Name: _____

Lengths of Leaves
Grade 3-4 Draw and measure
Grade 5-8 Do measurement of central Tendency

Objectives
- To accurately measure an object that is not flat
- To identify the mean, median and mode in a group of numbers
- To measure an object and create a model of the object that is accurate.
- To use an alternate measuring technique and device (not a ruler)
- To create a visual record of the measurements taken.

Materials

1 pot of planted tulips
metric ruler

Procedure:

The students will measure the length of each leaf on the tulips by using a string measuring method. This method minimizes the damage to the plant. Record the length of each leaf and be sure to measure each leaf only once.

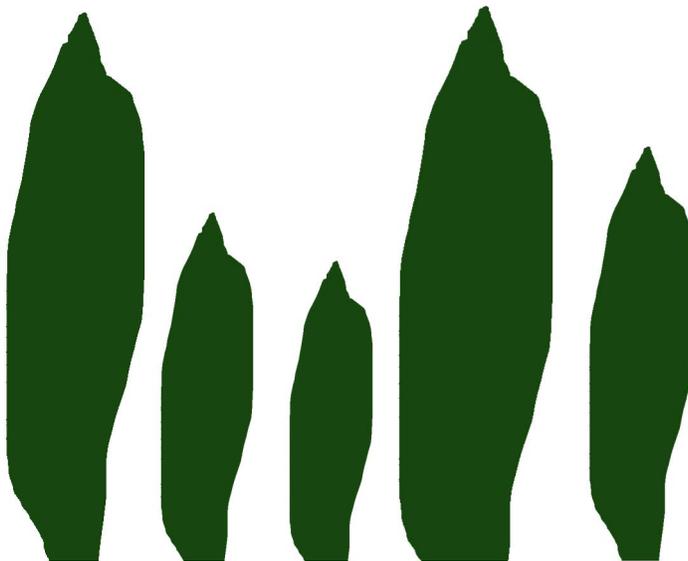Procedure for measuring a leaf without damaging the tulip
1. Cut a length of string to 50 cm
2. Place on end at the base of the leaf.
3. Stretch string down the center of the leaf.
4. March with a pen or a marker the length of the leaf on the string.
5. Place the string on a metre stick.
6. Record the length

7. Repeat with the remaining leaves. You may want to use a different colour of marker with each leaf.

Procedure for activity
1. Measure a leaf.
2. Cut a strip of green paper to the same length as your measurement. Possibly cut it in the shape of a tulip leaf.
3. Record the measurement on the strip of paper or leaf.
4. Create a graph on large paper and glue the leaves to the paper. (A standard bar graph on grid paper can also be made)

The graph would look like this.

When all of the leaves have been glued on answer the following questions.
1. How long was the longest leaf?
2. How long was the shortest leaf?
3. How much longer is the longest leaf than the shortest?
4. What is the length of the median leaf? (middle length). If you placed all of the leaves in order from smallest to largest the Median is the leaf that would be right in the middle of the line.
5. Is there a mode? Does one measurement occur more than once?

Mean: The Average length (Formula: Total length of all leaves/ by total number of leaves= mean)

Median: The middle Length (Arrange all of the measurements in ascending order from smallest to largest. The number in the middle of the list is the Median.   (1, 3, 5, 9, **19,** 22, 26, 26, 32) 19 is the median.

Mode: The number that occurs most often. In the above example 26 is the mode.