

# Recognise numbers in the same ratio

## → Starting point

Show the first set of hats in graphic **A**. Ask:

- *What is the ratio of stripy hats to spotty hats in this set?* [3:6] Revise that a ratio compares part with part, for example stripy with spotty, while a fraction compares part with whole, for example the number of stripy hats out of the whole set.

Reveal the first line of text in graphic **A**, reiterating that for every 3 stripy hats there are 6 spotty hats, which is the ratio 3 to 6 or 3:6. Explain that ratios can be simplified, just like fractions. Ask:

- *How could the ratio of 3:6 be simplified?* Reveal the next line of text in graphic **A** and discuss how the pattern can also be described as 1 stripy hat for every 2 spotty hats. Look at the pattern of hats and help the pupils to see this is also the ratio 1:2.

Repeat for the second set of hats in graphic **A**, showing how the ratio 4:6 can also be written as the ratio 2:3. Explain that these two ratios are 'in the same ratio' as each other. Ask:

- *Can anyone see what has been done to the numbers to simplify 3:6 to 1:2 or to simplify 4:6 to 2:3?* [Both numbers in the ratio have been divided by the same number, a common factor.]

Reveal the equivalent ratios in graphic **B**. Show how each has been divided or multiplied by a common factor to give another ratio that is in the same ratio (or equivalent). Work through each one, describing them in this way: '20 for every 30 is in the same ratio as 2 for every 3'.

**Key point:** Like equivalent fractions, equivalent ratios can be found by multiplying or dividing both numbers by the same number. For example, dividing both numbers in the ratio 5:10 by 5 gives the equivalent ratio 1:2. 5:10 is said to be 'in the same ratio' as 1:2.

## 🔍 Spot the mistake

Ask:

- *The statement says 'For every 1 unshaded part there are 4 shaded parts'. Is the statement true?* [no]
- *How many shaded parts are there?* [3]
- *How many unshaded parts are there?* [9]
- *Is the ratio 3:9 the same as 1:4?* [no]
- *Can the ratio 3:9 be simplified?* [yes, to 1:3]

Explain that 1:3 can be described as 'for every one shaded part there are three unshaded parts'.

## ✓ Good to go?

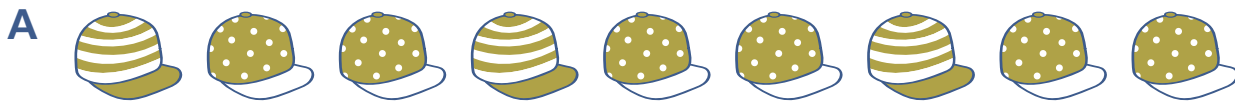
Answers: a) yes    b) no    c) yes    d) yes

## Pupil book practice

Pages 36 and 37

The pupils practise working out whether ratios are in the same ratio and begin to find equivalent ratios through simplifying or by multiplying both numbers in the ratio by the same number. Usually, if the pupils are confident with simplifying fractions and finding equivalent fractions, they will accept this idea quite easily. The idea of a ratio in its simplest form is also included in the **Challenge** section.

➔ Starting point



3 stripy hats for every 6 spotty hats      3:6

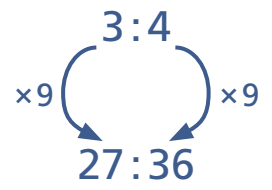
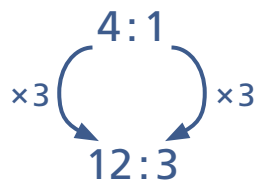
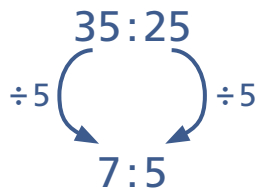
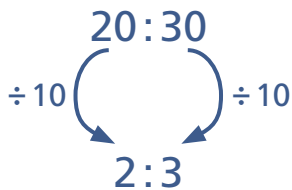
1 stripy hat for every 2 spotty hats      1:2



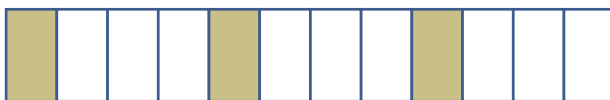
4 stripy hats for every 6 spotty hats      4:6

2 stripy hats for every 3 spotty hats      2:3

B



🔍 Spot the mistake



For every 1 unshaded part there are 4 shaded parts.

✔ Good to go?

Are these in the same ratio?

a) 8:4 and 2:1

b) 5:15 and 3:5

c) 7:2 and 21:6

d) 25:20 and 5:4