



1.13D Pictograms: Fluency and Exam Drill

EDEXCEL Edexcel 1MA1 · Calculator allowed · about 50 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** Each smiley face symbol represents 2 people. How many people are shown by 4 smiley faces?

(Total for Question 1 is 1 mark)

- 2** In a pictogram each star symbol represents 5 apples. There are 3 stars shown. How many apples are there in total?

(Total for Question 2 is 1 mark)

- 3** A pictogram uses a triangle symbol to represent 3 bicycles. Jenny sees 7 triangle symbols on the chart. How many bicycles does Jenny see represented?

(Total for Question 3 is 2 marks)

- 4** In a pictogram each icon of a book represents 4 books. A library shows 5 full book icons and 1 half icon (half a symbol). How many books are represented?

(Total for Question 4 is 2 marks)

- 5** A school pictogram shows lunch choices. One sandwich symbol represents 6 pupils. The diagram shows 4 sandwich symbols and 3 cheese symbols. Each cheese symbol represents 3 pupils.
Work out the total number of pupils shown who chose either a sandwich or cheese.

(Total for Question 5 is 3 marks)

- 6** In a pictogram for a car park each car symbol represents 8 cars. There are 9 car symbols and 2 quarter symbols (each quarter symbol represents a quarter of one car symbol).
How many cars are represented?

(Total for Question 6 is 3 marks)

- 7** A pictogram shows pets owned by 60 pupils. Each paw print symbol represents the same number of pets. The pictogram shows: 6 paw prints for dogs, 8 paw prints for cats, 1 paw print for fish, and 5 paw prints for rabbits. All pets are shown.
Work out how many pets each paw print represents.

(Total for Question 7 is 4 marks)

- 8** A charity poster uses one ribbon symbol to represent 25 donated items. The poster shows 2 full ribbons and 3 small slivers, each sliver representing $\frac{1}{5}$ of a full symbol.
How many donated items are shown on the poster?

(Total for Question 8 is 4 marks)

- 9** A pictogram shows the number of books read by pupils in a term. One book icon stands for 4 books. The pictogram shows 11 book icons. The teacher says this represents 44 books. Is the teacher correct? You must show your working.

(Total for Question 9 is 4 marks)

- 10** A town survey pictogram shows bins collected. One bin icon represents 10 bins. The pictogram shows 7 full bin icons and 2 half icons. How many bins were collected in total?

(Total for Question 10 is 4 marks)

- 11** A farmer uses a pictogram where one vegetable symbol represents 12 vegetables. The pictogram shows 5 carrot symbols, 3 potato symbols and 2 small quarter symbols (each quarter symbol represents $\frac{1}{4}$ of a full symbol).

- (a) Work out how many vegetable symbols in total are shown (counting quarters as fractions).
(b) Work out the total number of vegetables represented.

(a) (a) Work out how many vegetable symbols in total are shown (counting quarters as fractions). **(1)**

(b) (b) Work out the total number of vegetables represented. **(3)**

(Total for Question 11 is 4 marks)

- 12** A survey pictogram shows the number of people using different sports halls. One circle symbol represents 15 people. The pictogram shows 3 circles for badminton, 4 circles for basketball and 1 small third-circle symbol (one third of a full symbol) for squash. Work out the total number of people shown using the sports halls.

(Total for Question 12 is 4 marks)

Mark scheme · 1.13D Pictograms: Fluency and Exam Drill

Question 1

- **B1** 8 cao
- **Answer: 8**

Question 2

- **B1** 15 cao
- **Answer: 15 apples**

Question 3

- **M1** Correct method shown, e.g. 7×3 or repeated addition $3 + 3 + 3 + 3 + 3 + 3 + 3$ (oe)
- **A1** 21 cao
- **Answer: 21 bicycles**

Question 4

- **M1** Use of 5 full symbols $\times 4$ and half symbol $= 0.5 \times 4$ or 2, so method shown
- **A1** 22 cao
- **Answer: 22 books**

Question 5

- **M1** Correct calculation of sandwiches: $4 \times 6 = 24$ and cheeses: $3 \times 3 = 9$ (method shown)
- **M1** Addition of the two totals shown, e.g. $24 + 9$
- **A1** 33 cao
- **Answer: 33 pupils**

Question 6

- **M1** Recognise 2 quarter symbols $= 0.5$ of a symbol and show method to convert to number of whole symbols
- **M1** Calculate cars from full symbols: 9×8 and add half symbol 0.5×8
- **A1** 76 cao
- **Answer: 76 cars**

Question 7

- **M1** Sum symbols: $6 + 8 + 1 + 5 = 20$ shown
- **M1** Method to divide total pets by number of symbols: $60 / 20$
- **A1** 3 cao
- **B1** State result as pets per paw print, e.g. '3 pets per paw print' oe
- **Answer: 3 pets per paw print**

Question 8

- **M1** Convert slivers to fraction of a symbol: $3 \times 1/5 = 3/5$ or 0.6
- **M1** Add to full ribbons: $2 + 3/5$ shown as total symbols
- **M1** Multiply total symbols by 25, or compute $2 \times 25 + (3/5) \times 25$
- **A1** 65 cao
- **Answer: 65 items**

Question 9

- **M1** Method: multiply number of icons by value per icon, e.g. 11×4 shown
- **M1** Calculation shown giving 44 as the result
- **A1** 44 cao
- **B1** Answer states whether teacher is correct with a reason, e.g. 'Yes. $11 \text{ icons} \times 4 = 44$ ' oe
- **Answer: Yes. $11 \times 4 = 44$, so the teacher is correct.**

Question 10

- **M1** Recognise half icon = 0.5 of a full icon and convert two half icons to 1 full icon or show 2×0.5
- **M1** Find total number of full-icon-equivalents: $7 + 1 = 8$ or $7 + 2 \times 0.5$
- **M1** Multiply by 10 to find bins: 8×10
- **A1** 80 cao
- **Answer: 80 bins**

Question 11

- (a) **B1** $5 + 3 + 2 \times \frac{1}{4} = 8.5$ shown
- (a) **Answer: 8.5 symbols**
- (b) **M1** Use total symbols 8.5 and multiply by 12, showing method
- (b) **M1** Calculate 8.5×12 or $8 \times 12 + 0.5 \times 12$
- (b) **A1** 102 cao
- (b) **Answer: 102 vegetables**

Question 12

- **M1** Convert third symbol to fraction $\frac{1}{3}$ and add to full circles: $3 + 4 + \frac{1}{3}$ shown
- **M1** Find total symbols as fraction or mixed number: $7 + \frac{1}{3}$ or $\frac{22}{3}$
- **M1** Multiply total symbols by 15 or compute $7 \times 15 + (\frac{1}{3}) \times 15$
- **A1** 110 cao
- **Answer: 110 people**