Pictograms, Bar Charts and Pie Charts

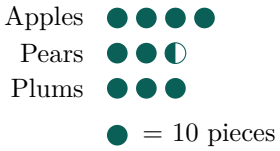
GCSE Mathematics • **Foundation Tier** • Grades 1–3 • Non-calculator

WORKED SOLUTIONS

Name: worked example Class: _____ Total: 48 / 48

Show all your working. Marks are given for correct method as well as the final answer.

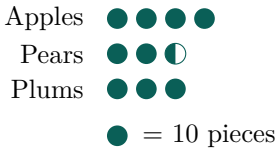
1. The pictogram shows fruit sold one morning. Work out how many apples were sold. **[1 mark]**



4 whole symbols
4 × 10 = 40

Answer: 40

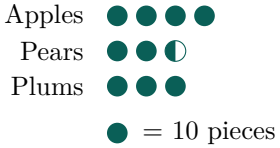
2. Using the same pictogram, work out how many pears were sold. **[2 marks]**



2 whole and 1 half
2 × 10 = 20, half = 5
half a symbol is half the KEY value
20 + 5 = 25

Answer: 25

3. Using the same pictogram, work out the total fruit sold. **[2 marks]**



apples 40, pears 25, plums 30
40 + 25 + 30 = 95

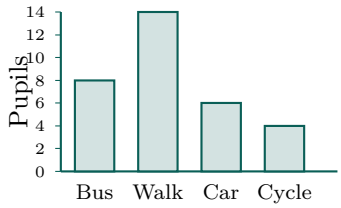
Answer: 95

4. 35 oranges were also sold. Work out how many symbols would be drawn, using the same key of 10. **[2 marks]**

35 ÷ 10 = 3.5

Answer: 3 and a half

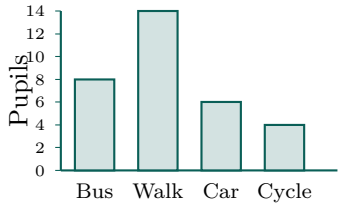
5. The bar chart shows how pupils travel to school. Write down the most common method. **[1 mark]**



the tallest bar

Answer: *Walk*

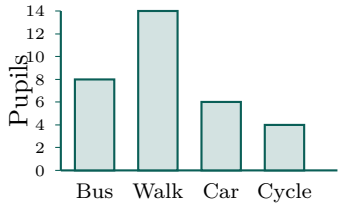
6. Using the same chart, work out how many pupils cycle. **[1 mark]**



read across from the top of the bar

Answer: *4*

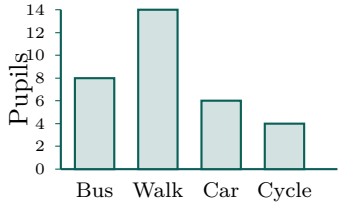
7. Using the same chart, work out how many pupils were asked. **[2 marks]**



8 + 14 + 6 + 4
= 32

Answer: *32*

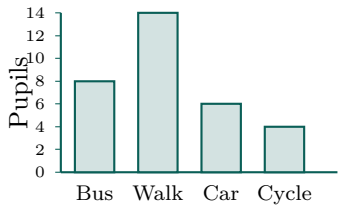
8. Using the same chart, work out how many more pupils walk than take the car. **[2 marks]**



14 − 6 = 8

Answer: *8*

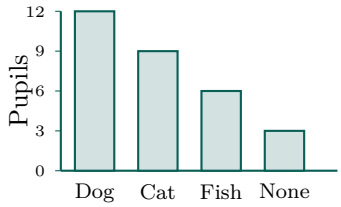
9. Using the same chart, work out what fraction of pupils take the bus. Give your answer in its simplest form. **[3 marks]**



8 out of 32
$\frac{8}{32}$
divide both by 8
$= \frac{1}{4}$

Answer: $\frac{1}{4}$

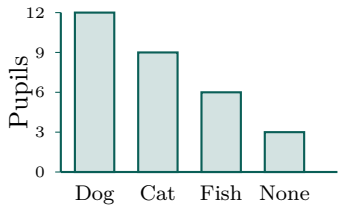
10. The bar chart shows pets owned by a class. Work out how many pupils own a cat or a fish. **[2 marks]**



9 + 6 = 15

Answer: 15

11. Using the pets chart, work out the percentage of pupils who own a dog. **[3 marks]**



total = 12 + 9 + 6 + 3 = 30
$\frac{12}{30} \times 100$
= 40%

Answer: 40%

12. 60 people were asked their favourite drink. Work out the angle for one person on a pie chart. **[2 marks]**

a full circle is 360°
360 ÷ 60 = 6

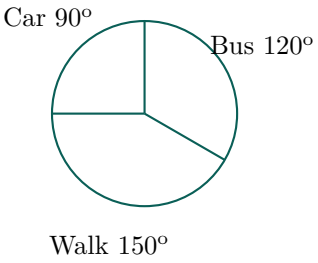
Answer: 6°

13. In that survey 25 chose tea. Work out the angle of the tea sector. **[2 marks]**

25×6
$= 150°$

Answer: 150°

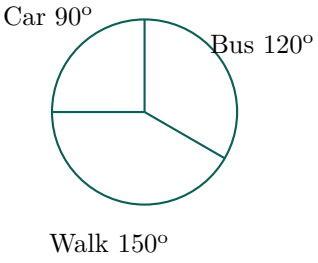
14. The pie chart shows how 72 pupils travel. Work out how many walk. **[3 marks]**



360° represents 72 pupils
1° represents $72 \div 360 = 0.2$
$150 \times 0.2 = 30$

Answer: 30

15. Using the same pie chart, work out how many take the bus. **[2 marks]**



$120 \times 0.2 = 24$

Answer: 24

16. A pie chart sector has an angle of 45°. Work out what fraction of the total it represents, in its simplest form. **[2 marks]**

$\frac{45}{360}$
divide both by 45
$= \frac{1}{8}$

Answer: $\frac{1}{8}$

17. Explain why a pie chart cannot show how many people were asked. **[2 marks]**

the sectors only give shares of the whole
two surveys of different sizes can look identical

Answer: it shows proportions, not totals

18. 40 people chose a holiday destination: 16 Spain, 14 France, 10 Italy.

(a) Work out the angle for one person. **[2 marks]**

$360 \div 40$

$= 9°$

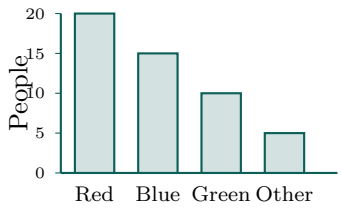
(b) Work out the angle of the Spain sector. **[2 marks]**

16×9

$= 144°$

Answer: $9°$; $144°$

19. A bar chart and a pie chart both show the same survey of 50 people.



(a) Work out the angle of the Blue sector on the pie chart. **[3 marks]**

$360 \div 50 = 7.2°$ per person

15×7.2

$= 108°$

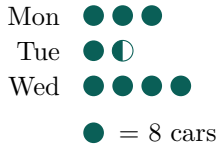
(b) Write down one thing the bar chart shows more clearly than the pie chart. **[2 marks]**

the bar chart gives the actual FREQUENCIES

the pie chart only shows shares

Answer: $108°$; the bar chart shows actual numbers

20. A pictogram uses one symbol for 8 cars.



(a) Work out how many cars passed on Tuesday. **[2 marks]**

1 whole and 1 half
8 + 4
= 12

(b) Work out the total for the three days. **[3 marks]**

Mon $3 \times 8 = 24$
Wed $4 \times 8 = 32$
$24 + 12 + 32 = 68$

Answer: 12 ; 68 cars

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