

Reasoning and Problem Solving

Step 3: Interpret Pictograms (1-1)

National Curriculum Objectives:

Mathematics Year 2: (2S1) [Interpret and construct simple pictograms, tally charts, block diagrams and simple tables](#)

Differentiation:

Questions 1, 4 and 7 (Problem Solving)

Developing Use a clue to work out a missing category on a pictogram. Pictogram uses one to one representation and includes up to 10 pictures or symbols in each category.

Expected Use clues to work out a missing category on a pictogram. Pictogram uses one to one representation and includes up to 15 pictures or symbols in each category.

Greater Depth Use clues to work out missing categories on a pictogram. Pictogram uses one to one representation and includes up to 15 pictures or symbols in each category.

Questions 2, 5 and 8 (Reasoning)

Developing Interpret a pictogram using one to one representation to explain if a statement is true or false. Includes up to 10 pictures or symbols in each category.

Expected Interpret a pictogram using one to one representation to explain if statements are true or false. Includes up to 15 pictures or symbols in each category.

Greater Depth Interpret a pictogram using one to one representation to explain if statements are true or false. Includes up to 15 pictures or symbols in each category.

Questions 3, 6 and 9 (Reasoning)

Developing Interpret a pictogram using one to one representation to explain if a statement is correct. Includes up to 10 pictures or symbols in each category.

Expected Interpret a pictogram using one to one representation to explain which statement is correct. Includes up to 15 pictures or symbols in each category.

Greater Depth Interpret a pictogram using one to one representation to explain if statements are correct. Includes up to 15 pictures or symbols in each category.


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Interpret Pictograms (1-1)

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1a. Max has spilt on his pictogram.

 = 1 vote

Music	
Pop	
Rap	
Rock	


Use the clue to work out how many children like pop music.




Fewer children like pop than rock music.



PS

1b. Sasha has spilt on her pictogram.

 = 1 vote

Sandwich	
Ham	
Egg	
Tuna	

Use the clue to work out how many children like cheese sandwiches.





More children like tuna than egg.



PS

2a. True or false?

Carrots and peas have the same number of votes.

Vegetables	 = 1 vote
Leeks	
Carrots	
Peas	





Explain your answer.



R

2b. True or false?

4 people like cherry pies.

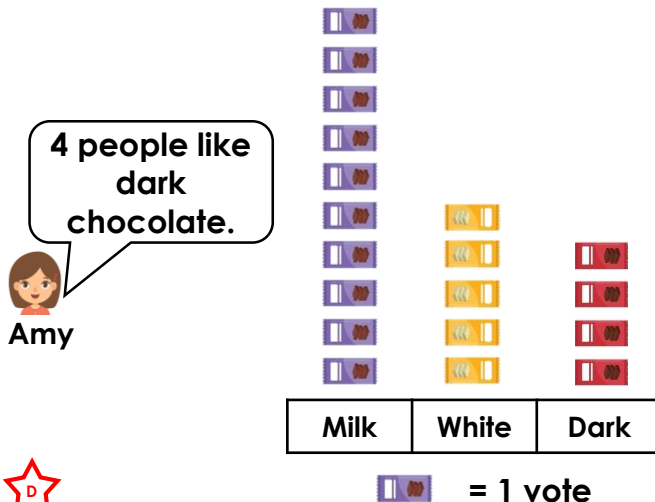
Pies	 = 1 vote
Apple	
Cherry	
Rhubarb	

Explain your answer.



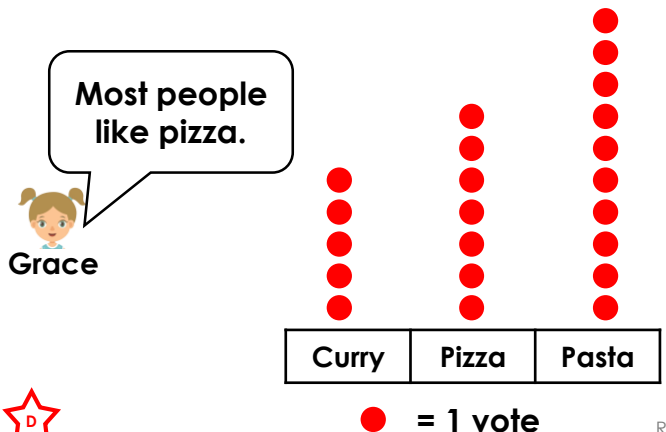
R

3a. Is Amy correct? Explain your answer.



R

3b. Is Grace correct? Explain your answer.



R

Interpret Pictograms (1-1)

Interpret Pictograms (1-1)

4a. Charlie has spilt on his pictogram.

● = 1 vote

Transport	
Car	
Walk	
Bike	

Use the clues to work out how many travel by car.

More people walk than travel by car.
Fewer people ride a bike than travel by car.



PS

4b. Kara has spilt on her pictogram.

● = 1 vote

Subject	
English	
Maths	
Art	

Use the clues to work out how many chose Maths.

English was the most popular subject.
At least 3 more chose Maths than Art.



PS

5a. True or false?

- A. 10 children have a fish or a rabbit.
- B. 24 children were asked in total.

Pets	● = 1 vote
Rabbit	
Dog	
Fish	

Explain your answers.



R

5b. True or false?

- A. Oak trees are the least popular.
- B. In total, there are 25 ash and oak trees.

Tree	● = 1 tree
Ash	
Oak	
Beech	

Explain your answers.



R

6a. Who is correct? Explain your answer.

8 more people like toffee than fudge.

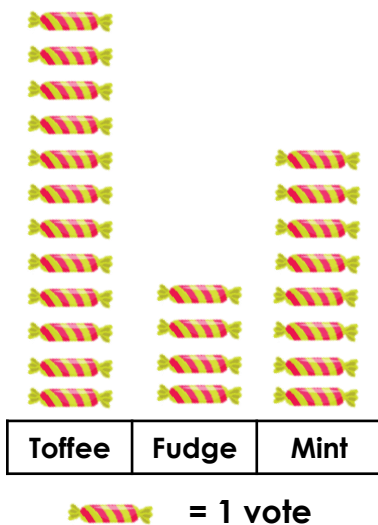


Dan

7 more people like toffee than fudge.



Sam



R

6b. Who is correct? Explain your answer.

22 people like to swim or cycle.

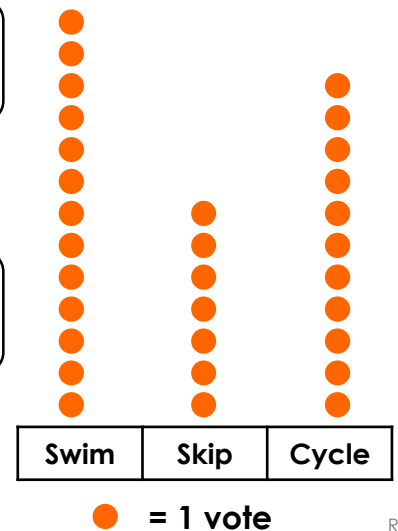


Lee

24 people like to swim or cycle.



Aama



R

Interpret Pictograms (1-1)

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7a. Tara has spilt on her pictogram.

● = 1 vote

Insect	
Bees	
Ants	
Flies	

Use the clues to work out how many bees and flies there could be.

There are fewer flies than bees.
There are more than twice as many ants as bees.



PS

7b. Ted has spilt on his pictogram.

● = 1 vote

Minibeast	
Worm	
Spider	
Slug	

Use the clues to work out how many worms and spiders there could be.

There are 30 minibeasts in total.
Spiders are most common and slugs are least common.



PS

8a. True or false?

- A. More chose cheese than plain and beef added together.
- B. 24 children were asked in total.

Crisps	● = 1 vote
Plain	
Cheese	
Beef	

Explain your answers.



R

8b. True or false?

- A. More than half the children asked chose cheese as their favourite.
- B. In total, 27 chose ham or tuna.

Pizza	● = 1 vote
Cheese	
Ham	
Tuna	

Explain your answers



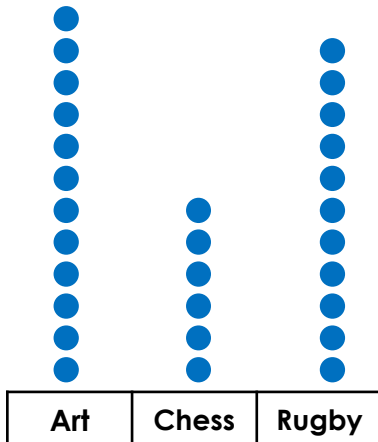
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9a. Who is correct? Explain your answer.

Twice as many people go to Art as Chess.



Art is the most popular by 2 votes.



● = 1 vote



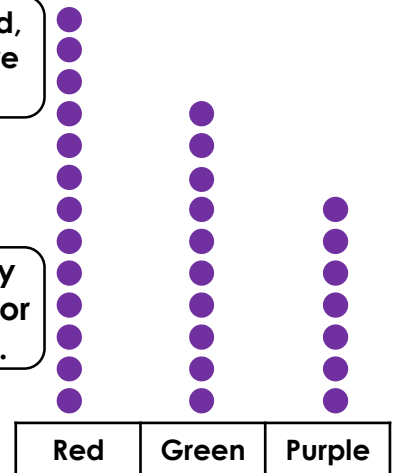
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9b. Who is correct? Explain your answer.

34 people voted, so 4 symbols are missing.



Twice as many people voted for red as purple.



● = 1 vote



R

Reasoning and Problem Solving Interpret Pictograms (1-1)

Developing

- 1a. 1, 2 or 3
2a. True. 8 liked carrots and 8 like peas.
3a. Amy is correct. There are 4 pictures/symbols above the word 'dark' to show 4 people liked dark chocolate.

Expected

- 4a. 7, 8, 9 or 10
5a. A. True. 6 people have a rabbit and 4 people have a fish. $6 + 4 = 10$.
B. False. There are 23 symbols altogether.
6a. Dan is correct. 12 people like toffee and 4 people like fudge. $12 - 4 = 8$.

Greater Depth

- 7a. 2, 3, 4 or 5 bees; 1, 2, 3, or 4 flies
8a. A. True. 7 people chose plain and 6 people chose beef. $7 + 6 = 13$. 14 chose cheese.
B. False. 7 chose plain, 6 chose beef, 14 chose cheese. $7 + 6 + 14 = 27$.
9a. Max is correct. Art had 12 votes, Chess had 6 votes, 12 is double 6.

Reasoning and Problem Solving Interpret Pictograms (1-1)

Developing

- 1b. 3, 4 or 5
2b. True. There are 4 pictures/symbols next to the word 'cherry' to show 4 people liked cherry pies.
3b. Grace is not correct. 7 people chose pizza but 10 people chose pasta.

Expected

- 4b. 10, 11 or 12
5b. A. False. There are 11 ash trees, 13 oak trees and 10 beech trees. The least popular is beech.
B. False. $11 + 13 = 24$.
6b. Aama is correct. 13 like to swim and 11 like to cycle. $13 + 11 = 24$.

Greater Depth

- 7b. 8, 9, 10 or 11 worms; 12, 13, 14 or 15 spiders
8b. A. False. 40 children were asked ($13 + 16 + 11 = 40$) Half of 40 is 20 but only 13 chose pepperoni.
B. True. 16 chose ham and 11 chose tuna. $16 + 11 = 27$.
9b. Anna is correct. There are 13 symbols for red, 10 symbols for green and 7 symbols for purple. $13 + 10 + 7 = 30$. If 34 people vote that means 4 symbols are missing.