

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)

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.



PS

Draw Pictograms (2, 5 and 10)

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.



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.



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.



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.



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.



PS

Draw Pictograms (2, 5 and 10)

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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)

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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

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	
Bat Dog	
Iron Boy	
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	
Tiny Tia	
Power Girl	

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	
Elm	
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	
6 years	
7 years	

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



PS

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 Draw Pictograms (2, 5 and 10)

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.