

Spread Spotters

Sort data by how far its values stretch.

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 _____

SMALL SPREAD

A clustered data display has values close together. The smallest and largest values have a small difference.

Example: The recorded scores are 84, 85, 85, and 86.

LARGE SPREAD

A spread-out data display has values far apart. The smallest and largest values have a large difference.

Example: The recorded scores are 3, 9, 15, and 21.

1 SORT _____ 8 items

For each item, circle CLUSTERED or SPREAD OUT, then for Part 2 choose two items and explain how the values show that category.

- | | | |
|---|---------------------------------|----------------------------------|
| 1. A line plot has marks at 4, 10, and 16. | ☐ CLUSTERED | ☐ SPREAD OUT |
| 2. Stem-and-leaf plot, key: 6 2 means 62: 6 2 3 3 4 | ☐ CLUSTERED | ☐ SPREAD OUT |
| 3. A line plot has marks at 27, 28, 28, and 29. | ☐ CLUSTERED | ☐ SPREAD OUT |
| 4. Stem-and-leaf plot, key: 1 0 means 10: 1 0 7; 2 5 | ☐ CLUSTERED | ☐ SPREAD OUT |
| 5. A line plot has marks at 40, 47, 53, and 59. | ☐ CLUSTERED | ☐ SPREAD OUT |
| 6. Stem-and-leaf plot, key: 3 1 means 31: 3 1 9; 4 6; 5 2 | ☐ CLUSTERED | ☐ SPREAD OUT |
| 7. A line plot has marks at 71, 72, 73, and 73. | ☐ CLUSTERED | ☐ SPREAD OUT |
| 8. Stem-and-leaf plot, key: 0 8 means 8: 0 8; 1 6; 2 4 | ☐ CLUSTERED | ☐ SPREAD OUT |

2 PROVE IT Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ HOW I KNEW _____

ITEM # _____ HOW I KNEW _____

3 MAKE YOUR OWN One of each

Write one new clustered example and one new spread-out example. You may use a list of dot locations or a stem-and-leaf plot.

CLUSTERED _____

SPREAD OUT _____

CHALLENGE

Compare these displays: A has 34, 34, 35, and 36. B has 22, 28, 34, and 40. Write one sentence that names the display with the wider spread and tells both ranges.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	A line plot has marks at 4, 10, and 16.	SPREAD OUT	The values go from 4 to 16, so the range is 12.
2	Stem-and-leaf plot, key: 6 2 means 62: 6 2 3 3 4	CLUSTERED	The values are 62, 63, 63, and 64, with a range of 2.
3	A line plot has marks at 27, 28, 28, and 29.	CLUSTERED	The values go from 27 to 29, so the range is 2.
4	Stem-and-leaf plot, key: 1 0 means 10: 1 0 7; 2 5	SPREAD OUT	The values go from 10 to 25, so the range is 15.
5	A line plot has marks at 40, 47, 53, and 59.	SPREAD OUT	The values go from 40 to 59, so the range is 19.
6	Stem-and-leaf plot, key: 3 1 means 31: 3 1 9; 4 6; 5 2	SPREAD OUT	The values go from 31 to 52, so the range is 21.
7	A line plot has marks at 71, 72, 73, and 73.	CLUSTERED	The values go from 71 to 73, so the range is 2.
8	Stem-and-leaf plot, key: 0 8 means 8: 0 8; 1 6; 2 4	SPREAD OUT	The values go from 8 to 24, so the range is 16.

PART 2 • PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 • MAKE YOUR OWN (SAMPLE ANSWERS)

- **CLUSTERED:** Dot locations 91, 92, 92, and 93.
- **SPREAD OUT:** Stem-and-leaf plot, key: 4|2 means 42: 4 | 2 9; 5 | 6; 6 | 3

Challenge: Display B has the wider spread because its range is 18, while Display A's range is 2.

Classify each display by comparing its smallest and largest values, not by counting how many marks it has. For Part 2, accept an explanation that identifies close or far-apart endpoints and refers to the range or spread.