

Hello!

We hope you and your families are safe and well.

You are required to complete today's work. Please try your very best!

### Independent work

Complete your fluency, reasoning and problem solving questions. Choose the colour questions you are given in class e.g. red, blue or yellow.

$$1 \times 12 = 12$$

$$2 \times 12 = 24$$

$$3 \times 12 = 36$$

$$4 \times 12 = 48$$

$$5 \times 12 = 60$$

$$6 \times 12 = 72$$

$$7 \times 12 = 84$$

$$8 \times 12 = 96$$

$$9 \times 12 = 108$$

$$10 \times 12 = 120$$

$$11 \times 12 = 132$$

$$12 \times 12 = 144$$

$$12 \div 12 = 1$$

$$24 \div 12 = 2$$

$$36 \div 12 = 3$$

$$48 \div 12 = 4$$

$$60 \div 12 = 5$$

$$72 \div 12 = 6$$

$$84 \div 12 = 7$$

$$96 \div 12 = 8$$

$$108 \div 12 = 9$$




$$120 \div 12 = 10$$

$$132 \div 12 = 11$$

$$144 \div 12 = 12$$

# Arithmetic Test

Test 1

1	$987 \div 100$ 	<input type="text"/> 1 mark
2	$343 \times 2$ 	<input type="text"/> 1 mark
3	$5.2 \div 0.4$ 	<input type="text"/> 1 mark

20.01.2021

L.O: To find percentages of amounts.

### Success Criteria;

- Understand 'per cent' means 'out of 100'
- Use your knowledge of equivalent fractions
- Use your knowledge of multiplication and division

### Introduction

Fill in the gaps in the table using the options below.

25%      0.01      10%       $\frac{1}{10}$       0.5  
1%      0.25

<u>Fraction</u>	<u>Equivalent decimal</u>	<u>Equivalent percentage</u>
$\frac{1}{2}$		50%
$\frac{1}{4}$		
	0.1	
$\frac{1}{100}$		

### Introduction

Fill in the gaps in the table using the options below.

25%

0.01

10%

$\frac{1}{10}$

0.5

1%

0.25

<u>Fraction</u>	<u>Equivalent decimal</u>	<u>Equivalent percentage</u>
$\frac{1}{2}$	0.5	50%
$\frac{1}{4}$	0.25	25%
$\frac{1}{10}$	0.1	10%
$\frac{1}{100}$	0.01	1%

50% is half, so if you want to find 50% of an amount, divide it by 2.

25% is a quarter, so if you want to find 25% of something, divide it by 4.

20% is a fifth, so if you want to find 20% of something, divide it by 5.

10% is a tenth, so if you want to find 10% of something, divide it by 10.



Percentages  
of amounts



# Percentages of amounts

## Percentages in everyday life

We see percentages everywhere:

- In shops to promote sales, such as '30% off clothing'.
- Banks use them to show interest rates on bank accounts
- Even on chocolate bars, for example 'contains 80% cocoa'.

There are a number of different methods to find a percentage of an amount that we can use. Some percentages can be converted into an equivalent fraction in its lowest form.

For example:

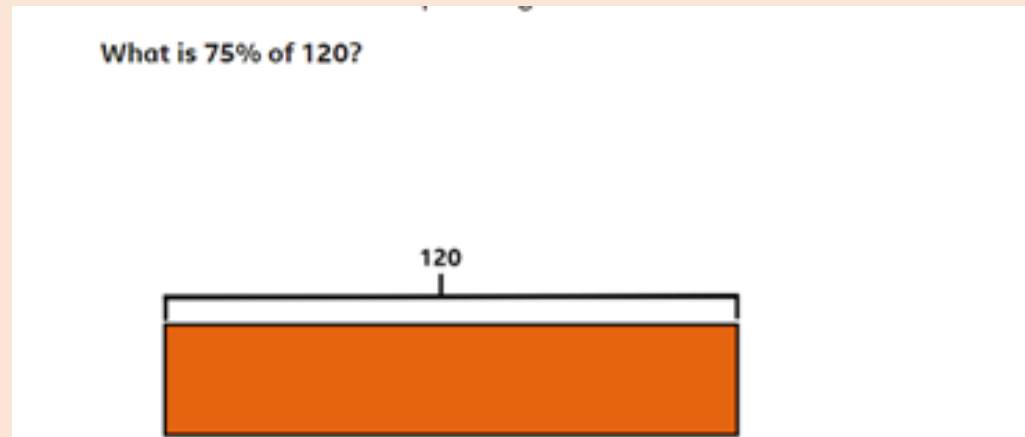
Percentage	Fraction
25%	$\frac{1}{4}$
50%	$\frac{1}{2}$
75%	$\frac{3}{4}$
20%	$\frac{1}{5}$
10%	$\frac{1}{10}$
30%	$\frac{3}{10}$

# Percentages of amounts

When you know what the equivalent fraction is, you then just find the fraction of the amount using this 'top tip'...

"**Divide** by the **denominator** (bottom) and **times** by the **numerator** (top)!"

Now let's look at an example using a bar model.



*This bar represents the whole which is 120. The whole is 100%.*

# Percentages of amounts

## Top Tip!

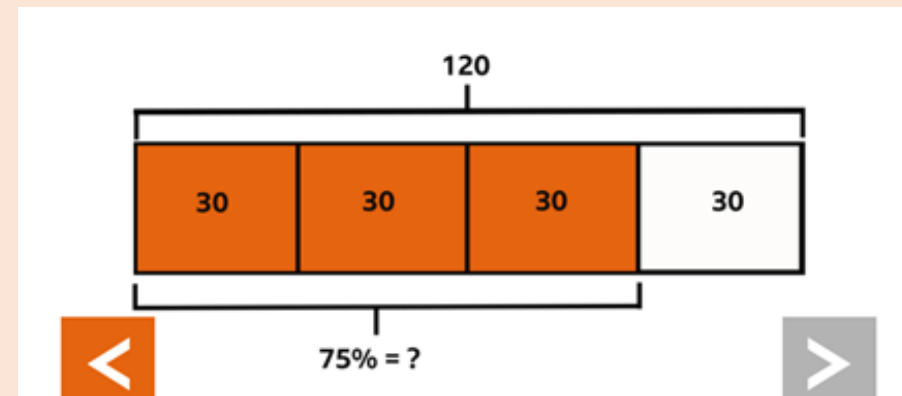
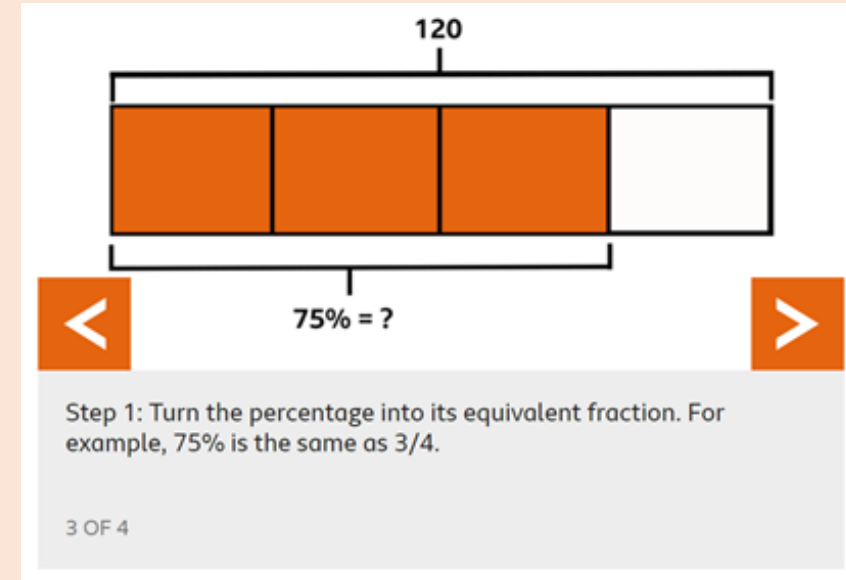
"**Divide** by the **denominator** (bottom) and **times** by the **numerator** (top)!"

Therefore, you must divide the whole-120 by the denominator (4) and times the answer by the numerator (3) to find your answer.

$$120 \div 4 = 30$$

$$30 \times 3 = 90$$

So, 75% of 120 = 90



### Varied Fluency 1

What value should replace each letter in the calculation below?

$$1\% \text{ of } 1,200 = \frac{1}{A} \text{ of } 1,200 = 1,200 \div B = 12$$

### Varied Fluency 1

What value should replace each letter in the calculation below?

$$1\% \text{ of } 1,200 = \frac{1}{100} \text{ of } 1,200 = 1,200 \div 100 = 12$$

$$A = 100; B = 100$$



### Problem Solving 1

**Mahalia wants to raise £1,300 for charity. She hopes to raise 50% of that total at an art exhibition. This is what people gave:**

<u>Person</u>	<u>Amount given</u>
Phil Coffers	1% of £18,000
Frieda Spendit	10% of £2,230
Will Paywell	25% of £1,004

**How much money did she raise at the exhibition? Did she reach 50% of £1,300?**



### Problem Solving 1

**Mahalia wants to raise £1,300 for charity. She hopes to raise 50% of that total at an art exhibition. This is what people gave:**

<u>Person</u>	<u>Amount given</u>
Phil Coffers	1% of £18,000
Frieda Spendit	10% of £2,230
Will Paywell	25% of £1,004

**How much money did she raise at the exhibition? Did she reach 50% of £1,300?**

**She raised £654. Yes, she reached her target. 50% of £1,300 is £650.**




# Main Activity

**Percentage of an amount (1)**

**1 Match the equivalent fractions to the percentages.**

$\frac{1}{2}$	25%
$\frac{1}{100}$	1%
$\frac{1}{10}$	50%
$\frac{1}{4}$	10%

**2 Match each bar model to the statement it represents.**

	10% of 40
	25% of 40
	50% of 40

Compare answers with a partner.

**3 Use the bar models to help you complete the calculations.**

50% of 624 =

25% of 624 =

What do you notice about your answers?

**4 Use bar models to complete the calculations.**

50% of 3,420 =

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Complete the worksheet- Percentages of amounts.  
Complete the RPS worksheet (slide 21, 22 or 23) you are normally given in class- red, blue or yellow.



# Percentage of an amount (1)

1 Match the equivalent fractions to the percentages.

$$\frac{1}{2}$$

$$\frac{1}{100}$$

$$\frac{1}{10}$$

$$\frac{1}{4}$$

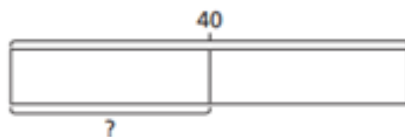
25%

1%

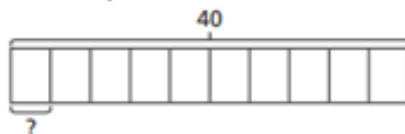
50%

10%

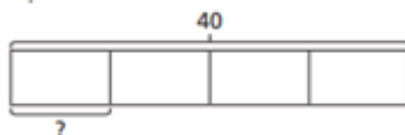
2 Match each bar model to the statement it represents.



10% of 40



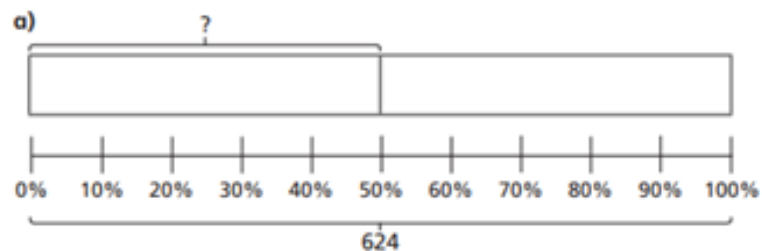
25% of 40



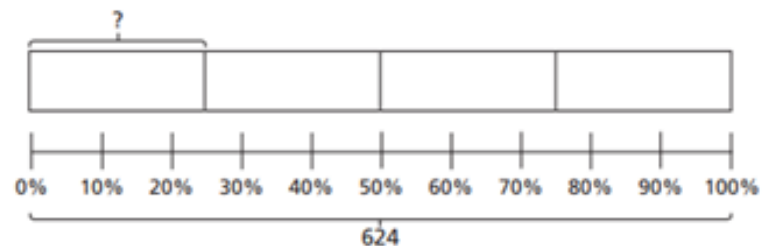
50% of 40

Compare answers with a partner.

3 Use the bar models to help you complete the calculations.



$$50\% \text{ of } 624 = \boxed{\phantom{000}}$$



$$25\% \text{ of } 624 = \boxed{\phantom{000}}$$

What do you notice about your answers?

b) Use bar models to complete the calculations.

$$50\% \text{ of } 3,420 = \boxed{\phantom{0000}}$$



25% of 3,420 =

10% of 3,420 =

4 Complete the calculations.

- |  |  |
|--|--|
| a) 50% of 3,000 = <input type="text"/> | c) 10% of 3,000 = <input type="text"/> |
| 50% of 1,500 = <input type="text"/>    | 10% of 1,500 = <input type="text"/>    |
| 50% of 500 = <input type="text"/>      | 10% of 500 = <input type="text"/>      |
| b) 25% of 3,000 = <input type="text"/> | d) 1% of 3,000 = <input type="text"/>  |
| 25% of 1,500 = <input type="text"/>    | 1% of 1,500 = <input type="text"/>     |
| 25% of 500 = <input type="text"/>      | 1% of 500 = <input type="text"/>       |

What do you notice about your answers?

- 5 Workers in a toy factory aim to pack 2,560 boxes each day.  
At 10:00 am they have completed 25% of their target.

a) How many boxes have they packed?

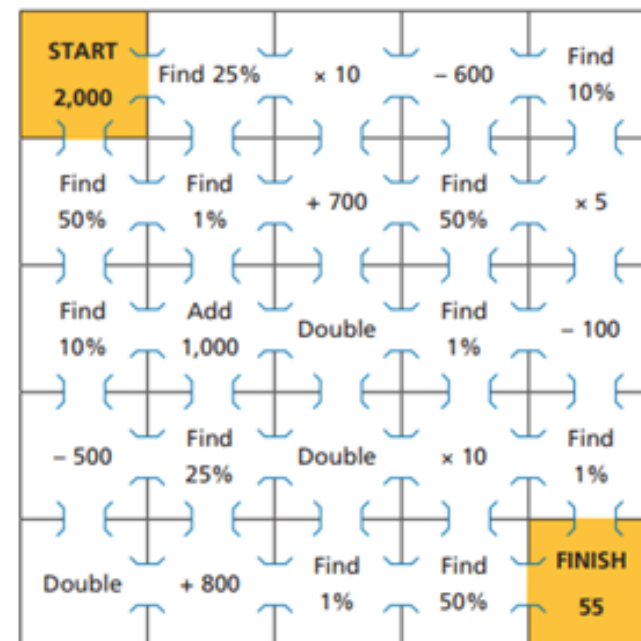
By midday they have packed 50% of their target.

At 2:00 pm they have packed another 10% of their target.

b) How many more boxes do they need to pack to meet the daily target?

They need to pack  more boxes.

- 6 Follow the steps to find a way through the maze.



## Percentage of an Amount 1

1a. Ali wants to raise £40 for charity. He hopes to raise 50% of that total at a party. This is what people gave:

Person	Amount given
Rich Fella	10% of £80
Guy Withmoney	10% of £30
Lotta Cash	50% of £10

How much money did he raise?  
Did he reach 50% of £40?



PS

2a. Ollie and Shae are trying to get the largest answer. They can only change one part of the calculation below.

$$10\% \text{ of } 80\text{kg} = 8\text{kg}$$

- Ollie says, "I will find 10% of 100kg to make the larger answer."
- Shae says, "I will find 50% of 80kg to make the larger answer."

Who has made the largest answer?



PS

3a. Esme tried to calculate 10% of 500 but she has got the answer wrong.

She says,



To find 10% of 500, I divided 500 by 2 and got 250 as an answer.

Explain Esme's mistake.



R

## Percentage of an Amount 1

1b. Leah wants to raise £6,000 for charity. She hopes to raise 10% of that total at a fundraising ball. This is what people gave:

Person	Amount given
Carrie Dollars	50% of £250
Bill Mybank	50% of £370
Angel Hinvesta	10% of £3,000

How much money did she raise ?  
Did she reach 10% of £6,000?



PS

2b. Finn and Max are trying to get the smallest answer. They can only change one part of the calculation below.

$$50\% \text{ of } 110\text{m} = 55\text{m}$$

- Finn says, "I will find 10% of 110m to make the smaller answer."
- Max says, "I will find 50% of 50m to make the smaller answer."

Who has made the smallest answer?



PS

3b. Karl tried to calculate 50% of 700 but he has got the answer wrong.

He says,



To find 50% of 700, I divided 700 by 10 and got 70 as an answer.

Explain Karl's mistake.



R

### Percentage of an Amount 1

4a. Tia wants to raise £500 for the church roof. She hopes to raise 25% of that total at a church fair. This is what people gave:

Person	Amount given
Owen Lotts	1% of £6,800
Penny Pincher	10% of £360
Noah Goodeal	50% of £66

How much money did she raise?  
Did she reach 25% of £500?



PS

5a. Shona and Toby are trying to get the largest answer. They can only change one part of the calculation below.

$$1\% \text{ of } 1,300\text{cm} = 13\text{cm}$$

- Shona says, "I will find 25% of 1,300cm to make the larger answer."
- Toby says, "I will find 1% of 3,200cm to make the larger answer."

Who has made the largest answer?



PS

6a. Raoul tried to calculate 25% of 608 but he has got the answer wrong.

He says,



To find 25% of 608, I divided 608 by 2 and got 304 as an answer.

Explain Raoul's mistake.



PS

### Percentage of an Amount 1

4b. Tom wants to raise £16,000 for a new library. He hopes to raise 1% of that total at a school fête. This is what people gave:

Person	Amount given
Milly Yonaire	25% of £180
Anna Notherquid	25% of £148
Landon Hisfeet	10% of £770

How much money did he raise?  
Did he reach 1% of £16,000?



PS

5b. Theo and May are trying to get the smallest answer. They can only change one part of the calculation below.

$$25\% \text{ of } 500\text{ml} = 125\text{ml}$$

- Theo says, "If I find 25% of 200ml to make the smaller answer."
- May says, "I will find 1% of 500ml to make the smaller answer."

Who has made the smallest answer?



PS

6b. Josie tried to calculate 1% of 1,500 but she has got the answer wrong.

She says,



To find 1% of 1,500, I divided 1,500 by 10 and got 150 as an answer.

Explain Josie's mistake.



PS



## Percentage of an Amount 1

7a. Dylan wants to raise £485 for charity. He hopes to raise 50% of that total at an art exhibition. This is what people gave:

Person	Amount given
Ruby Dealer	25% of £335
Liv Decadent-Lee	1% of £4,540
Max Profits	10% of £1,196

How much money did he raise at the party? Did he reach 50% of £485?



PS

8a. Cal and Eva are trying to get the smallest answer. They can only change one part of the calculation below.

$$25\% \text{ of } 2.35\text{km} = 587.5\text{m}$$

- Cal says, "I will find 25% of 1.67km to make the smaller answer."
- Eva says, "I will find 1% of 2.35km to make the smaller answer."

Who has made the smallest answer?



PS

9a. Layla tried to calculate 50% of 9.4m in cm but she has got the answer wrong.

She says,



To find 50% of 9.4m in cm, I divided 94cm by 2 and got 47cm as an answer.

Explain Layla's mistake.



II

## Percentage of an Amount 1

7b. Sia wants to raise £1,610 for charity. She hopes to raise 25% of that total at a gala. This is what people gave:

Person	Amount given
Ivor Fortune	1% of £11,170
Kitty Isfull	1% of £16,320
Chase Wonga	50% of £255

How much money did she raise at the party? Did she reach 25% of £1,610?



PS

8b. Nia and Arlo are trying to get the largest answer. They can only change one part of the calculation below.

$$10\% \text{ of } 4.5\text{cm} = 4.5\text{mm}$$

- Nia says, "I will find 25% of 4.5cm to make the larger answer."
- Arlo says, "I will find 10% of 65.5cm to make the larger answer."

Who has made the largest answer?



PS

9b. Aiden tried to calculate 25% of 0.45kg in g but he has got the answer wrong.

He says,



To find 25% of 0.45kg in g, I divided 450g by 4 and got 225g as an answer.

Explain Aiden's mistake.



II

# Plenary

## True or False?

Percentage of an amount (1)

Tommy and Ron are both correct.



Tommy

To find 25%. I can divide the amount by 4



Ron

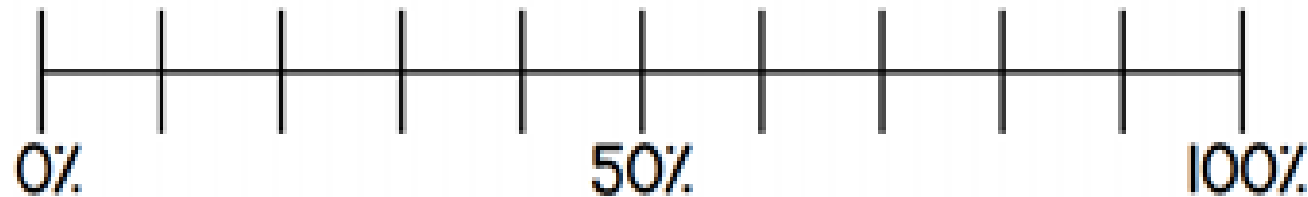
To find 25%. I can halve the amount then halve the amount again.

# Plenary

True or False ?

Percentage of an amount (1)

True



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**Email your finished work  
to your class teacher!**

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[ksutherland@kingsavenue.lambeth.sch.uk](mailto:ksutherland@kingsavenue.lambeth.sch.uk)