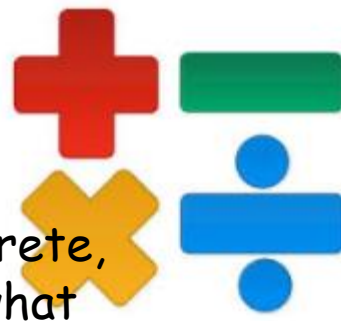




Parent workshop

1. How we teach your child maths?
2. What is the end of Key Stage 1 expectation?
3. What is 'greater depth'?
4. What can we be doing at home to help our child in maths?

The four operations- addition and subtraction

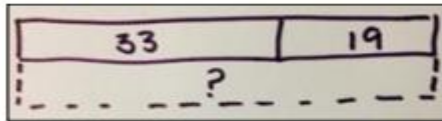


We look at explaining each term within the context of CPA (concrete, pictorial and abstract), which helps embed an understanding of what is happening with the maths.

Addition

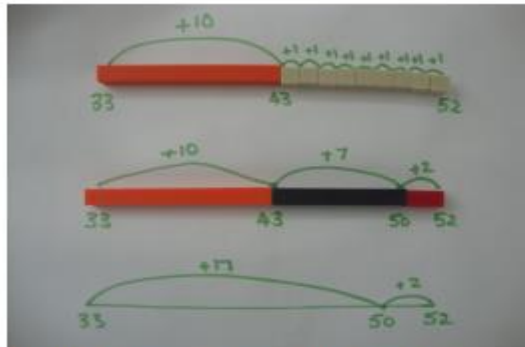
Unstructured number lines

Jottings to support mental methods e.g. number line and bar model



There are 33 children in the playground, 19 more come out to play. How many children are now in the playground?

$$33 + 19 = ?$$



Round and adjust- adding near tens



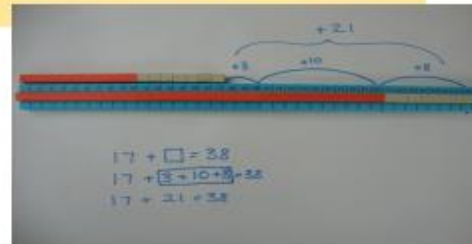
Year 2

• **NON STATUTORY**

Pupils extend their understanding of the language of addition and subtraction to include sum and difference.

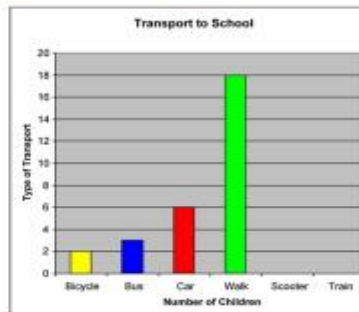
Subtraction

Finding the difference and counting up to subtract (see also exploring relationships)



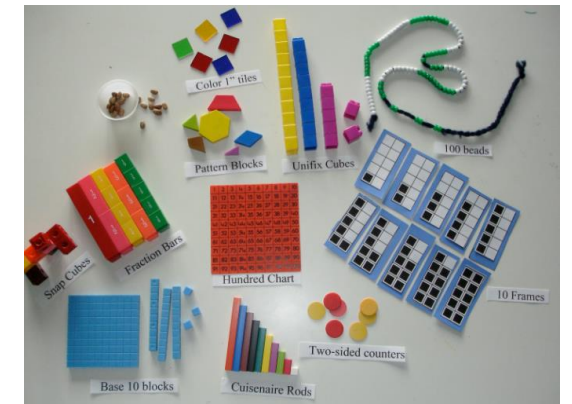
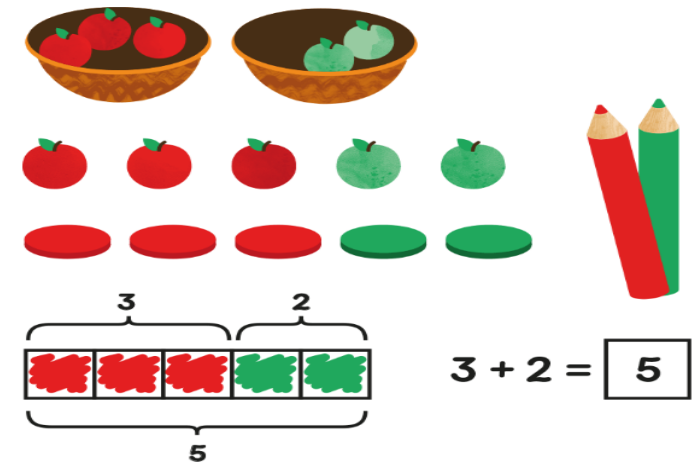
I have 36 DVDs, my friend has 17. How many **more** DVDs do I have than my friend?

$$36 = 17 + ? \text{ or } 17 + ? = 36$$



How many more children walked to school than travelled by car?

Use a variety of contexts for children to practice their addition and subtraction skills.



The four operations- addition and subtraction

Addition

Jottings to support mental methods e.g. using place value - partitioning

Once children can count on/back in tens it is easier if they just partition one number as quickly as possible. This prevent issues with subtraction where partitioning both numbers does not work with bridging.

Progression

36 + 40 (adding only tens to any number)

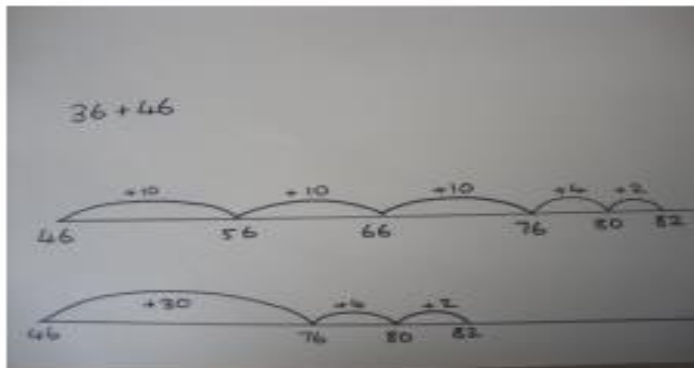
36 + 43 (adding tens and ones with no bridging)

36 + 46 (adding tens and ones with bridging)

36 + 46

36 + 40 (36, 46, 56, 66, 76) add tens

76 + 6 or 76 + 4 + 2 (using number bond knowledge)



Subtraction

Jottings to support mental methods e.g. using place value - partitioning

56 - 20 (subtracting only tens to any number)

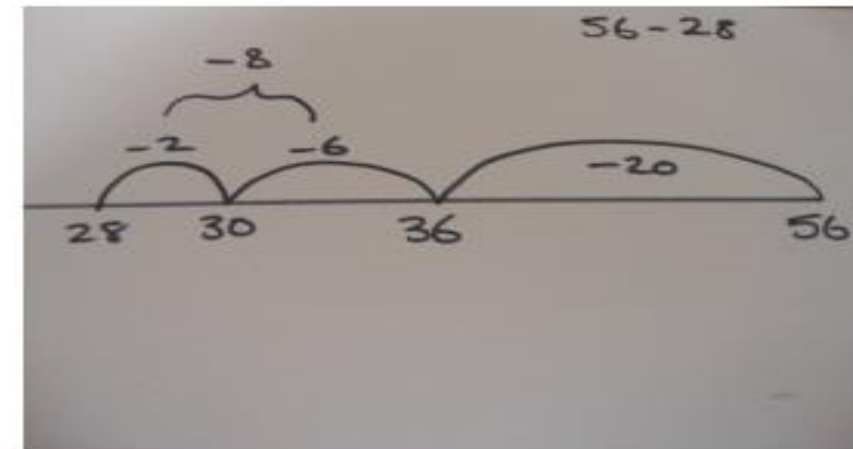
56 - 23 (subtracting tens and ones with no bridging)

56 + 28 (subtracting tens and ones with bridging)

56 - 28

56, 46, 36 (-20)

36—8 or 36—6—2



Year 2

Add and subtract numbers using concrete objects, pictorial representations, and mentally, including:

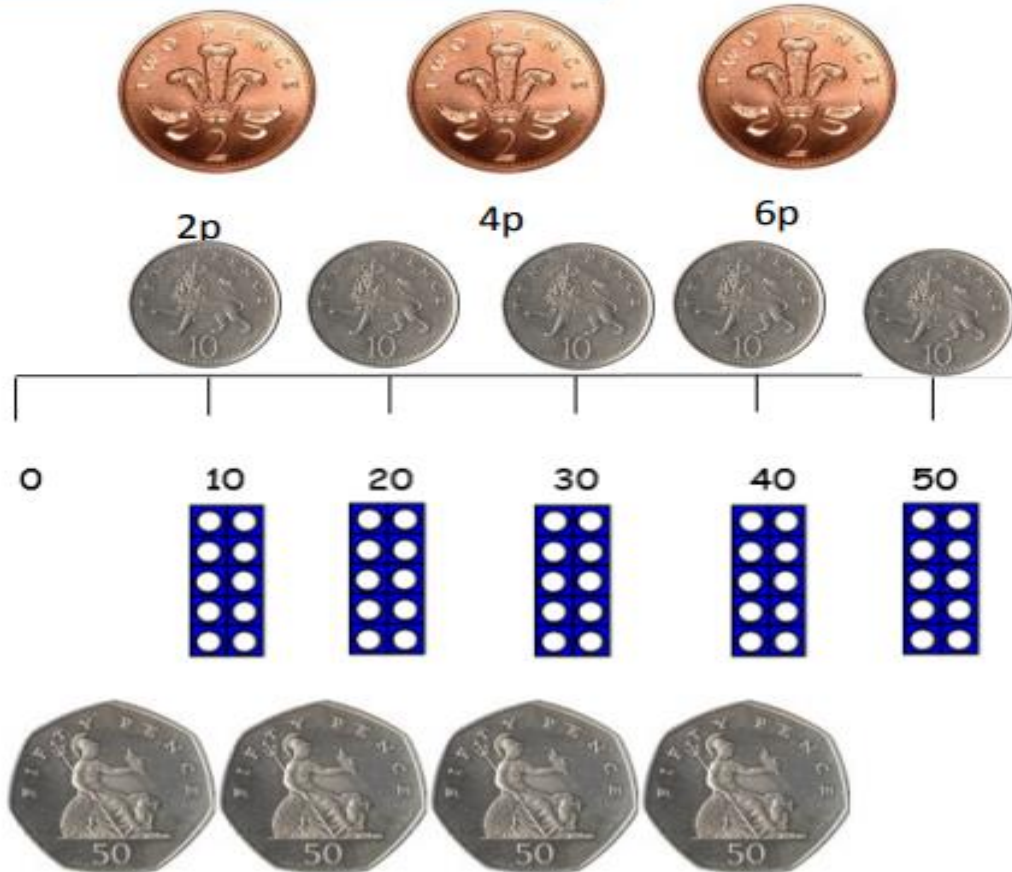
- A 2 digit number and ones
- A 2 digit numbers and tens
- Two 2 digit numbers.
- Adding 3 one digit numbers.

The four operations- multiplication and division

Counting and Place Value

Year 1

Count in multiples of two, five and ten.



Year 2

Count in steps of 2, 3, 5 from 0 and in tens from any number forwards and backwards

Year 2

Recall and use multiplication tables and division facts for the 2, 5 and 10 multiplication tables.

$$3 \times 5 = 15$$

How many 3s in 15?

How many groups of 3 in 15?

$$3 \times \square = 15$$

100s

10s

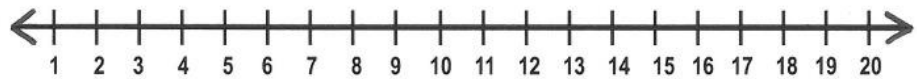
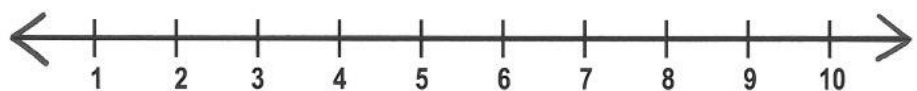
1s



Counting- Linking in multiplication and division



Verbally



What has gone wrong in this pattern? Can you fix it?

5 10 15 20 30 35

The four operations- multiplication and division

Using objects and pictorial representations alongside concrete resources



If I have 6 socks. How many pairs will that make?

3 pairs



5 frogs on each lily pad

$$5 \times 3 = 15$$



Repeated Addition



Year 1

Solve one step problems involving multiplication and division by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.

Year 2

Solve problems using multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.

$$15 \text{ frogs} \div 3 \text{ lilly pads} = \square \text{ Frogs on each}$$

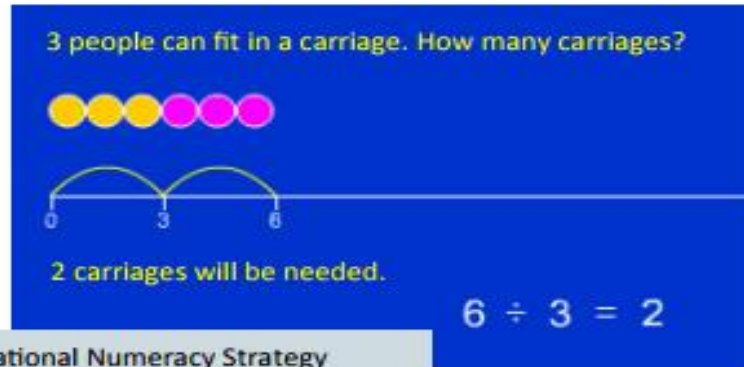
$$\square \text{ frogs} \times 3 \text{ lilly pads} = 15$$

There are 15 frogs. There are the same amount on each Lilly pad.

The four operations- multiplication and division

Division as grouping and sharing

3 people will fit in a carriage.
How many carriages will I need
to carry 6 people?



There are 6 fish. How many bowls will I
need if I want 2 fish in each?

There are 3 bowls, each with 2 fish!

I will group in 2s or share my
fish across the 3 bowls.



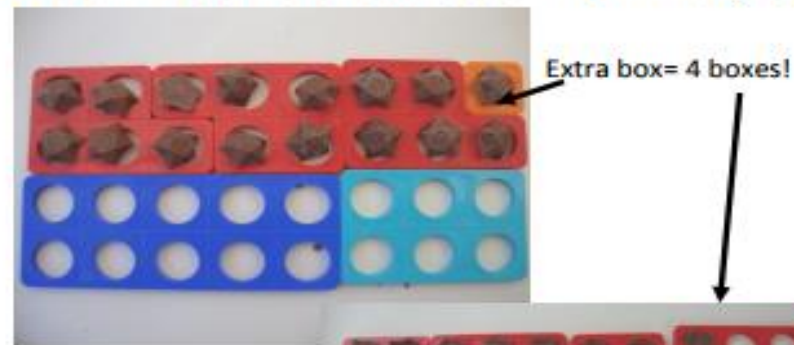
Year 1

Solve one step problems involving multiplication and division
by calculating the answer using concrete objects, pictorial
representations and arrays with the support of the teacher.

5 chocolates will fit in a box. How many boxes will I need for 15
chocolates?



What if I had 16 chocolates...how many boxes would I need then?



Extra box= 4 boxes!



Year 1 Maths			
Number and Place Value			
Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions
<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none"> ❑ Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. ❑ Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s. ❑ Given a number, identify 1 more and 1 less. ❑ Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. ❑ Read and write numbers from 1 to 20 in numerals and words. 	<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none"> ❑ Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs. ❑ Represent and use number bonds and related subtraction facts within 20. ❑ Add and subtract one-digit and two-digit numbers to 20, including 0. ❑ Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$. 	<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none"> ❑ Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. 	<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none"> ❑ 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
Geometry and Measure			
Measure	Geometry – Properties of Shapes	Geometry – Position and Movement	
<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none"> ❑ Compare, describe and solve practical problems for: <ul style="list-style-type: none"> ➤ lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] ➤ mass/weight [for example, heavy/light, heavier than, lighter than] ➤ capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] ➤ time [for example, quicker, slower, earlier, later] ❑ Measure and begin to record the following: <ul style="list-style-type: none"> ➤ lengths and heights ➤ mass/weight ➤ capacity and volume ➤ time (hours, minutes, seconds) ➤ recognise and know the value of different denominations of coins and notes ➤ sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] . ❑ Recognise and use language relating to dates, including days of the week, weeks, months and years. ❑ Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. 	<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none"> ❑ Recognise and name common 2-D and 3-D shapes, including: <ul style="list-style-type: none"> ➤ 2-D shapes [for example, rectangles (including squares), circles and triangles] ➤ 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]. 	<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none"> ❑ Describe position, direction and movement, including whole, half, quarter and three-quarter turns. 	

Year 2 Maths

Number and Place Value

Number and Place Value	Addition and Subtraction	Multiplication and Division	Fractions
<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none">❑ Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.❑ Recognise the place value of each digit in a two-digit number (tens, ones).❑ Identify, represent and estimate numbers using different representations, including the number line.❑ Compare and order numbers from 0 up to 100; use and = signs.❑ Read and write numbers to at least 100 in numerals and in words.❑ Use place value and number facts to solve problems.	<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none">❑ Solve problems with addition and subtraction:<ul style="list-style-type: none">❑ using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods.❑ Recall and use addition and 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: a two-digit number and ones, a two-digit number and tens, two two-digit numbers.❑ Add three one-digit numbers.❑ Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.❑ Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none">❑ Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.❑ Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.❑ Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.❑ Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none">❑ Recognise, find, name and write fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$ of a length, shape, set of objects or quantity.❑ Write simple fractions for example, $\frac{1}{2}$ of $6 = 3$ and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.

Geometry and Measure

Measure	Geometry – Properties of Shapes	Geometry – Position and Movement	Statistics
<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none">❑ Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.❑ Compare and order lengths, mass, volume/capacity and record the results using >, < and =.❑ Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value❑ Find different combinations of coins that equal the same amounts of money.❑ Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.❑ Compare and sequence intervals of time.❑ Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.❑ Know the number of minutes in an hour and the number of hours in a day.	<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none">❑ Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line.❑ Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.❑ Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid].❑ Compare and sort common 2-D and 3-D shapes and everyday objects.	<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none">❑ Order and arrange combinations of mathematical objects in patterns and sequences.❑ Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise).	<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none">❑ Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.❑ Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.❑ Ask and answer questions about totalling and comparing categorical data.

Year 6 Maths				
Number and Place Value				
Number and Place Value	Addition and Subtraction Multiplication and Division	Fractions	Ratio and Proportion	Algebra
<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none"> ❑ Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit. ❑ Round any whole number to a required degree of accuracy. ❑ Use negative numbers in context, and calculate intervals across zero. ❑ Solve number and practical problems that involve all of the above. 	<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none"> ❑ Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. ❑ Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. ❑ Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. ❑ Perform mental calculations, including with mixed operations and large numbers. ❑ Identify common factors, common multiples and prime numbers. ❑ Use their knowledge of the order of operations to carry out calculations involving the four operations. ❑ Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. 	<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none"> ❑ Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. ❑ Compare and order fractions, including fractions > 1. ❑ Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. ❑ Multiply simple pairs of proper fractions, writing the answer in its simplest form. [For example, $\frac{1}{2} \times \frac{1}{2} = \frac{1}{8}$]. ❑ Divide proper fractions by whole numbers. $\frac{1}{3} \div 2 = \frac{1}{6}$ ❑ Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [e.g. $\frac{3}{8}$]. ❑ Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places. ❑ Multiply one-digit numbers with up to two decimal places by whole numbers. ❑ Use written division methods in cases where the answer has up to two decimal places. ❑ Solve problems which require answers to be rounded to specified degrees of accuracy. ❑ Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts 	<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none"> ❑ Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. ❑ Solve problems involving the calculation of percentages (e.g. of measures and 15% of 360) and the use of % for comparison. ❑ Solve problems involving similar shapes where the scale factor is known or can be found. ❑ Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. 	<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none"> ❑ Use simple formulae. ❑ Generate and describe linear number sequences. ❑ Express missing number problems algebraically. ❑ Find pairs of numbers that satisfy an equation with two unknowns. ❑ Enumerate possibilities of combinations of two variables.
Geometry and Measure				
Measure	Geometry – Properties of Shapes		Geometry – Position and Movement	Statistics
<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none"> ❑ Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. ❑ Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. ❑ Convert between miles and kilometres. ❑ Recognise that shapes with the same areas can have different perimeters and vice versa. ❑ Recognise when it is possible to use formulae for area and volume of shapes. ❑ Calculate the area of parallelograms and triangles. ❑ Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units [for example, mm³ and km³]. 	<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none"> ❑ Draw 2-D shapes using given dimensions and angles. ❑ Recognise, describe and build simple 3-D shapes, including making nets. ❑ Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. ❑ Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius <p>recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</p>		<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none"> ❑ Describe positions on the full coordinate grid (all four quadrants). ❑ Draw and translate simple shapes on the coordinate plane, and reflect them in the axes 	<p>Sufficient evidence shows the ability to:</p> <ul style="list-style-type: none"> ❑ Interpret and construct pie charts and line graphs and use these to solve problems. ❑ Calculate and interpret the mean as an average

What types of question will my child have to answer at the end of the Key Stage?

5

$$\boxed{} = 15 - 2$$

6

$$20 + 30 + 50 = \boxed{}$$

11

$$20 + \boxed{} = 70$$

What types of question will my child have to answer at the end of the Key Stage?

24

$$\frac{1}{3} \text{ of } 12 =$$

16

$$8 \times 3 =$$

22

$$80 \div 10 =$$

What types of question will my child have to answer at the end of the Key Stage?

6 Write these numbers in order, starting with the smallest.

73 37 76 36 63

--	--	--	--	--

smallest

largest



1 mark

8 A game costs £25

Ben has £19



How much **more** money does Ben need to buy the game?

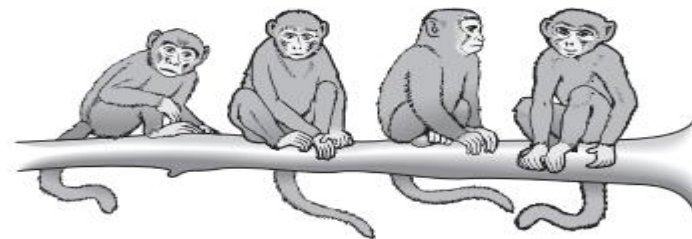
£



1 mark

14 20 bananas are shared equally among 4 monkeys.

How many bananas does **each** monkey get?



--

 bananas

1 mark

18 Write six **different** numbers to make these sums correct.

	+		=	27
--	---	--	---	----

	+		=	27
--	---	--	---	----

	+		=	27
--	---	--	---	----



2 marks

28 There are **55** cakes.

20 boys and **19** girls each take a cake.

How many cakes are **left**?



Show
your
working

cakes



2 marks

30 There are **76** cars in the car park.

18 more cars go into the car park.

Then **35** cars go out.

How many cars are in the car park **now**?



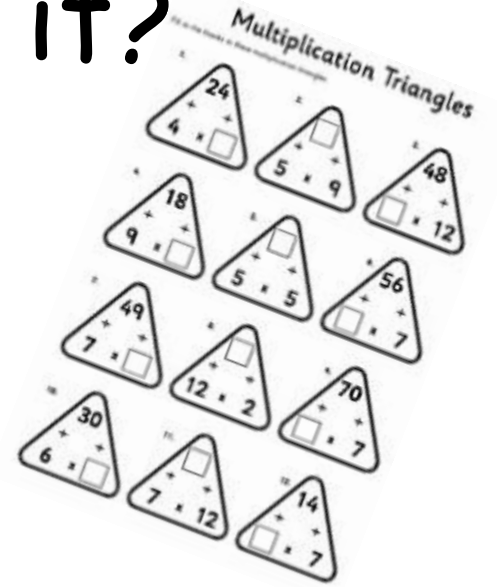
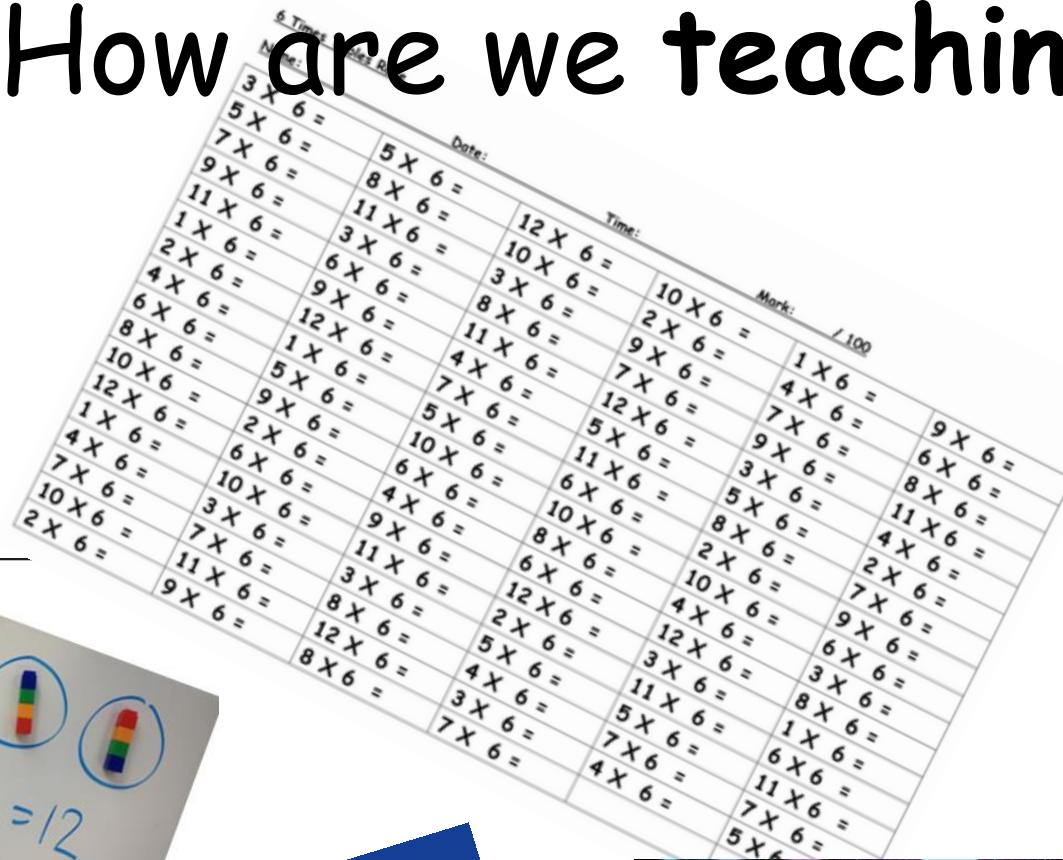
Show
your
working

cars

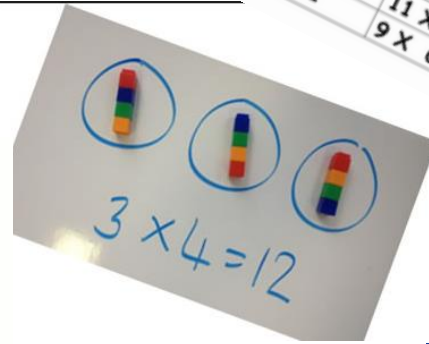


2 marks

Times tables- How are we teaching it?



- Division Worksheet
- | | |
|---------------------------|--------------------------|
| 1 a. $50 \div 5 =$ _____ | 1 b. $36 \div 4 =$ _____ |
| 2 a. $40 \div 5 =$ _____ | 2 b. $20 \div 5 =$ _____ |
| 3 a. $6 \div 2 =$ _____ | 3 b. $18 \div 2 =$ _____ |
| 4 a. $24 \div 4 =$ _____ | 4 b. $20 \div 2 =$ _____ |
| 5 a. $32 \div 4 =$ _____ | 5 b. $10 \div 2 =$ _____ |
| 6 a. $24 \div 3 =$ _____ | 6 b. $18 \div 3 =$ _____ |
| 7 a. $4 \div 4 =$ _____ | 7 b. $9 \div 3 =$ _____ |
| 8 a. $5 \div 5 =$ _____ | 8 b. $3 \div 3 =$ _____ |
| 9 a. $21 \div 3 =$ _____ | 9 b. $30 \div 3 =$ _____ |
| 10 a. $30 \div 5 =$ _____ | 10 b. $8 \div 2 =$ _____ |



Times tables- teaching it!

1. Exploring patterns- What do you notice about?

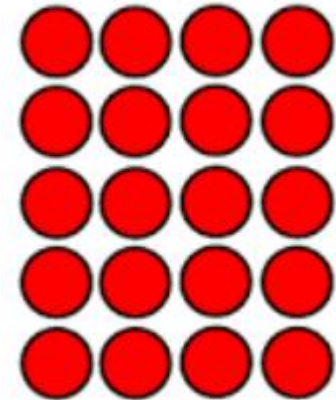
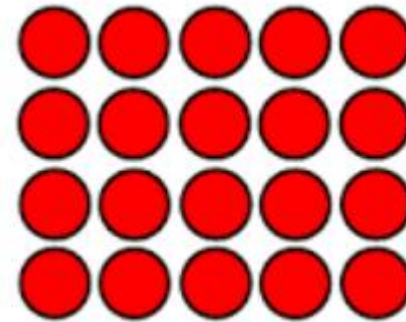
- All the numbers in the two times table
- The relationship between the 5 and 10 times table
- Every third number in the 3 times table

2. The difference between knowing and calculating- The importance of fluency!

3. Use concrete apparatus.

4. Making links

- How many sides would 5 pentagons have?
- How many days would there be in 10 weeks?
- How many sides would 10 pentagons have?



Always, Sometimes or Never? Number

Stage: 2 ★

Are the following statements always true, sometimes true or never true?

How do you know?

The sum of three numbers is odd	If you add 1 to an odd number you get an even number
Multiples of 5 end in a 5	If you add two odd numbers you get an odd number
If you add a multiple of 10 to a multiple of 5 the answer is a multiple of 5	



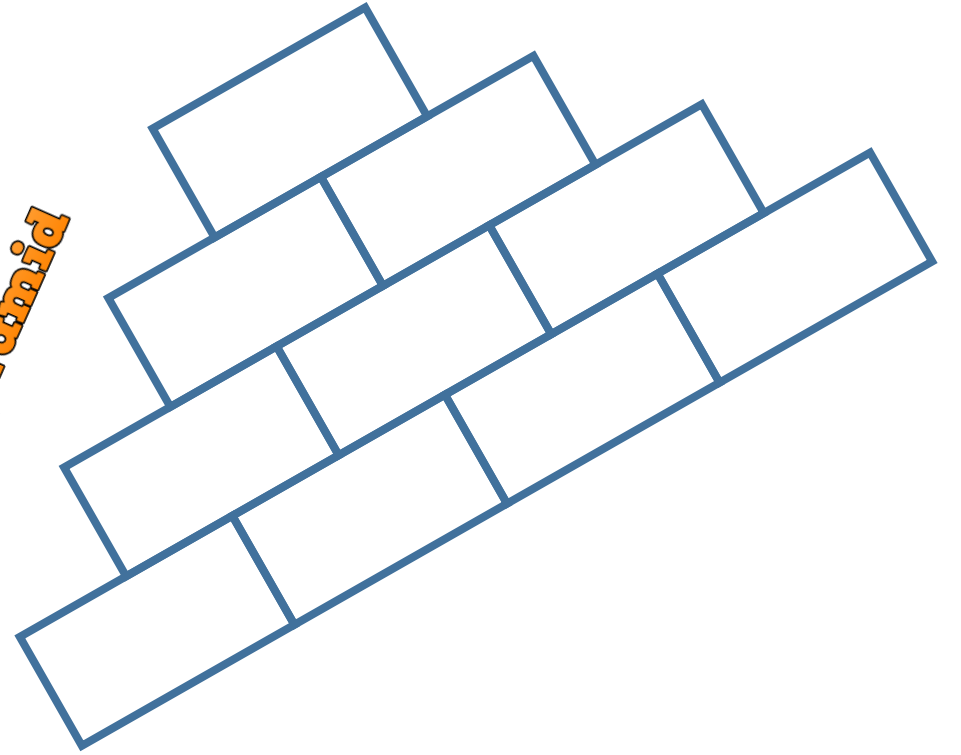
BALANCED EQUATIONS

$$6 + ? = 10$$

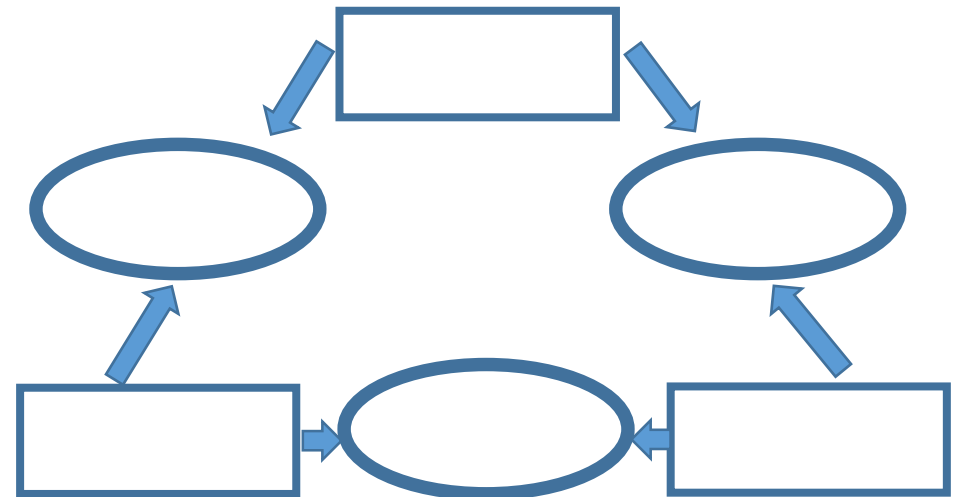


All numbers in the 10 times table are also in the 5s?

Number
pyramid



arithmagon



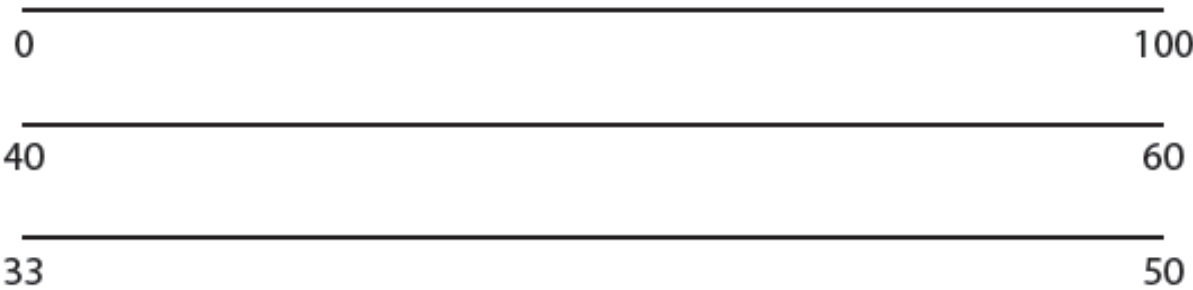
Amy thinks of a number. Her number:

- is an even number
- is between 20 and 25
- has two different digits.

What is her number?

Explain your reasoning.

Place 47 on each of these empty number lines.



Together Jack and Sam have £12.

Jack has £2 more than Sam.

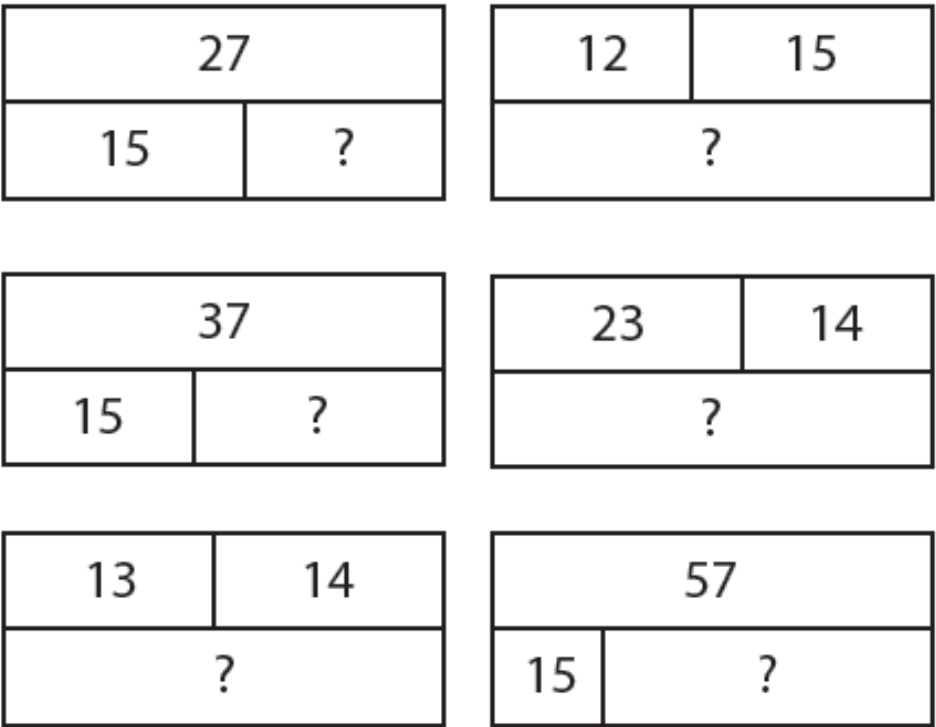
How much money does Sam have?

A bar model can be very helpful in solving these types of problems.



$£12 - £2 = £10$
 $£10 \div 2 = £5$
Sam has £5

Fill in the missing numbers. What do you notice?



Which has the most biscuits:

4 packets of biscuits with 5 in each packet, or
3 packets of biscuits with 10 in each packet?

Explain your reasoning.

Together Rosie and Jim have £12.

Rosie has twice as much as Jim.

How much does Jim have?

The bar model can be helpful in solving these types of problems

