

Calculation Methods

A visual break-down of strategies used to support children in calculation.

Addition using a number line challenge 2:

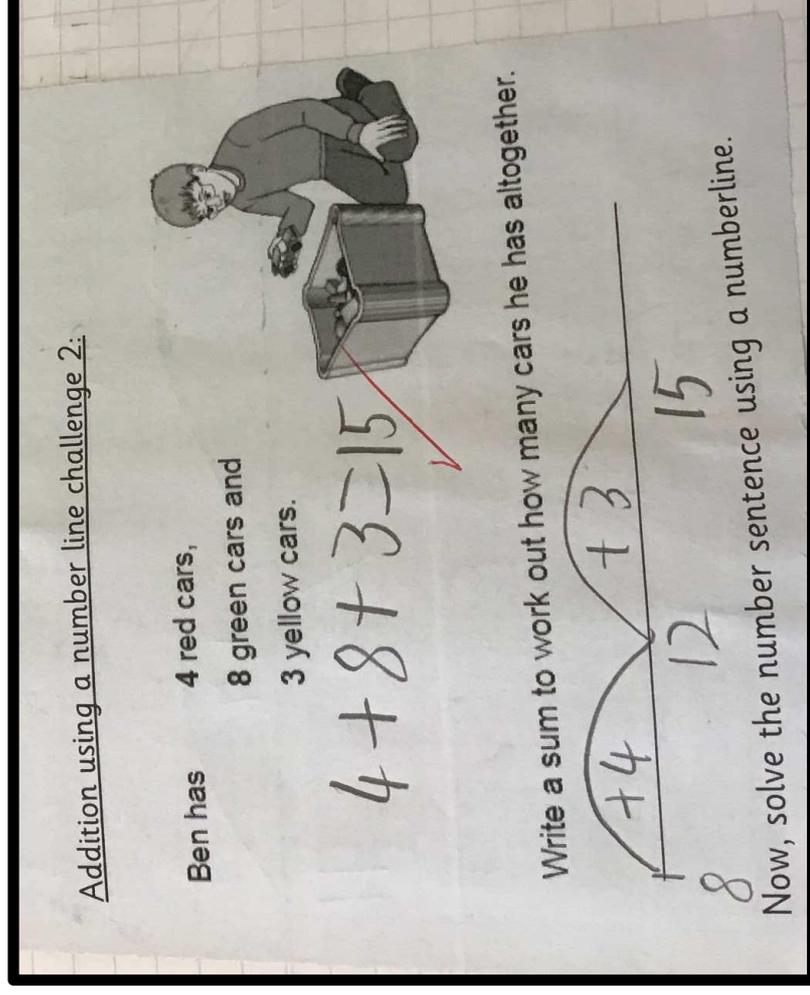
Ben has 4 red cars,
8 green cars and
3 yellow cars.

$$4 + 8 + 3 = 15$$

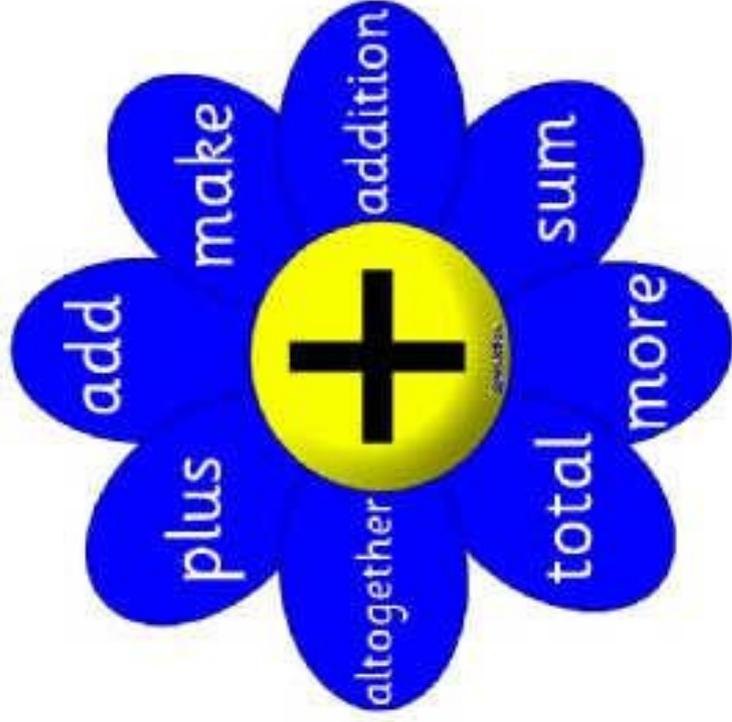
Write a sum to work out how many cars he has altogether.

$$\begin{array}{r} +4 \\ 8 \\ \hline 12 \\ +3 \\ \hline 15 \end{array}$$

Now, solve the number sentence using a numberline.

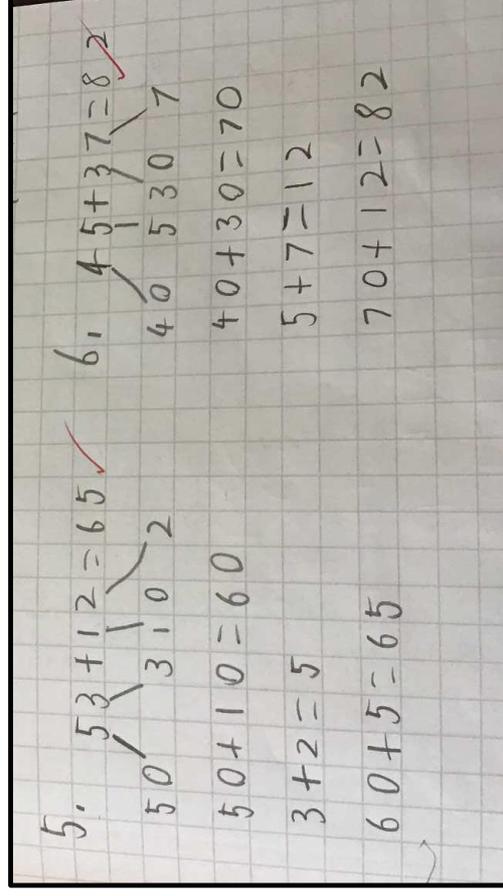


Addition



Partitioning

- Step 1 – Partition the two numbers into tens and ones.
- Step 2 – Add the tens
- Step 3 – Add the ones
- Step 4 – Recombine (add the two answers together)

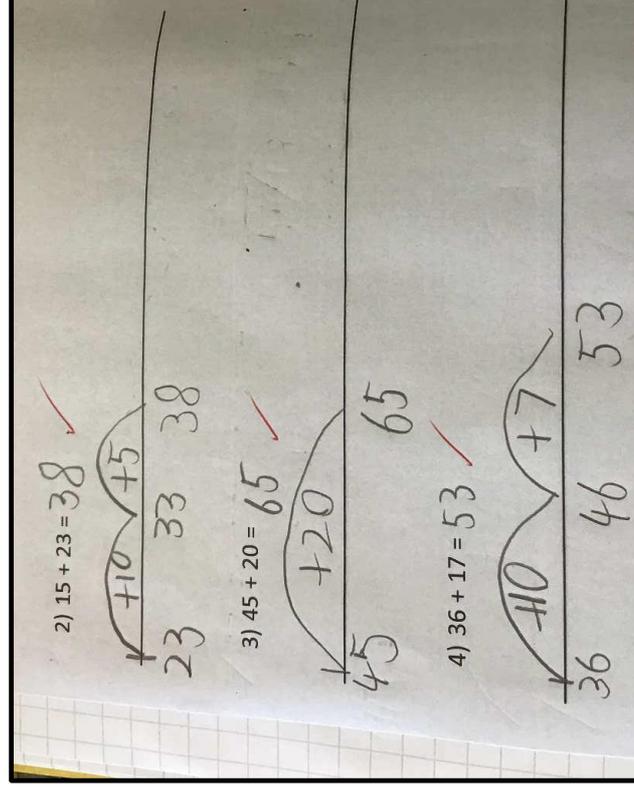


$$\begin{array}{r} 68 \\ \underline{60} \\ 8 \end{array} + \begin{array}{r} 23 \\ \underline{20} \\ 3 \end{array} = 91$$

$$\begin{array}{r} 60 \\ \underline{8} \\ 52 \end{array} + \begin{array}{r} 20 \\ \underline{3} \\ 23 \end{array} = 80 + 11 = 91$$

Numberline

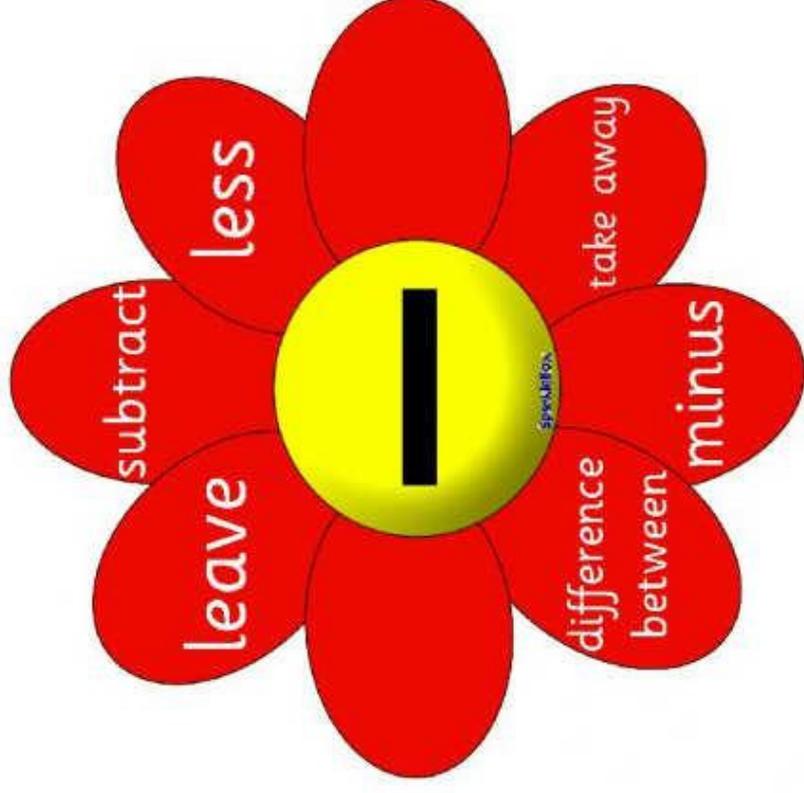
- Place the first number at the start of the line.
- Partition the 2nd number into tens and ones
- Add the tens onto the numberline
- Add the ones onto the numberline



$$65 + 32 =$$

$$\begin{array}{r} +10 \\ \hline 65 \\ +10 \\ \hline 75 \\ +10 \\ \hline 85 \\ +2 \\ \hline 97 \end{array}$$

Subtraction



Numberline

- Place the biggest number at the end of the line.
- Partition the 2nd number into tens and ones
- Take away the tens onto the numberline
- Takeaway the ones onto the numberline

The image shows three examples of subtraction using number lines:

- 2) $78 - 45 = 33$: A number line from 0 to 78. A bracket from 45 to 78 is labeled -40 . A second bracket from 45 to 33 is labeled -5 . The result 33 is written below the line.
- 3) $38 - 17 = 21$: A number line from 0 to 38. A bracket from 17 to 38 is labeled -10 . A second bracket from 17 to 21 is labeled -7 . The result 21 is written below the line.
- 4) $36 - 19 = 17$: A number line from 0 to 36. A bracket from 19 to 36 is labeled -10 . A second bracket from 19 to 17 is labeled -9 . The result 17 is written below the line.

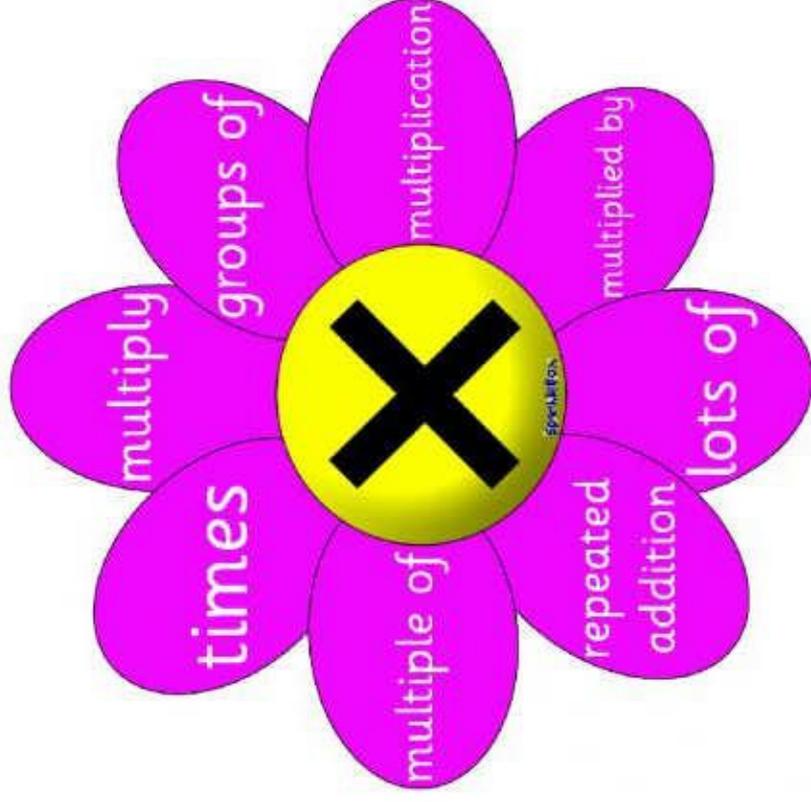
$$68 - 11 = 57$$



$$73 - 22 = 51$$

$$\begin{array}{r} \cancel{51} - \cancel{10} - \cancel{10} \\ \hline 51 \quad 52 \quad 53 \quad 63 \quad 73 \\ \hline \end{array}$$

Multiplication

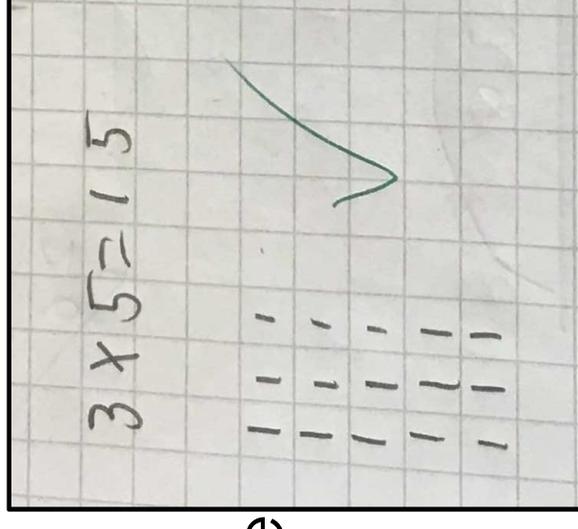


Array

- If the question is 3×2
- Create 3 rows of 2 dots
- Count each row in 2's to see how many there are altogether.

Or

- Create 2 rows of 3 dots
- Count in 3's to see how many there are altogether.



$$3 \times 2 = 6$$

∴

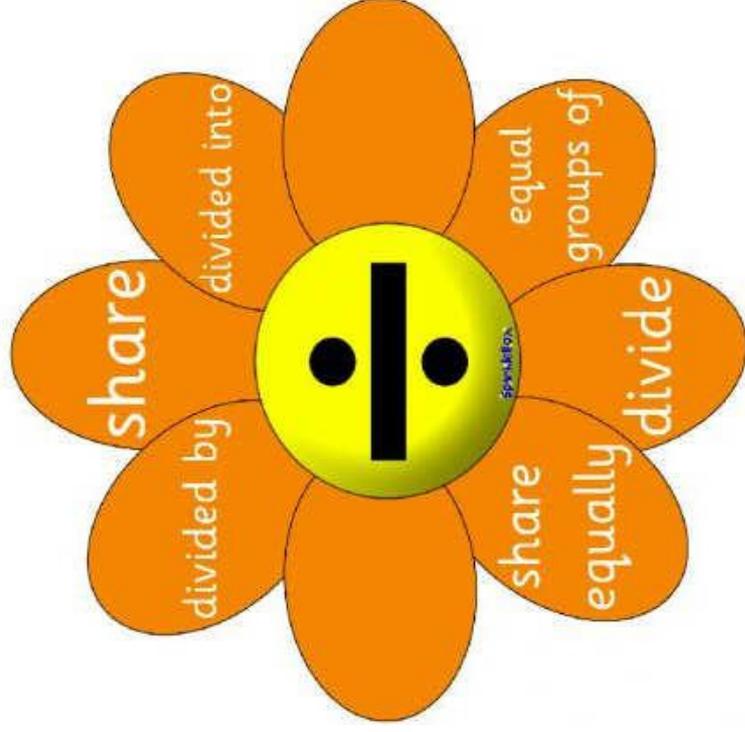
$$2 \times 3 = 6$$

∴

$$6 \times 3 = 18$$

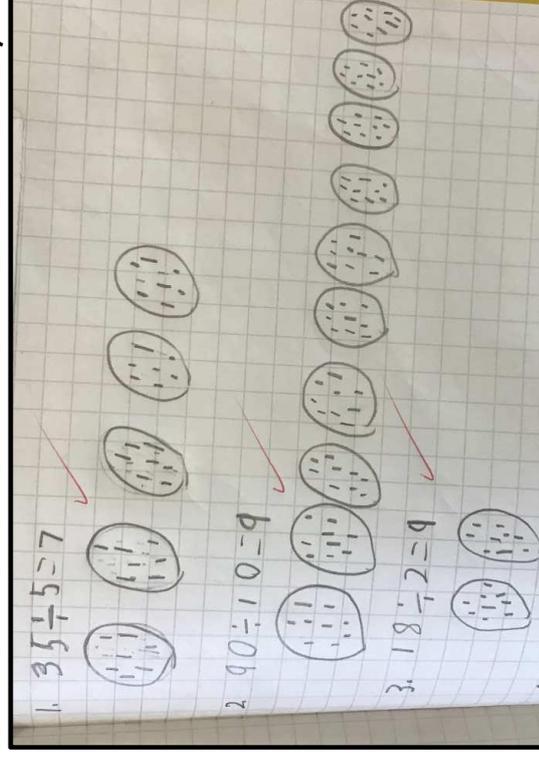


Division



Sharing

- If the question is $12 \div 2$
- Draw two circles because that is how many the total is being shared into.
- Share 12 equally by placing one dot in each circle until reaching 12 altogether.
- Count the number of dots in one circle, that is your answer.



$$\textcircled{12} \div \textcircled{2} = 6$$

