

Spread Detective

Read the distance from the smallest data value to the largest.

GRADE 5 • 5.PS.1.e.i

5.PS.1.e.i "Analyze data represented in line plots (dot plots) and stem-and-leaf plots and communicate results orally and in writing: describe the characteristics of the data represented in a line plot (dot plot) and stem-and-leaf plot as a whole..."

NAME _____

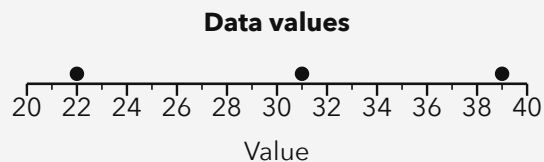
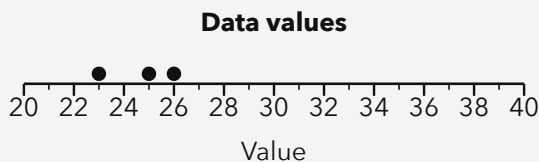
DATE _____

MEASURE THE SPREAD

For this activity only, use CLOSE for a range of 3 or less and SPREAD OUT for a range of 6 or more. These are sorting rules for the examples, not universal definitions; ranges 4 and 5 are not used. Values close together: Find the smallest and largest dots. If they are 3 or fewer units apart, the data have a close spread. Values spread out: Find the smallest and largest dots. If they are 6 or more units apart, the data have a spread-out range.

WORKED EXAMPLE

Example 1: Dots at 23, 25, and 26 Example 2: Dots at 22, 31, and 39



1. First plot: $26 - 23 = 3$, so CLOSE under our activity rule.
2. Second plot: $39 - 22 = 17$, so SPREAD OUT under our activity rule.

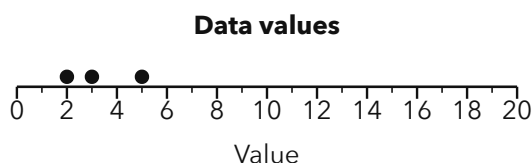
Answer:

Example 1: CLOSE. Example 2: SPREAD OUT.

PRACTICE 8 problems

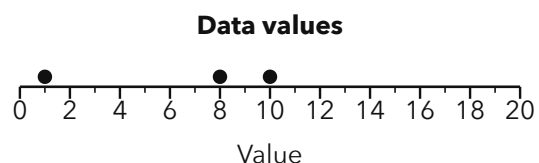
For Practice, circle CLOSE or SPREAD OUT for each figure; for Apply It 1, choose two items and explain how the smallest and largest dots helped you decide.

1 Figure 1 Choose CLOSE or SPREAD OUT.



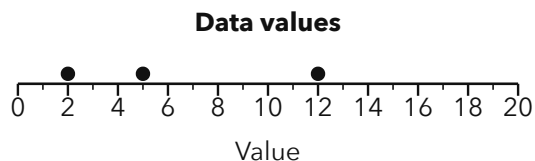
ANSWER _____

2 Figure 2 Choose CLOSE or SPREAD OUT.



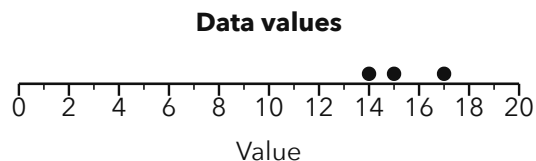
ANSWER _____

3 Figure 3 Choose CLOSE or SPREAD OUT.



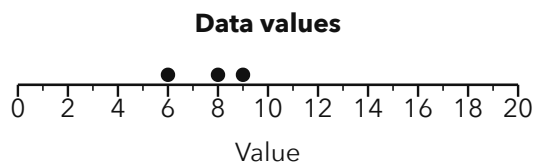
ANSWER _____

4 Figure 4 Choose CLOSE or SPREAD OUT.



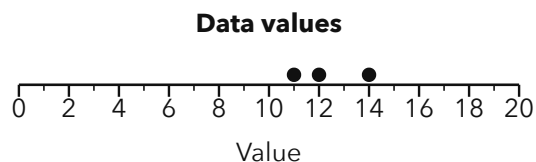
ANSWER _____

5 Figure 5 Choose CLOSE or SPREAD OUT.



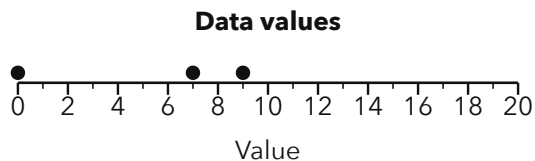
ANSWER _____

6 Figure 6 Choose CLOSE or SPREAD OUT.



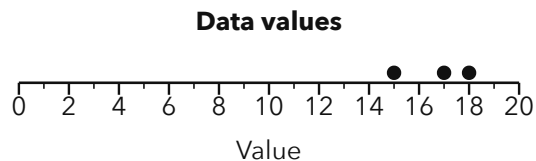
ANSWER _____

7 Figure 7 Choose CLOSE or SPREAD OUT.



ANSWER _____

8 Figure 8 Choose CLOSE or SPREAD OUT.



ANSWER _____

APPLY IT Show your work

1 Choose two practice items. For each one, identify the item and explain how you knew where it belonged. Explain your reasoning aloud to a partner, then write it below.

2

Draw one new dot plot with a CLOSE spread and one new dot plot with a SPREAD OUT range. Label each plot.

CLOSE

Title: _____

SPREAD OUT

Title: _____



CHALLENGE One step up

Draw a six-dot line plot that is SPREAD OUT and has exactly three dots at its most common value. Write a stem-and-leaf plot of the same values with a title and key. Tell a partner how both displays show the same spread. Also analyze the reference stem-and-leaf plot below: list its values and range, describe a cluster or gap, and compare its shape with your six-dot plot.

REFERENCE DATA: KEY 1 | 2 = 12

Stem	Leaves
0	2 5
1	2

Draw six dots Title: _____



PRACTICE 1

CLOSE. The range is 5 minus 2, or 3.

PRACTICE 2

SPREAD OUT. The range is 10 minus 1, or 9.

PRACTICE 3

SPREAD OUT. The range is 12 minus 2, or 10.

PRACTICE 4

CLOSE. The range is 17 minus 14, or 3.

PRACTICE 5

CLOSE. The range is 9 minus 6, or 3.

PRACTICE 6

CLOSE. The range is 14 minus 11, or 3.

PRACTICE 7

SPREAD OUT. The range is 9 minus 0, or 9.

PRACTICE 8

CLOSE. The range is 18 minus 15, or 3.

APPLY IT 1

For example: Item 1: CLOSE. The range is 5 minus 2, or 3. Item 2: SPREAD OUT. The range is 10 minus 1, or 9.

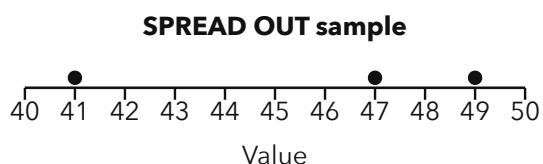
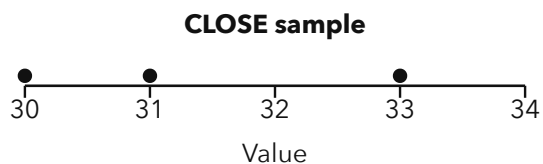
Accept any two correct explanations using the displayed data and the rule.

APPLY IT 2

CLOSE: Dots at 30, 31, and 33.

SPREAD OUT: Dots at 41, 47, and 49.

Accept other valid examples that satisfy each category.

**CHALLENGE**

Dots at 50, 50, 50, 56, 57, and 59. The range is 9, so the data are spread out, and 50 appears exactly three times.

Same Six Values

5 | 0 0 0 6 7 9

Key: 5 | 0 = 50

Both displays have minimum 50, maximum 59 and range 9.

Reference values: 2, 5, 12; range = $12 - 2 = 10$.

Two observations lie from 2 to 5, with a larger gap from 5 to 12. In the six-dot sample, half the observations pile up at 50, followed by a gap to 56 and three higher values. Both have a lower group and a gap, but only the six-dot sample repeats values.

Accept explanations that identify the smallest and largest data values and subtract to find the range. Items 1, 4, 5, 6, and 8 are CLOSE. Items 2, 3, and 7 are SPREAD OUT.

