

Reasoning and Problem Solving

Step 4: Draw Pictograms (2, 5 and 10)

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 Draw a pictogram from the given statements. Three clues, with each image representing either 2, 5 or 10. No half pictures.

Expected Draw a pictogram from the given statements. Four clues, with each image representing either 2, 5 or 10. Includes half pictures.

Greater Depth Draw a pictogram from the given statements. Four clues, with each image representing either 2, 3, 5 or 10. Includes half pictures. No value given for pictogram.

Questions 2, 5 and 8 (Reasoning)

Developing Use the pictogram to explain whether the statement is correct. Each image representing either 2, 5 or 10. No half pictures. Pictogram is partially complete.

Expected Use the pictogram to explain whether the statement is correct. Each image representing either 2, 5 or 10. Includes half pictures. Pictogram is partially complete.

Greater Depth Use the pictogram to explain whether the statement is correct. Each image representing either 2, 3, 5 or 10. Includes half pictures. No value given for pictogram.

Questions 3, 6 and 9 (Problem Solving)

Developing Use the clues to work out how many images could be missing from the pictogram. Each image representing either 2, 5 or 10. No half pictures. Pictogram is partially complete.

Expected Use the clues to work out how many images could be missing from the pictogram. Each image representing either 2, 5 or 10. Includes half pictures. Pictogram is partially complete.

Greater Depth Use the clues to work out how many images could be missing from the pictogram. Each image representing either 2, 5 or 10. Includes half pictures. No value given for pictogram.


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Draw Pictograms (2, 5 and 10)


Draw Pictograms (2, 5 and 10)


1a. A class is collecting information.



8 children like lions.

Only 4 children like elephants.






6 children like tigers.

Create a pictogram to display this information where one picture represents 2 animals.

D


PS


1b. A class is collecting information.



10 children like water.

Only 2 children like juice.











8 children like milk.

Create a pictogram to display this information where one picture represents 2 children.

D

PS

2a. Stan is drawing a pictogram to show Year 2's favourite colours.

Colours	Number of Children  = 5 children
Blue	
Yellow	 
Green	  

Stan says,

I must draw 5 circles to show 5 children like blue.











D

Is he correct? Explain your answer.

R

2b. Anna is drawing a pictogram to show Year 2's hair colours.

Hair Colour	Number of Children  = 10 children
Black	   
Brown	  
Blonde	

Anna says,

I must draw 20 circles to show 20 children have blonde hair.











D

Is she correct? Explain your answer.

R

3a. Naseem is drawing a pictogram where  = 5 children.






Traffic	Number of Children
Car	    
Bike	
Truck	  

Naseem knows there were 10 more bikes than trucks. How many bikes were there? Complete the pictogram.

D

PS

3b. Filip is drawing a pictogram where  = 10 children.

Favourite Sport	Number of Children
Football	   
Cricket	
Gymnastics	

Filip knows 20 more children like cricket than gymnastics. How many children like cricket? Complete the pictogram.

D

PS

Draw Pictograms (2, 5 and 10)

Draw Pictograms (2, 5 and 10)

4a. A class is collecting information.



There are 3 more cats than dogs.

Only 10 children like hamsters.



9 more children like dogs than fish.

11 children like fish.



Create a pictogram to display this information where one picture represents 2 children.



PS

4b. A year group is collecting information.



5 more children like kiwis than plums.

Only 5 children like mangoes.



5 more children like plums than oranges.

15 children like oranges.



Create a pictogram to display this information where one picture represents 5 children.



PS

5a. Ed is drawing a pictogram to show Year 2's favourite drinks.

Drinks	Number of Children ● = 10 children
Orange	● ●
Cola	●
Water	
Milk	● ● ●

Ed says,

I must draw 30 circles to show 30 children like water.



Is he correct? Explain your answer.



R

5b. Olivia is drawing a pictogram to show Year 2's favourite playground games.

Games	Number of Children ● = 2 children
Football	● ● ● ●
Skipping	
Hopscotch	● ● ● ●
Races	● ●

Olivia says,

I must draw 10 circles to show 20 children like skipping.



Is she correct? Explain your answer.



R

6a. Evie is drawing a pictogram where ● = 5 children.

Type of Shoe	Number of Children
Boots	● ● ● ●
Trainers	
School Shoes	● ● ● ● ● ●
Sandals	

Evie knows more children wear trainers than sandals, but fewer children wear trainers than boots. How many children could wear trainers? Complete the pictogram.



PS

6b. Jakub is drawing a pictogram where ● = 10 children.

Accommodation	Number of Children
Detached House	●
Cottage	
Terraced House	
Flat	● ● ● ● ● ●

Jakub knows more children live in a flat than live in a cottage, but more children live in a cottage than a terraced house. How many children could live in a cottage? Complete the pictogram.



PS

Draw Pictograms (2, 5 and 10)

7a. A class is collecting information.



We saw 11 fewer red cars than white.

We saw 2 fewer blue cars than red.



We saw 5 more white than black.



We saw 9 black cars.

Create a pictogram to display this information using the fewest number of images possible. Remember you can use half images.



PS

Draw Pictograms (2, 5 and 10)

7b. A class is collecting information.



3 fewer children like broccoli than carrots.

7 fewer children like sweetcorn than broccoli.



2 more children like carrots than peas.

15 children like peas.



Create a pictogram to display this information using the fewest number of images possible. Remember you can use half images.



PS

8a. Riley is drawing a pictogram to show 30 of his friends' favourite superheroes.

Superheroes	Number of Children
Super Cat	4 circles
Bat Dog	2.5 circles
Iron Boy	3.5 circles
Green Girl	

Riley says,

I must draw 1 circle to show 10 children prefer Green Girl.



Is he correct? Explain your answer.



R

8b. Sara is drawing a pictogram to show 30 of her friends' favourite cartoons.

Cartoons	Number of Children
Dino Dogs	
Bug Men	1.5 circles
Tiny Tia	4 circles
Power Girl	3.5 circles

Sara says,

I must draw 6 circles to show 12 children prefer Dino Dogs.



Is she correct? Explain your answer.



R

9a. Mariam is drawing a pictogram. She knows there are fewer ash trees than beech, and fewer oak trees than ash.

Trees	Number of Trees in the Forest
Ash	
Beech	4 circles
Elm	5.5 circles
Oak	

Complete the pictogram.
How many of each tree could there be?
Find 2 possibilities.



PS

9b. Jojo is drawing a pictogram. He knows fewer children are 4 than 5, but fewer children were 7 years old than 4.

Ages	Number of Children
4 years	
5 years	3.5 circles
6 years	4 circles
7 years	

Complete the pictogram.
How many children could there be in each age group? Find 2 possibilities.



PS

Reasoning and Problem Solving

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Developing

1a.

Animals	Number of Children ● = 2 children
Lions	● ● ● ●
Elephants	● ●
Tigers	● ● ●

2a. No. 1 image = 5 children, so Stan must only draw one image.

3a. Bike = 25

Traffic	Number of Children ● = 5 children
Car	○ ○ ○ ○ ○ ○
Bike	● ● ● ● ●
Truck	○ ○ ○

Expected

4a.

Pets	Number of Children ● = 2 children
Cats	● ● ● ● ● ● ● ● ● ● ●
Dogs	● ● ● ● ● ● ● ● ● ●
Hamsters	● ● ● ● ●
Fish	● ● ● ● ● ● ●

5a. No, 1 image = 10 children, so Ed must draw 3 images.

6a. Various answers, for example:

Shoe Type	Number of Children ● = 5 children
Boots	○○○○
Trainers	●●●
School Shoes	○○○○○○
Sandals	●●

Reasoning and Problem Solving

Draw Pictograms (2, 5 and 10)

Developing

1b.

Drinks	Number of Children ● = 2 children
Water	● ● ● ● ●
Juice	●
Milk	● ● ● ●

2b. No. 1 image = 10 children, so Anna must only draw 2 images.

3b. Cricket = 30

Sport	Number of Children ● = 10 children
Football	○○○○○
Cricket	●●●
Gymnastics	○

Expected

4b.

Fruit	Number of Children ● = 5 children
Kiwis	●●●●●
Plums	●●●●
Oranges	●●●
Mangoes	●

5b. No, 1 image = 2 children, so Olivia must draw 10 images.

6b. Various answers, for example:

Accommodation	Number of Children ● = 10 children
Detached House	1
Cottage	3
Terraced House	2
Flat	3

Reasoning and Problem Solving

Draw Pictograms (2, 5 and 10)

Greater Depth

7a. Various answers, for example:

Colour of Cars	Number of Cars ● = 2 cars
Red	●●
White	●●●●●●●●
Blue	●
Black	●●●●●

8a. No, 1 image = 2 children, so Riley must draw 5 images.

9a. Various possible answers:

Trees	Number of Trees in the Forest ● = 10 trees
Ash	●●●
Beech	○○○○○
Elm	○○○○○○○
Oak	●●

There could be 30 ash, 40 beech, 55 elm and 20 oak trees in the school grounds.

Reasoning and Problem Solving

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Greater Depth

7b. Various answers, for example:

Vegetable	Number of Children ● = 2 children
Broccoli	●●●●●●●●
Carrots	●●●●●●●●●
Sweetcorn	●●●●
Peas	●●●●●●●●●

8b. Yes, 1 image = 2 children, so Sara must draw 6 images.

9b. Various possible answers:

Ages	Number of Children ● = 10 children
4 years	●●●
5 years	○○○○○
6 years	○○○○○
7 years	●●

There could be 30 4 year olds, 35 5 year olds, 40 6 year olds and 20 7 year olds.