

Thursday

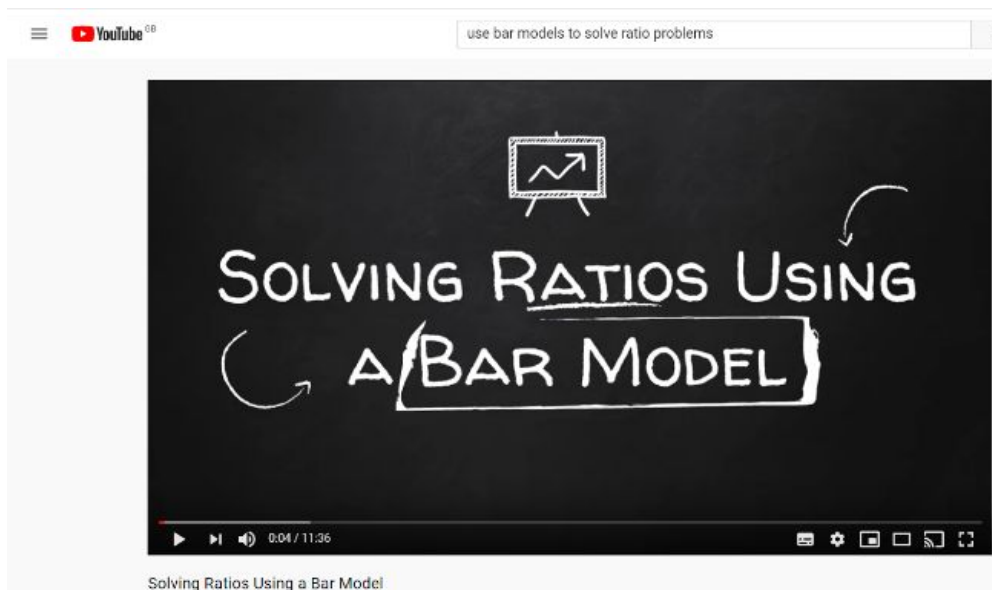
26.03.20

Today, you will continue to use bar models to solve problems involving ratio.

WALT use bar models to solve problems involving ratios

Watch this video

<https://www.youtube.com/watch?v=vEcpr8-VGRA>



Task 1: Draw the bar models in your book or show your working out.  
Answer the questions.

<b>1</b>	<p style="text-align: center;"><b>Kallan and Adam share some money in the ratio 5 : 3</b></p> <p style="text-align: center;">Between them they have £240</p> <p style="text-align: center;">How much does each person receive?</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;">Kallan</div> <div style="margin-right: 10px;">Adam</div> </div>	<b>1</b>
	<p style="text-align: center;"><b>Kallan and Adam share some money in the ratio 5 : 3</b></p> <p style="text-align: center;">Adam has £240</p> <p style="text-align: center;">How much does Kallan have?</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;">Kallan</div> <div style="margin-right: 10px;">Adam</div> </div>	<b>2</b>
<b>3</b>	<p style="text-align: center;"><b>Kallan and Adam share some money in the ratio 5 : 3</b></p> <p style="text-align: center;">Adam has £240</p> <p style="text-align: center;">How much money did they share?</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;">Kallan</div> <div style="margin-right: 10px;">Adam</div> </div>	

Task 1: Draw the bar models in your book or show your working out.

Answer the questions.

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The ratio of boys to girls on a school trip is  
 $1 : 4$

60 students go on the trip.  
How many girls go?

4

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The ratio of boys to girls on a school trip is  
 $1 : 4$

60 students are boys.  
How many girls go on the trip?

5

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The ratio of boys to girls on a school trip is  
 $1 : 4$

60 students are girls.  
How many boys go on the trip?

6

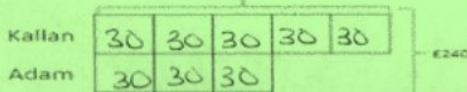
# Task 1 Answers

## ANSWERS

Task 1: Draw the bar models in your book or show your working out.  
Answer the questions.

1

Kallan and Adam share some money in the ratio 5 : 3  
Between them they have £240  
How much does each person receive?

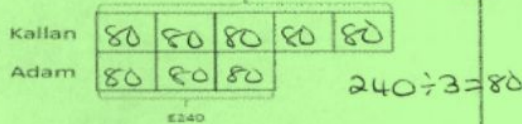


$$240 \div 8 = 30$$

Kallan - £150 Adam - £90

2

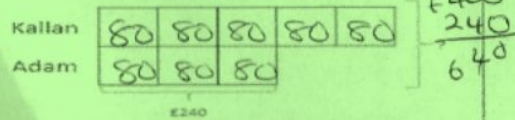
Kallan and Adam share some money in the ratio 5 : 3  
Adam has £240  
How much does Kallan have?



$$240 \div 3 = 80$$

3

Kallan and Adam share some money in the ratio 5 : 3  
Adam has £240  
How much money did they share?



$$\begin{array}{r} +400 \\ 240 \\ \hline 640 \end{array}$$

Task 1: Draw the bar models in your book or show your working out.  
Answer the questions.

The ratio of boys to girls on a school trip is 1 : 4

60 students go on the trip.  
How many girls go? 48  
 $1:4 = 1+4 = 5$   
 $60 \div 5 = 12$

B 12 = 12

G 12 12 12 12 = 48

The ratio of boys to girls on a school trip is 1 : 4

60 students are boys.  
How many girls go on the trip? 240

B 60 = 60

G 60 60 60 60 = 240

The ratio of boys to girls on a school trip is 1 : 4

60 students are girls.  
How many boys go on the trip? 15

B 15 = 15

G 15 15 15 15 = 60

$$60 \div 4 = 15$$

Task 2: 26.03.20 WALT use ratio to solve problems involving the relative size of two quantities.

Choose your level. Becoming confident complete: A & B. Confident complete B & C.

Read the example. Show your working out in your book. Use bar models or any other methods to calculate.

## RATIO

70

**TARGET** To use ratio to solve problems involving the relative sizes of two quantities.

### Example 1

A prize of £200 is shared 3 : 2 between Diane and Dave. How much should they receive each?

- 1 Find the number of shares.  
 $5 (3 + 2 = 5)$
- 2 Find the value of each share.  
 $£40 (£200 \div 5 = £40)$
- 3 Work out how much is received each.  
Diane £120 ( $£40 \times 3$ )  
Dave £80 ( $£40 \times 2$ )

### Example 2

The ratio of boys to girls in a school is 6 : 5. There are 168 boys in the school. How many children are there altogether?

- 1 Find the total number of parts.  
 $11 (6 + 5 = 11)$
- 2 Find the value of one part.  
 $28 (168 \div 6 = 28)$
- 3 Work out the number of children.  
 $308 (28 \times 11 = 308)$

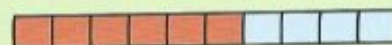
### Example 3

The ratio of adults to children at a cinema is 3 : 4. There are 111 adults in the cinema. How many children are there?

- 1 Find the number of parts.  
 $7 (3 + 4 = 7)$
- 2 Find the value of each part.  
 $37 (111 \div 3 = 37)$
- 3 Work out the number of children.  
 $148 (37 \times 4 = 148)$

### A

A row of tiles is laid with this repeating pattern.



- 1 How many blue tiles are there if there are:  
a) 12 red tiles      b) 30 red tiles?
- 2 How many red tiles are there if there are:  
a) 12 blue tiles      b) 40 blue tiles?

In a raffle there is one prize for every 20 tickets.

- 3 How many prizes are there if:  
a) 120 tickets are sold  
b) 500 tickets are sold?
- 4 How many tickets have been sold if there are:  
a) 9 prizes      b) 17 prizes?
- 5 In Year 6 the ratio of dinners to packed lunches is 2 : 1. Forty children have a dinner. How many have a packed lunch?
- 6 In a class the ratio of boys to girls is 3 : 2. There are 16 girls. How many boys are there?
- 7 The ratio of red to green apples in a bowl is 3 : 1. If there are 15 red apples how many apples are green?
- 8 At a market the ratio of blue jeans sold to black jeans sold is 7 : 2. If 6 black jeans are sold, how many blue jeans are sold?



Task 2: 26.03.20 WALT use ratio to solve problems involving the relative size of two quantities.

Choose your level. Becoming confident complete: A & B. Confident complete B & C. Read the example. Show your working out in your book. Use bar

**B**

- 1 In one season the ratio of goals for to goals against in Chelsea's matches was 5 : 3. If Chelsea scored 80 goals, how many did they let in?
- 2 In November the ratio of wet days to dry days was 4 : 1. How many days were wet?



- 3 In a survey of trees in a wood the ratio of beech trees to other trees was 2 : 5. If there were 14 beeches, how many other types of tree were there?
- 4 In a supermarket the ratio of male to female employees is 2 : 3. If there are 36 female employees, how many men work there?
- 5 During a lesson lasting one hour the ratio of the time Aidan spends working to the time he spends day-dreaming is 3 : 7. How long does he actually work?
- 6 In a hospital ward the ratio of nurses to patients is 2 : 9. If there are 63 patients, how many nurses are there?
- 7 A cashier in a bank counts £1300 in £10 and £20 notes only. The ratio £10 notes : £20 notes is 3 : 5. How many are there of each note?
- 8 Share:
  - a) 21 sweets in the ratio 3 : 4
  - b) £1.20 in the ratio 2 : 1
  - c) 1 litre of drink in the ratio 2 : 3
  - d) 36 strawberries in the ratio 4 : 5
  - e) £90 in the ratio 3 : 15
  - f) 480 g of nuts in the ratio 5 : 3.

**C**

- 1 A photocopier enlarges in a ratio of 5 : 7. If the original document was 30 cm long and 20 cm wide, what are the dimensions of the photocopy?
- 2 In a bakery the ratio of large loaves to small loaves is 8 : 3. If there are 96 large loaves, how many small loaves are there?
- 3 On a plane the ratio of adult to child passengers is 15 : 2. If there are 300 adult passengers, how many children are there on the plane?
- 4 In a necklace the ratio of black to red to green beads is 1 : 2 : 4. If there are 32 red beads, how many beads are:
  - a) black
  - b) green?
- 5 In an English exam the ratio of marks given for spelling to writing to reading is 2 : 8 : 5. If there are 48 marks for writing, how many are there for:
  - a) spelling
  - b) reading?
- 6 In a sports shop the ratio of large to medium to small running vests sold is 3 : 5 : 4. If 15 medium vests are sold, how many large vests and how many small vests are sold?
- 7 Three afternoon lessons last for 2 hours altogether. The lengths of the lessons are in the ratio 2 : 3 : 3. How long is each lesson?
- 8 Split:
  - a) 1.32 m in the ratio 6 : 5
  - b) £65 in the ratio 4 : 9
  - c) 6 hours in the ratio 7 : 2
  - d) 2 kg in the ratio 1 : 3 : 4
  - e) £5.40 in the ratio 3 : 2 : 5
  - f) 750 ml in the ratio 5 : 1 : 9.

Check and mark your answers.

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**A**

- 1 a)** 8  
**b)** 20  
**2 a)** 18  
**b)** 60

- 3 a)** 6  
**b)** 25  
**4 a)** 180  
**b)** 340

- 5** 20  
**6** 12  
**7** 5  
**8** 21

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**B**

- 1** 48  
**2** 24  
**3** 35  
**4** 24  
**5** 18 mins.  
**6** 14  
**7** 30 £10, 50 £20

- 8 a)** 9, 12  
**b)** 80p, 40p  
**c)** 400 ml, 600 ml  
**d)** 16, 20  
**e)** £15, £75  
**f)** 300 g, 180 g

**C**

- 1** 42 cm × 28 cm  
**2** 36  
**3** 40  
**4 a)** 16 **b)** 64  
**5 a)** 12 **b)** 30  
**6** 9 large, 12 small  
**7** 30 mins., 45 mins., 45 mins.

- 8 a)** 72 cm, 60 cm  
**b)** £20, £45  
**c)** 4 h 40 mins., 1 h 20 mins.  
**d)** 250 g, 750 g, 1 kg  
**e)** £1.62, £1.08, £2.70  
**f)** 250 ml, 50 ml, 450 ml