

**Richmond Public Schools**  
Curriculum Framework  
*Grade 6 Honors (6/7)*

Strand: Measurement and Geometry	
<p><b>6.11 The student will</b></p> <p>a) represent the mean of a data set graphically as the balance point; and</p> <p>b) determine the effect on measures of center when a single value of a data set is added, removed, or changed.</p>	
Suggested Pacing	
Related Standards	
Spiral Down: 5th Grade: <ul style="list-style-type: none"> <li>• SOL 5.17</li> </ul>	Spiral Up:
Essential Questions	Common Misconceptions
<ul style="list-style-type: none"> <li>• What is meant by mean as a balance point?</li> <li>• What does the phrase “measure of center” mean?</li> </ul>	<ul style="list-style-type: none"> <li>• Mean: students have difficulty remembering how to calculate the mean; remembering what the mean represents, as a balance point</li> </ul>
Understanding the Standard	Essential Knowledge and Skills
<ul style="list-style-type: none"> <li>• Categorical data can be sorted into groups or categories while numerical data are values or observations that can be measured. For example, types of fish caught would be categorical data while weights of fish caught would be numerical data.</li> <li>• Measures of center are types of averages for a data set. They represent numbers that describe a data set. Mean, median, and mode are measures of center that are useful for describing the average for different situations.</li> </ul>	<ul style="list-style-type: none"> <li>• Represent the mean of a set of data graphically as the balance point represented in a line plot. (a)</li> <li>• Determine the effect on measures of center when a single value of a data set is added, removed, or changed. (b)</li> </ul>

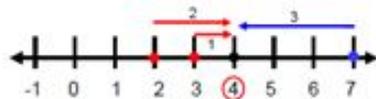
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- Mean may be appropriate for sets of data where there are no values much higher or lower than those in the rest of the data set.
- Median is a good choice when data sets have a couple of values much higher or lower than most of the others.
- Mode is a good descriptor to use when the set of data has some identical values, when data is non-numeric (categorical) or when data reflects the most popular item.
- Mean can be defined as the point on a number line where the data distribution is balanced. This requires that the sum of the distances from the mean of all the points above the mean is equal to the sum of the distances from the mean of all the data points below the mean. This is the concept of mean as the balance point.

– Example: Given the data set:

2, 3, 4, 7

The mean value of 4 can be represented on a number line as the balance point:



- The mean can also be found by calculating the numerical average of the data set.
- In grade five mathematics, mean is defined as fair share.
- Defining mean as the balance point is a prerequisite for understanding standard deviation, which is addressed in high school level mathematics.
- The median is the middle value of a data set in ranked order. If there are an odd number of pieces of data, the median is the middle value in ranked order. If there is an even number of pieces of data, the median is the numerical average of the two middle values.

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<ul style="list-style-type: none"> <li>The mode is the piece of data that occurs most frequently. If no value occurs more often than any other, there is no mode. If there is more than one value that occurs most often, all these most-frequently-occurring values are modes. When there are exactly two modes, the data set is bimodal.</li> </ul>							
<b>Vocabulary</b>	<b>Instructional Activities Organized by Learning Objective</b>						
<p>SOL 6.11</p> <table border="1"> <tr> <td>Mean</td> <td>Median</td> <td>Mode</td> </tr> <tr> <td>Range</td> <td>Categorical Data</td> <td></td> </tr> </table>	Mean	Median	Mode	Range	Categorical Data		<p>Textbook</p> <p>Notes</p> <p>Resources</p> <ul style="list-style-type: none"> <li>Print</li> <li>Technology-based</li> </ul> <p>Station Activities</p>
Mean	Median	Mode					
Range	Categorical Data						
<b>Assessment</b>							
<b>Cross-Curricular Connections</b>	<b>Tiered Differentiations</b>						