Just In Time Quick Check
Standard of Learning (SOL) 5.17a

Strand: Probability and Statistics

Standard of Learning (SOL) 5.17a
The student, given a practical context, will describe mean, median, and mode as measures of center.

Grade Level Skills:
- Describe and determine the mean of a group of numbers representing data from a given context as a measure of center.
- Describe and determine the median of a group of numbers representing data from a given context as a measure of center.
- Describe and determine the mode of a group of numbers representing data from a given context as a measure of center.

Just in Time Quick Check

Just in Time Quick Check Teacher Notes

Supporting Resources:
- VDOE Mathematics Instructional Plans (MIPS)
  - What's the Data All About? (Word) / PDF version
- VDOE Word Wall Cards: Grade 5 (Word / PDF)
  - Mean
  - Median
  - Mode
- VDOE Instructional Videos for Teachers
  - Mean as Balance Point

Supporting and Prerequisite SOL: None

SOL 5.17a - Just in Time Quick Check

1) This table shows the number of crayons a teacher has in four bowls.

Crayons in Bowls

Bowl	Number of Crayons
A	12
B	21
C	10
D	11

The teacher will empty all of the crayons from each bowl. She will put an equal number of crayons back into each bowl. The number of crayons she will put in each bowl represents the _____ of the data set.

2) David wants to find out which month has the most birthdays among the students in his class. Which measure of center is David trying to find?

3) Eighteen students in a math class lined up to get their class picture taken. The teacher asked them to line up according to their height, shortest to tallest. Which measure of center represents the height of the person in the middle of the line?

4) This data set shows the number of balloons each of six friends has at a party.

8, 1, 6, 2, 6, 7

Write a statement to describe the mode of the data set shown.

SOL 5.17a - Just in Time Quick Check Teacher Notes
Common Errors/Misconceptions and their Possible Indications

1) This table shows the number of crayons a teacher has in four bowls.

Crayons in Bowls

Bowl	Number of Crayons
A	12
B	21
C	10
D	11

The teacher will empty all of the crayons from each bowl. She will put an equal number of crayons back into each bowl. The number of crayons she will put in each bowl represents the _____ of the data set.

A common error that some students may make is to answer with a number instead of identifying the described vocabulary word. Teachers may wish to incorporate and use the word wall cards as an anchor chart and provide students with a context/scenario to associate each specific vocabulary word. Students would benefit from a visual demonstration with manipulatives to demonstrate the idea of dividing as sharing equally to develop the foundation for the mean of a data set.

2) David wants to find out which month has the most birthdays among the students in his class. Which measure of center is David trying to find?

A common misconception that some students may have is to think this situation describes finding the mean. This may indicate that a student confuses finding the average number of birthdays as the highest number of occurrences. Teachers should encourage students to associate mode as occurring "most often" or being the most frequent number in a data set. Again, teachers may wish to use the word wall cards as an anchor chart and provide students with a context to associate each specific vocabulary word.

3) Eighteen students in a math class lined up to get their class picture taken. The teacher asked them to line up according to their height, shortest to tallest. Which measure of center represents the height of the person in the middle of the line?

A common misconception that a student may have is to think the mean represents the height of the person in the middle of the line. This may indicate that a student is thinking they have to determine the arithmetic average of the heights of the two middle students in the line. Students may benefit from using a number line to conceptualize the meaning of median.

4) This data set shows the number of balloons each of six friends has at a party.

8, 1, 6, 2, 6, 7

Write a statement to describe the mode of the data set shown.

A common error for some students is to describe the range of a data set. This may indicate that a student believes the mode is described by the difference between the greatest and least values in the data set. Students would benefit from hands on experiences to develop an understanding of the measures of center in order to be able to describe them. Hands-on experiences may also help students understand why range is not included as a measure of center.

Students would benefit from building an understanding of what each measure tells them about the data, and relate those values in the context of other characteristics of the data.