Year 4 · Statistics: Reading Dot Plots

Name: _____ Date: _____

Hi! This sheet helps you read dot plots and answer questions about them. Look carefully at each plot and think about whether the question is asking for a value or how many (the frequency). Have fun!

Warm-up

1. Room 3 at Avondale School made a dot plot of how many brothers and sisters (siblings) each child has. Each x is one child. 0 siblings: x x 1 sibling: x x x x 2 siblings: x x x 3 siblings: x How many children have exactly 1 sibling?

2. Using the same dot plot, what is the most common number of siblings?

3. How many children are in the plot altogether?

4. What is the largest number of siblings that any child has?

Practice

5. Room 6 surveyed how many pets each student owns and made this dot plot. Each x is one student. 0 pets: x x x 1 pet: x x x x x x 2 pets: x x x x x 3 pets: x x 5 pets: x How many students own exactly 2 pets?

6. What is the most common number of pets for a student in Room 6?

7. The student who owns the most pets, how many pets do they own?

8. How many students altogether were surveyed in Room 6?

9. Word problem: The teacher wants to give every pet in Room 6 one treat. How many treats does she need to buy?

10. Word problem: Mia looks at the dot plot and says, 'The pet numbers spread from the smallest to the biggest.' What is the difference between the most pets and the fewest pets any student owns?

Challenge

11. Each pet in Room 6 needs $3 of food each week. Using the total of 27 pets, how much does the whole class spend on pet food in one week?

12. If we line up all 17 students in order from fewest pets to most pets, which number of pets is in the middle of the line?

Answer key (for parents and tutors)

1. Room 3 at Avondale School made a dot plot of how many brothers and sisters (siblings) each child has. Each x is one child. 0 siblings: x x 1 sibling: x x x x 2 siblings: x x x 3 siblings: x How many children have exactly 1 sibling?
   Count the x marks above '1 sibling'. There are 4 marks, so 4 children have exactly 1 sibling.

2. Using the same dot plot, what is the most common number of siblings?
   Find the tallest stack of x marks. '1 sibling' has the most marks (4), which is more than any other. So the most common number of siblings is 1.

3. How many children are in the plot altogether?
   Add all the x marks: 2 + 4 + 3 + 1 = 10 children altogether.

4. What is the largest number of siblings that any child has?
   Look for the value furthest to the right that still has an x. That is 3, so the largest number of siblings any child has is 3.

5. Room 6 surveyed how many pets each student owns and made this dot plot. Each x is one student. 0 pets: x x x 1 pet: x x x x x x 2 pets: x x x x x 3 pets: x x 5 pets: x How many students own exactly 2 pets?
   Count the x marks above '2 pets'. There are 5 marks, so 5 students own exactly 2 pets.

6. What is the most common number of pets for a student in Room 6?
   Find the tallest stack. '1 pet' has 6 marks, more than any other stack. So the most common number of pets is 1.

7. The student who owns the most pets, how many pets do they own?
   The value furthest to the right with an x is 5. So the student with the most pets owns 5 pets. (Note: this asks for the value, not the frequency.)

8. How many students altogether were surveyed in Room 6?
   Add up all the x marks: 3 + 6 + 5 + 2 + 1 = 17 students altogether.

9. Word problem: The teacher wants to give every pet in Room 6 one treat. How many treats does she need to buy?
   Multiply each pet number by how many students, then add: 0 × 3 = 0 1 × 6 = 6 2 × 5 = 10 3 × 2 = 6 5 × 1 = 5 Total pets = 0 + 6 + 10 + 6 + 5 = 27 pets. She needs 27 treats.

10. Word problem: Mia looks at the dot plot and says, 'The pet numbers spread from the smallest to the biggest.' What is the difference between the most pets and the fewest pets any student owns?
    The smallest value with an x is 0 pets and the largest is 5 pets. The difference (spread) is 5 − 0 = 5 pets.

11. Each pet in Room 6 needs $3 of food each week. Using the total of 27 pets, how much does the whole class spend on pet food in one week?
    There are 27 pets and each costs $3. Work out 27 × 3. Break it up: 20 × 3 = 60 and 7 × 3 = 21, so 60 + 21 = 81. The class spends $81 each week.

12. If we line up all 17 students in order from fewest pets to most pets, which number of pets is in the middle of the line?
    With 17 students, the middle is the 9th student. Count along the ordered list: students 1–3 own 0 pets, students 4–9 own 1 pet, students 10–14 own 2 pets, students 15–16 own 3 pets, student 17 owns 5 pets. The 9th student is in the '1 pet' group, so the middle of the data is 1 pet.