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lesson plans

# STACKING statistics

M A T H   A N D   M O V E M E N T



CONTENT	FINE ARTS
<p><b>Math:</b> Organize data into stem and leaf plot, find mean, median, mode, outlier, and range of data. Alternate use of data on line plot.</p>	<p><b>Movement:</b> Apply the relationship between effort and improvement – show the relationship between effort and skill improvement over a determined amount of time through charting a performance</p>

Materials:

- \* [Stacking cups](#)
- \* stopwatches
- \* timing mat
- \* chart paper or blackboard or overhead
- \* calculators

Extensions:

*Use the graphs to make a projection for successive future attempts to teach prediction.*

**Pre-assessment:** This lesson will be a review of the concepts of mean, median, mode, range, so no preassessment will be given today.

**Engagement:** Teachers will demonstrate several cup-stacking strategies and levels – (3-cup stack, 6-cup stack, 10-cup stack.)

**Activity:** Students will work in pairs and will do a 6-cup stack 3 times. Partners will record times using a stopwatch. All data will be added to two classroom charts. One chart will be classroom-wide, with all data put on one chart. A second chart will have each students' name and will have a space for all 3 times.

**Discussion** will then take place about how to organize the classroom data.

At first we will look at the chart with each child's name and see if a pattern of improvement is seen with each successive practice.

**Discussion** will then be guided by teachers to a stem and leaf plot using the classroom-wide data, which will be modeled for students. Students will then create a stem and leaf plot using the same data, and teachers will demonstrate how to find the mode, median, outlier, mean, and range of the data.

**Transition:** End of lesson discussion will review double bar graphs and stem and leaf plots and will then move on to the next lesson's data organization which will be line plots. The same data may be used for that lesson.

**Closure:** Discuss what students learned about improvement over time with practice and the organization of data.



Stem and Leaf Plots will be evaluated for accuracy.

