

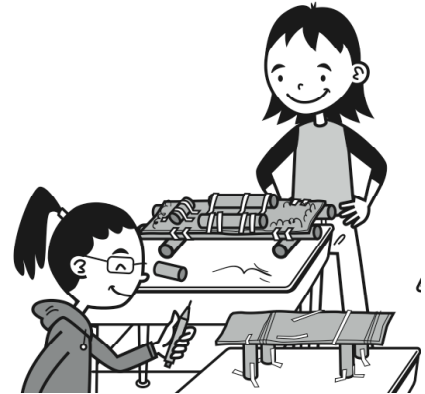
# Grade 3, Unit Eight: Bridge Design & Construction

## Data Collection & Analysis

This unit is special because it combines math and science. Students learn about bridge design and construction and then build their own model bridges. They collect and analyze extensive data about how much weight those bridges can support and how far they can span. While studying principles of bridge design and construction, students learn more about measurement and data analysis.

In this unit, your child will:

- collect and display data using tables and graphs
- use data to draw conclusions and make inferences
- find the mode, range, median and mean (average) of a set of a data
- estimate and measure length and mass



Your child will learn and practice these skills by solving problems like those shown below. Keep this sheet for reference when you're helping with homework.

Problem	Comments
<p>The numbers below show how many cubes each team's bridge held before collapsing.</p> <p>83, 187, 484, 688, 730, 787, 851, 1000, 1201</p> <p>Identify or calculate the following statistics for this set of data:</p> <p>minimum     <b>83</b>            maximum    <b>1201</b>            range        <b><math>1201 - 83 = 1118</math></b>            median       <b>730</b>            mode         <b>no mode</b>            mean         <b><math>83 + 187 + 484 + 688 + 730 + 787 + 851 + 1000 + 1201 = 6011</math></b></p> <p><b><math>6011 \div 9 = 667.88</math></b>  <b>I rounded up. The mean is 668.</b></p>	<p>Students practice finding measures of variability (like the range) and measures of center or averages, including the mode, median, and mean. These numbers provide a lot of information about a set of data, especially when paired with the graphs students create in this unit. The definitions below will help refresh your memory about these statistics.</p> <p><b>minimum</b> the lowest value in the data set</p> <p><b>maximum</b> the highest value in the data set</p> <p><b>range</b> the difference between the highest and lowest values in the data set</p> <p><b>mode</b> the value or values that appear most often in the data set</p> <p><b>median</b> the middle value in the data set, when all the values are put in numerical order (If there is an even number of values, the median is the average of the two values in the middle.)</p> <p><b>mean</b> the mathematical average (Add all the values and divide the sum by the number of values to find the mean.)</p>

