

Following the Bar Model meeting on 12.01.18, here are some examples of the children's work, starting with the easier examples then leading onto the harder ones.

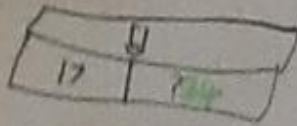
# Class 1

made by rily  
Problem solving using bar models

Subtracting

Sally bought 51 tulip bulbs. Only 17 of them flowered.  
How many bulbs did not flower?

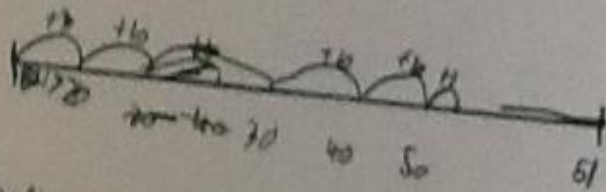
- ① Read the question carefully and circle or underline the important information.
- ② Draw the bar model and the numbers in the correct place.



- ③ Write the number sentence.

$$51 - 17 = ?$$

- ④ Use the numberline to add or subtract.



- ⑤ Write your answer in the bar model, number sentence or answer box at the end of the problem.

# Class 1

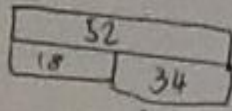
Made  
By  
Theal

## Problem Solving Using bar models

Adding  
18 children are in the library. Another 34 come in. How many children are in the library altogether?

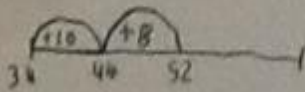
① Read the question carefully and circle the important information.

② Draw the bar model. Remember to fill in the numbers.



③ Write the number sentence.  $18 + 34 = 52$

④ Use a number line to get the answer.



⑤ Put the highest number at the start of the number line.  
⑥ Add the tens jumps on.  
⑦ Add the units on.

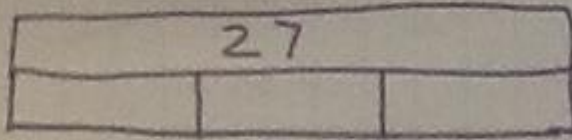
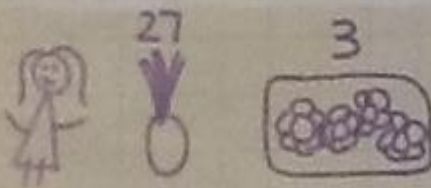
⑧ The number that you end in is your answer.

⑨ Finally, write the answer at the top of the bar model and in the answer box.

# Class 2

Gwen the gardener has bought 27 bulbs.  
She wants to plant the same number in each of three flowerbeds.  
How many bulbs should Gwen plant in each flowerbed?

Faith and  
Honey



$$27 \div 3$$

(Using my mental skills.)

$$27 \div 3 = 9 \dots$$

Gwen plants 9 bulbs in each flower bed.

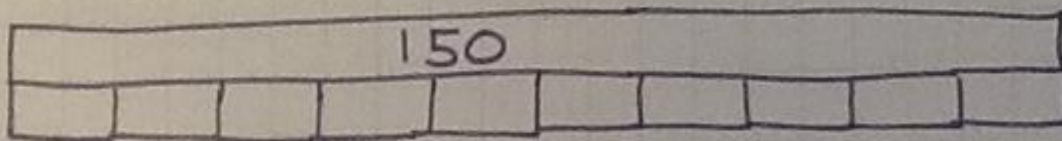
# Class 2

Oliver H.

Counters come in boxes of 150.  
Mrs Kaur, the Year 3 teacher, divides a box equally between 10  
containers.  
How many counters are in each container?

150  
Counters

$\div$   
 $\times 10$



$$150 \div 10$$

(Using my mental skills)

$$150 \div 10 = 15$$

16

Mrs Kaur has 15 counters in each container.

# Class 3

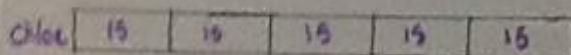
## Problem Solving Using

Ratio

## Bar Models

Ratio

- Ninah and Chloe shared out £120 with the ratio of 3:5.  
How much did Chloe have? Chloe has £75.



- Once the bar model is drawn, count the bars. There is 8
- Then, divide the total amount of money by 8.  $120 \div 8 = 15$   $\frac{120}{8} = 15$
- When the calculation is complete, write 15 in each bar.
- After that, times 15 by 5 to find out how much Chloe has.  $15 \times 5 = 75$
- Chloe has £75.

$$\begin{array}{r} 15 \\ \times 5 \\ \hline 75 \end{array}$$

### To double check

To check your answer is right you can work out how much Ninah got then add that to Chloe's total:

- Times 15 by 3, the answer is 45.  $\begin{array}{r} 15 \\ \times 3 \\ \hline 45 \end{array}$
- Then add 45 to 75, the answer is 120.  $\begin{array}{r} 120 \\ + 45 \\ \hline 165 \end{array}$

# Class 3

## Problem Solving Using

### Bar Models

Ratio and Proportion

Alisa is double the size of her brother Samuel. Samuel is 3 times smaller than his Dad. His mum is 10cm taller than his Dad. How tall could Alisa be if the family's height is 4 metres 78cm?

Mum	Mum	Mum	10
Dad	Dad	Dad	
Samuel			
Alisa	Alisa		

① Once you have drawn the Bar Model take the 10cm off the total height because it is the only non-ratios value the rest are proportional.  $478 - 10 = 468$

② Count up the remaining blocks because they are all equal to each other. There are 4 remaining blocks.

③ Divide the remaining total by size as this is the total number of blocks.  $\frac{468}{12} = 39$

④ You have worked out Samuel's height and because Alisa's height is double her brother's (as shown on the bar model) therefore you double the answer from your last step.  $39 \times 2 = 78$

⑤ Convert your answer to metres and centimetres.  $104 \text{ cm} = 1 \text{ m } 4 \text{ cm}$

### How to check

To check you must calculate all the heights and add them up. If your answer was 478 your work is right.

Mum = 106  
Dad = 96  
Samuel = 39  
Alisa = 78

$106 + 96 = 202$   
 $202 + 10 = 212$

$212 + 78 = 290$

$290 + 188 = 478$

$\frac{478}{1} = 478$