

* 5.1. Ratio and proportion

Let's investigate



Joey has two litres of red paint and three litres of yellow paint. He wants to make an orange colour.

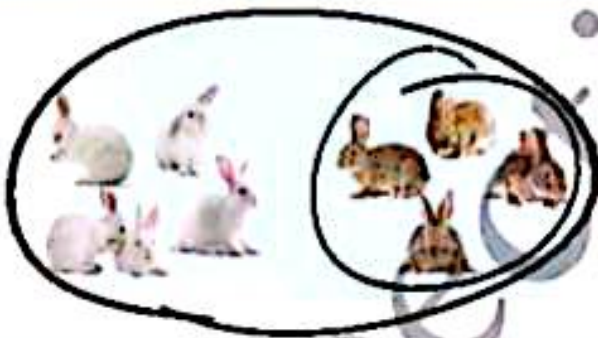
The orange he wants to make is called Glorious Sunrise.

Glorious Sunrise needs a ratio of two amounts of yellow for every one amount of red (2:1).

How many litres of Glorious Sunrise can Joey make with his red and yellow paint?

Remember

Brown rabbits to all the rabbits:



4 to 9 or 4:9 or $\frac{4}{9}$

This is a part-to-whole proportion.

White rabbits to brown rabbits:



5 to 4 or 5:4

This is part-to-part ratio.

Here is a pocketful of coins that are used in Italy.

- a) What is the ratio of bronze to silver coins in the group?
- b) What proportion of the coins in the group has a value of a more than 15 cents?
- c) What proportion of the coins has a value of less than 8 cents?
- d) What proportion of the coins has a value of 20 cents?



1. Here is a bead pattern. For every 1 blue bead, there are 4 pink beads.



Draw bead patterns to match these descriptions:

a) For every 1 black bead, 3 beads are white.

b) In every 3 beads, 1 is white.

2. Here is a recipe to make 12 gingerbread men.

Work out how much flour, butter and sugar are needed to make 24 gingerbread men.

Copy and complete the table shown below.

	flour	butter	sugar
24 gingerbread men			

350 grams flour
 125 grams butter
 175 grams brown sugar
 4 tablespoons syrup
 8 teaspoons ginger



Primary Mathematics

3. The word 'fun' has a vowel-to-consonant ratio of 1:2.

a) Find 3 words with a vowel-to-consonant ratio of 2:3.

b) Choose a vowel-to-consonant ratio and find 3 words for it.

4. Su Mei's recipe for bean salad calls for 3 cans of lima beans, 2 cans of pinto beans, and a can of kidney beans.

Su Mei is making bean salad for her family reunion.

Suppose she uses 9 cans of lima beans.

a) How many cans of pinto beans will she use?

b) How many cans of kidney beans will she use?



The Vitruvian Man, shown below, is a famous drawing made by the Italian polymath Leonardo da Vinci in about 1490.

It shows Leonardo's concept of proportions of the human body. Go online and find some of the body proportions and ratios. For example: The average ratio of hip width to shoulder width is 1:1 for women, and 1:1.8 for men.

