Just In Time Quick Check
Standard of Learning (SOL) 5.16a

Strand: Probability and Statistics

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The student, given a practical problem, will represent data in line plots and stem-and-leaf plots.

Grade Level Skills:
- Collect data, using observations (e.g., weather), measurement (e.g., shoe sizes), surveys (e.g., hours watching television), or experiments (e.g., plant growth).
- Organize the data into a chart or table.
- Represent data in a line plot. Line plots will have no more than 30 data points.
- Represent data in a stem-and-leaf plot where the stem is listed in ascending order and the leaves are in ascending order, with or without commas between leaves. Stem-and-leaf plots will be limited to no more than 30 data points.
- Title the given graph or identify an appropriate title.

Just in Time Quick Check

Just in Time Quick Check Teacher Notes

Supporting Resources:
- VDOE Mathematics Instructional Plans (MIPS)
  - Statistics: Learning about Our Class from Mystery Data (Word) / PDF version
- VDOE Algebra Readiness Remediation Plans
  - Data Organizers (Word) / PDF version
  - Graph Match (Word) / PDF version
  - Interpreting Graphs (Word) / PDF version
  - Mystery Data (Word) / PDF version
  - Stem and Leaf Plot (Word) / PDF version
- VDOE Word Wall Cards: Grade 5 (Word / PDF)
  - Line Plot
  - Stem-and-Leaf Plot

Supporting and Prerequisite SOL: 4.14a, 3.15a

SOL 5.16a - Just in Time Quick Check

Use this data set for questions 1 and 2.

This data set represents quiz grades.
   78, 74, 58, 78, 98, 84, 82, 86, 94, 88, 94

1) Organize the data in a chart.

2) Create a stem-and-leaf plot that correctly displays the data set.

KEY	

Use this data set for questions 3 and 4.

This data set represents heights, in inches, of students in a fifth grade class.
   54, 50, 51, 48, 49, 52, 58, 57, 55, 54, 50, 52, 54, 53, 54, 57, 55, 53, 52, 54

3) Create a line plot to represent the data set.

4) What would be a possible title for the line plot?

Use this data set for questions 1 and 2.

This data set represents quiz grades.
78, 74, 58, 78, 98, 84, 82, 86, 94, 88, 94

1) Organize the data in a chart.

A common error that some students may make is to not include data that is repeated more than once, i.e., 78 and 94. Remind students to think how they could receive a 94 on two different quizzes, thus having two or more pieces of data that are the same. It may also be beneficial to help students develop a system for keeping track and organizing their data.

2) Create a stem-and-leaf plot that correctly displays the data set.

A common misconception that a student may have is to leave out the stem of six in the stem-and-leaf plot. This might indicate that a student is not aware that a stem must be included even if there are no data points in the set included in that range.

Another common error some students may make is not being able to decompose the data into tens and ones to represent the stem and leaf. Teachers could provide opportunities with base-10 blocks or other place value practice to break down the numbers, providing an understanding with the stems representing tens and the leaves representing ones.

Use this data set for questions 3 and 4.

This data set represents heights, in inches, of students in a fifth grade class.
54, 50, 51, 48, 49, 52, 58, 57, 55, 54, 50, 52, 54, 53, 54, 57, 55, 53, 52, 54

3) Create a line plot to represent the data set.

A common misconception some students may have is how to establish a scale that fits the data. This may be indicated when a student potentially skips numbers or only lists numbers that are included in the data when completing the scale. It might be beneficial to provide additional experience with determining scales that fit with the data provided. When students begin to represent data, ask questions like- "What data will be represented in the line plot? What numbers will be appropriate for a scale? Do we have a minimum? A maximum? What should be labeled first?"

Another common error some students may make is to not put a second "x" on the line plot when a data point repeats (i.e., 54 in this data set), which demonstrates a misunderstanding about frequency. Discuss what an individual "x" represents and when more than one "x" is necessary.

4) What would be a possible title for the line plot?

A common error a student may make is to use a title based on the type of data representation, i.e. Line Plot. This may indicate that a student is not basing the title of the line plot on what the data represents (i.e. Heights of Students). It would be beneficial to ask students what an individual data point represents in order to direct their focus to the meaning of the data.