FOUNDATION

1.13 Pictograms: Test Pack

EDEXCEL 1MA1 · Calculator allowed · about 65 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Mr Osei asked the pupils in his class which pet they owned. The pictogram shows the results.

Pets owned by pupils in Mr Osei's class

Dog	🐾 🐾 🐾 🐾 🐾 🐾
Cat	🐾 🐾 🐾 🐾
Fish	🐾 🐾
Rabbit	🐾 🐾 🐾

Key: 🐾 = 1 pupil

(a) Write down the number of pupils who own a fish. **(1)**

.....

(b) Write down which pet is the least popular. **(1)**

.....

(c) Work out how many more pupils own a dog than own a rabbit. **(2)**

.....

(Total for Question 1 is 4 marks)

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2 The pictogram shows the number of rainy days recorded each month for four months.

Rainy days recorded each month

Key: = 6 rainy days = 3 rainy days (half symbol)

Month	Number of symbols
January	
February	
March	
April	

(a) Write down the number of rainy days in April. **(1)**

.....

(b) Write down the number of rainy days in February. **(1)**

.....

(c) Work out how many more rainy days there were in January than in March. **(2)**

.....

(Total for Question 2 is 4 marks)

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3 A museum recorded the number of visitors on four days. The pictogram shows the results.

Museum visitors

Saturday	● ● ● ● ● ● ● ●
Sunday	● ● ● ● ● ●
Monday	● ●
Tuesday	● ● ●

Key: ● = 5 visitors

(a) Write down the number of visitors on Monday. **(1)**

.....

(b) Work out how many more visitors came on Saturday than on Tuesday. **(2)**

.....

(c) Work out the total number of visitors over the four days. **(2)**

.....

(Total for Question 3 is 5 marks)

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4 At a charity shop, donated items were recorded on a pictogram using the key 1 symbol = 5 items. The Toys row has 4 symbols. Priya says, 'The pictogram shows that 4 toys were donated.' Explain why Priya is incorrect, and state the correct number of toys donated.

.....

.....

.....

.....

.....

.....

(Total for Question 4 is 2 marks)

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5 A cinema kiosk pictogram uses the key 1 symbol = 4 buckets of popcorn. Monday: 3 symbols. Tuesday: 4 and a half symbols. Wednesday: 6 symbols. Show that the total number of buckets of popcorn sold over the three days is 54.

(Total for Question 5 is 3 marks)

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6 A pictogram shows the number of late buses recorded at a bus depot over five weekdays, using the key 1 symbol = 2 late buses. Monday: 3 symbols. Tuesday: 2 symbols. Wednesday: 4 symbols. Thursday: 1 symbol. Friday: 5 symbols.

(a) Work out the number of late buses on Thursday. **(1)**

.....

(b) Work out the total number of late buses over the five weekdays. **(2)**

.....

(c) Work out the mean number of late buses per weekday. **(2)**

.....

(Total for Question 6 is 5 marks)

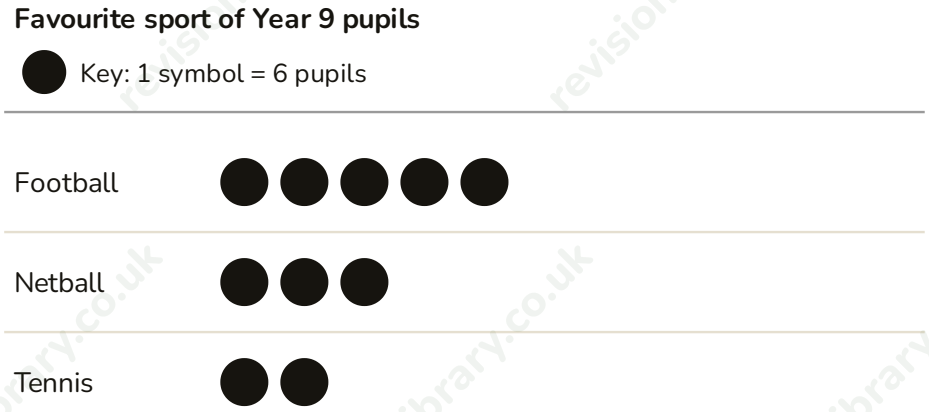
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7 At a village fete, a pictogram shows raffle tickets sold, with one ticket symbol representing 3 tickets. Priya sold 18 raffle tickets. How many whole ticket symbols are needed to represent Priya's sales on the pictogram?

(Total for Question 7 is 1 mark)

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8 A pictogram shows the favourite sport of pupils in Year 9, using the key 1 symbol = 6 pupils. Football: 5 symbols. Netball: 3 symbols. Tennis: 2 symbols.



(a) Work out the ratio of pupils who chose Football to pupils who chose Tennis. Give your ratio in its simplest form. **(3)**

.....

(b) Work out the percentage of pupils in the survey whose favourite sport is Netball. **(3)**

.....

(Total for Question 8 is 6 marks)

9 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 9 is 2 marks)

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10 A pictogram shows spectators at an Under-14s football match. Each football symbol represents 12 spectators. The pictogram shows 4 full football symbols and 1 half symbol.
Show that 54 spectators are represented.

(Total for Question 10 is 3 marks)

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11 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 11 is 4 marks)

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12 A PE department's pictogram shows pupils' favourite sport. Each symbol represents 4 pupils. Football has 6 symbols and netball has 4 symbols.
Write the ratio of pupils who chose football to pupils who chose netball, giving your answer in its simplest form.

(Total for Question 12 is 3 marks)

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13 A running club's pictogram shows laps completed in a sponsored event. Each trainer-shoe symbol represents 8 laps. Saturday's row shows 6 full symbols and 1 quarter symbol. The coach says, 'That means 54 laps were completed.'
Show that the coach's total is wrong, and work out the correct number of laps.

(Total for Question 13 is 4 marks)

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14 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 14 is 3 marks)

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Mark scheme · 1.13 Pictograms: Test Pack

Question 1

(a) 2 cao **B1**

(a) Answer: 2

(b) Fish cao **B1**

(b) Answer: Fish

(c) 6 - 3 oe **M1**

(c) 3 cao **A1**

(c) Answer: 3

Question 2

(a) 9 cao **B1**

(a) Answer: 9

(b) 18 cao **B1**

(b) Answer: 18

(c) 27 - 15 oe, with 27 and 15 correctly read from the pictogram **M1**

(c) 12 cao **A1**

(c) Answer: 12

Question 3

(a) 10 cao **B1**

(a) Answer: 10

(b) 40 - 15 oe, with 40 and 15 correctly read from the pictogram **M1**

(b) 25 cao **A1**

(b) Answer: 25

(c) 8 + 6 + 2 + 3 (= 19 symbols) oe **M1**

(c) 95 cao **A1**

(c) Answer: 95

Question 4

explains that each symbol represents 5 items, not 1, so the number of symbols must be multiplied by the key oe **B1**

20 cao **B1**

Answer: Priya is wrong because each symbol represents 5 items (the key), not 1 item. She should multiply the number of symbols by 5. The correct number of toys donated is 4 x 5 = 20.

Question 5

3 x 4 = 12 and 6 x 4 = 24 (the two whole-symbol days) oe **M1**

4.5 x 4 = 18 (the half-symbol day) oe **M1**

12 + 18 + 24 = 54, cso **A1**

Answer: 54 (shown).

Question 6

(a) 2 cao **B1**

(a) Answer: 2

(b) 6 + 4 + 8 + 2 + 10 oe **M1**

(b) 30 cao **A1**

(b) Answer: 30

(c) their total (30) / 5 oe, ft **M1**

(c) 6 cao **A1**

(c) Answer: 6

Question 7

6 cao **B1**

Answer: 6 symbols

Question 8

(a) Football = 30, Tennis = 12, ratio 30:12 oe **M1**

(a) dividing both parts by their highest common factor, 6 **M1**

(a) 5:2 cao **A1**

(a) Answer: 5:2

(b) total pupils = (5+3+2) x 6 = 60 oe **M1**

(b) 18 / 60 x 100 (ft their total) **M1**

(b) 30% cao **A1**

(b) Answer: 30%

Question 9

Correct method shown, e.g. 7 x 3 or repeated addition 3 + 3 + 3 + 3 + 3 + 3 + 3 (oe) **M1**

21 cao **A1**

Answer: 21 bicycles

Question 10

Method for full symbols shown, e.g. 4 x 12 (= 48) **M1**

Method for half symbol shown, e.g. 0.5 x 12 (= 6) **M1**

48 + 6 = 54 cso, with both parts of the working shown **C1**

Answer: 54 spectators (shown)

Question 11

Recognise half icon = 0.5 of a full icon and convert two half icons to 1 full icon or show 2 x 0.5 **M1**

Find total number of full-icon-equivalents: 7 + 1 = 8 or 7 + 2 x 0.5 **M1**

Multiply by 10 to find bins: 8 x 10 **M1**

80 cao **A1**

Answer: 80 bins

Question 12

Correct totals found: 24 and 16 (or method shown) **M1**

Ratio written as 24 : 16 (oe) before simplifying **M1**

3 : 2 cao **A1**

Answer: 3 : 2

Question 13

Correct method for full symbols, e.g. 6 x 8 (= 48) **M1**

Correct method for quarter symbol, e.g. 0.25 x 8 (= 2) **M1**

50 cao **A1**

States clearly that the coach is wrong because the correct total is 50, not 54, oe **C1**

Answer: 50 laps; the coach is wrong (54 is incorrect)

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Question 14

Method: multiply number of icons by value per icon, e.g. 11 x 4 shown	**M1**
44 cao	**A1**
Answer states whether teacher is correct with a reason, e.g. 'Yes. 11 icons x 4 = 44' oe	**B1**

Answer: Yes. 11 x 4 = 44, so the teacher is correct.

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