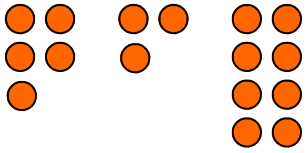
Addition - EYFS and Key Stage 1

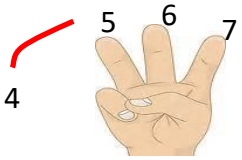
Concrete

5 + 3 = 8

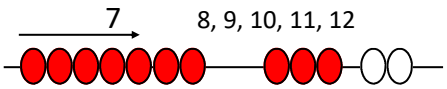


5 + 1 = 6

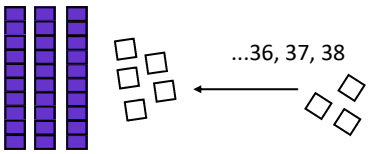
Counting on: 4 + 3 = 7



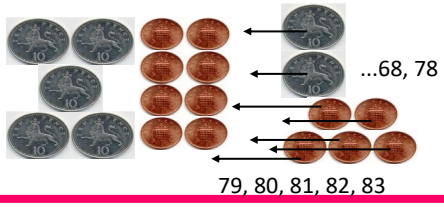
Counting on: 7 + 5 = 12



Counting on: 35 + 3 = 38

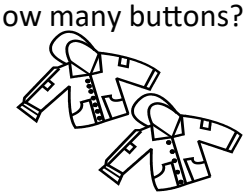


Counting on: 58 + 25 = 83

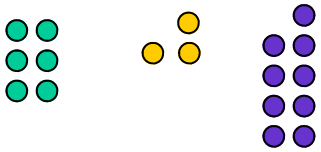


Pictorial (children to draw pictures)

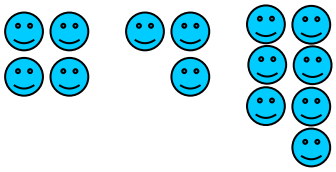
How many buttons? 7 + 5 = 12



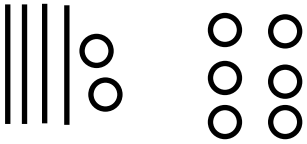
6 + 3 = 9



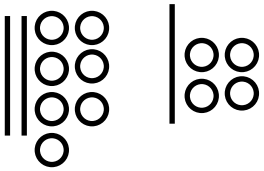
4 + 3 = 7



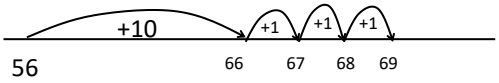
42 + 6 = 48



27 + 14 = 41

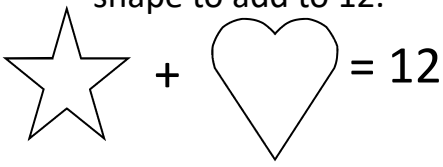


56 + 13 = 69



Abstract

Write the numbers in the shape to add to 12.



What is 3 more than 35?

Paul thought of a number. He added six. His answer was 41. What was his original number?

Write the missing digits to make this correct.

5 ☐ + ☐ 0 = 76

Tick the two numbers that total 79.

56 78 23 99

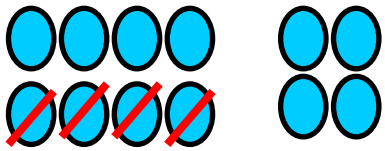
James bought a rubber for 34p. He also bought a pen for 58p. How much did he spend altogether?

Always ensure that addition and subtraction are mixed together to demonstrate further reasoning and mastery.

Subtraction - EYFS and Key Stage 1

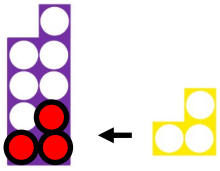
Concrete

8 - 4 = 4

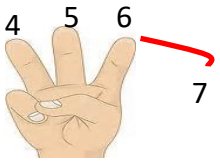


9 - 3 = 6

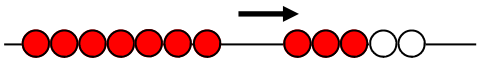
Use pegs or numicon shapes to cover '3'



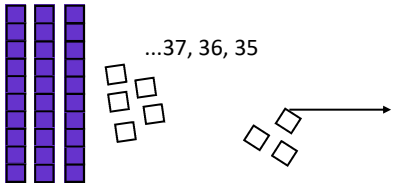
Counting back: 7 - 3 = 4



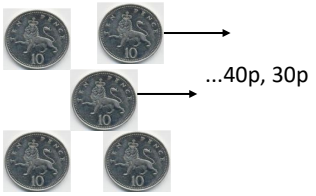
Counting back: 12 - 5 = 7



Counting back: 38 - 3 = 35



Counting back: 50p - 20p= 30p

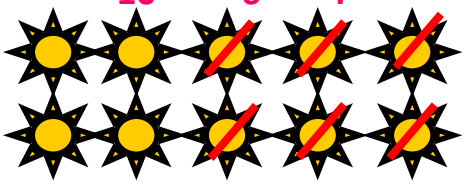


Pictorial (children to draw pictures)

Number stories: 5 frogs are on a log. 3 jump away. How many are left?

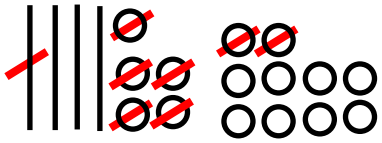
5 - 4 = 1

10 - 6 = 4



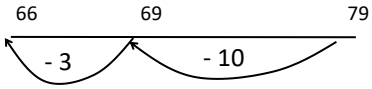
34 - 3 = 31

45 - 7 = 38



Exchange a ten for ten ones

79 - 13 = 66

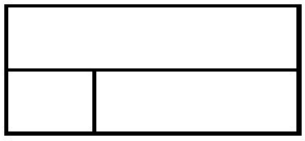


Abstract

□ + 5 = 12

Paul thought of a number. He subtracted six. His answer was 35. What was his original number?

Add numbers to make the bar model complete. How many different numbers can you use?



What is 3 fewer than thirty eight?

Tick the correct number.
79 - ? = 56

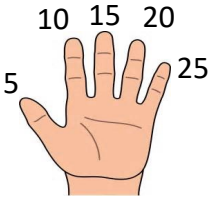
23 32 135

Henry's shoe measured 27cm. His dad's shoe measured 42cm. How much longer was Harry's dad's shoe compared to Harry's shoe?

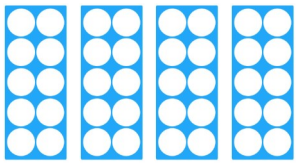
Always ensure that addition and subtraction are mixed together to demonstrate further reasoning and mastery.

Multiplication - EYFS and Key Stage 1

Concrete



4 X 10 = 40



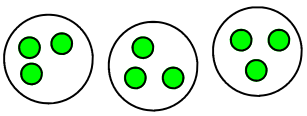
Repeated addition: 4 X 2 = 8

2 + 2 + 2 + 2

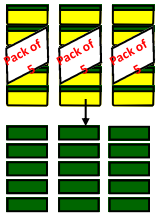
Repeated addition: 5 X 2 = 10

2 + 2 + 2 + 2 + 2

3 X 3 = 9

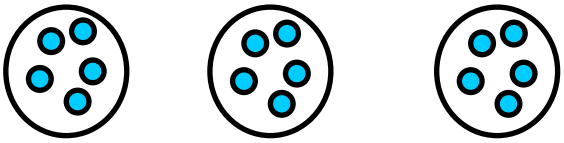


5 X 3 =15

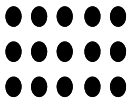


Pictorial (children to draw pictures

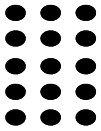
3 X 5 = 15



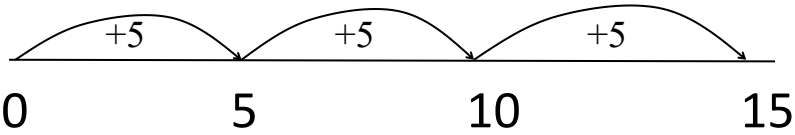
3 X 5 = 15



5 X 3 = 15



3 X 5 = 15



Abstract

I will clap where there is one number missing.

2 4 6 (Clap) 10 12 14

What is the missing number?

Write the missing numbers in the sequence below.

0	2		6	8	

Will the number 11 be in the sequence? How do you know?

Sponges come in packs of 5. Mr Smith buys 3 packs of sponges. How many sponges did Mr Smith have altogether? Prove it!

Complete the below table

	1 × 5	5
	3 × 5	
		35

Write different digits in each box to make these correct

☐ x ☐ = 20

☐ x ☐ = 20

Can you think of any more multiplication calculations that make 20?

Will these two calculations give you the same answer? Prove it!

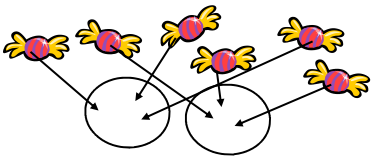
5 X 2 = 2 X 5

Always ensure that multiplication and division are mixed together to demonstrate further reasoning and mastery.

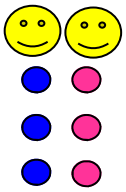
Division - EYFS and Key Stage 1

Concrete

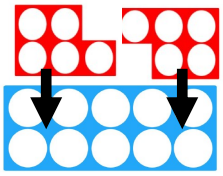
6 ÷ 2 = 3



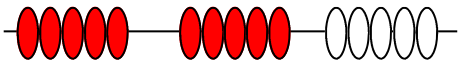
6 ÷ 2 = 3



10 ÷ 5 = 2



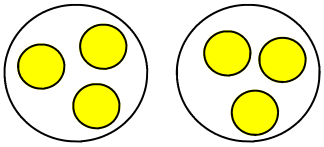
15 ÷ 5 = 3



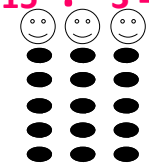
15 ÷ 3 = 5

Pictorial (children to draw pictures)

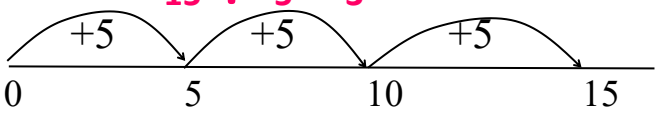
6 ÷ 2 = 3



15 ÷ 3 = 5



15 ÷ 5 = 3



Abstract

How many different ways can we share 6 sweets equally? Prove it!

There are 25 children. Children need to be put into groups of 5. How many groups will there be?

Paul had 20p in his piggy bank. He only had 2p coins. How many 2p coins did he have?

Write a number in this box to make this correct.

□ X 5 = 15

24 = □ X □

Which is the odd one out? Why?

6 X 5 = 30

5 X 6 = 30

30 ÷ 5 = 6

5 ÷ 30 = 6

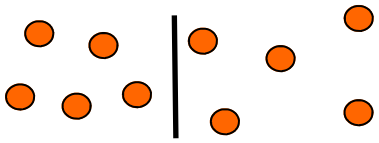
Which has the most biscuits:
4 packets of biscuits with 5 in each packet
or
3 packets of biscuits with 10 in each packet.
Prove it!

Always ensure that multiplication and division are mixed together to demonstrate further reasoning and mastery.

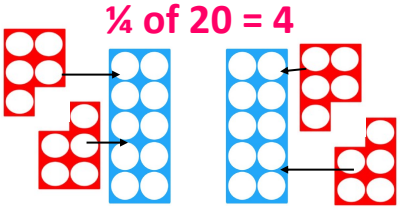
Fractions - Key Stage 1

Concrete

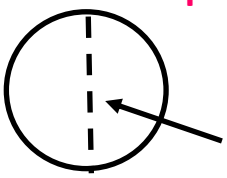
½ of 10 = 5



¼ of 20 = 4

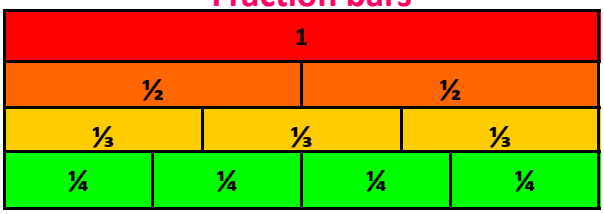


Find ½ of a shape



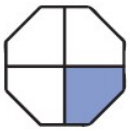
¼ of 8 = 2

Fraction bars

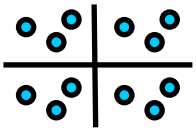


Pictorial (children to draw pictures)

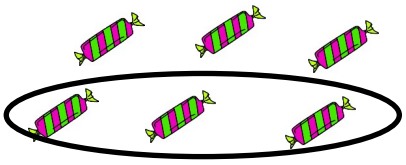
Colour ¼ of the shape



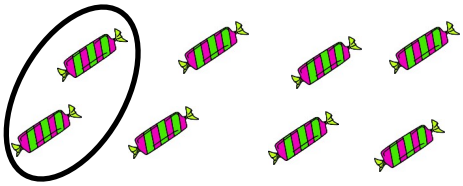
¼ of 12 = 3



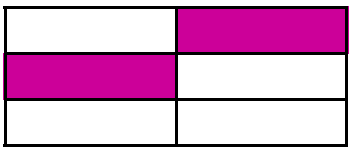
Circle ½ of the sweets



What fraction is circled?

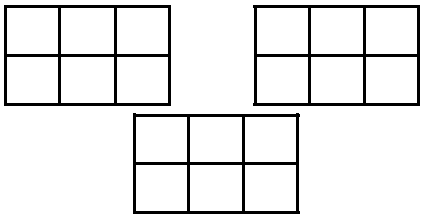


Shade ⅓ of the shape



Abstract

Can you show ½ in different ways?



Which is bigger?
Prove it!

2/3 of 21
OR
2/4 of 24

Half of the children at a party are boys. How many children could be at the party?
How many different possibilities can you think of?

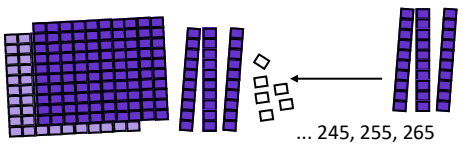
James has a shape that is split into 4 equal parts. He shades in 2 parts and says 'I have shaded half of my shape'. Do you agree? Why?

Can you mark ½, ¼ and ¾ on this number line?

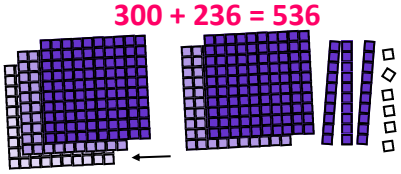
Addition - Key Stage 2

Concrete

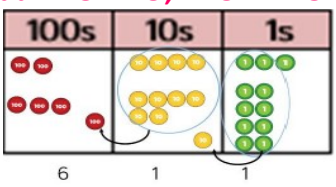
235 + 30 = 265



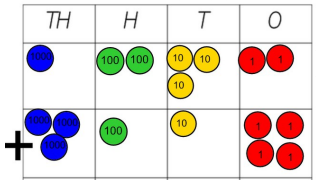
300 + 236 = 536



Add HTO + TO, HTO + HTO etc



1232 + 3114 = 4346

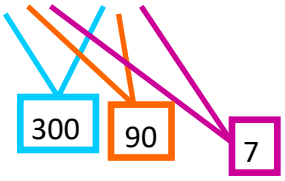


Colours to re-flect PV counters

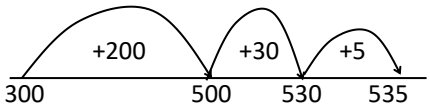
£1.58 + 25p = £1. 83

Pictorial (children to draw pictures

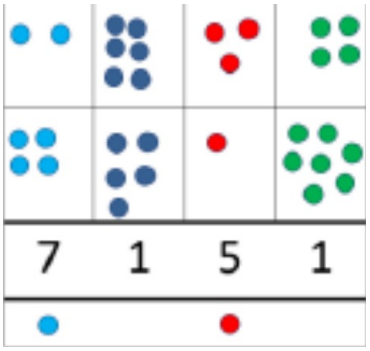
265 + 132 = 397



300 + 235 = 535

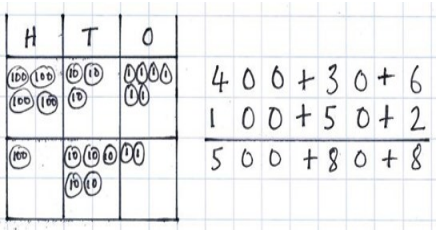


2634 + 4517 = 7151

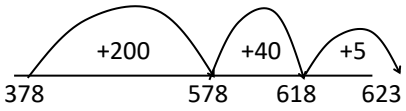


Colours to re-flect PV counters

436 + 152 = 588



378 + 245 = 623



Abstract

Column Addition

$$\begin{array}{r} 7465 \\ 827 \\ \hline 8292 \\ \hline \end{array}$$

Column Addition using money

	Th	H	T	U
	£	4	8	9
	£	1	2	3
+	£	6	5	4
	£	1	2	6	6

2	5	3	4

Use three of the numbers above to make this correct.

$$\begin{array}{r} 3\ 7\ 8 \\ \hline \square\ \square\ \square \\ \hline 6\ 2\ 3 \\ \hline \end{array}$$

Sam bought a bag for £4.89, a hair-brush for £1.23 and a DVD for £6.54. How much change did he get from £15.00?

$$\begin{array}{r} 6\square\square8 \\ +\ \square\square8\square \\ \hline 9,325 \\ \hline \end{array}$$

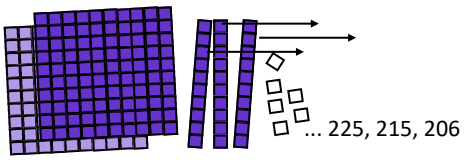
Is there more than one answer for the missing numbers in the hundred column? Prove it.

Always ensure that addition and subtraction are mixed together to demonstrate further reasoning and mastery.

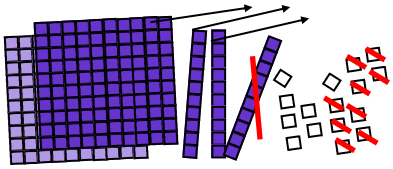
Subtraction - Key Stage 2

Concrete

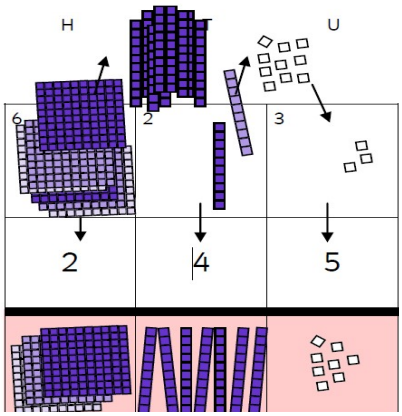
236 - 30 = 206



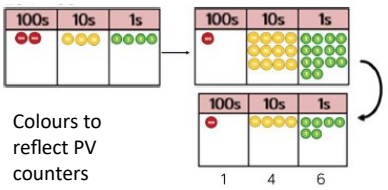
236 - 129 = 107



623 - 245 = 378



234 - 88 = 146



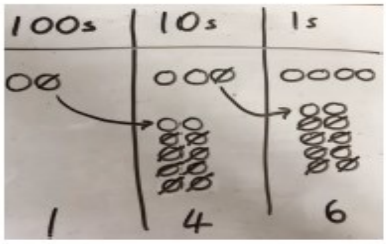
Colours to reflect PV counters

£2.55 - £1.27

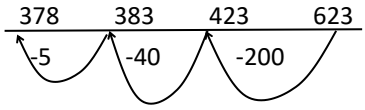
Exchange a £1.00 for other coins.

Pictorial (children to draw pictures)

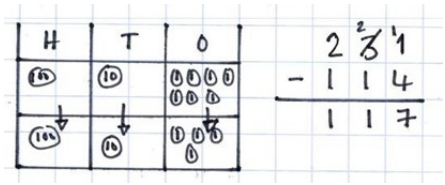
234 - 88 = 146



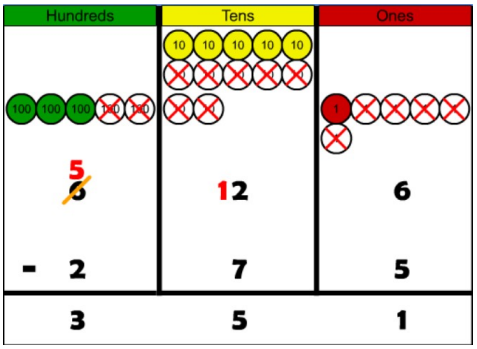
623 - 245 = 378



231 - 114 = 117



626 - 275 = 351



Colours to reflect PV counters

Abstract

Here are 3 bags in a shop.

£11.49 £14.65 £16.89

Adam buys bag A and bag C. How much change will he get from £40?

Ben emptied his piggy bank and counted £9.97. He wanted to buy a T-shirt that cost £10.11. How much more money did he need to save?

Fill in the missing numbers to make this correct.

	Th	H	T	U
8	9		7	8
-	3	6		5
	5	7	3	3

Chloe is performing column subtraction with two four digit numbers.

The larger number has a digit total of 35. The smaller number has a digit total of 2.

Use cards to help you to find the numbers.

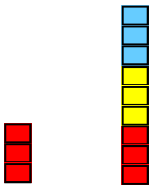
What could Chloe's subtraction be? How many different options can you find?

Always ensure that addition and subtraction are mixed together to demonstrate further reasoning and mastery.

Multiplication - Key Stage 2

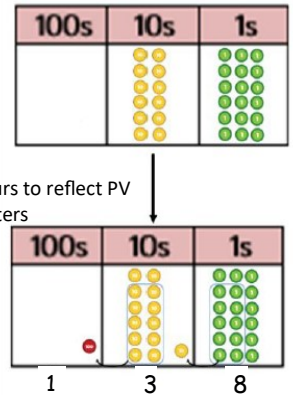
Concrete

Scaling

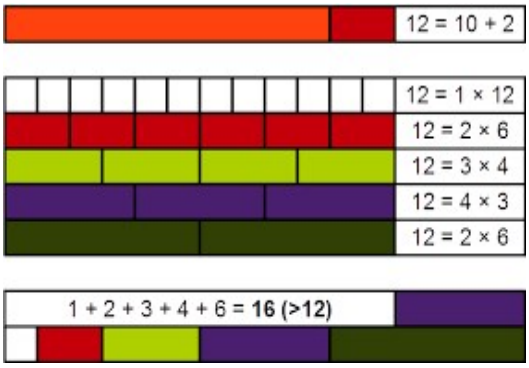


3 times as big.

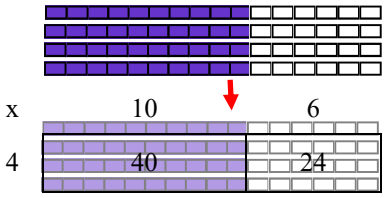
6 X 23 =



Factor Pairs

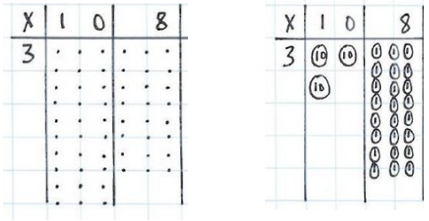


4 X 16 =

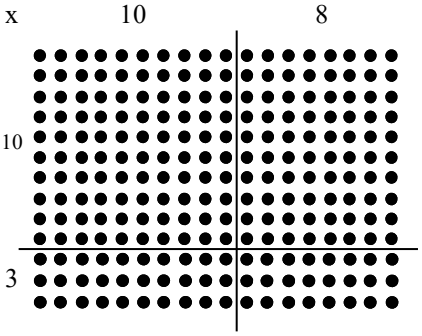


Pictorial (children to draw pictures)

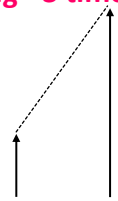
18 X 3 = 54



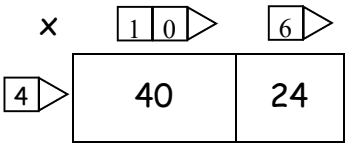
18 X 13 = 234



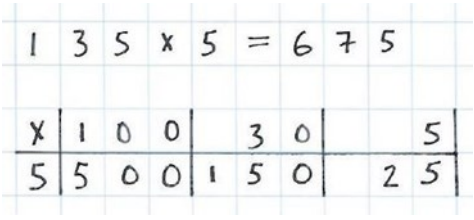
Scaling - 3 times as big



16 X 4 =

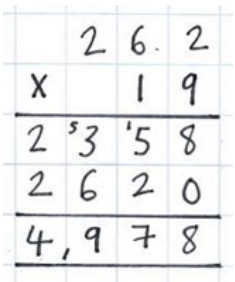


Abstract



Use all of the cards to make this correct:

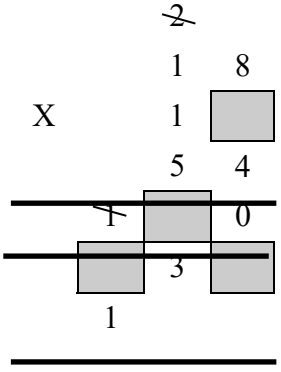
	T	U	
	2	4	
X		6	
	2	4	(6 x 4)
1	2	0	(6 x 20)
1	4	4	



Two whole numbers are each between 50 and 70.They multiply to make 4095. Write in the missing numbers.

□ × □ = 4095

Fill in the missing numbers

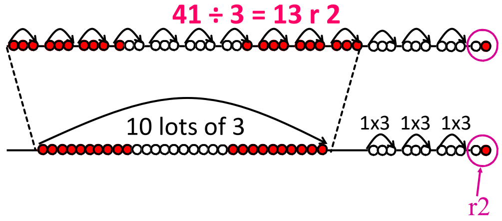


Always ensure that multiplication and division are mixed together to demonstrate further reasoning and mastery.

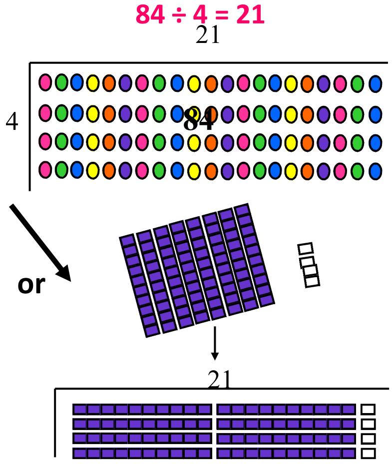
Division - Key Stage 2

Concrete

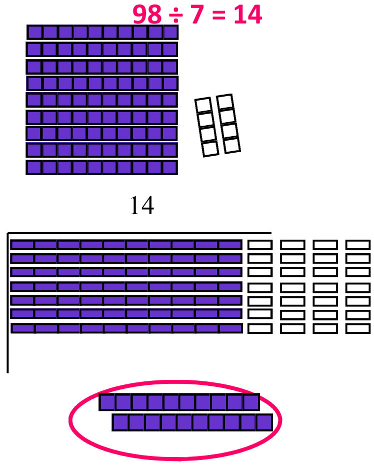
41 ÷ 3 = 13 r 2



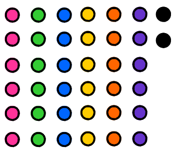
84 ÷ 4 = 21



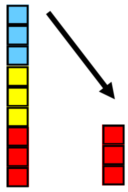
98 ÷ 7 = 14



38 ÷ 6 = 6 r2

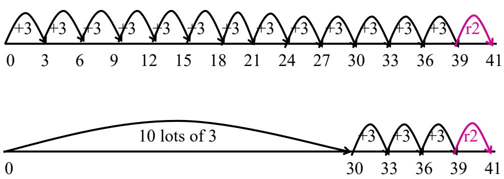


3 times shorter

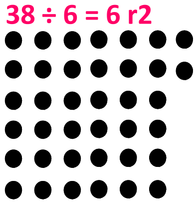


Pictorial (children to draw pictures

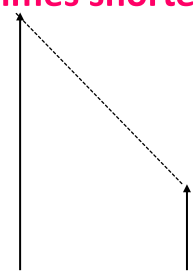
41 ÷ 3 = 13 r2



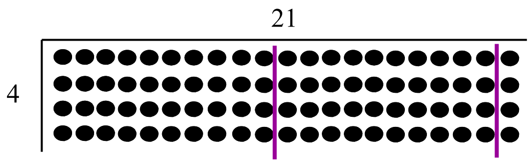
38 ÷ 6 = 6 r2



3 times shorter



84 ÷ 4 = 21



Abstract

Short division

$$7 \overline{)\,9\,{}^{2}8\,}\quad = 14$$

Investigate the possible values of the ☐ and ●

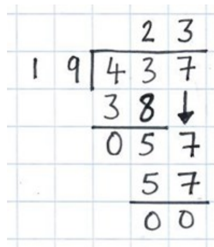
☐ ÷ 6 = ● r 2

Calculate the missing number

$$4 \overline{)\,?\,}\quad = 21$$

A carton of orange juice fills 3 cups. Mrs. Green wants to fill 41 cups with orange juice. How many cartons does she need to buy?

Formal long division



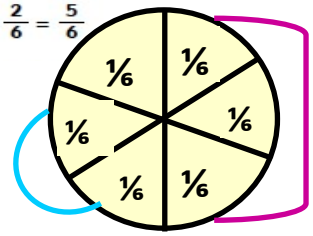
The length of Hannah's dress for her doll was 9cm. When it came out of the washing machine it was 3 times smaller. What was the length of the doll's dress now?

Always ensure that multiplication and division are mixed together to demonstrate further reasoning and mastery.

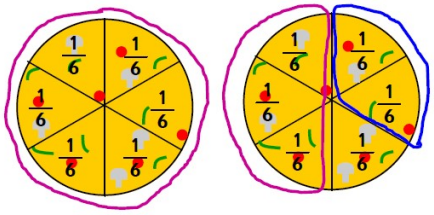
Fractions - Key Stage 2

Concrete

$\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$



$1\frac{3}{6} + \frac{2}{6} = \frac{11}{6}$ or $1\frac{5}{6}$

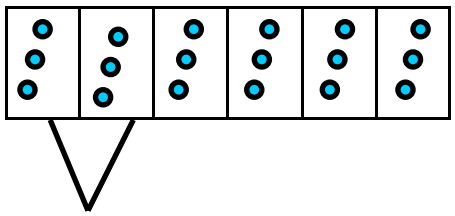


Fraction Walls

1/8 of 16 = 2

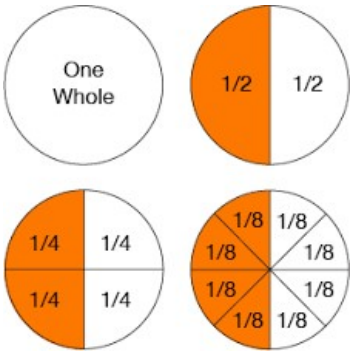
Pictorial (children to draw pictures

2/6 of 18



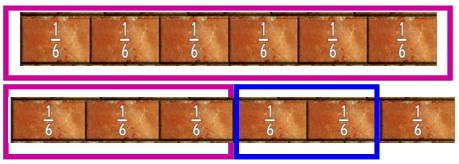
6

Equivalent fractions



$\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$

$1\frac{3}{6} + \frac{2}{6} = \frac{11}{6}$ or $1\frac{5}{6}$

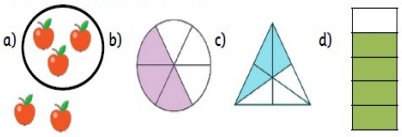


Abstract

Sam ate a whole pizza. Jack ate only two sixths of his pizza and gave half of the pizza to Sam and he ate that too! What fraction of pizza did the boys eat?

$1\frac{3}{6} + \frac{2}{6} = \square$

Which is the odd one out? Explain how you know.



This is 2/5 of a set of marbles. How many would be in the whole set? Prove it!

Write down a fraction that could go in each section of the number line.