Key point
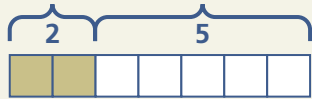
A **fraction** compares a part with the whole.
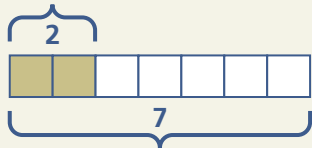
2 questions correct out of **7 questions** is the fraction $\frac{2}{7}$.

Ratio compares parts of the whole with each other.

2 questions correct and **5 questions** wrong is the ratio **2:5**.

Ratio is used to describe **relationships between parts**, for example, 'for every 2 questions correct, there are 5 wrong' or 'for every 3 girls in the room there are 4 boys'. These are written as 2:5 and 3:4.
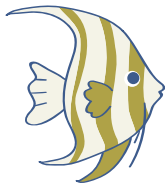
Get started

1 Given that $\frac{2}{5}$ of this shape is gold, what is the ratio of gold parts to white parts?

gold : white

2 :

2 On this necklace $\frac{5}{8}$ of the beads are gold. What is the ratio of gold to white beads?

gold : white

:

3 If 1 out of 5 of the children in a room are girls, what is the ratio of girls to boys?

girls : boys

:
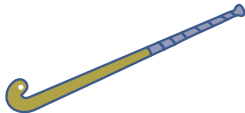
4 Write the ratio of gold stars to white stars.

:

5 What fraction of the stars in question 4 are gold? _____

6 What is the ratio of gold parts to white parts in this square?

:

7 Give the ratio of gold to white sweets.

:

8 What fraction of the above sweets are white? _____

Now try these

9 Colour this grid so that the ratio of coloured to white squares is 4:5.

10 True or false? If one-quarter of these bottles are full and the rest are empty, the ratio of full bottles to empty bottles is 1:4.   True ☐   False ☐

11 For every gold section of this pattern there are two white sections. Circle which shows the ratio of gold to white sections.

1:3   2:1   1:2

12 A wall has blue and green tiles. For every 4 blue tiles there is 1 green tile.   blue : green
Write this as a ratio.

:

13 An ice cream shop sells 3 scoops of vanilla ice cream for every scoop of caramel ice cream.
Write this as a ratio of vanilla to caramel scoops. _____

14 A shop has a 'buy two, get one free' offer. Write the ratio of paid for items to free items. _____

15 A class of children get into seven equal groups. Three of the groups are all girls.
The rest of the groups are all boys. What is the ratio of girls to boys? _____

16 Half the people in a room are adults and half are children. Write the ratio of adults to children. _____

17 There are ten fish in a fish tank. Three are angel fish and seven are guppies.

a) What is the ratio of angel fish to guppies? _____

b) What fraction of the fish are angel fish? _____

18 The ratio of pens to pencils in a pencil case is 5:6. What fraction of the items are:

a) pens? _____ b) pencils? _____

Challenge

19 One-third of a team's matches were won. The rest were lost. What was their 'win : lose' ratio? _____

20 In a hockey match 7 out of the 12 shots at the goal were on target.
What was the ratio of shots on target to shots not on target? _____

21 The instructions for a drink say to use squash to water in the ratio 1:6.
What fraction of the mixed drink is water? _____

22 A factory makes different coloured sweets. $\frac{1}{8}$ of the sweets are blue. For every 2 blue sweets there are
3 red sweets. Write the ratio of: a) blue to not blue sweets. _____ b) red to blue sweets. _____

23 For every £2 Ali saves his dad gives him £3 more.
What fraction of the money altogether comes from his dad? _____

24 Circle the two fractions that could be used to describe the ratio 1:9.

$\frac{3}{9}$ $\frac{1}{10}$ $\frac{5}{9}$ $\frac{9}{10}$

25 Circle the two fractions that could be used to describe the ratio 4:5.

$\frac{5}{8}$ $\frac{4}{5}$ $\frac{5}{9}$ $\frac{4}{9}$ $\frac{5}{4}$

26 If 30% of a group of children are girls, what is the ratio of girls to boys? _____

27 In bowl A the ratio of green olives to black olives is 20:10. In bowl B the ratio is 2:1. For each bowl,
write the fraction of black olives in its simplest form.   a) bowl A _____   b) bowl B _____

28 Oscar makes scones using the ratio 3:2:1 of flour to butter to sugar. What fraction of the mixture is:

a) flour? _____ b) butter? _____ c) sugar? _____