Name & Surname: _____ Class: _____ Date: _____

Ratio Scalers

Find missing parts with × and ÷

About 45 minutes Level ★★★☆☆

Ratio in a Nutshell

A **ratio** shows the relative sizes of 2 quantities. For every 2 of one thing there may be 3 of another, written 2:3. Order matters.

- Write the ratio in **order**, e.g. red:blue = 3:2.
- Find the **factor** with ÷: 12 ÷ 3 = 4.
- Multiply both parts by the same **number**: 2 × 4 = 8.

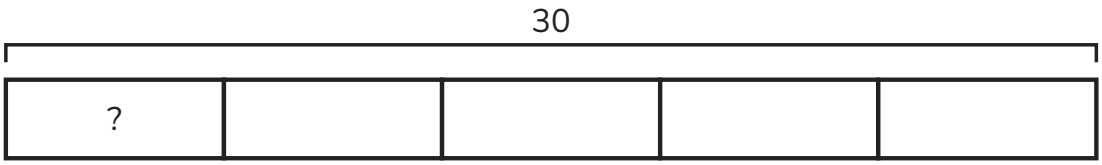


Task A

/4

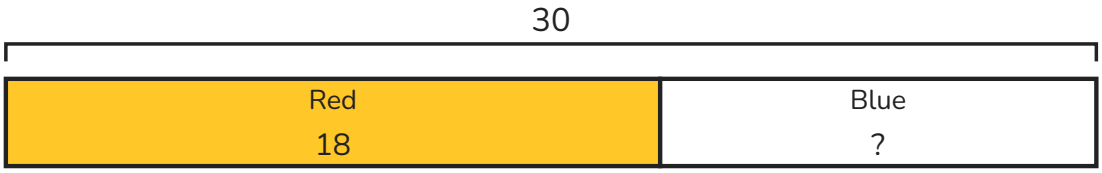
Use the bars to find the missing value.

1 Counters are shared in the **ratio** 3:2. That is 3 + 2 = 5 equal parts. There are 30 counters altogether. How many counters in one part?



Answer: _____ **counters**

2 The 30 counters are split into red and blue. The red **share** is 18 counters. The blue share is unknown. The **total** is 30 counters. How many blue counters?



Answer: _____ **counters**

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Find Missing Parts

Practise scaling ratios up with whole numbers.

Key words

ratio: how much of one thing compared to another

factor: whole number you multiply both parts by

share: one part of a total

order: which quantity comes first in a:b

equivalent: different numbers that show the same ratio

Task B

/10

Scale both parts by the same number.

WARM UP

1 Complete the **equivalent** ratio: 2:3 = 4:?

Answer: _____

2 Complete the **equivalent** ratio: 3:5 = 9:?

Answer: _____

3 Find the **factor**: 4 is multiplied to get 20. Multiply by what?

Answer: _____

4 Work out 4 × 6 **counters**

Answer: _____

PRACTISE

5 The ratio of red to **blue** is 4:3. There are 8 red counters. How many blue counters?

Answer: _____

6 The ratio of apples to **oranges** is 3:2. There are 18 apples. How many oranges?

Answer: _____

7 A recipe uses flour and **sugar** in the ratio 5:2. 10 spoonfuls of flour are used. How much sugar?

Answer: _____

PROBLEM SOLVING

8 A fruit bowl has 2 oranges for every 3 apples. There are 15 **apples**. How many oranges?

Answer: _____

9 The ratio of blue to **yellow** paint is 2:5. A student uses 14 litres of blue. How many litres of yellow?

Answer: _____

10 A student says 3:4 = 6:8 because you add 3 to both **parts**. Explain why the method is wrong.

Answer: _____

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Share the Total

Use division to share totals in a ratio.

Task C

/10

Find one part first, then scale up.

WARM UP

1 20 counters shared into 4 equal **parts**. How many in one part?

Answer: _____

2 Work out 15 ÷ 3 **sweets**

Answer: _____

3 Complete the **equivalent** ratio: 12:8 = 6:?

Answer: _____

4 Complete the **equivalent** ratio: 20:15 = 4:?

Answer: _____

PRACTISE

5 Ratio 3:2 shares 25 **counters** in total. How many counters in one part?

Answer: _____

6 Ratio 4:1. Total 20 **sweets**. How many in the larger share?

Answer: _____

7 Ratio 2:3. Smaller **share** is 14. How many in the larger share?

Answer: _____

PROBLEM SOLVING

8 Three friends share stickers in the ratio 2:3:4. Total 180 **stickers**. How many in the largest share?

Answer: _____

9 A quiz team has 3 adults and 2 children. There are 45 **people** in total. How many teams?

Answer: _____

10 Explain how you know your teams answer keeps the **ratio** 3:2.

Answer: _____

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See the Jumps

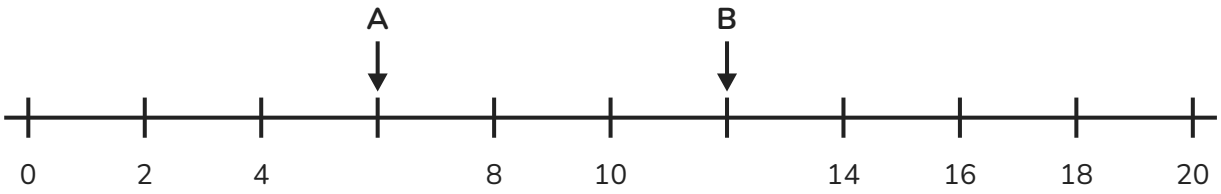
Trace scaling on number lines, then make up questions.

↑↓ Task D

/6

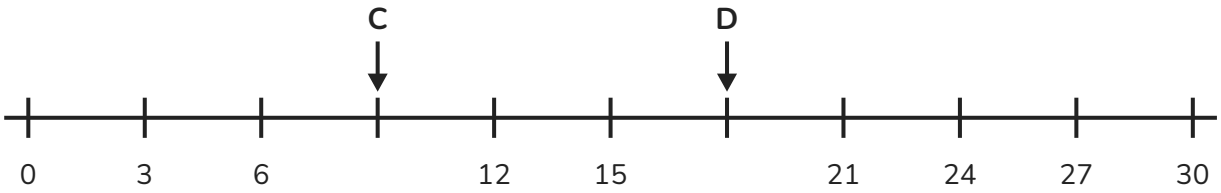
Follow the equal jumps to scale the ratio 2:3.

1



A = ☐ B = ☐ Draw an arrow to show: 18

2



C = ☐ D = ☐ Draw an arrow to show: 27

Task E

The answer is given. Write a ratio question to match.

The answer is: **10 oranges**

What could the question be?

.....

.....

.....

The answer is: **20 counters**

What could the question be?

.....

.....

.....

The answer is: **6:9**

What could the question be?

.....

.....

.....

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Multiply Then Check

Use table facts and worked methods to finish.

Task F

/8

Practise fast multiplication facts for ratio work.

×	2	5	7	9
3		15		
4				36
8		40	56	

Task 6

/2

Follow the steps in each example, then try.

WORKED EXAMPLE

Work out the missing value: 2:5 = 6:?

1. Find the **factor**: 6 ÷ 2 = 3
2. Multiply the other **part** by 3: 5 × 3 = 15

Answer: 15

YOUR TURN

Work out the missing value: 3:4 = 12:?

Answer: _____

WORKED EXAMPLE

Ratio 4:3 shares 28 counters. How many in one part?

1. Add the **parts**: 4 + 3 = 7
2. Divide the **total**: 28 ÷ 7 = 4

Answer: 4 counters

YOUR TURN

Ratio 3:2 shares 30 counters. How many in one part?

Answer: _____

How did I do?

Circle a face for each line.

I can find a missing value by scaling a ratio.

I can find the value of one part and the total.

I can explain why both ratio parts scale together.

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Answer sheet: Ratio Scalers

Task A

1. 6 counters
2. 12 counters

Task B

1. 6
2. 15
3. 5
4. 24 counters
5. 6 counters
6. 12 oranges
7. 4 spoonfuls
8. 10 oranges
9. 35 litres
10. You must multiply both parts by the same number, not add. 3×2=6 and 4×2=8, so the factor is ×2.

Task C

1. 5 counters
2. 5 sweets
3. 4
4. 3
5. 5 counters
6. 16 sweets
7. 21
8. 80 stickers
9. 9 teams
10. 9×3=27 adults and 9×2=18 children, 27+18=45 and 27:18 simplifies to 3:2.

Task D

1. A = 6; B = 12; arrows at 18
2. C = 9; D = 18; arrows at 27

Task E

Answers will vary, e.g. 10 oranges → There are 3 lemons for every 2 oranges. There are 15 lemons. How many oranges? 20 counters → The ratio is 3:2. One part is worth 4 counters. What is the total? 6:9 → Scale the ratio 2:3 up by 3. What is the new ratio?

Task F

3 × 2, 5, 7, 9: 6, 15, 21, 27
4 × 2, 5, 7, 9: 8, 20, 28, 36
8 × 2, 5, 7, 9: 16, 40, 56, 72

Task G

1. 16
2. 6 counters

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