

Reasoning and Problem Solving

Step 2: Draw 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 the clues and the partially completed table to work out how many images could be missing from the pictogram. Up to 10 images.

Expected Use the clues and the partially completed tally chart to work out how many images could be missing from the pictogram. Up to 15 images.

Greater Depth Combine the values from two tally charts to draw a vertical pictogram. Up to 15 images.

Questions 2, 5 and 8 (Problem Solving)

Developing Draw a pictogram from the given statements. Three clues and up to 10 images.

Expected Draw a pictogram from the given statements. Four clues and up to 15 images.

Greater Depth Draw a pictogram from the given statements. Four clues with some two-step problems and up to 15 images.

Questions 3, 6 and 9 (Reasoning)

Developing Find, correct and explain one mistake in a pictogram which has been created from a table. Up to 10 images.

Expected Find, correct and explain mistakes in a pictogram which has been created from a table. Up to 15 images.

Greater Depth Find, correct and explain mistakes in a pictogram which has been created from two tally charts.

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Draw Pictograms (1-1)

1a. Ted draws a pictogram from the following table.

Food	
Burger	6
Pizza	8
Sandwich	5
Salad	

He knows there are more salads than sandwiches, but fewer salads than pizzas.

How many salads could he draw on his pictogram?



PS

Draw Pictograms (1-1)

1b. Kim draws a pictogram from the following table.

Animals	
Cow	9
Sheep	
Horse	4
Chicken	10

She knows there are more sheep than horses, but fewer sheep than cows.

How many sheep could she draw on her pictogram?



PS

2a. A class collected information about the traffic passing their school.



I counted 6 trucks.

There were 2 more cars than trucks.



I only saw 5 buses.

Use the statements to draw a pictogram.



PS

2b. A class collected information about school dinners.



5 children like pizza.

3 fewer children like pasta than pizza.



4 children like beans.

Use the statements to draw a pictogram.



PS

3a. Find and correct the mistake in Sam's pictogram.

Reading	
Swimming	
Running	

 = 1 person

Reading	6
Swimming	2
Running	9

Explain what Sam did wrong.



R

3b. Find and correct the mistake in Ben's pictogram.

TV	
Games	
Music	

 = 1 person

TV	5
Games	8
Music	1

Explain what Ben did wrong.



R

Draw Pictograms (1-1)

4a. Kelly is drawing a pictogram from the following chart.

Mini beast	
Bees	
Ladybirds	  
Butterflies	
Spiders	  

She knows there are more bees than spiders, but fewer bees than ladybirds.

How many bees could she draw on her pictogram?



PS

Draw Pictograms (1-1)

4b. Stan is drawing a pictogram from the following chart.

Flowers	
Rose	 
Daffodil	   
Sunflower	 
Tulip	

He knows there are fewer sunflowers than daffodils, but more sunflowers than roses.

How many sunflowers could he draw on his pictogram?



PS

5a. A class collected information about the trees in their school grounds.



There were 3 more oak trees than elm trees.

I only saw 3 beech trees.



I counted 9 elm trees.



There were 2 more ash trees than beech trees.



Use the statements to draw a pictogram.



PS

5b. A class collected information about their favourite drinks.



4 fewer children like cola than juice.

9 children like water.



8 children like juice.



3 more children like milk than water.



Use the statements to draw a pictogram.



PS

6a. Find and correct the mistakes in Reece's pictogram.

Pizza	       
Sausages	   
Burger	      

 = 1 person

Pizza	14
Sausages	5
Burger	10
Chips	4

Explain what Reece did wrong.



R

6b. Find and correct the mistakes in Alina's pictogram.

Tractor	  
Lorry	      
Digger	  

 = 1 person

Tractor	3
Lorry	13
Digger	2
Van	15

Explain what Alina did wrong.



R

Draw Pictograms (1-1)

7a. Maisy was drawing a pictogram to show the favourite colours in Year 2.

Class 2a		Class 2b	
Blue	   	Red	 
Green	   	Blue	
Red		Yellow	  

Use Maisy's information to draw one vertical pictogram to show both sets of information.



PS

Draw Pictograms (1-1)

7b. Jordan was drawing a pictogram to show the favourite pets in Year 2.

Class 2a		Class 2b	
Dog	   	Cat	  
Cat	   	Bird	  
Bird	 	Snake	   

Use Jordan's information to draw one vertical pictogram to show both sets of information.



PS

8a. A class collected information about visitors to their school.



There were twice as many women as men.

I saw 2 dogs and 14 women.



I saw 36 visitors altogether.

There were 6 more children than men.



Use the statements to draw a pictogram.



PS

8b. A class collected information about creatures they saw on the way to school.



There were half as many cats as birds.

I saw 7 slugs and the same number of cats.



I saw 31 creatures altogether.

There were 4 fewer squirrels than slugs.



Use the statements to draw a pictogram.



PS

9a. Find and correct the mistakes in Mandip's pictogram.

Fiction	         
Non-fiction	         
Poetry	       

 = 1 person

Fiction	   	Non-fiction	  
Poetry	  	Poetry	  
Comic	  	Fiction	   

Explain what Mandip did wrong.



R

9b. Find and correct the mistakes in Jakub's pictogram.

Swimming	       
Running	       
Cycling	      

 = 1 person

Running	   	Cycling	 
Cycling	 	Skipping	 
Swimming	 	Swimming	   

Explain what Jakub did wrong.



R

Reasoning and Problem Solving Draw Pictograms (1-1)

Developing

- 1a. Ted could draw 6 or 7 salads on his pictogram.
- 2a. Accept any pictogram that shows 6 trucks, 8 cars and 5 buses.
- 3a. Sam should have drawn two symbols for swimming in his pictogram, not three.

Expected

- 4a. Kelly could draw 9, 10 or 11 bees on her pictogram.
- 5a. Accept any pictogram that shows 12 oak trees, 9 elm trees, 5 ash trees and 3 beech trees.
- 6a. Reece should have drawn a row for 4 chips in the pictogram, along with symbols for 3 more pizzas and 1 more burger.

Greater Depth

- 7a. Accept any vertical pictogram that shows 15 blue, 12 green, 12 red and 8 yellow.
- 8a. Accept any pictogram that shows 14 women, 7 men, 2 dogs and 13 children.
- 9a. Mandip should have drawn a row for 8 comics, added another 9 symbols for fiction, only 11 symbols for non-fiction and another 16 symbols for poetry.

Reasoning and Problem Solving Draw Pictograms (1-1)

Developing

- 1b. Kim could draw 5, 6, 7 or 8 sheep on her pictogram.
- 2b. Accept any pictogram that shows 5 pizzas, 2 pasta and 4 beans.
- 3b. Ben should have drawn eight symbols for games, not seven.

Expected

- 4b. Stan could draw 8, 9, 10, 11 or 12 sunflowers on his pictogram.
- 5b. Accept any pictogram that shows 4 cola, 9 water, 8 juice and 12 milk.
- 6b. Alina should have drawn a row for 15 vans in the pictogram, along with symbols for 3 more lorries and there should only be two symbols for diggers.

Greater Depth

- 7b. Accept any vertical pictogram that shows 13 dogs, 27 cats, 14 birds and 4 snakes.
- 8b. Accept any pictogram that shows 7 slugs, 3 squirrels, 7 cats and 14 birds.
- 9b. Jakub should have drawn a row for 10 people skipping, added another 2 symbols for swimming, 2 more symbols for running and another 7 symbols for cycling.