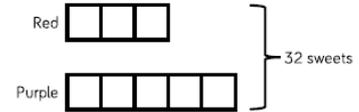


Y6 Maths What they need to know...

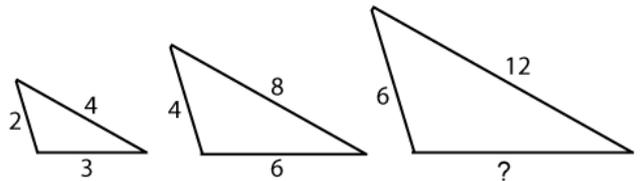
Children are introduced to **Ratio** for the first time in Year 6. They will learn that a ratio shows the relationship between two values and describes how one is related to the other. For instance, "For every one girl, there are two boys". They are introduced to the : notation and should link this with the language 'For every..., there are...'. They should also know that the notation relates to the order of parts. For example, 'For every 3 bananas, there are 2 apples' would be presented as 3 : 2; and 'For every 2 apples, there are 3 bananas' would be noted as 2 : 3. Eventually, children will build on their knowledge of ratios and begin to calculate them. They should be able to calculate the ratio between two quantities and identify both a part and the whole. They will be encouraged to draw bar models to represent their problems, labelling clearly the information they have been given and what they want to calculate.



Once children are able to calculate ratio they can apply this knowledge to problems involving scale factors. They will be expected to find scale factors when given similar shapes, using vocabulary such as "Shape A is three times as big as Shape B". They should also be able to draw 2D shapes on a grid given a scale factor, or use them to calculate missing lengths.

Activities & Games!

★ **Number of sides:** The triangles in this set are 'similar'



'Similar' means that the triangles are exactly the same shape, but not the same size. The sides are in the same ratio to each other (NB. these triangles are not drawn to scale.) What can you say about the length of the side of the third triangle which is marked with a question mark? There is an a sheet of more questions like this to solve on the school website.

★★ **Nutty Mixture:** Rachel has a bag of nuts. For every cashew nut in the bag, there are two peanuts. There are 8 cashews in Rachel's bag. How many peanuts are there?

Marianne also has a bag of nuts. In Marianne's bag, for every two cashew nuts, there are three peanuts.

Marianne's bag contains 12 peanuts in total. How many cashews are in her bag?

Rachel and Marianne decide to mix their bags of nuts together. What is the ratio of cashew nuts to peanuts in the mix?

★★★ **Ratio problems:** Have a go at solving these ratio problems. Can you write some similar ones of your own?

- 1) Simon has two bags of sweets. Each bag contains only lime and strawberry sweets. There are 20 sweets in each bag. In the first bag, there is 1 lime sweet for every 3 strawberry. In the second bag there are 2 lime sweets for every 3 strawberry. How many more lime sweets are there in the second bag?
- 2) A tower is made of red and green cubes. For every 1 red cube there are 2 green cubes. Each cube has a height of 2.5cm. The tower is 30cm tall. How many green cubes are in the tower?
- 3) In Year 6 three fifths of the class are boys and there are 12 girls. How many boys are there in the class?
- 4) 2 parts of red paint with 3 parts of blue paint make purple. Susan has 50 ml of red and 100 ml of blue. What is the maximum amount of purple she can make?

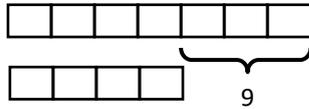
★ **Create your own ratio:** Make your very own ratio. It can be drawn, photographed, made up of objects - anything! Think outside the box if you can. The only rule is that it must represent a ratio.

Going deeper...

Bar Modelling

Can you solve these ratio problems? I have drawn a bar model to help you with the first one.

In a class the ratio of boys to girls is 7:4. There are 9 more boys than girls. How many children are in the class?



In a survey, the ratio of the number of people who preferred milk chocolate to those who preferred plain chocolate was 5 : 3. 46 more people preferred milk chocolate, to plain chocolate. How many people were in the survey?



Wonderful websites

My Maths

Use our school login (Username: **coleridge1**, Password: **success74**), and then your own login details to access activities related to our current topic on the MyMaths website. You can also have a look to see if there are some other fun games you would like to play.

[Rod Ratios](#)

[Ratio Pairs](#)

[Ratio Rumble](#)

[Proportion Grids](#)

Whilst it can be very tempting to encourage your child to have a go at the more challenging activities, it is far better to work with them at a level they feel confident with. Significant and regular practise of even the most basic skills outlined in this document will lead to a much deeper understanding and greater proficiency, and ultimately a much more pleasant 'homework' experience for you and your child!