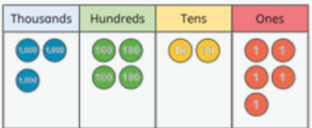
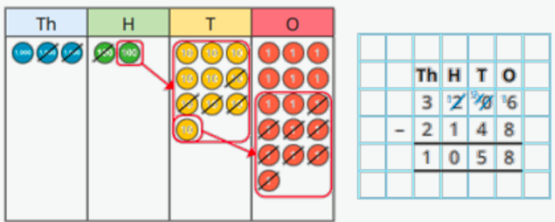
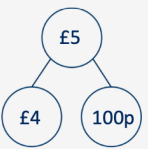
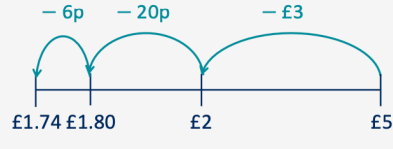
Progression of skills	Key representations		
Subtract ones from any number (related facts) Make links to known facts.	I know that ... minus ... = ... so ... minus ... = ... 	... less than ... is ... so ... less than ... is ... 	What do you notice? Can you continue the pattern? $8 - 3 = 5$ $18 - 3 = 15$ $28 - 3 = 25...$
Subtract across a 10 Partition the number being subtracted to bridge through a ten.	... can be partitioned into ... and ... 	Make links with related facts. 	
Subtract multiples of 10 Make links to known facts within ten.	... ones - ... ones = ... ones so ... tens - ... tens = ... tens 	What is the same? What is different? 	
Subtract 10s from any number Make links to known facts.	... tens - ... tens = ... tens ... tens and ... ones = ... 	To subtract ... I need to subtract 10 ... times. 	I know that ... minus ... = ... so ... minus ... = ... $50 - 20 = 30$ $54 - 20 = 34$
Subtract two 2-digit numbers (not across a ten)	... ones - ... ones = ... ones ... tens - ... tens = ... tens 	 $3 \text{ ones} - 1 \text{ one} = 2 \text{ ones}$ $4 \text{ tens} - 2 \text{ tens} = 2 \text{ tens}$ $2 \text{ tens and } 2 \text{ ones} = 22$	
Subtract two 2-digit numbers (across a ten) Begin to exchange 1 ten for 10 ones.	I need to make an exchange because I do not have enough ones to subtract ... ones. 	 $3 \text{ ones} - 5 \text{ ones}$ (I need to exchange 1 ten for 10 ones) $13 \text{ ones} - 5 \text{ ones} = 8 \text{ ones}$ $3 \text{ tens} - 2 \text{ tens} = 1 \text{ ten}$ $1 \text{ ten and } 8 \text{ ones} = 18$	
Missing numbers Solve missing number problems and use the inverse to check.	How many do you need to subtract to make ...?  $10 - \square = 6$ $6 + \square = 10$	If ... is a whole and ... is a part, then ... is the other part.  $7 - 3 = \square$ $\square + 3 = 7$	... can be partitioned into ... and ... $18 - \square = 12 + 2$ 

Year 3	- Subtract 1s, 10s and 100s from a 3-digit number - Subtract two numbers (no exchange) - Subtract two numbers across a 10 or 100 - Complements to 100 - Subtract fractions with the same denominator within 1 whole
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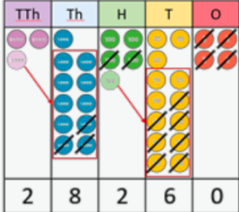
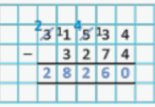
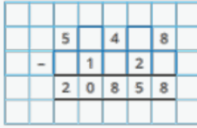
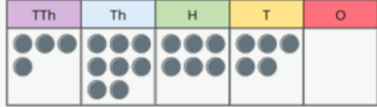
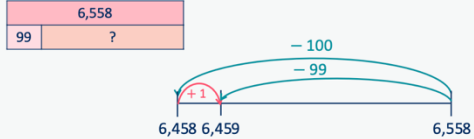
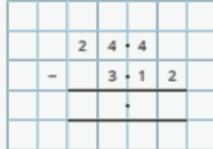
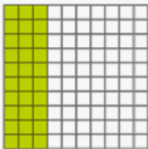
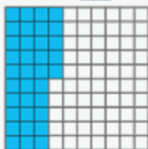
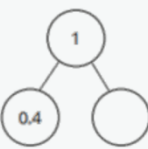
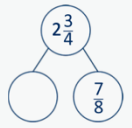
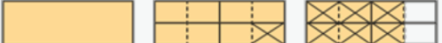
Progression of skills	Key representations	
Subtract 1s, 10s and 100s from a 3-digit number Emphasis on mental strategies including number bonds and related facts. Prompt children to notice which digit changes.	The ones/tens/hundreds column will decrease by ...  $444 - 2 =$ $444 - 20 =$ $444 - 200 =$	What patterns do you notice? $235 - 3 =$ $235 - 30 =$ $235 - 300 =$ $118 - \square = 111$ $181 - \square = 111$ $811 - \square = 111$
Subtract two numbers (no exchange) Mental strategies and introduction of formal written method.	... ones – ... ones = ... ones ... tens – ... tens = ... tens ... hundreds – ... hundreds = ... hundreds 	 
Subtract two numbers across a 10 or 100 Formal written method involving up to 2 exchanges including 3-digit subtract 2-digit numbers.	I need to subtract ... ones. I do/do not need to make an exchange. I need to subtract ... tens. I do/do not need to make an exchange. I can exchange 1 ... for 10 ... 	 
Complements to 100 Focus on subtraction facts. Encourage children to notice patterns.	100 minus ... is equal to ... 	I subtract ... tens, then I subtract ... ones. $100 - 38 = 62$ $100 - 62 = 38$ $62 = 100 - 38$ $38 = 100 - 62$ 
Subtract fractions with the same denominator within 1 whole Make links with known facts.	When subtracting fractions with the same denominator, I only subtract the numerator. ... fifths – ... fifths = ... fifths 	

Year 4

- Subtract 1s, 10s and 100s and 1000s from a 4-digit number
- Subtract up to two 4-digit numbers
- Subtract decimal numbers in the context of money
- Subtract fractions and mixed numbers with the same denominator

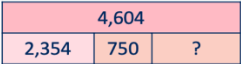
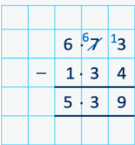
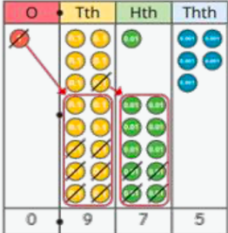
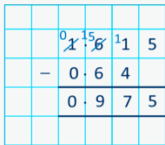
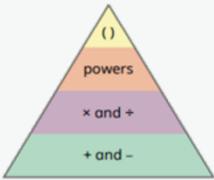
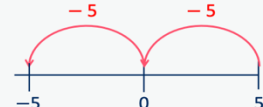
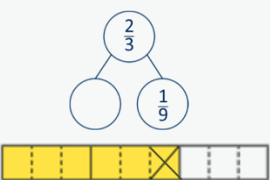
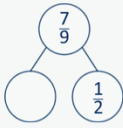
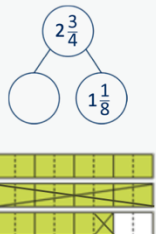
Progression of skills	Key representations	
Subtract 1s, 10s, 100s and 1,000s from a 4-digit number Emphasis on mental strategies including number bonds and related facts. Prompt children to notice which digit changes.	The ones/tens/hundreds/thousands column will decrease by ...  $3,425 - 2 =$ $3,425 - 200 =$ $3,425 - 20 =$ $3,425 - 2,000 =$	What patterns do you notice? $4,356 - 3 =$ $4,356 - 30 =$ $4,356 - 300 =$ $4,356 - 3,000 =$ $4,433 - \square = 4,430$ $6,940 - 200 =$ $4,433 - \square = 4,033$ $6,940 - 300 =$ $4,433 - \square = 4,403$ $6,940 - 400 =$
Subtract up to two 4-digit numbers Formal written method with up to 3 exchanges. Encourage children to estimate and use inverse operations to check answers to calculations.	I need to subtract... ones/tens/hundreds. I do/do not need to make an exchange. I can exchange 1... for 10... 	
Subtract decimal numbers in the context of money Emphasis here is on partitioning and use of number lines rather than formal written calculations.	I can partition £... into £... and 100p $£... - £... = £...$ $100p - ...p = ...p$ £5 - £3.26 $£4 - £3 = £1$ $100p - 26p = 74p$ $£5 - £3.26 = £1.74$ 	$£3.26$ can be partitioned into $£3 + 20p + 6p$ 
Subtract fractions and mixed numbers with the same denominator Include subtracting fractions from wholes.	When subtracting fractions with the same denominator, I only subtract the numerator. $... \text{ tenths} - ... \text{ tenths} = ... \text{ tenths}$ 	

Year 5	- Subtract whole numbers with more than 4 digits - Subtract using mental strategies - Subtract decimals with up to 2 decimal places - Complements to 1 - Subtract fractions with denominators that are a multiple of one another
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Progression of skills	Key representations
Subtract whole numbers with more than 4 digits Encourage children to estimate and use inverse operations to check answers to calculations.	I can exchange 1 ... for 10 ...   
Subtract using mental strategies Subtract 1s, 10s, 100s etc from any number. Use number bonds and related facts.	 $48,650 - 300 =$ $48,650 - 30,000 =$ $48,650 - 30 =$ To subtract ..., I can subtract ... then add ... 
Subtract decimals with up to 2 decimal places Progress from the same number of decimal places to a different number of decimal places and from no exchange to exchange.	  24.4 3.12  
Complements to 1 Encourage children to make links with bonds to 10 and complements to 100 and 1,000 when finding a missing part or subtracting from 1	$0.3 + \square = 1$  $0.35 + \square = 1$     $10 - 4 = 6$ $100 - 44 = 56$ $1,000 - 444 = 556$ $1 - 0.4 = 0.6$ $1 - 0.44 = 0.56$ $1 - 0.444 = 0.556$
Subtract fractions with denominators that are a multiple of one another Convert fractions to the same denominator before subtracting. Progress from subtracting fractions within 1 whole to subtracting from a mixed number.	The denominator has been multiplied by ..., so the numerator needs to be multiplied by... for the fractions to be equivalent.  $\frac{1}{3} - \frac{1}{15} = \frac{5}{15} - \frac{1}{15} = \frac{4}{15}$  $\frac{2}{3} - \frac{2}{9} = \frac{6}{9} - \frac{2}{9} = \frac{4}{9}$  

Year 6

- Subtract integers up to 10 million
- Subtract decimals with up to 3 decimal places
- Order of operations
- Negative numbers
- Subtract fractions

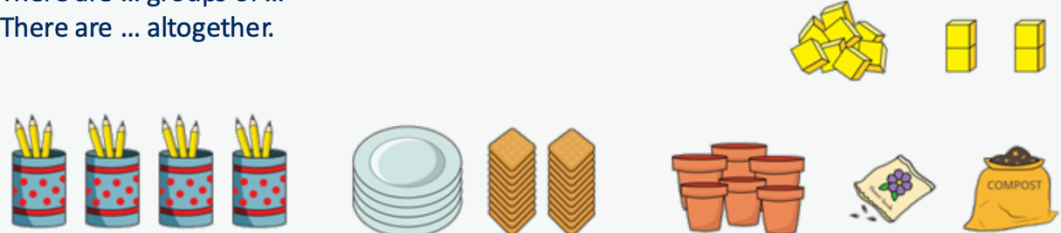
Progression of skills	Key representations		
Subtract integers up to 10 million Encourage children to estimate and use inverse operations to check answers to calculations.	  		
Subtract decimals with up to 3 decimal places Progress from the same number of decimal and whole number places to a different number of decimal and whole number places.	  	I do/do not need to make an exchange because ...	
Order of operations Children learn the order of priority for operations in a calculation. Calculations in brackets should be done first. Multiplication and division should be performed before addition and subtraction.		... has greater priority than ..., so the first part of the calculation I need to do is ...  $8 - 2 \times 3 = 2$  $(8 - 2) \times 3 = 18$	
Negative numbers Children subtract from positive and negative numbers and calculate intervals across 0	... minus ... is equal to ...  $-1 - 4 = -5$  $1 - 4 = -3$	 The difference between -5 and -1 is 4  The difference between 5 and -5 is 10	
Subtract fractions Convert fractions to the same denominator before subtracting. Progress from fractions where one denominator is a multiple of the other, to any fractions and then subtracting from a mixed number.	The denominator has been multiplied by ..., so the numerator needs to be multiplied by...  $\frac{2}{3} - \frac{1}{9} = \frac{6}{9} - \frac{1}{9} = \frac{5}{9}$	The lowest common multiple of ... and ... is ...  $\frac{7}{9} - \frac{1}{2} = \frac{14}{18} - \frac{9}{18} = \frac{5}{18}$	... is made up of ... wholes and ...  $2\frac{3}{4} - 1\frac{1}{8} = 1\frac{5}{8}$

Multiplication – Progression of Skills

FS1	• Continue with counting and subitising skills as a foundation for later work on equal groups.
FS2	• Double to 10 • Make equal groups
Year 1	• Count in 2s, 5s and 10s • Add equal groups • Make arrays • Make doubles
Year 2	• Link repeated addition and multiplication • Use arrays • Double • The 2 times-table • The 10 times-table • The 5 times-table • Missing numbers
Year 3	• The 3 times-table • The 4 times-table • The 8 times-table • Related facts • Multiply a 2-digit number by a 1-digit number – no exchange • Multiply a 2-digit number by a 1-digit number – with exchange • Scaling • Correspondence problems
Year 4	• Times-table facts to 12x12 • Multiply by 1 and 0 • Multiply 3 numbers • Factor pairs • Multiply by 10 and 100 • Related facts • Mental strategies • Multiply a 2 or 3-digit number by a 1-digit number • Scaling • Correspondence problems
Year 5	• Multiples and factors • Square and cube numbers • Multiply numbers up to 4 digits by a 1-digit number • Multiply numbers up to 4 digits by a 2-digit number • Multiply by 10, 100 and 1000 • Mental strategies • Multiply mixed numbers by a whole number • Find the whole
Year 6	• Multiply numbers up to 4 digits by a 2-digit number • Multiply by 10, 100 and 1000 • Order of operations • Multiply decimals by integers • Multiply fractions by fractions • Find the whole • Calculations involving ratio

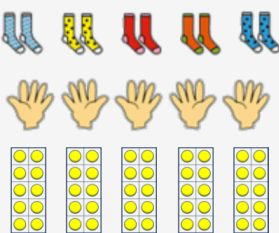
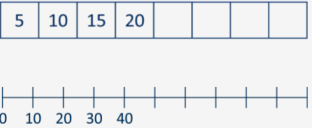
FS2

- Double to 10
- Make equal groups

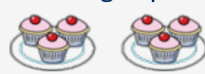
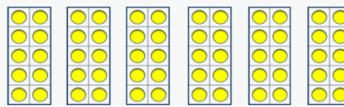
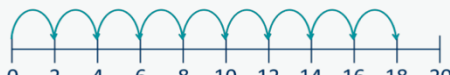
Progression of skills	Key representations
Double to 10 Prompt children to notice that double means twice as many and to notice that there are two equal groups.	Double ... is is double ... 
Make equal groups Provide opportunities to make equal groups when tidying up or during snack time. Encourage children to check that each group has the same amount.	There are ... groups of ... There are ... altogether. 

Year 1

- Count in 2s, 5s and 10s
- Add equal groups
- Make arrays
- Make doubles

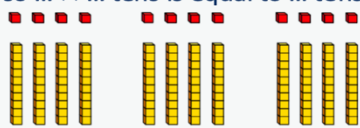
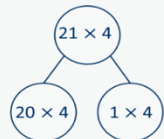
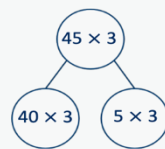
Progression of skills	Key representations		
Count in 2s, 5s and 10s Begin by counting objects that naturally come in 2s, 5s and 10s, for example pairs of socks or fingers.	There are ... equal groups of ... There are ... altogether. 	Continue to colour in ...s What do you notice? 	Complete the number track/number line by counting in ...s. 
Add equal groups (repeated addition) Children should be able to write a repeated addition to represent equal groups and to draw pictures or use objects to represent a repeated addition.	There are ... groups of ... There are ... altogether.  $10 + 10 + 10 = 30$ $5 + 5 + 5 + 5 = 20$	What is the same? What is different? $2 + 2 + 2 =$ $5 + 5 + 5 =$ $10 + 10 + 10 =$ Use objects or a drawing to represent the equal groups and find how many in total.	
Make arrays Children use their knowledge of adding equal groups to arrange objects in columns and rows.	There are ... rows of ... There are ... altogether. There are ... columns of ... There are ... altogether. 		
Make doubles Children understand that doubles are two equal groups. Children may begin to explore doubles beyond 20 using base 10	Double ... is + ... = ... 		

Year 2	• Link repeated addition and multiplication • Use arrays • Double • The 2 times-table • The 10 times-table • The 5 times-table • Missing numbers
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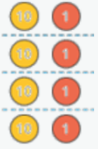
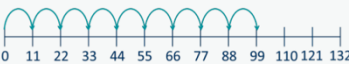
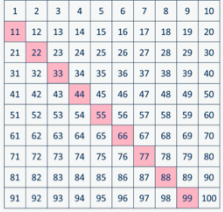
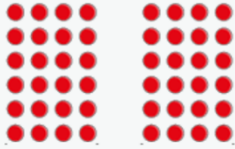
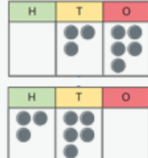
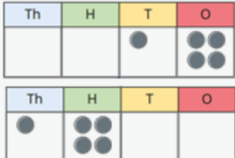
Progression of skills	Key representations																																																					
Link repeated addition and multiplication Encourage children to make the link between repeated addition and multiplication.	There are ... equal groups with ... in each group. There are ... altogether. <table border="1" data-bbox="1065 564 1214 619"><tr><td colspan="2">6</td></tr><tr><td>3</td><td>3</td></tr></table> $3 + 3 = 6$ $2 \times 3 = 6$ <table border="1" data-bbox="990 667 1214 722"><tr><td colspan="4">20</td></tr><tr><td>5</td><td>5</td><td>5</td><td>5</td></tr></table> $5 + 5 + 5 + 5 = 20$ $4 \times 5 = 20$		6		3	3	20				5	5	5	5																																								
6																																																						
3	3																																																					
20																																																						
5	5	5	5																																																			
Use arrays Encourage children to see that multiplication is commutative.	There are ... rows with ... in each row. There are ... columns with ... in each column.  $3 \text{ lots of } 5 = 15$ $5 + 5 + 5 = 15$ $5 \text{ lots of } 3 = 15$ $3 + 3 + 3 + 3 + 3 = 15$	I can see ... $\times$... and ... $\times$... $3 \times 5 = 15$ $5 \times 3 = 15$ $3 \times 5 = 5 \times 3$																																																				
Double Encourage children to make links with related facts.	Double ... is ... $\rightarrow$ $\text{Double } 4 = 4 + 4$ $\text{Double } 4 \text{ is } 8$	Double ... is ... so double ... is ... $\rightarrow$ $\text{Double } 4 \text{ is } 8$ $\text{Double } 40 \text{ is } 80$																																																				
The 2 times-table Encourage daily counting in multiples both forwards and back. Notice that all multiples of 2 are even numbers.	... lots of 2 = ... $\times 2 =$  <table border="1" data-bbox="734 1350 938 1404"><tr><td colspan="4">?</td></tr><tr><td>2</td><td>2</td><td>2</td><td>2</td></tr></table>	?				2	2	2	2	... times 2 is equal to ... <table border="1" data-bbox="1060 1148 1359 1228"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr><tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr></table> $1 \times 2 = 2$ $2 = 1 \times 2$ $2 \times 2 = 4$ $4 = 2 \times 2$ $3 \times 2 = 6$ $6 = 3 \times 2$ 	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														
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21	22	23	24	25	26	27	28	29	30																																													
The 10 times-table Encourage daily counting in multiples both forwards and back. Notice the pattern in the numbers.	... lots of 10 = ... $\times 10 =$  <table border="1" data-bbox="682 1579 932 1633"><tr><td colspan="6">?</td></tr><tr><td>10</td><td>10</td><td>10</td><td>10</td><td>10</td><td>10</td></tr></table>	?						10	10	10	10	10	10	... times 10 is equal to ... <table border="1" data-bbox="1060 1467 1359 1575"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr><tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr><tr><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td></tr></table> $1 \times 10 = 10$ $10 = 1 \times 10$ $2 \times 10 = 20$ $20 = 2 \times 10$ $3 \times 10 = 30$ $30 = 3 \times 10$ 	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
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31	32	33	34	35	36	37	38	39	40																																													
The 5 times-table Missing numbers Make links to known facts.	... is equal to ... groups of ... 18 socks, how many pairs?  	... times ... is equal to ... $\square \times 2 = 18$ $18 = 2 \times \square$																																																				

Year 3

- The 3, 4 and 8 times-table
- Related facts
- Multiply a 2-digit number by a 1-digit number – no exchange
- Multiply a 2-digit number by a 1-digit number – with exchange
- Scaling
- Correspondence problems

Progression of skills	Key representations																															
The 3 times-table Encourage daily counting in multiples both forwards and back.	... groups of 3 = ... $\times 3$ = 3, ... times = 3 $\times$... = 	... times 3 is equal to ... <table border="1" data-bbox="1029 520 1395 615"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr><tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr></table> $4 \times 3 = 12$ $12 = 4 \times 3$ 	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
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																							
The 4 times-table The 8 times-table																																
Related facts Use knowledge of multiplying by 10 to scale times-table facts.	... $\times$... ones is equal to ... ones so ... $\times$... tens is equal to ... tens.  	$3 \times 4 = 12$ $3 \times 40 = 120$																														
Multiply a 2-digit number by a 1-digit number - no exchange Children apply their understanding of partitioning to represent and solve calculations using the expanded method.	... tens multiplied by ... is equal to ... tens. ...ones multiplied by ... is equal to ... ones. <table border="1" data-bbox="461 995 712 1142"><thead><tr><th>Tens</th><th>Ones</th></tr></thead><tbody><tr><td>30</td><td>2</td></tr><tr><td>20</td><td>2</td></tr></tbody></table> $30 \times 2 = 60$ $2 \times 2 = 4$ $32 \times 2 = 64$  <table border="1" data-bbox="1192 995 1451 1142"><thead><tr><th>Tens</th><th>Ones</th></tr></thead><tbody><tr><td>60</td><td>4</td></tr><tr><td>40</td><td>4</td></tr><tr><td>20</td><td>4</td></tr><tr><td>0</td><td>4</td></tr></tbody></table>	Tens	Ones	30	2	20	2	Tens	Ones	60	4	40	4	20	4	0	4															
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Multiply a 2-digit number by a 1-digit number - with exchange Children apply their understanding of partitioning to represent and solve calculations using the expanded method.	... tens multiplied by ... is equal to ... tens. ... ones multiplied by ... is equal to ... ones. <table border="1" data-bbox="461 1247 737 1467"><thead><tr><th>Tens</th><th>Ones</th></tr></thead><tbody><tr><td>20</td><td>4</td></tr><tr><td>40</td><td>4</td></tr><tr><td>24</td><td>4</td></tr></tbody></table> $20 \times 4 = 80$ $4 \times 4 = 16$ $24 \times 4 = 96$  <table border="1" data-bbox="1159 1320 1451 1457"><thead><tr><th>Tens</th><th>Ones</th></tr></thead><tbody><tr><td>120</td><td>15</td></tr><tr><td>120</td><td>15</td></tr><tr><td>120</td><td>15</td></tr><tr><td>120</td><td>15</td></tr></tbody></table>	Tens	Ones	20	4	40	4	24	4	Tens	Ones	120	15	120	15	120	15	120	15													
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120	15																															
120	15																															
Scaling Children focus on multiplication as scaling (... times the size) as opposed to repeated addition.	There are times as many ... as ...  There are 3 times as many triangles as circles.	... is ... times the size of is ... times the length/height of ...   Miss Smith is twice the height of Jo.																														
Correspondence problems (How many ways?) Encourage children to work systematically to find all the different possible combinations.	For every ... , there are ... possible ... There are ... $\times$... possibilities altogether.  <table border="1" data-bbox="769 1856 989 2087"><thead><tr><th>hats</th><th>scarves</th></tr></thead><tbody><tr><td>blue</td><td>blue</td></tr><tr><td>orange</td><td>orange</td></tr><tr><td>purple</td><td>purple</td></tr></tbody></table> For every hat, there are two possible scarves. $3 \times 2 = 6$ There are 6 possibilities altogether.	hats	scarves	blue	blue	orange	orange	purple	purple																							
hats	scarves																															
blue	blue																															
orange	orange																															
purple	purple																															

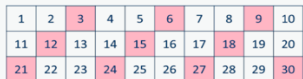
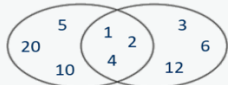
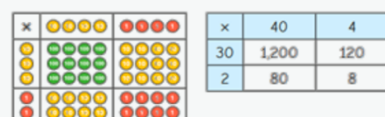
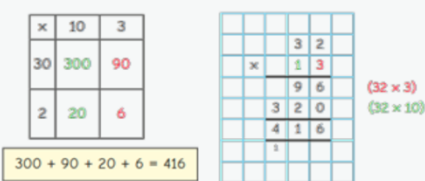
Year 4	• Times-table facts to 12x12 • Multiply by 1 and 0 • Multiply 3 numbers • Factor pairs • Multiply by 10 and 100 • Related facts • Mental strategies • Multiply a 2 or 3-digit number by a 1-digit number • Scaling • Correspondence problems
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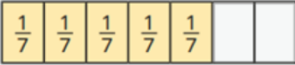
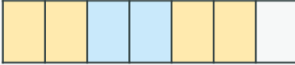
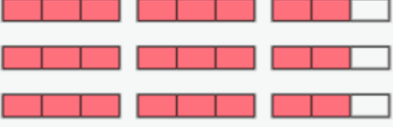
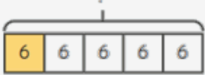
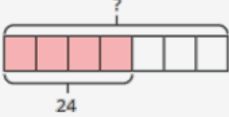
Progression of skills	Key representations									
Times-table facts to 12 × 12 Encourage daily counting in multiples both forwards and back. Encourage children to notice links between related times-tables.	... groups of ... = ... times ... is equal to × ... =    									
Multiply by 1 and 0	Any number multiplied by 1 is equal to ... Any number multiplied by 0 is equal to ... 	... × ... = ... <table><tr><td>1 × 1 = 1</td><td>1 × 0 = 0</td></tr><tr><td>2 × 1 = 2</td><td>2 × 0 = 0</td></tr><tr><td>3 × 1 = 3</td><td>3 × 0 = 0</td></tr><tr><td>4 × 1 = 4</td><td>4 × 0 = 0</td></tr></table>	1 × 1 = 1	1 × 0 = 0	2 × 1 = 2	2 × 0 = 0	3 × 1 = 3	3 × 0 = 0	4 × 1 = 4	4 × 0 = 0
1 × 1 = 1	1 × 0 = 0									
2 × 1 = 2	2 × 0 = 0									
3 × 1 = 3	3 × 0 = 0									
4 × 1 = 4	4 × 0 = 0									
Multiply 3 numbers Children use their understanding of commutativity to multiply more efficiently.	To work out ... × ... × ..., I can first calculate ... × ... and then multiply the answer by ...  $4 \times 2 \times 3 = 8 \times 3 = 24$ $2 \times 3 \times 4 = 6 \times 4 = 24$ $3 \times 4 \times 2 = 12 \times 2 = 24$									
Factor pairs Children explore equivalent calculations using different factors pairs.	12 = ... × ..., so ... × 12 = ... × ... × ...  $8 \times 6 = 8 \times 3 \times 2$ $8 \times 6 = 24 \times 2$  $6 \times 8 = 6 \times 4 \times 2$ $6 \times 8 = 24 \times 2$									
Multiply by 10 and 100 Some children may over-generalise that multiplying by 10 or 100 always results in adding zeros. This will cause issues later when multiplying decimals.	When I multiply by 10, the digits move ... place value column to the left. ... is 10 times the size of ...  35 × 10 = 350	When I multiply by 100, the digits move ... place value columns to the left. ... is 100 times the size of ...  14 × 100 = 1,400								

Related facts Use knowledge of multiplying by 10 and 100 to scale times-table facts.	... × ... ones is equal to ... ones so ... × ... tens is equal to ... tens and ... × ... hundreds is equal to ... hundreds. 1 1 1 1 1 1 1 1 1 1 10 10 10 10 10 10 10 10 10 10 100 100 100 100 100 100 100 100 100 100 $3 \times 7 = 21$ $3 \times 70 = 210$ $3 \times 700 = 2,100$ $7 \times 3 = 21$ $7 \times 30 = 210$ $7 \times 300 = 2,100$																								
Mental strategies Partition 2 or 3-digit numbers to multiply using informal methods.	... tens multiplied by ... is equal to ... tens. ...ones multiplied by ... is equal to ... ones. Tens Ones 10 10 10 10 10 10 10 10 10 10 1 1 1 1 1 1 1 1 1 1 26 20 6 $\times 3$ $\times 3$ 60 18 10 × 8 = 80 10 × 8 = 80 6 × 8 = 48 0 80 160 $26 \times 8 = 80 + 80 + 48 = 208$ $3 \times 26 = 60 + 18 = 78$																								
Multiply a 2 or 3-digit number by a 1-digit number The short multiplication method is introduced for the first time, initially in an expanded form.	To multiply a 2-digit number by ... , I multiply the ones by ... and the tens by ... To multiply a 3-digit number by ... , I multiply the ones by ... , the tens by ... and the hundreds by ... T O 10 10 10 10 10 10 10 10 10 10 1 1 1 1 1 1 1 1 1 1 H T O 3 4 × 5 2 0 1 5 0 1 7 0 (4×5) (30×5) H T O 10 10 10 10 10 10 10 10 10 10 1 1 1 1 1 1 1 1 1 1 H T O 10 10 10 10 10 10 10 10 10 10 1 1 1 1 1 1 1 1 1 1																								
Scaling Children focus on multiplication as scaling (... times the size).	... is ... times the size of ... 7 7 7 7 7 7 A computer mouse costs £7 A keyboard costs 6 times as much. 6 6 6 6 6 6 6 A red ribbon is 6 cm. A yellow ribbon is 7 times as long.																								
Correspondence problems Encourage children to use tables to show all the different possible combinations.	For every ... , there are ... possibilities. There are ... × ... possibilities altogether. A pizza company offers a choice of 5 toppings and 3 bases. $5 \times 3 = 15$ <table><tr><th></th><th>Deep pan</th><th>Italian</th><th>Thin</th></tr><tr><td>Cheese</td><td>C DP</td><td>C I</td><td>C Th</td></tr><tr><td>Mushroom</td><td>M DP</td><td>M I</td><td>M Th</td></tr><tr><td>Vegetable</td><td>V DP</td><td>V I</td><td>V Th</td></tr><tr><td>Chicken</td><td>C DP</td><td>C I</td><td>C Th</td></tr><tr><td>Tuna</td><td>T DP</td><td>T I</td><td>T Th</td></tr></table>		Deep pan	Italian	Thin	Cheese	C DP	C I	C Th	Mushroom	M DP	M I	M Th	Vegetable	V DP	V I	V Th	Chicken	C DP	C I	C Th	Tuna	T DP	T I	T Th
	Deep pan	Italian	Thin																						
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Mushroom	M DP	M I	M Th																						
Vegetable	V DP	V I	V Th																						
Chicken	C DP	C I	C Th																						
Tuna	T DP	T I	T Th																						

Year 5

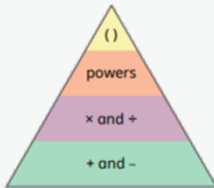
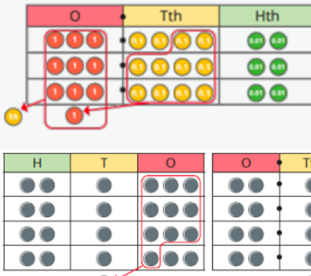
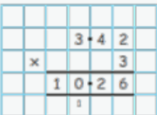
- Multiples and factors
- Square and cube numbers
- Multiply numbers up to 4 digits by a 1-digit number
- Multiply numbers up to 4 digits by a 2-digit number
- Multiply by 10, 100 and 1000
- Mental strategies
- Multiply mixed numbers by a whole number
- Find the whole

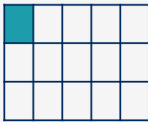
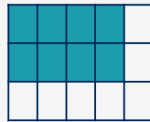
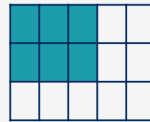
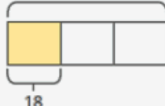
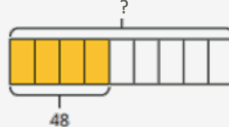
Progression of skills	Key representations																
Multiples and factors Encourage children to notice patterns and make links with known facts.	... is a multiple of ... because ... × ... = ...  	... is a factor of ... because ... × ... = ...   1, 2, 4 and 8 are factors of 8	The common factors of ... and ... are ... Factors of 20 Factors of 12 														
Square and cube numbers	... squared means ... × ...  $1 \times 1 = 1$ $2 \times 2 = 4$ $3 \times 3 = 9$ $4 \times 4 = 16$	... cubed means ... × ... × ...  $1 \times 1 \times 1 = 1$ $2 \times 2 \times 2 = 8$ $3 \times 3 \times 3 = 27$															
Multiply numbers up to 4 digits by a 1-digit number This builds on the short multiplication method introduced in Y4	To multiply a 4-digit number by ... , I multiply the ones by ... , the tens by ... , the hundreds by ... and the thousands by ... 																
Multiply numbers up to 4 digits by a 2-digit number Numbers are first partitioned using an area model then long multiplication is introduced for the first time.	I can partition ... into ... and ...  $32 \times 44 = 1,200 + 80 + 120 + 8$ $32 \times 44 = 1,408$	First, I multiply by the ... Then I multiply by the ...  $300 + 90 + 20 + 6 = 416$															
Multiply by 10, 100 and 1,000 Some children may over-generalise that multiplying by a power of 10 always results in adding zeros. This will cause issues later when multiplying decimals.	To multiply by 10/100/1,000, I move all the digits ... places to the left. ... is 10/100/1,000 times the size of ... <table border="1"><tr><td>M</td><td>Hth</td><td>Tth</td><td>Th</td><td>H</td><td>T</td><td>O</td></tr><tr><td></td><td></td><td></td><td></td><td>●●</td><td>●●●</td><td>●●●</td></tr></table> $234 \times 10 = 2,340$ $234 \times 100 = 23,400$ $234 \times 1,000 = 234,000$			M	Hth	Tth	Th	H	T	O					●●	●●●	●●●
M	Hth	Tth	Th	H	T	O											
				●●	●●●	●●●											
	<table border="1"><tr><td>Th</td><td>H</td><td>T</td><td>O</td><td>Tth</td><td>Hth</td></tr><tr><td></td><td></td><td></td><td>●●</td><td>●●●</td><td>●●●</td></tr></table> $2.34 \times 10 = 23.4$ $2.34 \times 100 = 234$ $2.34 \times 1,000 = 2,340$			Th	H	T	O	Tth	Hth				●●	●●●	●●●		
Th	H	T	O	Tth	Hth												
			●●	●●●	●●●												
Mental strategies Children continue to use efficient mental strategies such as partitioning and knowledge of factor pairs and related facts to multiply.	The most efficient strategy to calculate ... × ... is ... To calculate ... × 12, I can do ... × ... × ... For example: 121×12 I could calculate 100×12 plus 20×12 plus 1×12 I could calculate 121×10 plus 121×2 I could calculate $121 \times 6 \times 2$ I could calculate $121 \times 4 \times 3$																

Multiply fractions by a whole number Make links with repeated addition. E.g. $\frac{1}{5} \times 4 = \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$	To multiply a fraction by an integer, I multiply the numerator by the integer and the denominator remains the same.  $\frac{1}{7} \times 5 = \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \frac{5}{7}$  $\frac{1}{5} \times 6 = \frac{6}{5} = 1\frac{1}{5}$  $\frac{2}{7} \times 3 = \frac{2}{7} + \frac{2}{7} + \frac{2}{7} = \frac{6}{7}$  $\frac{2}{5} \times 3 = \frac{6}{5} = 1\frac{1}{5}$	
Multiply mixed numbers by a whole number	I can partition $\frac{\square}{\square}$ into $\frac{\square}{\square}$ and $\frac{\square}{\square}$  $2\frac{2}{3} \times 3$ $2 \times 3 = 6 \quad \frac{2}{3} \times 3 = \frac{6}{3} = 2$ $2\frac{2}{3} \times 3 = 6 + 2 = 8$	
Find the whole Children multiply to find the whole from a given part.	If $\frac{1}{\square}$ is ... , then the whole is ... $\times$... $\frac{1}{5}$ of $\underline{\quad} = 6$  $5 \times 6 = 30$ $\frac{1}{5}$ of 30 = 6	If $\frac{\square}{\square}$ is ... , then $\frac{1}{\square}$ is ... and the whole is ... $\times$... $\frac{4}{7}$ of $\underline{\quad} = 24$  $\frac{1}{7} = 24 \div 4 = 6$ $7 \times 6 = 42$ $\frac{4}{7}$ of 42 = 24

Year 6

- Multiply numbers up to 4 digits by a 2-digit number
- Multiply by 10, 100 and 1000
- Order of operations
- Multiply decimals by integers
- Multiply fractions by fractions
- Find the whole
- Calculations involving ratio

Progression of skills	Key representations																																																									
Multiply numbers up to 4 digits by a 2-digit number	To multiply by a 2-digit number, first multiply by the ones, then multiply by the tens and then find the total. <table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>1</td><td>2</td><td>0</td><td>7</td><td></td><td></td></tr><tr><td>x</td><td></td><td></td><td></td><td>3</td><td>6</td><td></td><td></td></tr><tr><td>+</td><td>7</td><td>2</td><td>4</td><td>2</td><td></td><td></td><td>(1,207 x 6)</td></tr><tr><td></td><td>3</td><td>6</td><td>2</td><td>1</td><td>0</td><td></td><td>(1,207 x 30)</td></tr><tr><td></td><td>4</td><td>3</td><td>4</td><td>5</td><td>2</td><td></td><td></td></tr><tr><td></td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												1	2	0	7			x				3	6			+	7	2	4	2			(1,207 x 6)		3	6	2	1	0		(1,207 x 30)		4	3	4	5	2				1						
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Multiply by 10, 100 and 1,000 Some children may over-generalise that multiplying by a power of 10 always results in adding zeros.	To multiply by 10/100/1,000, I move all the digits ... places to the left. ... is 10/100/1,000 times the size of ... <table><tr><td>M</td><td>HTH</td><td>TTH</td><td>Th</td><td>H</td><td>T</td><td>O</td></tr><tr><td></td><td></td><td></td><td></td><td>●●</td><td>●●</td><td>●●</td></tr></table><table><tr><td>Th</td><td>H</td><td>T</td><td>O</td><td>●</td><td>Tth</td><td>Hth</td><td>Thth</td></tr><tr><td></td><td></td><td></td><td></td><td>●</td><td>●●</td><td>●●</td><td>●●</td></tr></table> $234 \times 10 = 2,340$ $234 \times 100 = 23,400$ $234 \times 1,000 = 234,000$ $0.234 \times 10 = 2.34$ $0.234 \times 100 = 23.4$ $0.234 \times 1,000 = 234$		M	HTH	TTH	Th	H	T	O					●●	●●	●●	Th	H	T	O	●	Tth	Hth	Thth					●	●●	●●	●●																										
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Order of operations Calculations in brackets should be done first. Multiplication and division should be performed before addition and subtraction.	... has greater priority than ..., so the first part of the calculation I need to do is ...   $(3 + 4) \times 2 = 14$  $3 + 4^2 = 19$  $3 + 4 \times 2 = 11$																																																									
Multiply decimals by integers This is the first time children multiply decimals by numbers other than 10, 100 or 1,000 Encourage them to make links with known facts and whole number multiplication.	I know that ... $\times$... = ..., so I also know that ... $\times$... = ...  $6 \times 2 = 12$  $6 \times 0.2 = 1.2$	I need to exchange 10 ... for 1 ...   $213 \times 4 = 852$ $2.13 \times 4 = 8.52$																																																								

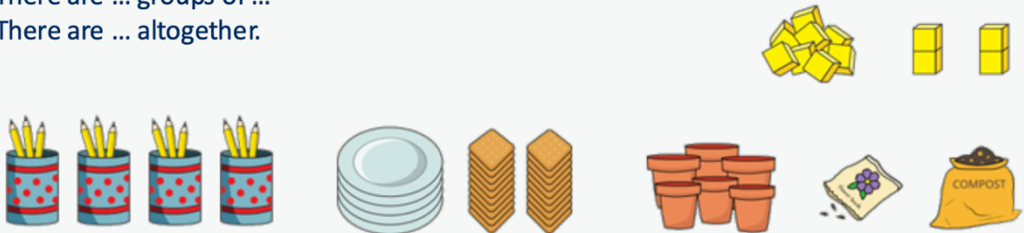
Multiply fractions by fractions Encourage children to give answers in their simplest form.	When multiplying a pair of fractions, I need to multiply the numerator and multiply the denominator. $\frac{1}{3} \times \frac{1}{5} = \frac{1}{15}$ $\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$ $\frac{2}{3} \times \frac{3}{5} = \frac{6}{15} = \frac{2}{5}$																																	
Find the whole Children multiply to find the whole from a given part.	If $\frac{1}{\square}$ is ... , then the whole is ... $\times$... $\frac{1}{3}$ of $\square$ = 18  $18 \times 3 = 54$ $\frac{1}{3}$ of 54 = 18	If $\frac{\square}{\square}$ is ... , then $\frac{1}{\square}$ is ... and the whole is ... $\times$... $\frac{4}{9}$ of $\square$ = 48  $\frac{1}{9} = 48 \div 4 = 12$ $9 \times 12 = 108$ $\frac{4}{9}$ of 108 = 48																																
Calculate percentages Children first learn how to find 1%, 10%, 20%, 25% and 50% before using multiples of these amounts to find any percentage.	There are ... lots of ... % in 100% To find ... %, I need to divide by ... <table><tr><td colspan="4">100%</td></tr><tr><td colspan="2">50%</td><td colspan="2">50%</td></tr><tr><td>25%</td><td>25%</td><td>25%</td><td>25%</td></tr></table> 50% of ... = ... $\div$ 2 25% of ... = ... $\div$ 4	100%				50%		50%		25%	25%	25%	25%	... % is made up of ... %, and ... % <table><tr><td colspan="10">100%</td></tr><tr><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td></tr></table> To find 30%, I can find 10% and then multiply it by 3 To find 23%, I can use 10% $\times$ 2 and 1% $\times$ 3 To find 99%, I can find 1%, then subtract from 100%	100%										10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
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10%	10%	10%	10%	10%	10%	10%	10%	10%	10%																									
Calculations involving ratio Encourage children to see the multiplicative relationship between ratios. They will need to multiply or divide each value by the same number to keep the ratio equivalent. Double number lines and ratio tables help children to see both horizontal and vertical multiplicative relationships.	For every ... , there are ... For every 1 adult on a school trip, there are 6 children. adults  children  <table><tr><td colspan="2"></td><td colspan="2">$\times 6$</td></tr><tr><td>Adults</td><td>Children</td><td></td><td></td></tr><tr><td>1</td><td>6</td><td></td><td></td></tr><tr><td>2</td><td>12</td><td></td><td></td></tr><tr><td>3</td><td>18</td><td></td><td></td></tr></table> $\times 3$ $\times 6$ $\times 3$ 0123456 Adults Children 061218 The ratio of adults to children is 1 : 6				$\times 6$		Adults	Children			1	6			2	12			3	18														
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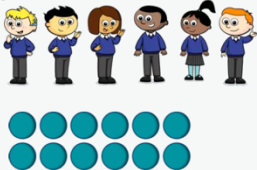
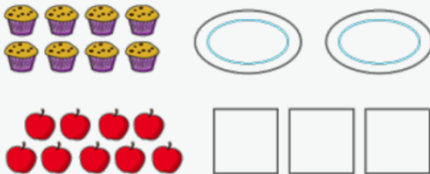
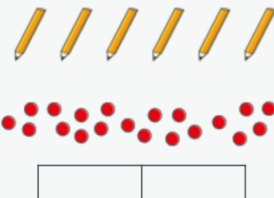
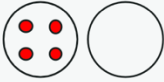
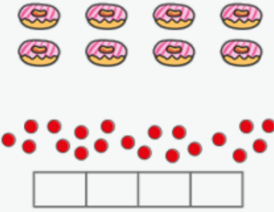
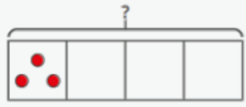
Division – Progression of Skills

FS1	• Continue with counting and subitising skills as a foundation for later work on equal groups.
FS2	• Sharing • Grouping
Year 1	• Make equal groups - grouping • Make equal groups - sharing • Find a half • Find a quarter
Year 2	• Divide by 2 • Divide by 10 • Divide by 5 • Missing numbers • Unit fractions • Non-unit fractions
Year 3	• Divide by 3, 4 and 8 • Related facts • Divide a 2-digit number by a 1-digit number – no exchange • Divide a 2-digit number by a 1-digit number – with remainders • Unit fractions of a set of objects • Non-unit fractions of a set of objects
Year 4	• Divide facts to 12x12 • Divide a number by 1 and itself • Related facts • Divide a 2 or 3-digit number by a 1-digit number • Divide by 10 and 100
Year 5	• Mental strategies • Divide numbers up to 4 digits by a 1-digit number • Divide by 10, 100 and 1000 • Fraction of an amount
Year 6	• Short division • Mental strategies • Long division • Order of operations • Divide by 10, 100 and 1000 • Divide decimals by integers • Decimal and fraction equivalents • Divide a fraction by an integer • Fraction of an amount • Calculate percentages • Calculations involving ratio

FS2	• Sharing • Grouping
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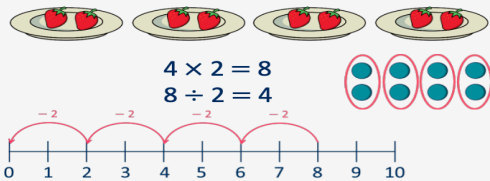
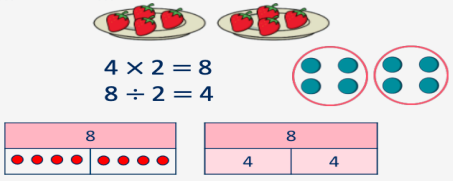
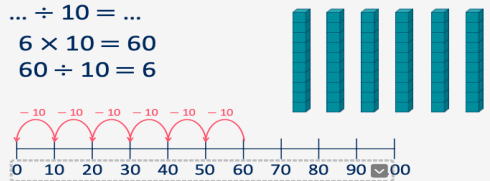
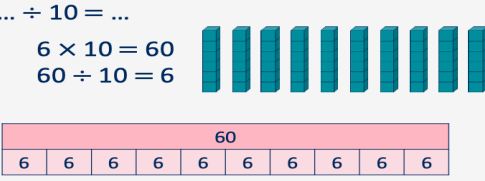
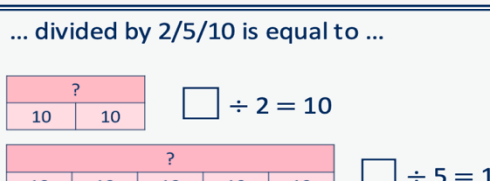
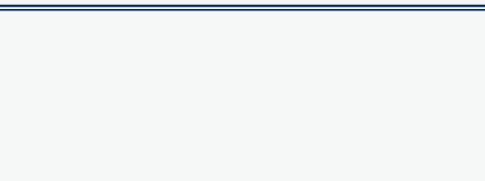
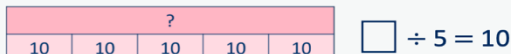
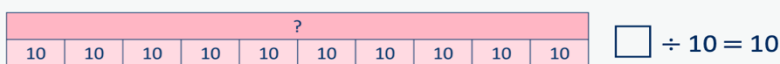
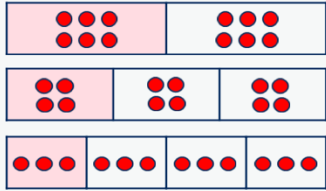
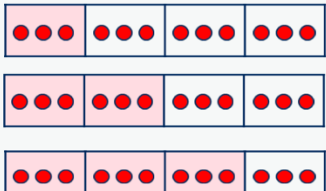
Progression of skills	Key representations
Sharing Provide practical activities such as sharing items during snack time. Encourage children to check whether items have been shared fairly (equally).	There are ... altogether. They are shared equally between ... groups. 
Grouping Provide opportunities to make equal groups when tidying up or during snack time. Encourage children to check that each group has the same amount.	There are ... groups of ... There are ... altogether. 

Year 1	• Make equal groups - grouping • Make equal groups - sharing • Find a half • Find a quarter
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Progression of skills	Key representations		
Make equal groups - grouping Encourage children to physically move objects into equal groups. They can also circle equal groups when using pictures.	There are ... altogether. How many groups of ... can you make? 	Circle groups of 2 There are ... groups of 2 	Take ... cubes. Make equal groups.  There are ... groups of ...
Make equal groups – sharing Encourage children to check that the objects have been shared fairly and each group is the same.	... have been shared equally between... There are ... on/in each ... 	Take ... cubes. Share them between ...  12 shared between ... is ...	
Find a half Start with practical opportunities to share a quantity into 2 groups. Progress to circling half of the objects in a picture and then to finding the whole from a given half.	To find half, I need to share into 2 equal groups.  There are ... in each group.	Half of ... is ... 	If ... is half, what is the whole?  4 is half of ...
Find a quarter Start with practical opportunities to share a quantity into 4 groups. Progress to using pictures or bar models to find a quarter and then to finding the whole from a given quarter.	To find a quarter, I need to share into 4 equal groups.  There are ... in each group.	A quarter of ... is ... 	If ... is one quarter, what is the whole?  3 is one quarter of ...

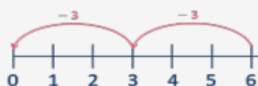
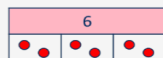
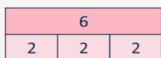
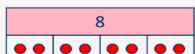
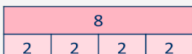
Year 2

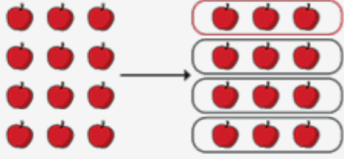
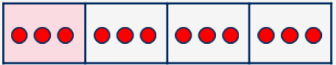
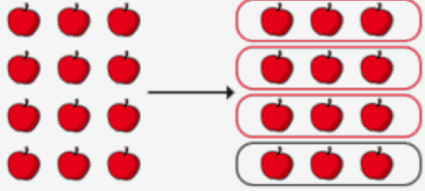
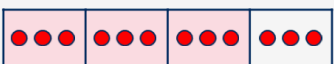
- Divide by 2
- Divide by 10
- Divide by 5
- Missing numbers
- Unit fractions
- Non-unit fractions

Progression of skills	Key representations	
Divide by 2 Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts and halving.	There are ... equal groups of 2 $\dots \div 2 = \dots$  $4 \times 2 = 8$ $8 \div 2 = 4$	... shared equally between 2 is ... Half of ... is ... $\dots \div 2 = \dots$  $4 \times 2 = 8$ $8 \div 2 = 4$
Divide by 10 Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.	There are ... equal groups of 10 $\dots \div 10 = \dots$ $6 \times 10 = 60$ $60 \div 10 = 6$ 	... shared equally between 10 is ... $\dots \div 10 = \dots$ $6 \times 10 = 60$ $60 \div 10 = 6$ 
Divide by 5 Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.	There are ... equal groups of 5 $\dots \div 5 = \dots$ $6 \times 5 = 30$ $30 \div 5 = 6$ 	... shared equally between 5 is ... $\dots \div 5 = \dots$ $6 \times 5 = 30$ $30 \div 5 = 6$ 
Missing numbers Bar models are useful to show the link between multiplication and division.	... divided by 2/5/10 is equal to ...   	
Unit fractions In Y2 the focus is on finding $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{3}$ Bar models are useful to show the link between division and finding a fraction.	The objects have been shared fairly into ... groups. $\frac{1}{\dots}$ of ... is ... 	There are ... equal parts. There is ... part circled. $\frac{1}{\dots}$ is circled. 
Non-unit fractions In Y2 the focus is on finding $\frac{2}{4}$ and $\frac{3}{4}$ Prompt children to notice that $\frac{2}{4}$ is equivalent to $\frac{1}{2}$	The objects have been shared fairly into ... groups. $\frac{\dots}{\dots}$ of ... is ... 	There are ... equal parts. There are ... parts circled. $\frac{\dots}{\dots}$ is circled. 

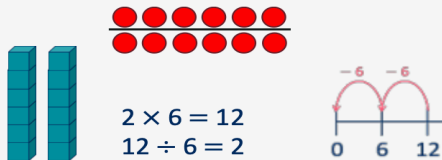
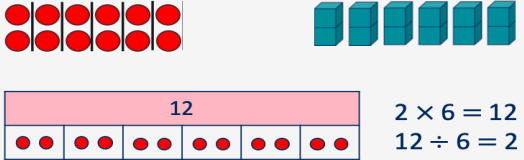
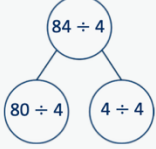
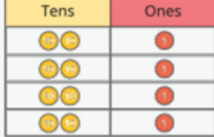
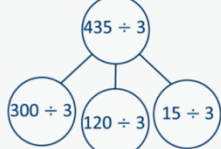
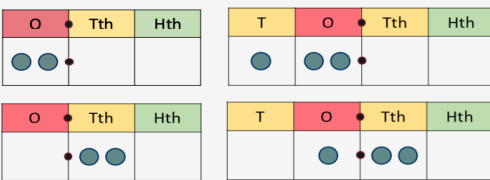
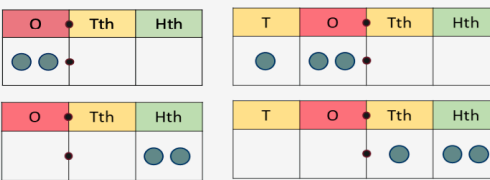
Year 3

- Divide by 3, 4 and 8
- Related facts
- Divide a 2-digit number by a 1-digit number – no exchange
- Divide a 2-digit number by a 1-digit number – with remainders
- Unit fractions of a set of objects
- Non-unit fractions of a set of objects

Progression of skills	Key representations	
Divide by 3 Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.	There are ... groups of 3 in ... $\dots \div 3 =$  $2 \times 3 = 6$ $6 \div 3 = 2$  	... has been shared equally into 3 equal groups. $\dots \div 3 =$  $2 \times 3 = 6$ $6 \div 3 = 2$   
Divide by 4 Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.	There are ... groups of 4 in ... $\dots \div 4 =$  $2 \times 4 = 8$ $8 \div 4 = 2$  	... has been shared equally into 4 equal groups. $\dots \div 4 =$  $2 \times 4 = 8$ $8 \div 4 = 2$   
Divide by 8		
Related facts Link to known times-table facts.	$\dots \div \dots$ is equal to ..., so ... tens $\div$... is equal to ... tens.        	

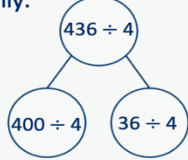
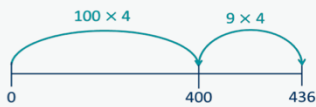
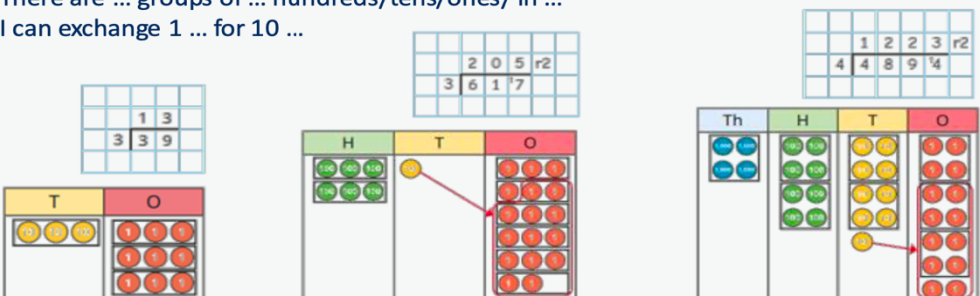
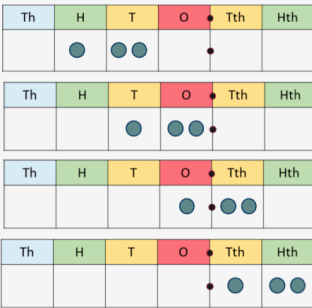
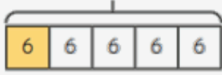
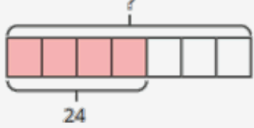
Unit fractions of a set of objects Bar models are useful to show the link between division and fractions, for example, dividing by 3 and finding a third.	The whole is divided into ... equal parts. Each part is $\frac{1}{\square}$ of the whole.  $\frac{1}{4}$ of 12 apples is 3 apples.	One ... of ... is ... $\frac{1}{4}$ of 12 is 3  $\frac{1}{3}$ of 36 is 12 
Non-unit fractions of a set of objects Bar models are a useful representation and show the links with division and multiplication.	The whole is divided into ... equal parts. Each part is $\frac{1}{\square}$ of the whole.  $\frac{3}{4}$ of 12 apples is 9 apples.	$\frac{1}{\square}$ of ... is ..., so $\frac{\square}{\square}$ of ... is ... $\frac{3}{4}$ of 12 is 9  $\frac{2}{3}$ of 36 is 24 

Year 4	• Divide facts to 12x12 • Divide a number by 1 and itself • Related facts • Divide a 2 or 3-digit number by a 1-digit number • Divide by 10 and 100
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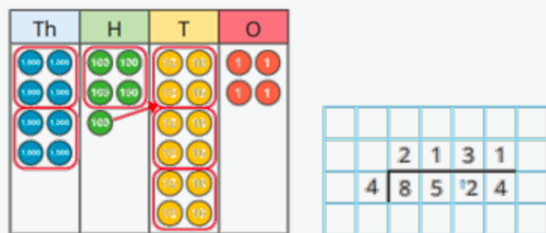
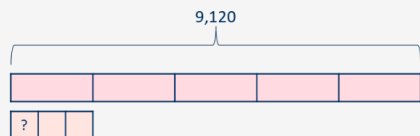
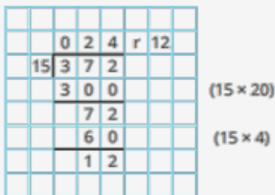
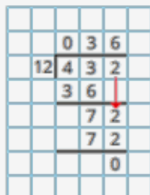
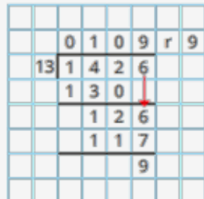
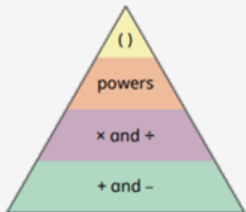
Progression of skills	Key representations	
Division facts to 12 × 12 Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.	There are ... groups of ... in ÷ ... =  $2 \times 6 = 12$ $12 \div 6 = 2$	... has been shared equally into ... equal groups. ... ÷ ... =  $2 \times 6 = 12$ $12 \div 6 = 2$
Divide a number by 1 and itself Children may try to divide a number by zero and it should be highlighted that this is not possible.	When I divide a number by 1, the number remains the same. 5 shared between 1 is 5  There are 5 groups of 1 in 5 	When I divide a number by itself, the answer is 1 5 shared between 5 is 1  There is 1 group of 5 in 5
Related facts Link to known times-table facts.	... ÷ ... is equal to ... so ... tens ÷ ... is equal to ... tens and ... hundreds ÷ ... is equal to ... hundreds.  $21 \div 7 = 3$ $210 \div 7 = 30$ $2,100 \div 7 = 300$ $21 \div 3 = 7$ $210 \div 3 = 70$ $2,100 \div 3 = 700$	
Divide a 2 or 3-digit number by a 1-digit number Progress from divisions with no exchange, to divisions with exchange and then divisions with remainders.	I can partition ... into ... tens and ... ones.  $80 \div 4 = 20$ $4 \div 4 = 1$ $84 \div 4 = 21$ 	I cannot share the hundreds/tens equally, so I need to exchange 1 ... for 10 ...  $300 \div 3 = 100$ $120 \div 3 = 40$ $15 \div 3 = 5$ $435 \div 3 = 145$ 
Divide by 10 and 100 Encourage children to notice that dividing by 100 is the same as dividing by 10 twice.	When I divide by 10, the digits move 1 place value column to the right. ... is one-tenth the size of ...  $2 \div 10 = 0.2$ $12 \div 10 = 1.2$	When I divide by 100, the digits move 2 place value columns to the right. ... is one-hundredth the size of ...  $2 \div 100 = 0.02$ $12 \div 100 = 0.12$

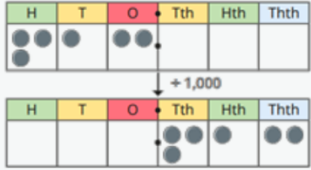
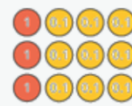
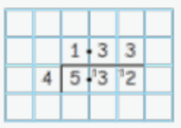
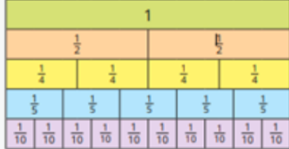
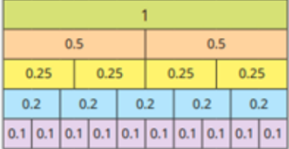
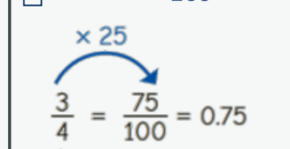
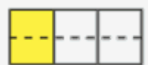
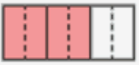
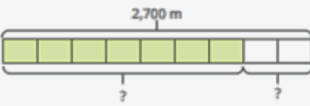
Year 5

- Mental strategies
- Divide numbers up to 4 digits by a 1-digit number
- Divide by 10, 100 and 1000
- Fraction of an amount

Progression of skills	Key representations		
Mental strategies 	I can partition ... into ... and ... to help me to divide more easily. 	I can show groups of ... on a number line. 	To divide by ..., I can divide by ... and then divide the result by ... $436 \div 4 = 436 \div 2 \div 2$ $436 \div 2 = 218$ $218 \div 2 = 109$
Divide numbers up to 4 digits by a 1-digit number The short division method is introduced for the first time.	There are ... groups of ... hundreds/tens/ones/ in ... I can exchange 1 ... for 10 ... 		
Divide by 10, 100 and 1,000 Encourage children to notice that dividing by 100 is the same as dividing by 10 twice, and that dividing by 1,000 is the same as dividing by 10 three times.	To divide by 10/100/1,000, I move all the digits ... places to the right. ... is one-tenth/one-hundredth/one-thousandth the size of ...  $120 \div 10 = 12$ $120 \div 100 = 1.2$ $120 \div 1,000 = 0.12$		
Fraction of an amount Bar models support children to understand that to find a fraction of an amount, we divide by the denominator and multiply by the numerator.	To find $\frac{\square}{\square}$ of ..., I need to divide by ... and multiply by ...   $\frac{1}{5}$ of 20 = $\frac{1}{4}$ of 84 = $\frac{3}{5}$ of 20 = $\frac{3}{4}$ of 84 =		
	If $\frac{1}{\square}$ is ..., then the whole is ... $\times$...  $\frac{1}{5}$ of ___ = 6  $\frac{4}{7}$ of ___ = 24		

Year 6	• Short division • Mental strategies • Long division • Order of operations • Divide by 10,100 and 1000 • Divide decimals by integers • Decimal and fraction equivalents • Divide a fraction by an integer • Fraction of an amount • Calculate percentages • Calculations involving ratio
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Progression of skills	Key representations	
Short division Encourage children to interpret remainders in context, for example knowing that “4 remainder 1” could mean 4 complete boxes with 1 left over so 5 boxes will be needed.	There are ... groups of ... hundreds/tens/ones/ in ... I can exchange 1 ... for 10 ... 	
Mental strategies Include partitioning and number line strategies outlined in Y5 as well as division using factors.	To divide by ... , I can first divide by ... and then divide the answer by ... $240 \div 60 = 240 \div 10 \div 6$  $480 \div 24 = 480 \div 4 \div 6$  $9,120 \div 15 = 9,120 \div 5 \div 3$ 	
Long division The long division method is introduced for the first time. Two alternative methods are shown.	Method 1  	Method 2  
Order of operations Calculations in brackets should be done first, then powers. Multiplication and division should be performed before addition and subtraction.	... has greater priority than ..., so the first part of the calculation I need to do is ...   $(6 + 4) \div 2 = 5$  $6 + 4 \div 2 = 8$	

Divide by 10, 100 and 1,000 Encourage children to notice that dividing by 100 is the same as dividing by 10 twice, and that dividing by 1,000 is the same as dividing by 10 three times.	To divide by ... , I move the digits ... places to the right.  $312 \div 10 = 31.2$ $312 \div 100 = 3.12$ $312 \div 1,000 = 0.312$ $906 \div 10 = 90.6$ $906 \div 100 = 9.06$ $906 \div 1,000 = 0.906$		
Divide decimals by integers This is the first time children divide decimals by numbers other than 10, 100 or 1,000	I know that $\dots \div \dots = \dots$, so I also know that $\dots \div \dots = \dots$  $39 \div 3 = 13$  $3.9 \div 3 = 1.3$  $0.39 \div 3 = 0.13$		I need to exchange 1 ... for 10 ...  
Decimal and fraction equivalents	The fraction ... is equivalent to the decimal ...  $\frac{1}{5} = 0.2$  $\frac{2}{5} = 0.4$  $\frac{3}{5} = 0.6$		$\frac{\square}{\square}$ is equal to $\frac{\square}{100}$ $\times 25$ $\frac{3}{4} = \frac{75}{100} = 0.75$ $\times 25$
Divide a fraction by an integer This is the first time children divide fractions by an integer.	... ones divided by 2 is ... ones so ... sevenths divided by 2 is ... sevenths.  $\frac{4}{7} \div 4 = \frac{1}{7}$  $\frac{4}{7} \div 2 = \frac{2}{7}$	I am dividing by ... , so I can split each part into ... equal parts.  $\frac{1}{3} \div 2 = \frac{1}{6}$	... is equivalent to ... so $\dots \div \dots = \dots \div \dots$  $\frac{2}{3} = \frac{4}{6}$ so $\frac{2}{3} \div 4 = \frac{4}{6} \div 4 = \frac{1}{6}$
Fraction of an amount Children divide and multiply to find fractions of an amount. Bar models can still be used to support understanding where needed.	To find $\frac{1}{\square}$ I divide by ... $\frac{1}{2}$ of 36 = $36 \div 2$ $\frac{1}{12}$ of 36 = $36 \div 12$	If $\frac{1}{\square}$ is equal to ..., then $\frac{\square}{\square}$ are equal to ...  $\frac{7}{9}$ of 2,700 = $\frac{1}{9}$ of 2,700 $\times 7$	If $\frac{\square}{\square}$ is equal to ..., then the whole is equal to ...  $\frac{4}{9}$ of $\underline{\hspace{1cm}}$ = 48

Calculate percentages Children first learn how to find 1%, 10%, 20%, 25% and 50% before using multiples of these amounts to find any percentage.	There are ... lots of ... % in 100% To find ... %, I need to divide by ... <table><tr><td colspan="4">100%</td></tr><tr><td colspan="2">50%</td><td colspan="2">50%</td></tr><tr><td>25%</td><td>25%</td><td>25%</td><td>25%</td></tr></table> 50% of ... = ... ÷ 2 25% of ... = ... ÷ 4	100%				50%		50%		25%	25%	25%	25%	... % is made up of ... %, and ... % <table><tr><td colspan="10">100%</td></tr><tr><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td></tr></table> To find 30%, I can find 10% and then multiply it by 3 To find 23%, I can use 10% × 2 and 1% × 3 To find 99%, I can find 1%, then subtract from 100%	100%										10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
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Calculations involving ratio Encourage children to see the multiplicative relationship between ratios. They will need to multiply or divide each value by the same number to keep the ratio equivalent. Double number lines and ratio tables help children to see both horizontal and vertical multiplicative relationships.	For every ... , there are ... For every 6 children on a school trip, there is 1 adult. adults children <table><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> <table><tr><th>Adults</th><th>Children</th></tr><tr><td>1</td><td>6</td></tr><tr><td>2</td><td>12</td></tr><tr><td>3</td><td>18</td></tr></table> 0123456 Adults Children 061218 The ratio of children to adults is 6 : 1								Adults	Children	1	6	2	12	3	18																		
Adults	Children																																	
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