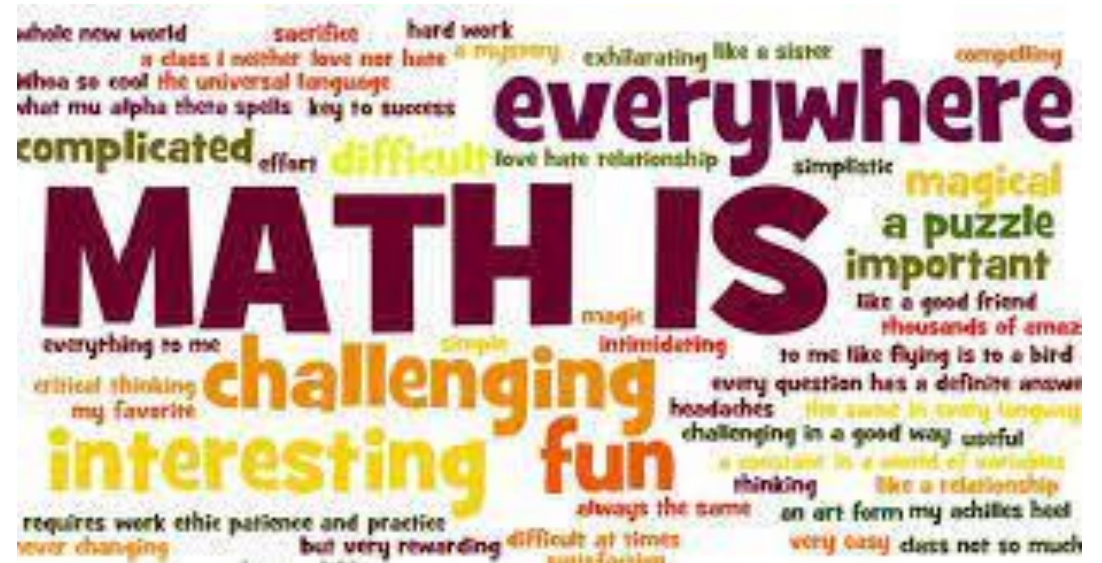
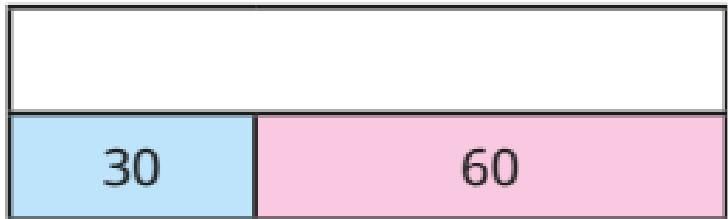
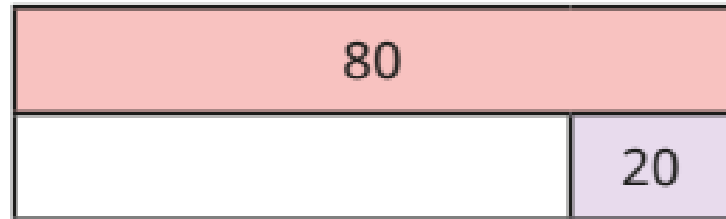
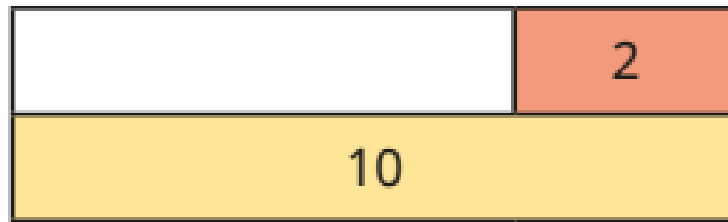
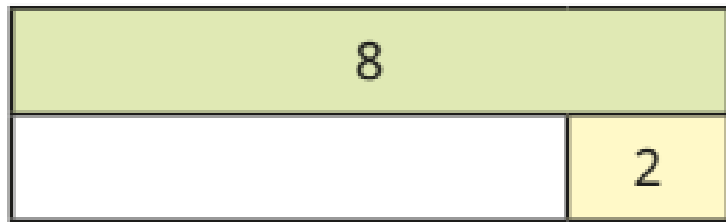


Year 3 & 4 Maths workshop

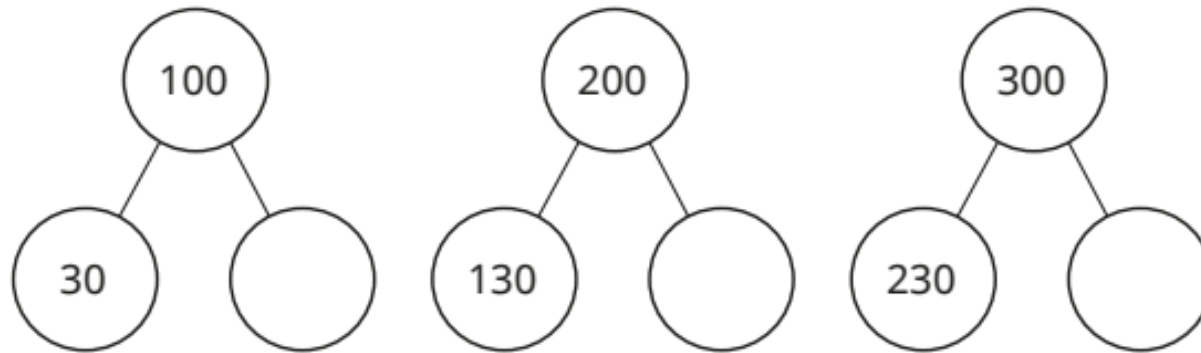
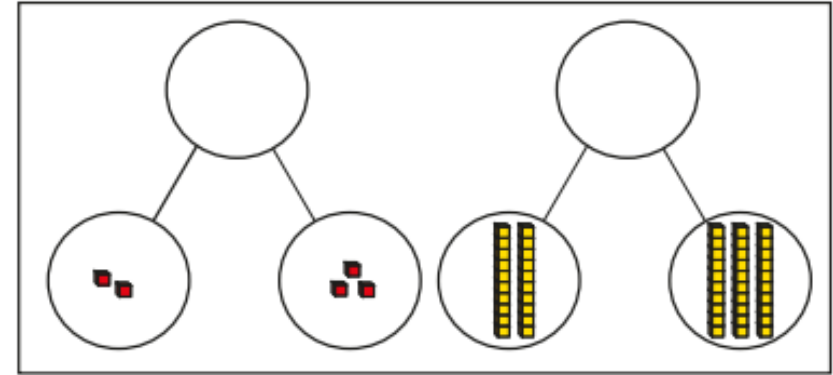
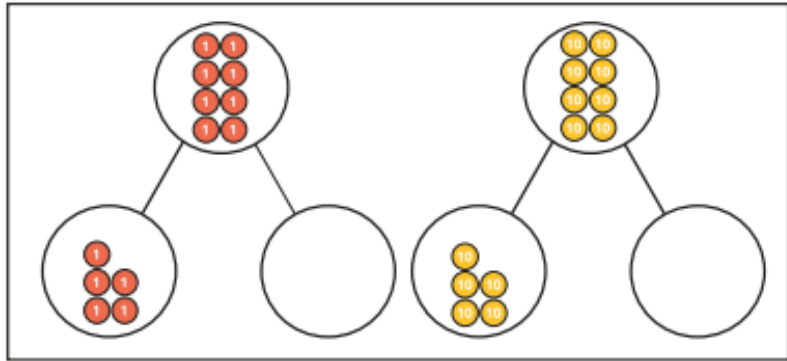


Bar models



A pictorial representation of a problem or concept where bars and boxes are used to represent known or unknown quantities.

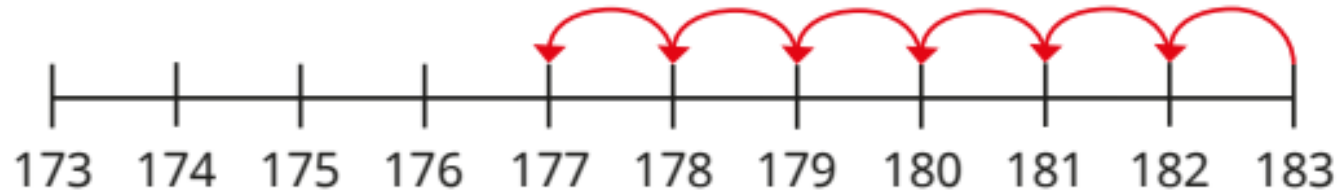
Part- whole model



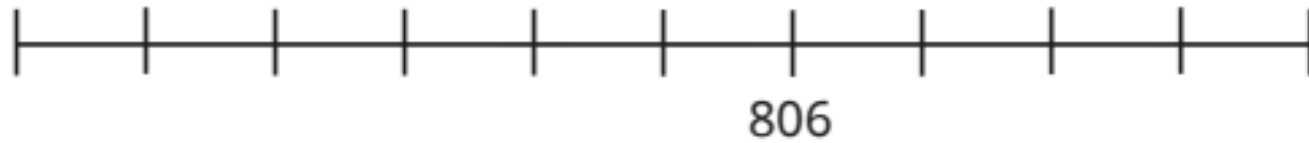
The part whole model is a pictorial representation that shows the relationship between a whole and its parts.

Number lines

$$183 - 6 =$$



Can you use the number lines to add on 3?



Your turn.....

- Solving problems using bar models and part whole models.

(We will be marking them at the end!)



Answers

Handwritten mathematical diagrams showing various problem-solving strategies:

- Number bond: 32 = 10 + 22
- Number bond: 37 = 17 + 20
- Number bond: 37 = 30 + 7
- Bar model: 20 (represented by 20 vertical bars) = 22 (represented by 22 vertical bars)
- Bar model: 10 (represented by 10 vertical bars) = 4 (represented by 4 vertical bars)
- Number bond: 20 = 52
- Number bond: 32 = 52
- Number bond: 66 = 60 + 6
- Number bond: 87 = 7 + 80
- Number bond: 60 = 51 + 9
- Number bond: 80 = 50 + 30

(Many possible answers)

Problem Solving with Bar Models **Answers**

There are 20 sweets in my bag and 13 sweets in my friend's bag. How many sweets have we got altogether?
33 sweets

33	
20	13

In three rolls of the dice, Jack scored 18. James scored 9. How many more did Jack score than James?
9 more

18	
9	9

There were 30 biscuits in the tin. Now there are 25. How many have been eaten?
5 biscuits

30	
25	5

I had 46 beads. I used some of them to make a bracelet and now I have 20 left. How many beads are on my bracelet?
26 beads

46	
20	26

4 months of the year have 30 days. How many months do not have 30 days?
8 months

12	
4	8

Sam took 25 minutes to do his homework. It took Jacob 22 minutes. How long did they take altogether?
47 minutes

47	
25	22

Billy gave 25 of his football cards to Ali. Now he has 34 left. How many did he start with?
59 cards

59	
25	34

My dog weighs 5kg. My friend's dog weighs 12kg. How much heavier is my friend's dog?
7kg

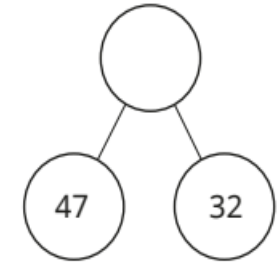
12	
5	7

Adding numbers (no exchange)

		T	O	
		3	4	
	+	2	3	
		<hr/>		
		<hr/>		

Tens	Ones

524	145

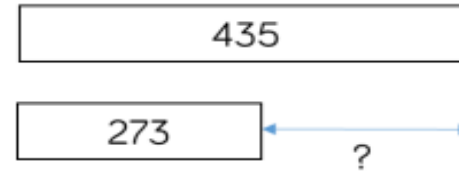
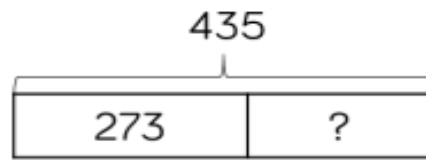
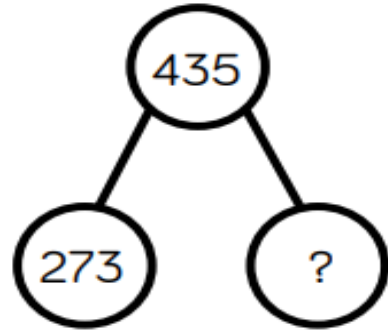


Adding two numbers across a 10

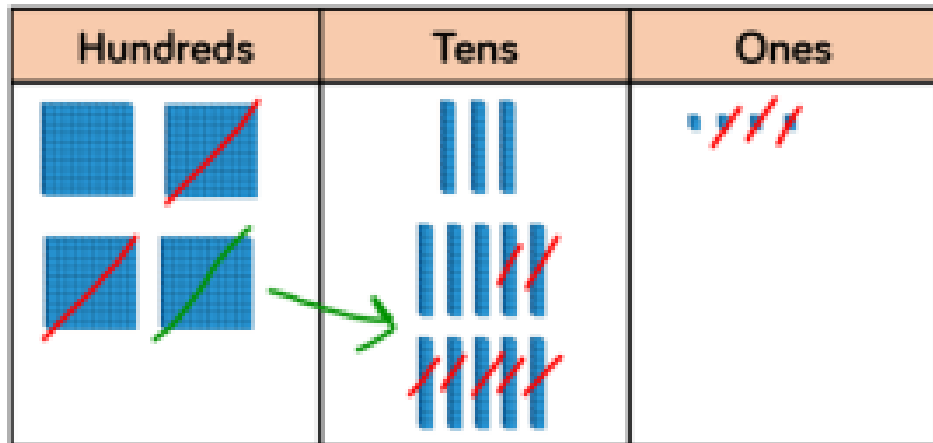
Hundreds	Tens	Ones
5	2	1

		H	T	O	
		2	0	8	
	+	3	1	3	
		<hr/>			
		5	2	1	
			1		

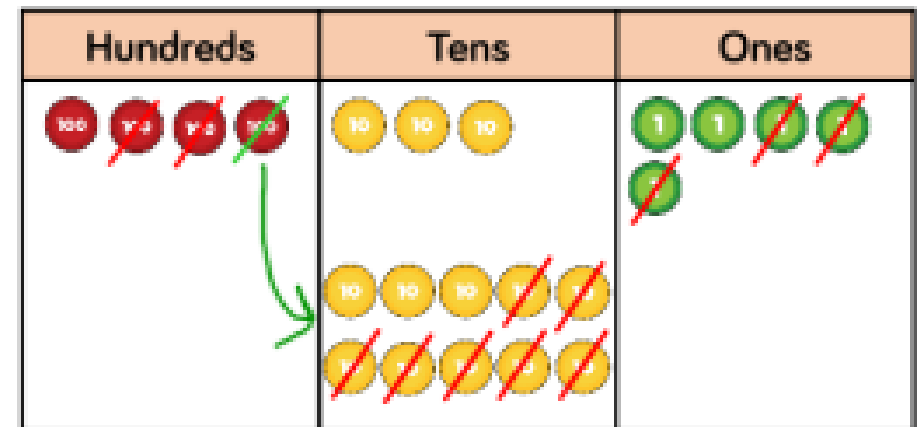
Subtract 3 digit numbers with exchange



$$435 - 273 = 162$$



$$\begin{array}{r}
 \overset{3}{4} \overset{1}{3} 5 \\
 - 273 \\
 \hline
 162 \\
 \hline
 \end{array}$$

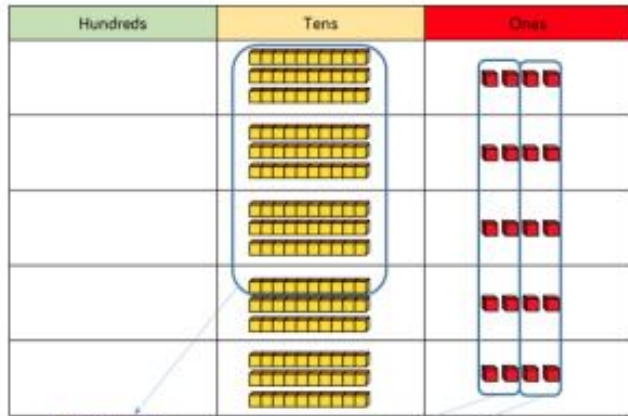


Your turn!

Answers

question	
1	3698
2	11810
3	2912
4	10016
5	1357
6	14934
7	3236
8	8984
9	1107
10	9123
11	2091
12	9027
13	715
14	10195
15	3810
16	8089

Multiplication

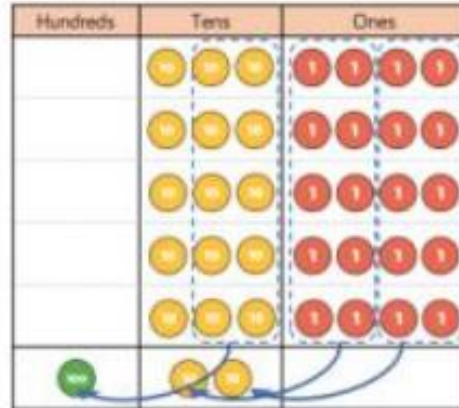


	H	T	O	
		3	4	
x			5	
		2	0	(5 × 4)
+	1	5	0	(5 × 30)
	1	7	0	











$$34 \times 5 = 170$$

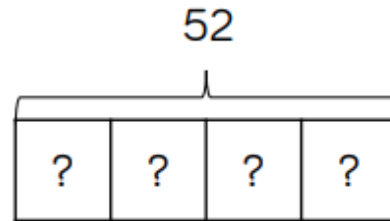
	H	T	O
		3	4
x			5
	1	7	0
	1	2	



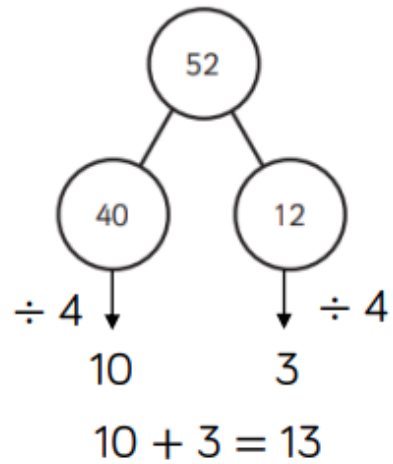
Division





Tens	Ones
	
	
	
	



$$52 \div 4 = 13$$



Tens	Ones
	
	
	
	

Your turn.....last one.....

- Solving formal methods of addition and subtraction.

Using Numicon



Used as a concrete resource – good for visual learners.

Addition

Numicon Addition

$\square + \square =$	$\square + \begin{matrix} \square \\ \square \\ \square \end{matrix} =$
$\square + \begin{matrix} \square \\ \square \end{matrix} =$	$\square + \begin{matrix} \square \\ \square \\ \square \\ \square \end{matrix} =$
$\square + \begin{matrix} \square \\ \square \\ \square \end{matrix} =$	$\square + \begin{matrix} \square \\ \square \\ \square \\ \square \\ \square \end{matrix} =$
$\square + \begin{matrix} \square \\ \square \\ \square \\ \square \end{matrix} =$	$\begin{matrix} \square \\ \square \end{matrix} + \begin{matrix} \square \\ \square \\ \square \\ \square \end{matrix} =$
$\square + \begin{matrix} \square \\ \square \\ \square \\ \square \\ \square \end{matrix} =$	$\begin{matrix} \square \\ \square \\ \square \end{matrix} + \begin{matrix} \square \\ \square \\ \square \\ \square \end{matrix} =$
$\square + \begin{matrix} \square \\ \square \\ \square \\ \square \\ \square \\ \square \end{matrix} =$	$\begin{matrix} \square \\ \square \\ \square \end{matrix} + \begin{matrix} \square \\ \square \\ \square \\ \square \\ \square \end{matrix} =$

Subtraction

$$9 - 4 = 5$$



6 - 2 = 4
10 - 3 = 7
12 - 5 = 7
20 - 6 = 14

A green background with blue and yellow Numicon shapes, illustrating subtraction.

Multiplication

5 x 4 = 20
2 x 6 = 12
10 x 4 = 40
5 x 6 = 30

A green background with red and blue Numicon shapes, illustrating multiplication.

$\begin{matrix} \square \\ \square \\ \square \\ \square \end{matrix} \times 3 = 12$	$3 \times \begin{matrix} \square \\ \square \\ \square \end{matrix} = 12$
$\begin{matrix} \square \\ \square \\ \square \end{matrix} \times 2 = 6$	$2 \times \begin{matrix} \square \\ \square \\ \square \end{matrix} = 6$
$\begin{matrix} \square \\ \square \\ \square \\ \square \\ \square \end{matrix} \times 2 = 10$	$2 \times \begin{matrix} \square \\ \square \\ \square \\ \square \\ \square \end{matrix} = 10$
$\begin{matrix} \square \\ \square \\ \square \\ \square \\ \square \\ \square \end{matrix} \times 3 = 15$	$3 \times \begin{matrix} \square \\ \square \\ \square \\ \square \\ \square \end{matrix} = 15$

Cuisenaire rods

$4+3$



$8+5$



$9-2$



$13-7$



The rods can be arranged end to end to model addition, subtraction, multiplication and division.

They are very useful when teaching fractions.

Used as a concrete resource – good for visual learners.

Times tables

- Times table check in Y4 (June 2024) – 25 questions, 6 seconds per question.
- Check is done on a digital device.
- Y4's should know up to 12 x 12 nearing the end of Y4.
- Timestable Rockstars (TTRS) and URBrainy good for support at home.