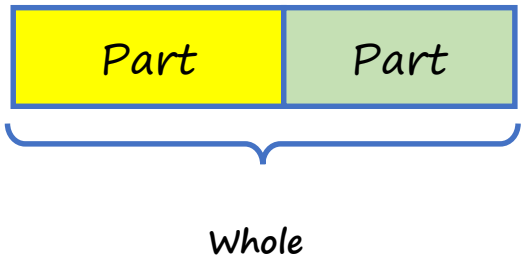
Bar Modelling at Roe Green Junior School

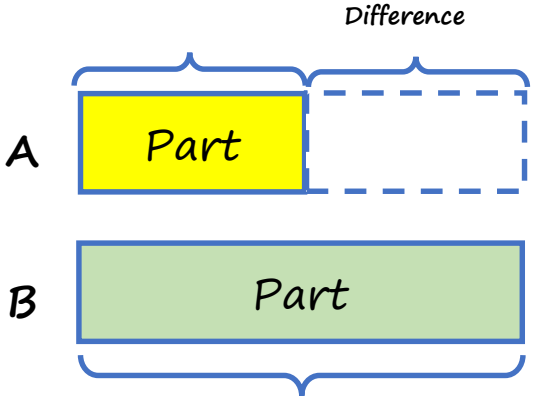
What is bar modelling?

- Drawing maths pictures to help us solve word problems
- It won't tell us the answer but should help us to 'see' what we need to do

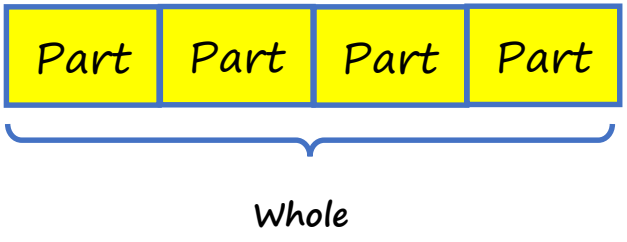
Part-Part-Whole



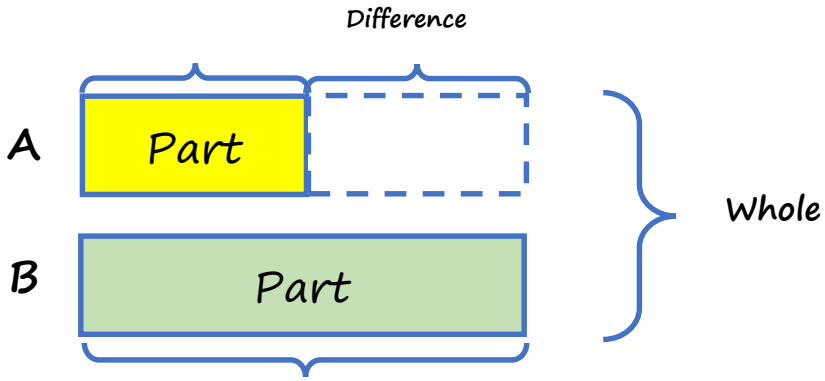
Comparison



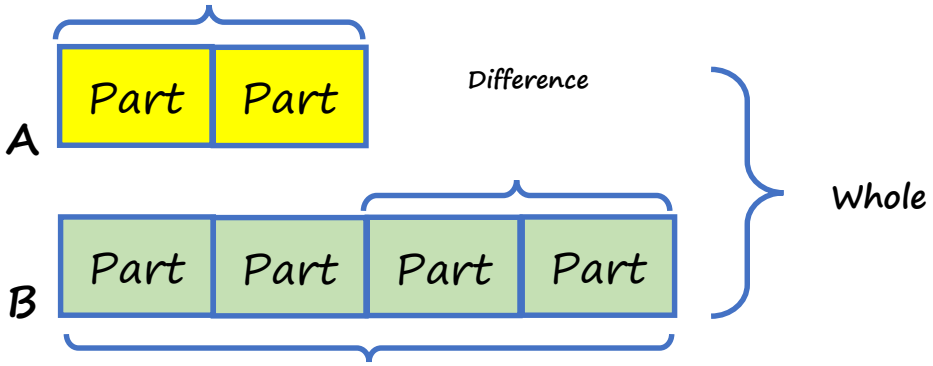
Equal Parts of a Whole



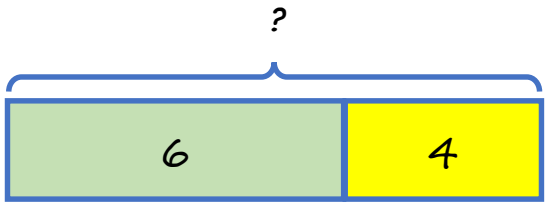
Comparison Part-Part-Whole



Comparison and Equal Parts of Wholes



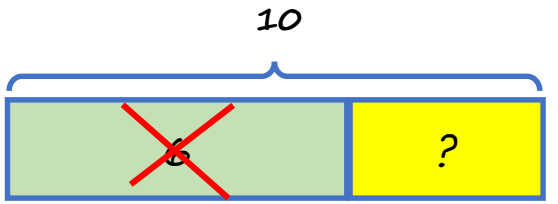
Addition



I have 6 red pencils and 4 yellow pencils. How many pencils do I have?

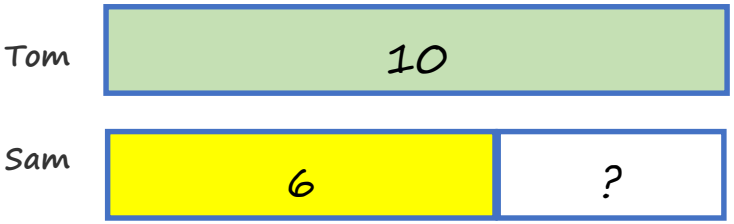
Subtraction

Taking away



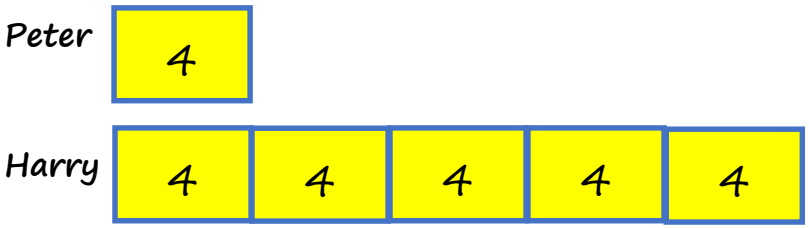
I had 10 pencils and I gave 6 away, how many do I have now?

Comparison or Difference



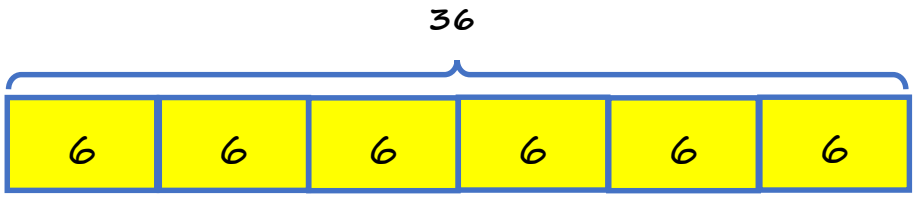
Tom has 10 pencils and Sam has 6 pencils. How many more does Tom have?

Multiplication



Peter has 4 books. Harry has five times as many books as Peter. How many books does Harry have? How many books do they have altogether?

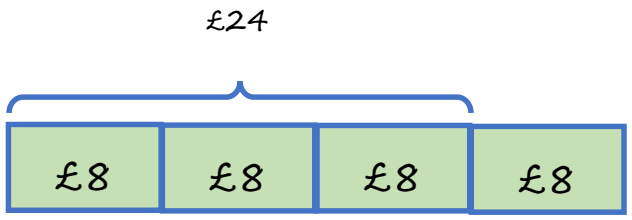
Division



Mr Smith had a piece of wood that measured 36 cm.
He cut it into 6 equal pieces.
How long was each piece?

Fractions

A computer game is £24 in the sale. This is one quarter off its original price. How much did it cost before the sale?

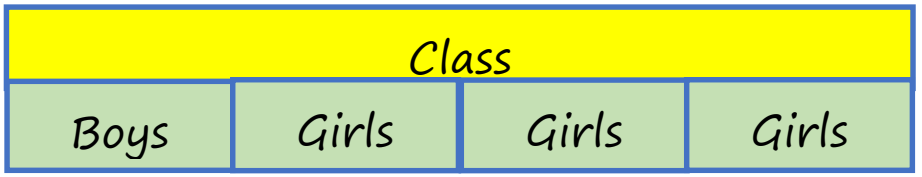


£24 ÷ 3 = £8, giving the value of three sections of the bar. The final section of the bar must also be £8, since it represents the same proportion as each of the other sections. £8 × 4 = £32

The original cost of the computer game is £32.

Proportion

In a class, 18 of the children are girls. A quarter of the children in the class are boys. Altogether how many children are there?

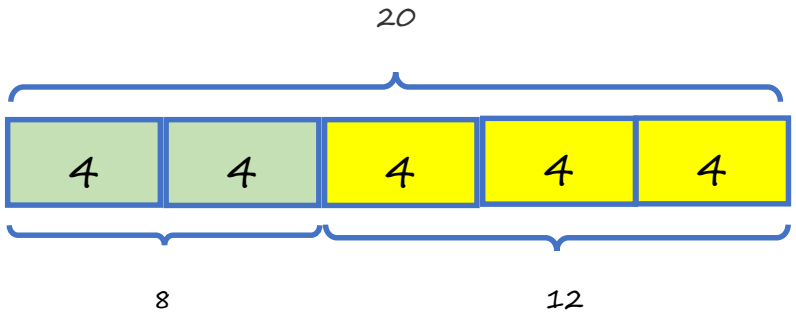


Dividing the bar into quarters allows us to represent the boys as a proportion of the whole class. The rest of the class must be girls.

There are 18 girls so each of the three girl sections must equal 6 and so the boy section must also be 6. 6 × 4 = 24, there are 24 children in the class.

Ratio

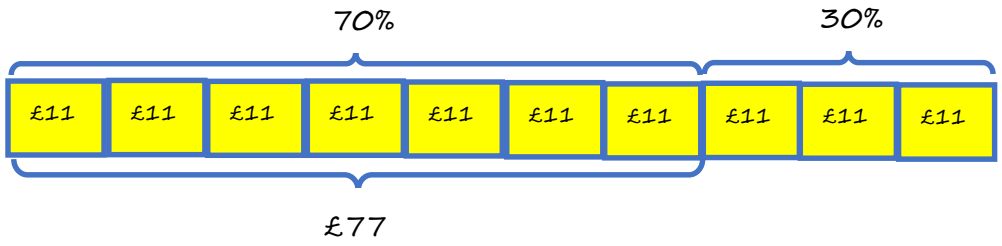
Sam and Tom share 20 stickers in the ratio of 2 to 3. How many stickers do they each have?



Altogether the bars have a value of 20 meaning each bar has a value of 4. Sam has 8 stickers and Tom has 12.

Percentage

A computer game is reduced in a sale by 30%. Its reduced price is £77. How much was the original price?



Dividing the bar into ten equal pieces allows us to represent 30% and keep the other pieces the same size.£77 ÷ 7 = £11

The original cost (the whole bar) is £11 × 10 = £110