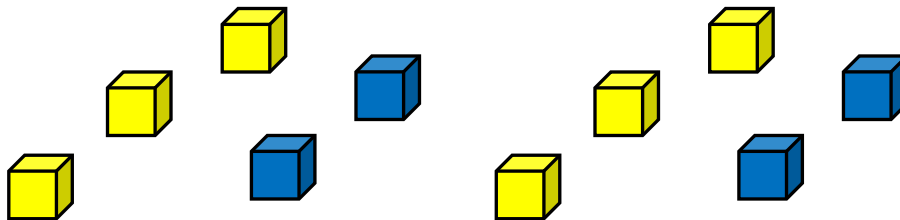




This is all about comparing. Here are 10 cubes. Some are yellow and some are blue.



There are 6 yellow cubes and 4 blue cubes. We can say, 'The ratio of yellow to blue is 6 to 4.'

We can also look at this and say, 'For every 3 yellow cubes there are 2 blue cubes.'

The proportion of yellow cubes is 6 out of 10 (or 3 out of 5). This can be written as a fraction: $\frac{3}{5}$.

The proportion of blue cubes is 4 out of 10 (or 2 out of 5). This can be written as a fraction: $\frac{2}{5}$.



But how do I work out a tricky question like this?

Sam has 15 crayons. She has 3 blue crayons for every 2 green ones.

How many blue crayons does she have?



Step by step, of course!

- | | |
|---|---|
| 1. Add the 3 blue and 2 green crayons. | $3 + 2 = 5$. |
| 2. Work out how many lots of 5 there are in 15. | $3 \times 5 = 15$ so there are 3 lots of 5 in 15. |
| 3. Find 3 lots of 3 blue crayons. | $3 \times 3 = 9$ so she would have 9 blue crayons. |
| 4. Find 3 lots of 2 green crayons. | $3 \times 2 = 6$ so she would have 6 green crayons. |
| 5. Check by adding the two totals. | $9 + 6 = 15$. |

To begin with some people find it easier to draw out the sets of 3 blue and 2 green crayons until they reach a total of 15, but this can take a long time with larger numbers!

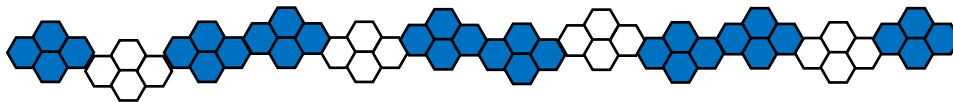
Ratio and proportion 1
Maths worksheets from mathsblog.co.uk

Here is a pattern of tiles.



1. How many red tiles to yellow tiles are there?
2. What is the proportion of red tiles?
3. What is the proportion of yellow tiles?

Here is another pattern of tiles.



Complete these sentences about the tile pattern:

4. For every white tile there are blue tiles.
5. The proportion of blue tiles in the whole pattern is
6. The proportion of white tiles in the whole pattern is
7. The number of blue tiles is the number of white tiles.
8. Sam has 20 crayons. She has 3 blue crayons for every 2 green ones.
How many blue crayons does she have?
9. The ice cream man sells 3 vanilla ice creams to every two chocolate ice creams.
If he sells 35 ice creams altogether how many vanilla ice creams did he sell?
10. Carol makes four phone calls for every three that James makes.
If they make 140 calls in a week how many calls did James make?
.....

Ratio and proportion 1
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Answers

1. One to every three
2. One in four or $\frac{1}{4}$
3. Three in four or $\frac{3}{4}$
4. 2 blue tiles
5. The proportion of blue tiles in the whole pattern is $\frac{2}{3}$.
6. The proportion of white tiles in the whole pattern is $\frac{1}{3}$.
7. The number of blue tiles is double the number of white tiles.
8. 12 blue crayons.
9. 21 vanilla ice creams
10. 60 phone calls.