

Ratio

If you have **5 blue balls** and **7 red balls** then the ratio will be **5:7**. Note how the order they appear in the sentence is also the order they appear in the ratio.

In other situations there may be **4 lemon bonbons** and **12 apple bonbons**. Here the ratio would be **4:12**.

This can be simplified further, so the simpler ratio would become **1:3**.

To get this we have to divide **both sides** of the ratio by the **same** number. So a **common factor** of both **4** and **12** is **4**.

We then divide both of the numbers:

$$4 \div 4 = 1$$

$$12 \div 4 = 3$$

Calculating with ratios

For a necklace, for every **2 blue beads**, there must be **3 pink beads**. So the ratio here is **2:3**.

But the necklace **must** contain **25 beads** all together!

So in situations like this we can use a table to help.

Blue Beads	Pink Beads	Total Number of Beads
2	3	5
4	6	10
6	9	15
8	12	20
10	15	25

So to make the necklace, we **need 10 blue beads** and **15 pink beads**.

Sharing in a ratio

Old Aunt Sally decides to share out her savings.

She has **£280** and wants to share it between her **nieces** and **nephews** in the ratio of **3:4**.

We need to work out how much money the **nieces** and **nephews** receive.

To solve this we need to find out how many shares there are.

So if the **nieces** get **3 shares** and the **nephews** get **4 shares**, that makes **7 shares** in total.

Next we have to divide the total amount of Old Aunt Sally's money (which is **£280**) and divide it by how many shares there are (**7 shares**).

So **£280 ÷ 7 shares = £40**

So if the **nieces** get **3 shares** and the **nephews** get **4 shares**, we need to work out how much money that is.

The **nieces** get **3 shares** so we do: **3 shares x £40 = £120**

Meaning the **nieces** get **£120** of Sally's savings.

The **nephews** get **4 shares** so we do: **4 shares x £40 = £160**

Meaning the **nephews** get **£160** of Sally's savings.

Sharing in a ratio

Lord Gray decides to set up a business breeding racehorses.

He buys **36 horses**.

They are **stallions**, **mares** and **foals**, in the ratio **2:7:3**

How many of each does he have?

Stallions	Mares	Foals	Total Horses
2	7	3	12
4	14	6	24
6	21	9	36

So Lord Gray will buy **6 stallions**, **21 mares** and **9 foals**.