Our Calculations Policy

This calculation policy has been created to meet the expectations of the National Curriculum but most importantly the learning needs and styles of the children.

The policy is organised into the five key areas: addition; subtraction; multiplication; division and fractions for each year group. Each of these sections addresses the key vocabulary related to the operation and a concrete, pictorial and abstract approach for each method of calculating. We believe all pupils benefit from using manipulatives; visually representing calculations; progressing to the use of the abstract form. These are seen as a series of approaches that all interlink and overlap.
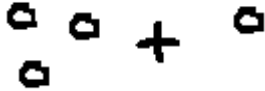
The National Curriculum guidance has been applied with regards to which methods each year group should be applying, however, pupils will be supported to use any of the methods outlined in this policy where learning barriers hinder understanding or to support further progress.
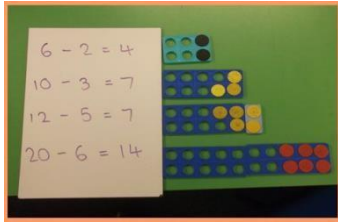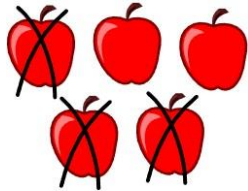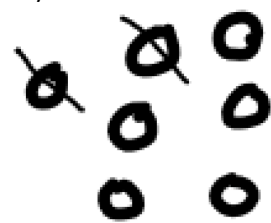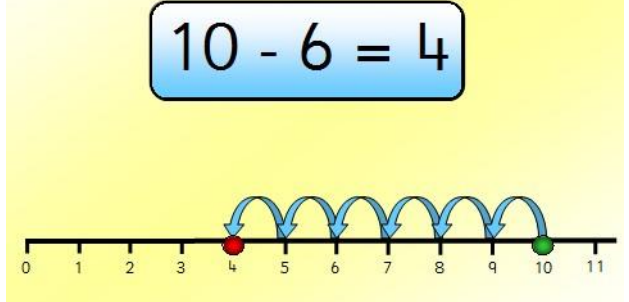
Resourcing

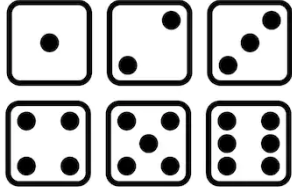The planning of lessons is supported using resources from a variety of resources such as: WhiteRose, Twinkl Resources, Focus Maths and Nrich.
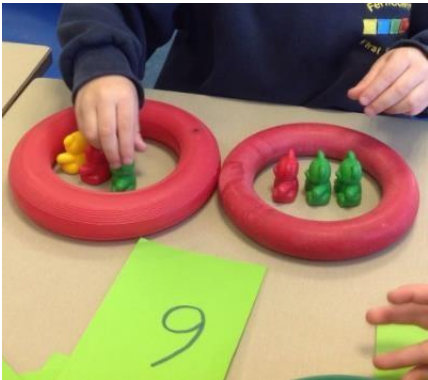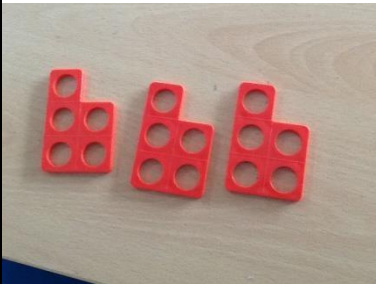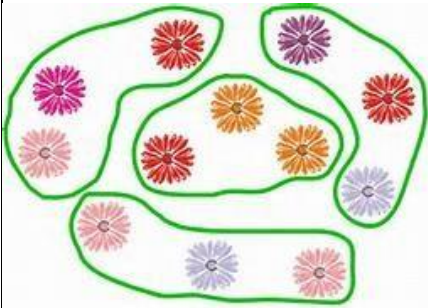
Maths manipulatives are used to engage pupils, giving a concrete opportunity to make sense of problems they are given. Pupils have access to a multitude of value based manipulatives such as Numicon and Base 10 which reflect and represent mathematical structures to support their learning.
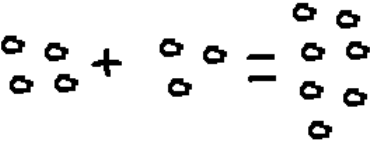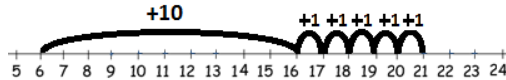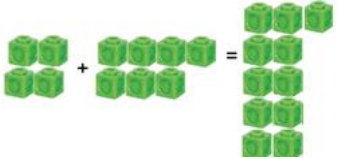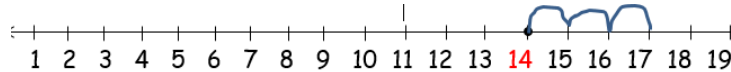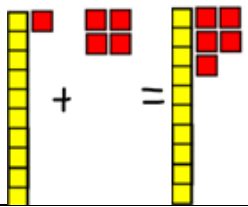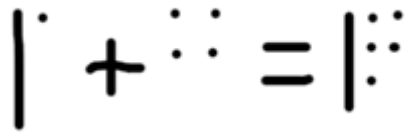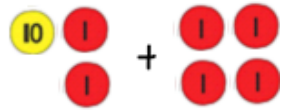
Pupils have access to online resources via recommended websites and apps including Mathletics, TT Rockstars, Numbots and Lightbot.

Reception
Addition

Vocabulary	Conceptual Understanding and Fluency	Reasoning and Problem solving
• Add • Plus • Equals • Altogether • More • Make • Sum • Total • How many more to make?	To add successfully, pupils need to: • understand addition as combining two or more groups of objects. • understand addition as counting on • find one more than a given number • represent and use number bonds within 10 • add one-digit and two-digit numbers to 20, including zero • recall doubles of all numbers to 6 • read, write and interpret mathematical statements involving addition (+) and equals (=) signs	To reason mathematically and solve problems successfully pupils need to use and apply their understanding of, and fluency in, addition to: • solve one-step problems that involve addition, using concrete objects and pictorial representations solve one-step problems that involve addition in familiar contexts, e.g. money

Concrete	Pictorial	Abstract
Find one more than a given number using objects. Use a range of physical manipulatives such as cubes or numicon to combine a group to find the total. Numicon 4 + 6 = 10 Cubes 3 + 2 = 5 	Count the total number of images or symbols to find the total. ☐ + ☐ = ☐ Draw own images, symbols and representations to then count the total. 3 + 1 = 4 	Use a number track recognise the numeral and to count on from the largest number. 6 + 6 = 12 Then progress to a marked number line. Subitisation of number – recognition of numbers immediately e.g. with numicon or dice. Store the largest number mentally and count on.

Subtraction		
Vocabulary	**Conceptual Understanding and Fluency**	**Reasoning and Problem solving**
• Subtract • Take away • Minus • Less • Leave • Remain • Deduct • Decrease • Difference • How many are left?	To subtract successfully, pupils need to: • Understand subtraction as 'taking away' (counting back) • Understand counting backwards and the numbers decreasing. • Finding one less than a given number. • Subtract one-digit up to 10. • Read, write and interpret mathematical statements involving subtraction (–) and equals (=) signs	To reason mathematically and solve problems successfully pupils need to use and apply their understanding of, and fluency in, subtraction to: • Solve one-step problems that involve subtraction, using concrete objects and pictorial representations and solve one-step problems that involve subtraction in familiar contexts, e.g. money.
Concrete	**Pictorial**	**Abstract**
Find one less than a given number using objects. Use a range of physical manipulatives such as cubes or numicon to take an object away to count how many remain.	Cross out the number of images that are being subtracted. Count the images that remain. 5 - 3 = 2 Draw own images, symbols and representations, cross out the amount to be taken away and then count how many remain.	Use a number track recognise the numeral and to count back the amount being subtracted. Then progress to a marked number line. 10 - 6 = 4
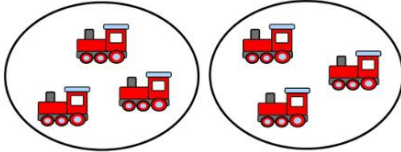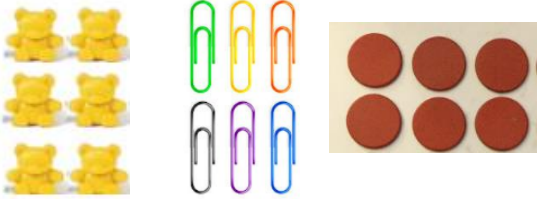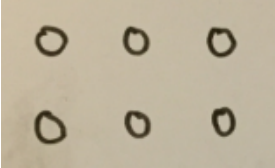
Multiplication		
Vocabulary	**Conceptual Understanding and Fluency**	**Reasoning and Problem solving**
• Groups of • Times • Lots of • Repeated addition • Double	To multiply successfully, pupils need to: • Understand multiplication through grouping small quantities. • Understand the link between multiplication and doubling	To reason mathematically and solve problems successfully pupils need to use and apply their understanding of, and fluency in, multiplication to: • Solve one-step problems involving multiplication, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher solve one-step problems that involve multiplication in familiar contexts.
Concrete	**Pictorial**	**Abstract**
Double a given number using a range of physical objects and manipulatives. Count repeated groups, of the same size using, physical resources and manipulatives. Group objects into 'lots of' the same amount. 	Double a given number by drawing 2 lots of images of the same amount. Group images to solve problems. Three apples for you and three apples for me. How many apples altogether?	Use symbols to solve multiplication problems. Each cake needs 3 cherries. How many cherries will you need altogether?

Division		
Vocabulary	**Conceptual Understanding and Fluency**	**Reasoning and Problem solving**
- Share - Group - Split - Equal parts - Each	To divide successfully, pupils need to: Understand division through sharing small quantities between 2, 5 and 10.	To reason mathematically and solve problems successfully pupils need to use and apply their understanding of, and fluency in, division to: Solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations.
Concrete	**Pictorial**	**Abstract**
Use a range of physical manipulatives such as cubes to halve a given number. Share a range of physical manipulatives into equal groups. 	Halve a given amount of images between two groups. 6 cookies 2 friends Share amounts equally between two groups. 	 Solve problems by grouping objects into equal groups. Roger has 8 sweets, he shares into two bags. How many sweets are in each bag?

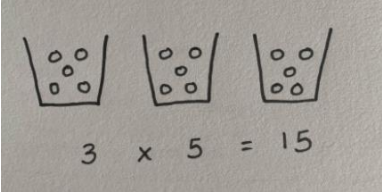| Year 1		
Addition		
Vocabulary	**Conceptual Understanding and Fluency**	**Reasoning and Problem solving**
• Add, more, plus, make, sum, total, altogether • Number line • Number bonds • Inverse • Double, near double • Equals, is the same as (including equals sign) • How many more to make..?, how many more is…than..?, how much more is..?	To add successfully, pupils need to: • add one-digit and two-digit numbers to 20, including 0	To reason mathematically and solve problems successfully pupils need to use and apply their understanding of, and fluency in, addition to: • memorise and reason with number bonds to 10 and 20 (Non-statutory) • Solve one-step problems that involve addition, using concrete objects and pictorial representations, and missing number problems (Non-statutory)
Concrete	**Pictorial**	**Abstract**
Adding one digit and two-digit numbers. Numicon $4 + 6 = 10$ Cubes $4 + 7 = 11$ Base 10 $11 + 4 = 15$ Place Value Counters $12 + 4 = 16$	Adding one digit and two-digit numbers. Drawing dots or using stampers, representing one dot/stamp for each number for addition sentences up to 10. $4 + 3 = 7$ Number Line $14 + 3 = 17$ Representing Base 10 with stick for tens and dots for ones. $11 + 4 = 15$	Adding one digit and two-digit numbers. Number line to add in tens and ones. $6 + 15 = 21$ $4 + 3 = 7$ I have 4 apples and I pick 3 more, how many have I got altogether? I have 7p, how much more do I need to make 12p. Applying knowledge of number facts and number bonds. E.g. $1 + 9 = 10$, then $11 + 9$ is easier to solve. Use knowledge of number families to complete missing number questions: $4 + ? = 10$ $? + 6 = 10$ $4 + 3 = 2 + ?$ $11 = 5 + ?$ Bar models used to understand the relationship between numbers and the calculation. $6 + 2 = 8$. Also used to solve missing number calculations.

Year 1
Subtraction

Vocabulary	Conceptual Understanding and Fluency	Reasoning and Problem solving
• Subtract, take away, minus Number bonds • Number line • Inverse • Equals, is the same as (including equals sign) • Difference between • How many fewer is…than..?, how much less is..?	To subtract successfully, pupils need to: • represent and use number bonds and related subtraction facts within 20 • subtract one-digit and two-digit numbers to 20, including 0	To reason mathematically and solve problems successfully pupils need to use and apply their understanding of, and fluency in, subtraction to: • Pupils memorise and reason with number bonds to 10 and (Non-statutory) • Solve one-step problems that involve subtraction, using concrete objects and pictorial representations, and missing number problems (Non-statutory) • Solve problems in familiar practical contexts, including using quantities., (Non-statutory)

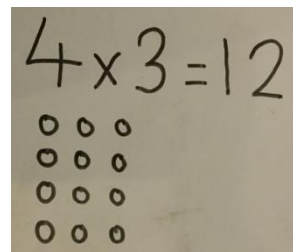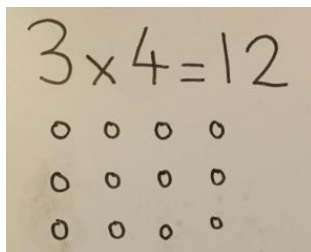| Concrete	Pictorial	Abstract
Subtract one-digit and two-digit numbers to 20. Cubes 11 – 7 = 4 Base 10 16 – 12 = 4 Place value counters 14 – 4 = 10	Subtract one-digit and two-digit numbers to 20 Number Line 14 – 5 = 9. 1 2 3 4 5 6 7 8 9 10 11 12 13 **14** 15 16 17 Start at 14 and jump back 5. Representing Base 10 with stick for tens and dots for ones. 16 – 5 = 11	Number line to subtract in tens and ones. 23 – 14 = 9 -1 -1 -1 -1 -10 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 Find the difference between 8 and 2. 8 – 2 = 6. There are 15 cakes in the shop. Three cakes are eaten, how many are left? Use knowledge of number families and inverse operations to complete missing number questions: 4 + ? = 10 ? + 6 = 10 10 – 4 = ? 10 - ? = 4 4 - 3 = 2 - ? 8 = 12 - ? Bar models used to understand the relationship between numbers and the calculation. 8 – 6 = 2. Also used to solve missing number calculations. | 8
6	2	

Year 1		
Multiplication		
Vocabulary	**Conceptual Understanding and Fluency**	**Reasoning and Problem solving**
• Odd, even • Count in twos and fives • Count in tens (forwards from/backwards from) • Lots of, groups of, how many times? • Once, twice, three times, five times • Multiple of, times, • Multiply, multiply by • Repeated addition • Array, row, column • Double	To multiply successfully, pupils need to: • solve one-step problems involving multiplication, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	To reason mathematically and solve problems successfully pupils need to use and apply their understanding of, and fluency in, multiplication to: • solve word problems involving multiplication, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher

Concrete	**Pictorial**	**Abstract**
Group objects into circles.	Groups pictorially to solve a worded problem by drawing it visually: *There were 3 plant pots and each pot had 5 seeds in it. How many seeds have been planted altogether?*	Use knowledge of counting patterns to solve multiplication problems, 2s, 5s, 10s:
Then move onto lining up objects and counters into lines to create groups an array.	Draw images/dots in groups to solve problems: Three apples for you and three apples for me. How many apples altogether? Progress into drawing an array by lining up dots logically in groups:	Tim has 5 plant pots, in each pot there are 2 seeds. How many seeds are there altogether?
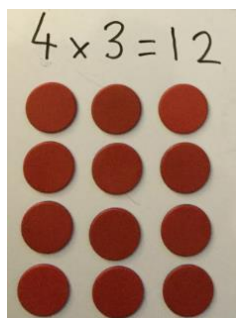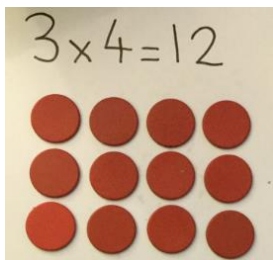
Understand that multiplication of 2 numbers can be done in any order.	Understand that multiplication of 2 numbers can be done in any order.	Is 3 x 4 the same as 4 x 3? Explain your answer.
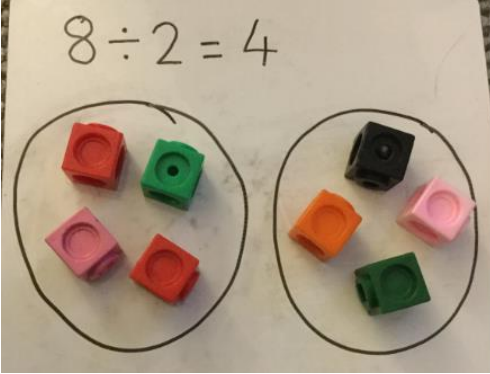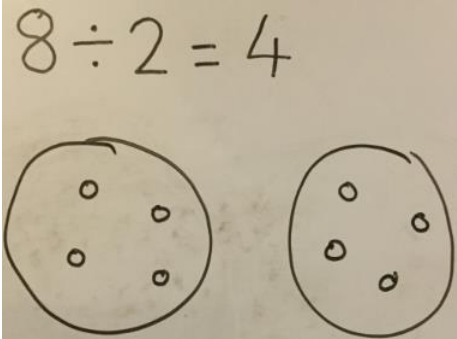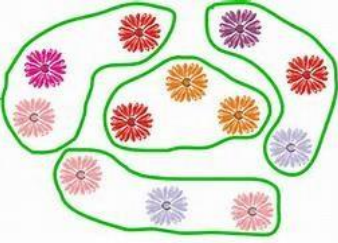| $3 \times 4 = 12$ $4 \times 3 = 12$ | $3 \times 4 = 12$ $4 \times 3 = 12$ | Making links between number facts - e.g. if you know that double 4 is 8 you can do 2 x 4.
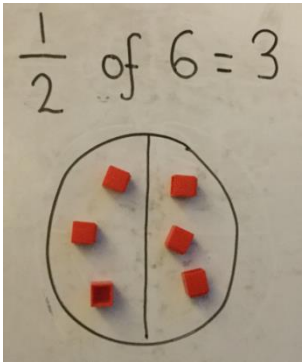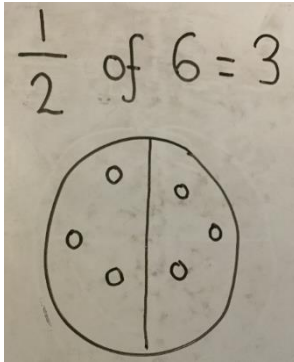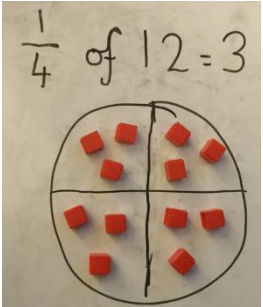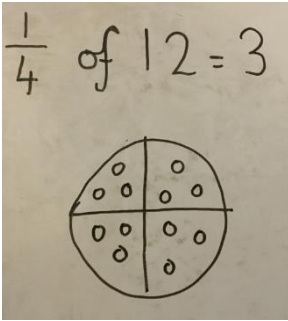
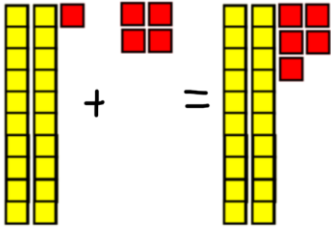Use knowledge of number families to complete missing number questions, e.g.:
  2 x 5 = ?
  5 x ? = 10

  10 = 2 x ? |

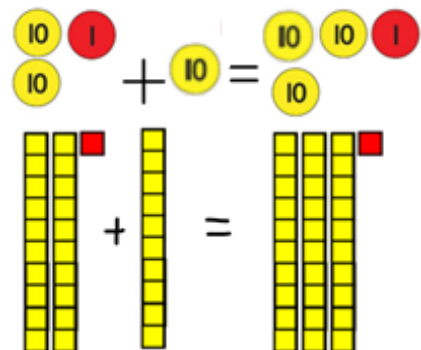| Year 1		
Division		
Vocabulary	**Conceptual Understanding and Fluency**	**Reasoning and Problem solving**
• Share, • share equally • Group in pairs, threes, etc. • Equal groups of • Divide, • Divided by • Halve	To divide successfully, pupils need to: • solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	To reason mathematically and solve problems successfully pupils need to use and apply their understanding of, and fluency in, division to: • solve word problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher
Concrete	**Pictorial**	**Abstract**
$8 \div 2 = 4$ Take 8 objects as this is how many you have to start. Draw 2 circles as you are dividing into 2 groups. Share the 8 objects equally between the 2 groups. Count how many are in each group.	$8 \div 2 = 4$ Draw 2 circles as you are dividing by 2. Draw 8 dots equally between the 2 groups. Count how many are in each group.	Solve problems by grouping objects into equal groups. There are 12 sweets. They are shared between 2 people. How many sweets will each person get? Use knowledge of number families and inverse operations to complete missing number questions, e.g.: $2 \times 5 = ?$ $5 \times ? = 10$ $10 \div ? = 5$ $10 \div ? = 2$

Year 1		
Fractions		
Vocabulary	**Conceptual Understanding and Fluency**	**Reasoning and Problem solving**
• Whole • Equal parts • Four equal parts • One half, two halves • A quarter, two quarters	To find fraction successfully, pupils need to • recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity • recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity	To reason mathematically and solve problems successfully pupils need to use and apply their understanding of, and fluency in, fractions to: • find a quarter and a half by solving problems using shapes objects and quantities. (Non-Statutory)
Concrete	**Pictorial**	**Abstract**
Finding ½ of amounts. ½ of 6 = 3 Start by drawing a circle. Take 6 objects. You are finding a ½ so you split the circle into 2 equal parts. Share the 6 objects equally between the 2 sides. There are 3 in each side.	Finding ½ of amounts. ½ of 6 = 3 Start by drawing a circle. You are finding a ½ so you split the circle into 2 equal parts. Draw 6 smaller circles equally between the 2 sides. There are 3 in each side.	Solving fraction word problems. Liz had 12 chocolates. She ate ½. How many does she have left?
Finding ¼ of amounts. 1/4 of 12 = 3 Start by drawing a circle. Take 12 objects. You are finding a quarter so spit the circles into 4 equal parts. Share the 12 objects equally between the 4 sections. There are 3 in each side.	Finding ¼ of amounts. ¼ of 12 = 3 Start by drawing a circle. You are finding a quarter so spit the circles into 4 equal parts. Share 12 smaller circles equally between the 4 sections. There are 3 in each side.	Solving fraction word problems. ¼ of 16p = 4p Zoe has 16p in her purse. She spends a 1/4. How much does she spend?

Year 2		
Addition		
Vocabulary	**Conceptual Understanding and Fluency**	**Reasoning and Problem solving**

• Add, more, plus, make, sum, total, altogether, sum Number line
• Inverse
• Double, near double
• Equals, is the same as (including equals sign)
• How many more to make..?, how many more is…than..?, how much more is..?
	To add successfully, pupils need to:
	add numbers using concrete objects, pictorial representations, and mentally, including:
	    • a two-digit number and 1s
	    • a two-digit number and 10s
	    • 2 two-digit numbers
	    • adding 3 one-digit numbers
		To reason mathematically and solve problems successfully pupils need to use and apply their understanding of, and fluency in, addition to:
		    • solve problems with addition: using concrete objects and pictorial representations, including those involving numbers, quantities and measures
		    • applying their increasing knowledge of mental and written methods

Concrete	**Pictorial**	**Abstract**
Adding a two-digit number and 1s Use Base 10 or place value counters. $21 + 4 = 25$ 	Adding a two-digit number and 1s $21 + 4 = 25$ Children to represent the base 10 with sticks for tens and dots for ones.	Adding a two-digit number and 1s $21 + 4 = 25$ Children to use column addition, starting by adding the ones.

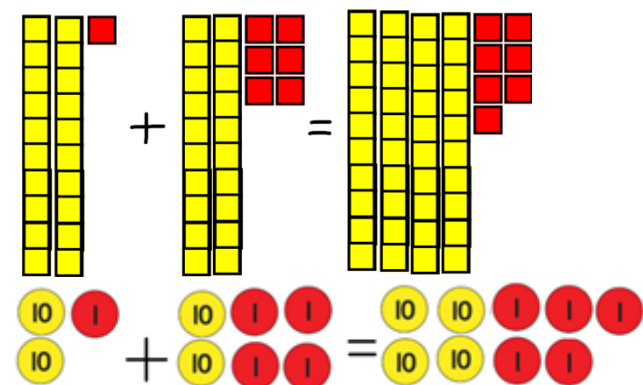|		
Adding a two-digit number and 10s Use Base 10 or place value counters. 21 + 10 = 31 	Adding a two-digit number and 10s $$\text{II}^{\cdot} + \text{I} = \text{III}^{\cdot}$$	Adding a two-digit number and 10s $$\begin{array}{r} 2\ 1 \\ +\ 2\ 0 \\ \hline 4\ 1 \end{array}$$ Children to use column addition, starting by adding the ones, then the tens.
Adding 2 two-digit numbers Use Base 10 or place value counters. 21 + 26 = 47 	Adding 2 two-digit numbers 21 + 26 = 47 $$\text{II}^{\cdot} + \text{II}^{\vdots} = \text{IIII}^{\vdots}$$ Children represent the base 10 with lines for tens and dots for ones.	Adding 2 two-digit numbers $$\begin{array}{r} 2\ 1 \\ +\ 2\ 6 \\ \hline 4\ 7 \end{array}$$ Children to use column addition, starting by adding the ones, then the tens.

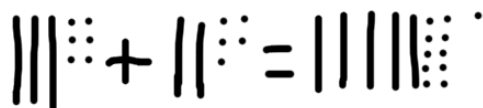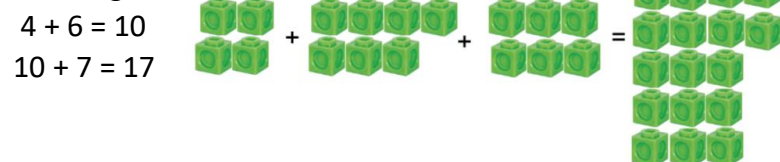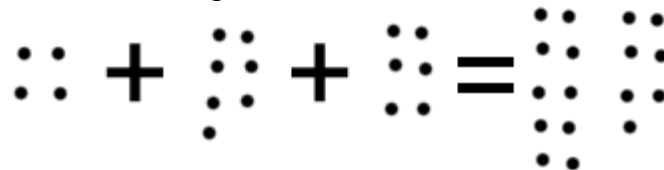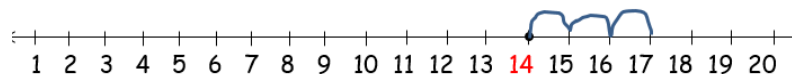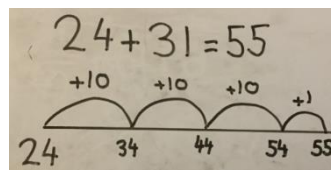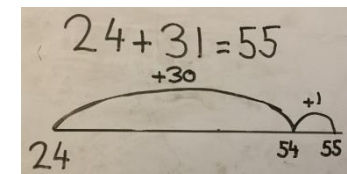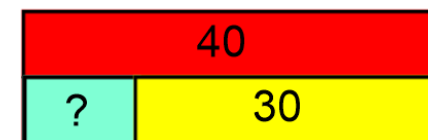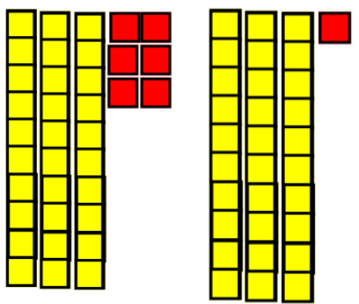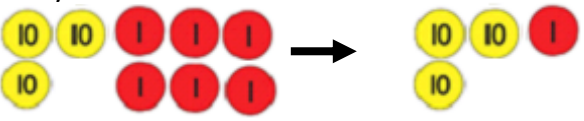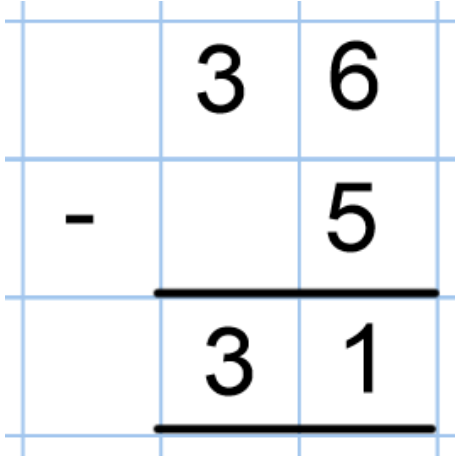|		
Adding 2 two-digit numbers crossing the tens Use Base 10 or place value counters. 36 + 25 = 61 	Adding 2 two-digit numbers crossing the tens 36 + 25 = 61 Children represent the base 10 with sticks for tens and dots for ones.	Adding 2 two-digit numbers crossing the tens Children to use column addition, starting by adding the ones, then the tens. Children are to carry the tens underneath.
Adding 3 one-digit numbers 4 + 7 + 6 = 17 Combine to make 10 first if possible or bridge 10, then add third digit. 4 + 6 = 10 10 + 7 = 17 	Adding 3 one-digit numbers 4 + 7 + 6 = 17 Combine to make 10 first if possible or bridge 10, then add third digit. 4 + 6 = 10 	Adding 3 one-digit numbers 4 + 7 + 6 = Combine to make 10 first if possible using mental addition 4 + 6 = 10. Then 10 + 7 = 17. Combine to make 10 first if possible or bridge 10, then add third digit. 4 + 6 = 10
Adding 2 two-digit numbers using a number line. 14 + 3 = 17 	Adding 2 two-digit numbers using a blank number line. 	Adding 2 two-digit numbers using a blank number line.
		Bar models used to understand the relationship between numbers and the calculation. 40 = 30 + ?
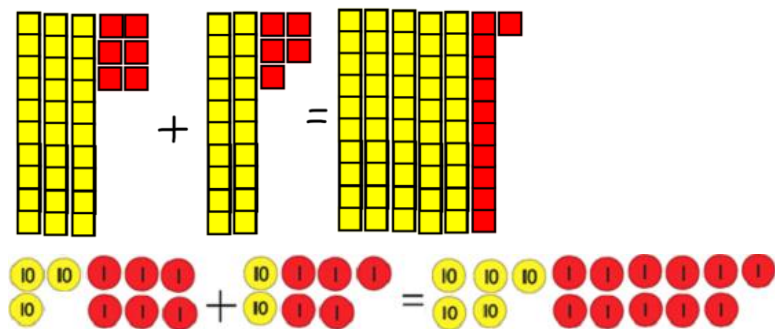
Year 2
Subtraction

Vocabulary	Conceptual Understanding and Fluency	Reasoning and Problem solving

• Subtract, take away, minus Number bonds
• Difference
• Number line
• Inverse
• Equals, is the same as (including equals sign)
• Difference between
• How many fewer is…than..?, how much less is..?
	To subtract successfully, pupils need to:
	• recall and use subtraction facts to 20 fluently, and derive and use related facts up to 100
	• add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
	   o a two-digit number and 1s
	   o a two-digit number and 10s
	   o 2 two-digit numbers
		To reason mathematically and solve problems successfully pupils need to use and apply their understanding of, and fluency in, subtraction to:
		• solve problems with subtraction:
		   o using concrete objects and pictorial representations, including those involving numbers, quantities and measures
		   o applying their increasing knowledge of mental and written methods
		• recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems

Concrete	Pictorial	Abstract
a two-digit number and 1s 36 – 5 = 31 Create 36 using Base 10 or place value counters. Then take away 5 ones.	a two-digit number and 1s 36 – 5 = 31 Children to represent 36 using sticks and dots. Create the larger number (the number you are taking away from), then cross out the 5 ones that is being taken away.	a two-digit number and 1s Children to use column subtraction, starting by subtracting the ones.

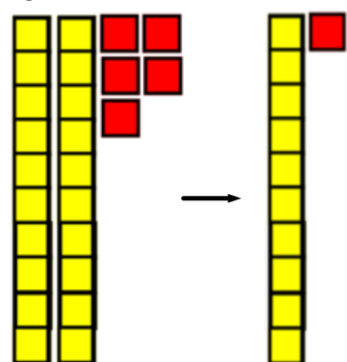| a two-digit number and 10s	a two-digit number and 10s	a two-digit number and 10s
36 – 10 = 26 Create 36 using Base 10 or place value counters. Then take away a 10.	36 – 10 = 26 Children to represent 36 using sticks and dots. Create the larger number (the number you are taking away from), then cross out the 10 that is being taken away.	Children to use column subtraction, starting by subtracting the ones, then the tens.
2 two-digit numbers (no exchanges)	2 two-digit numbers (no exchanges)	2 two-digit numbers (no exchanges)
25 – 14 = 11 Create 25 using base 10 or tens counters. Then remove 5 ones.	25 – 14 = 11 Children to represent 25 using base 10. Create the larger number (the number you are taking away from), then cross out the tens and the ones that are being taken away.	25 – 14 = 11 Children to use column subtraction, starting by subtracting the ones, then the tens.
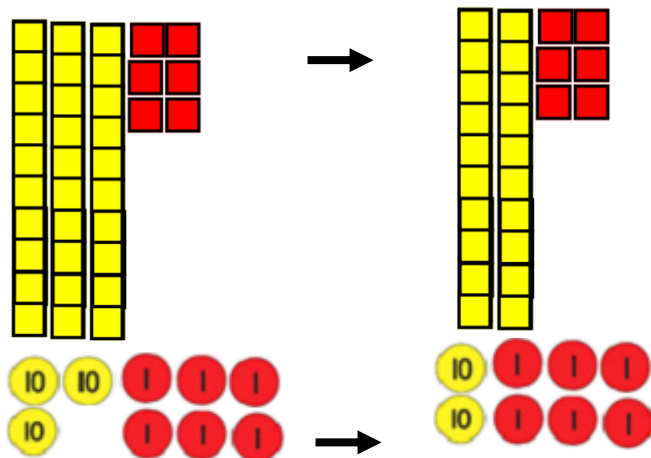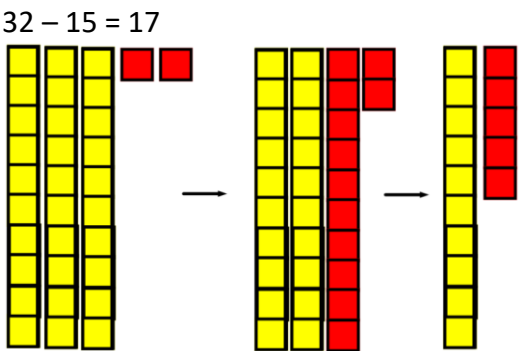
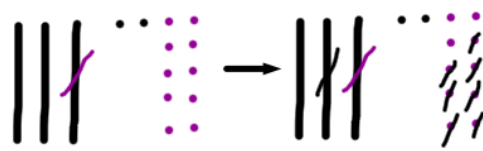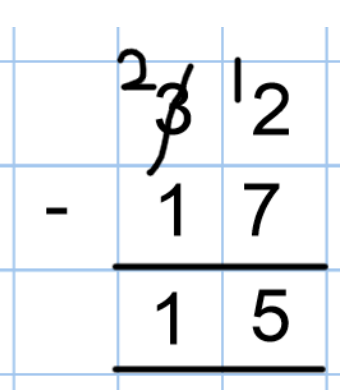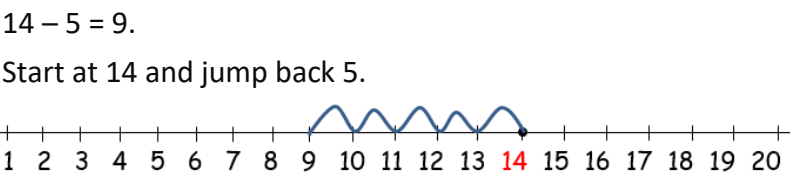| 2 two-digit numbers (with an exchange)	2 two-digit numbers (with an exchange)	2 two-digit numbers (with an exchange)
32 – 15 = 17 Create 32 using base 10 or tens counters, as you can't subtract 5 ones from 2 you need to exchange a ten stick for 10 ones. Now you can subtract 5 ones from the 12 ones, then subtract the other ten stick.	32 – 15 = 17 Children to represent 32 using sticks and dots. As you can't remove 5 ones from 2 ones you need to exchange a ten stick for 10 ones. Now you can subtract 5 ones from the 12 ones, then subtract the other ten stick.	Children to use column subtraction, starting by subtracting the ones. 7 can't be taken away from 2, you need to exchange from the tens column. When this has been done, you can subtract 7 from 12 which makes 5 and you can subtract 1 ten from the 2 tens.
Subtracting using a number line. 14 – 5 = 9. Start at 14 and jump back 5.	Subtracting using a blank number line.	Subtracting using a blank number line.
		Bar models used to understand the relationship between numbers and the calculation. 40 - ? = 30
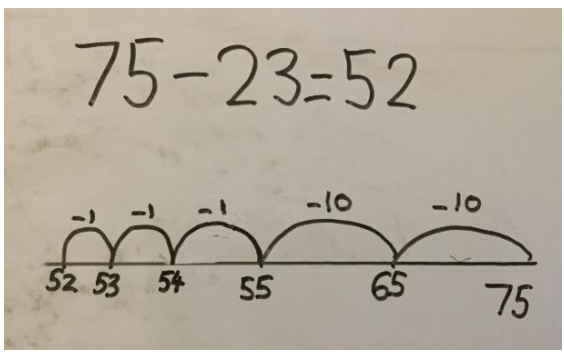
Year 2

Multiplication

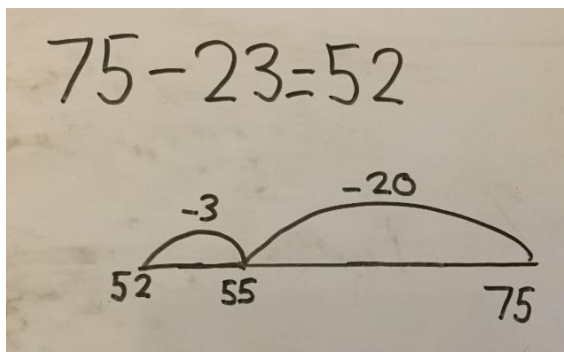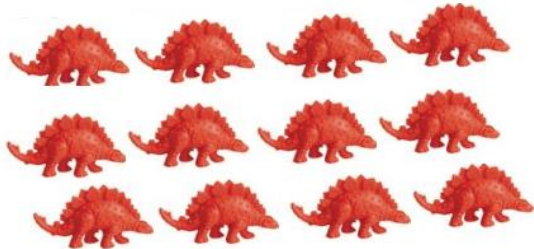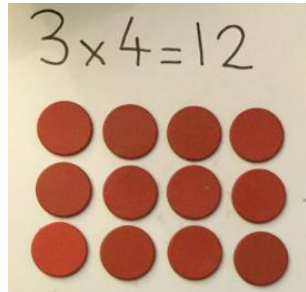| Vocabulary	Conceptual Understanding and Fluency	Reasoning and Problem solving
• Odd, even • Count in twos, threes, fives • Count in tens (forwards from/backwards from) • How many times? • Lots of, groups of • Once, twice, three times, five times • Multiple of, • Times, • Multiply, • Multiply by • Repeated addition • Array, row, column • Double • Commutative	To multiply successfully, pupils need to: 　• calculate mathematical statements for multiplication within the multiplication tables and write them using the multiplication (×) and equals (=) signs 　• show that multiplication of 2 numbers can be done in any order (commutative)	To reason mathematically and solve problems successfully pupils need to use and apply their understanding of, and fluency in, multiplication to: 　• solve problems involving multiplication, using materials, arrays, repeated addition, mental methods, and multiplication facts, including problems in contexts

Concrete	Pictorial	Abstract
3 x 4 = 12 Create an array using counters or objects. 	3 x 4 = 12 Draw an array. 	There are 5 horses, each with 4 legs. How many legs are there altogether? 20 = __ x __ What numbers could go in the boxes? Prove it.
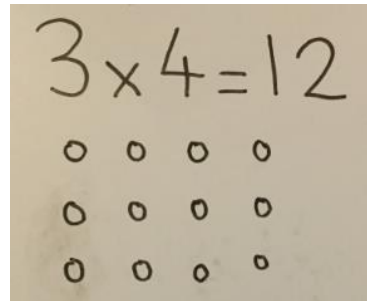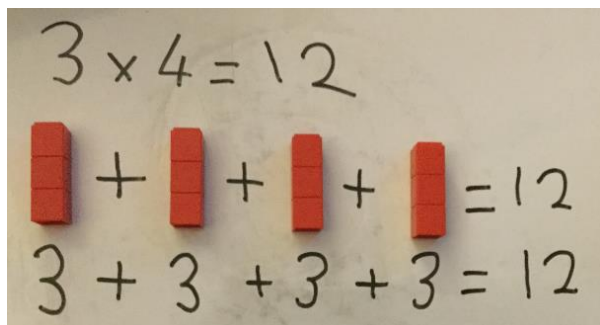
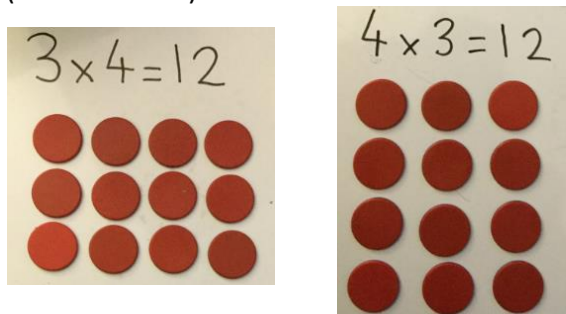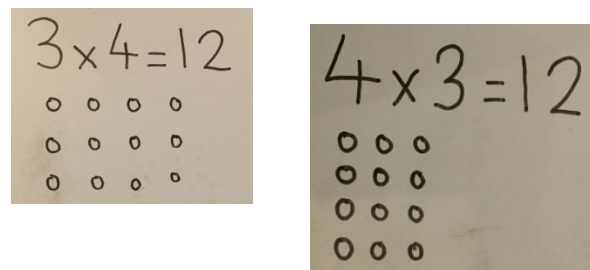| Multiplication as repeated addition.	Multiplication as repeated addition on a blank number line.	Multiplication as repeated addition. Children to be able to use an array to write a range of calculations e.g.
$3 \times 4 = 12$ ▮ + ▮ + ▮ + ▮ = 12 $3 + 3 + 3 + 3 = 12$	$3 \times 4 = 12$ +3 +3 +3 +3 ⌒ ⌒ ⌒ ⌒ O 3 6 9 12	12 = 3 x 4 and 3 x 4 = 12 3 + 3 + 3 + 3 = 12 and 12 = 4 + 4 + 4 Use knowledge of number families to complete missing number questions, e.g.: 6 x 5 = ? 5 x ? = 30 30 = 5 x ?
Multiplication of 2 numbers can be done in any order (commutative).	Multiplication of 2 numbers can be done in any order (commutative).	Cassie has 4 bags with 5 sweets in each, Rachel has 5 bags with 4 sweets in each. How many do they have each? Can you split the sweets into different numbers of bags so they both still have the same number?
$3 \times 4 = 12$ $4 \times 3 = 12$	$3 \times 4 = 12$ $4 \times 3 = 12$	$3 \times 4 = 12$ +4 +4 +4 ⌒ ⌒ ⌒ O 4 8 12 $3 \times 4 = 12$ +3 +3 +3 +3 ⌒ ⌒ ⌒ ⌒ O 3 6 9 12
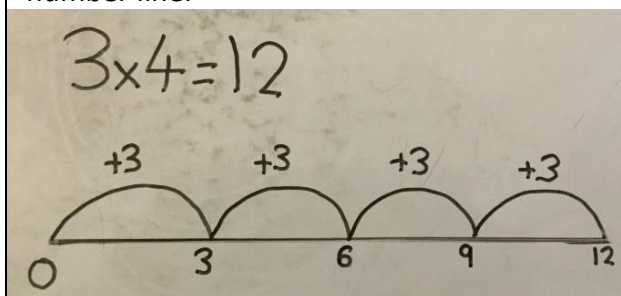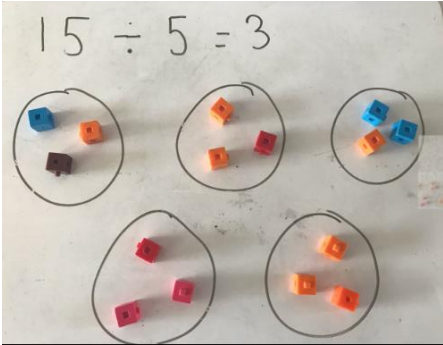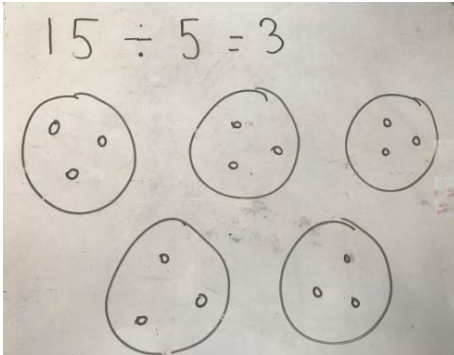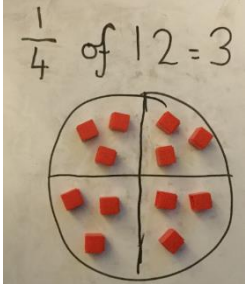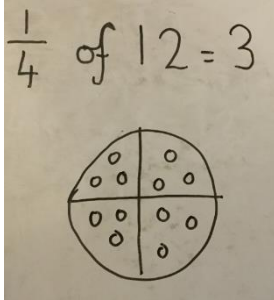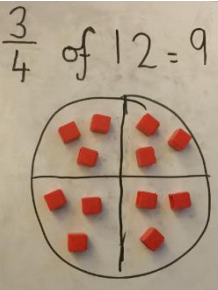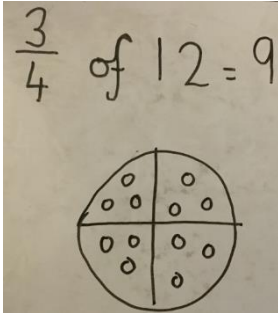
Year 2
Division

Vocabulary	Conceptual Understanding and Fluency	Reasoning and Problem solving
• Share, • share equally • Group in pairs, threes, etc. • Equal groups of • Divide, • Divided by • Halve	To divide successfully, pupils need to: • calculate mathematical statements for division within the multiplication tables and write them using the division (÷) and equals (=) signs	To reason mathematically and solve problems successfully pupils need to use and apply their understanding of, and fluency in, division to: • solve problems involving division, using materials, division facts, including problems in contexts

Concrete	Pictorial	Abstract
15 ÷ 5 = 3 Take 15 objects as this is how many you have to start. Draw 5 circles as you are dividing into 5 groups. Share the 15 objects equally between the 5 circles. Count how many are in each circle.	15 ÷ 5 = 3 Draw 5 circles as you are dividing into 5 groups. Draw 15 dots equally between the 5 circles. Count how many are in each circle. 	Apply number fact knowledge and knowledge of counting patterns to solve number and worded problems. There are 25 cupcakes. They are shared equally between 5 friends. How many cupcakes do they get each? Ben shares 40 sweets between himself and 4 friends. How many sweets do they get each? Use knowledge of number families and inverse operations to complete missing number questions, e.g.: 6 x 5 = ? 5 x ? = 30 30 ÷ ? = 5 30 ÷ ? = 2

Year 2		
Fractions		
Vocabulary	**Conceptual Understanding and Fluency**	**Reasoning and Problem solving**
• Whole • Equal parts • Four equal parts • One half, two halves • A quarter, two quarters, three quarters • One third, a third • Equivalence, equivalent • Numerator and denominator	To find fractions successfully, pupils need to: • recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity	To reason mathematically and solve problems successfully pupils need to use and apply their understanding of, and fluency in, fractions to: • solve problems using shapes, objects and quantities. (non-statutory)

Concrete	**Pictorial**	**Abstract**
Finding fraction of amounts. 1/4 of 12 = 3 Start by drawing a circle. Take 12 objects. The denominator is 4 therefore split the circle into 4. Share the 12 objects equally between the 4 sections. There are 3 in each section.	Finding fraction of amounts. 1/4 of 12 = 3 Start by drawing a circle. The denominator is 4 therefore split the circle into 4. Share 12 smaller circles equally between the 4 sections. There are 3 in each section.	Solving fraction word problems. Sarah has 12 marbles. She gives away ¼ of them. How many does she give away?
Finding fractions of amounts 3/4 of 12 = 9 Start by drawing a circle. Take 12 objects. The denominator is 4 therefore split the circle into 4. Share the 12 objects equally between the 4 sections. The numerator is 3, therefore 3 out of the 4 are required to be counted so the answer is 9.	Find fractions of amounts ¾ of 12 = 9 Start by drawing a circle. The denominator is 4 therefor split the circle into 4. Draw 12 smaller circles equally between the 4 sections. The numerator is 3, therefore 3 out of the 4 are required to be counted so the answer is 9.	Finding fraction of amounts Sarah has 24 eggs. She gives away ¾ of them. How many does she have left?