## Maths Activity - Percentages

## Click the links below to revise percentages

- What is a percentage?
- How to find a percentage of a number
- Understanding percentages


## Warming up *

Q1.
$20 \%$ of $3,000=$


Q2.
$35 \%$ of $320=$


1 mark

Q3.
$51 \%$ of $900=$


1 mark

Q4.
$36 \%$ of $450=$
$\square$

Q5.
$20 \%$ of $1,200=$


1 mark

Q6.
$99 \%$ of $200=$

Q7.
$28 \%$ of $650=$
$\square$
1 mark

Q8.
$45 \%$ of $460=$


1 mark

## Feeling confident **

## Q1.

Jack has $£ 400$
He spends $\mathbf{3 5 \%}$ of his money on a new bike.


How much does Jack spend on his new bike?

## £

1 mark

Q2.
What is $10 \%$ of a half?


1 mark
What percentage of 20 is $19 ?$


1 mark

Q3.

A cat sleeps for $\mathbf{1 2}$ hours each day.
$\mathbf{5 0 \%}$ of its life is spent asleep.


Write the missing percentage.
A koala sleeps for $\mathbf{1 8}$ hours each day.


## Q4.

This pie chart shows the ingredients to make a food mixture for wild birds.


Estimate the percentage of mixture that is suet.

Mina uses 100 grams of millet in the mixture.
Estimate how many grams of sunflower seeds she should use.

## Q5.

200 children went on holiday.
$10 \%$ of the children went to Wales.
$25 \%$ of the children went to Scotland.
How many more children went to Scotland than went to Wales?


Q6.
$20 \%$ of the children in a sports club play tennis.

$25 \%$ of the children who play tennis also play rounders.


There are 8 children in the club who play both tennis and rounders.
How many children are there in the sports club altogether?


2 marks

## Q7.

In a survey of children's favourite fruit juices, these were the results.

| J uice | Apple | Orange | Grape | Mango |
| :---: | :---: | :---: | :---: | :---: |
| Percentage <br> of children | $25 \%$ | $14 \%$ | $30 \%$ | $31 \%$ |

(a) $\mathbf{2 0}$ more children chose grape than chose apple.

How many children took part in the survey?

(b) Chen makes a pie chart to show the results.

What angle should he use for the children who chose mango?


Q8.
$\mathbf{2 0 \%}$ of Megan's number is 64
What is $\mathbf{5 0 \%}$ of Megan's number?


Q9.
Amina asked 60 children to choose their favourite flavour of jelly.
These were her results.

| Flavour | Number of <br> children |
| :--- | :---: |
| Raspberry | 12 |
| Lemon | 8 |
| Orange | 15 |
| Blackcurrant | 25 |
| Total | $\mathbf{6 0}$ |

What percentage of the 60 children chose orange?

Q10.
Liam did a survey of 55 people to see how many were left-handed.
Liam says,
'The results show that exactly $10 \%$ of the people
in the survey are left-handed.'
Explain why Liam cannot be correct.


1 mark

## Challenge ***

Copy this grid into your book:


Complete the grid using these clues:

1. The number in the top left square is $25 \%$ of 600
2. The number in the bottom right square is $4 \%$ of the number in the top right square
3. The number to the left of 5 is $60 \%$ of the number in the top left
4. The numbers in the bottom row add up to 335 increased by $20 \%$
5. The numbers in the top row total $35 \%$ of 1060 ; two of these numbers are the same.
6. The number below 125 is $45 \%$ of 300
7. The numbers in the last column total 200 increased by $50 \%$
8. The number below 150 is $60 \%$ of the number above 5
9. The number above 7 is $30 \%$ of the number next to 5
10. The total in the first column is 400 increased by $25 \%$
11. The number above 90 is $20 \%$ of 90
12. The number above 27 is $40 \%$ of 50
13. The number next to 135 is $10 \%$ of the number in the bottom right square

## Answers

## Warming up*

Mark schemes

## Q1.

600
Do not accept 600\%

Q2.
112
Do not accept 112\%

Q3.

Do not accept 459\%

Q4.
162
Do not accept 162\%

Q5.
240
Do not accept 240\%

Q6.
198
Do not accept 198\%

Q7.
182
Do not accept 182\%

Q8.
207
Do not accept 207\%

## Feeling confident ${ }^{* *}$

Mark schemes

## Q1.

£140
Do not accept 140\%

Q2.
(a) $\frac{1}{20}$ or equivalent

Accept equivalent fractions, decimals or percentages, eg:

- 5\%
- 0.05
- $\frac{5}{100}$

Do not accept 5 without a percentage sign
(b) 95

Do not accept equivalent fractions or decimals

Q3.
75

Q4.
(a) Answer in the range 15\% inclusive to $25 \%$ exclusive

Do not accept 25\%
(b) Answer in the range 200 g to 400 g exclusive

Do not accept 200 g OR 400 g.

## Q5.

Award TWO marks for a correct answer of 30
If the answer is incorrect, award ONE mark for evidence of appropriate working, eg:
$10 \%$ of $200=20$
$25 \%$ of $200=50$
$50-20=$ wrong answer

## OR

$$
25 \%-10 \%=15 \%
$$

$15 \%$ of $200=$ wrong answer
Working must be carried through to reach an answer for the award of ONE mark.

## Q6.

160
or
32 seen (number who play tennis)
Do not accept 32\% seen

## OR

Shows or implies a complete correct method, eg:

- $8 \times 4 \times 5$
- $25 \%$ of tennis is 8
$8 \times 4=24$ (error)
tennis is $20 \%$ of sports club
$24 \times 5=120$

Q7.
(a) 400
or
Shows or implies a complete correct method, eg:

- $30 \%-25 \%=5 \%$
$5 \%=20$
$100 \%=20 \times 20$
(b) $\quad 111.6$ or 112

Do not accept 111

Q8.
Award TWO marks for the correct answer of 160
If the answer is incorrect, award ONE mark for
evidence of appropriate working, eg:

- $64 \div 2=32$
$64+64+32=$ wrong answer


## OR

- $64 \times 5=320$
$320 \div 2=$ wrong answer
Working must be carried through to reach an answer for the award of ONE mark.

Q9.
25

## Q10.

An explanation which recognises that $10 \%$ of 55 is not a whole number, eg:
' $10 \%$ of 55 is $5 \frac{1}{2}$, and you can't have $5 \frac{1}{2}$ people'
'It wouldn't be a whole number of people'
'No whole number out of 55 will give you $10 \%$ '
'If it was 5 people, 5 out of 55 isn't $10 \%$.
6 out of 55 isn't $10 \%$ either'
'Because you can't have half a person.'

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

Do not accept vague or incomplete explanations, eg:
■ 'You can't get 10\% of 55'

- 'Some children write with both hands'.


## Challenge ***

| 150 | 48 | 48 | 125 |
| :---: | :---: | :---: | :---: |
| 21 | 20 | 0.5 | 135 |
| 29 | 27 | 18 | 35 |
| 300 | 7 | 90 | 5 |
|  |  |  |  |

