

## Co-Teaching Lesson Plan – Middle School Math

Subject: Math      Topic/Lesson: Measures of Central Tendency

Competencies/Objectives: 6<sup>th</sup> grade students will gather, analyze and interpret statistical data. Students will describe the center of a set of statistical data in terms of the mean, median, and mode.

Standard: Summarize numerical data sets in relation to their context, such as by

- Reporting the number of observations
- Describing the nature of the attribute under investigation, including how it was measured and its unit of measurement
- Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
- Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

Materials:

Manipulatives, small white boards for students in independent station, practice sheets for each station, calculators, cubes, average daily rainfall for the previous month, pencils, paper.

Student Grouping Plan:

Students will be grouped heterogeneously/ mixed ability for each station.

### Anticipatory Set/Needed Background Knowledge

Students will participate in a warm-up activity on practices ordering of numbers. One teacher will demonstrate and explain for most of the class; the other will pre-teach a small group of students including those with IEPs who have related goals. Students will be provided with a number line and manipulatives (small squares with random positive and negative integers). They will then place them in the correct order on the number line. Most students will have the same number line and manipulatives allowing teacher to easily check for understanding. In the small group, a series of ordering activities will be completed, starting with fewer and simpler examples and gradually working to the same example being completed by the rest of the class. The special educator will monitor student proficiency on this task and will also tailor homework so that students get additional appropriate practice. Special educator also will, at the end of the week, check for mastery for individual students.

Procedures/Co-Teaching Approaches-Group A	Mean Students will gather and analyze data regarding their heights. First,	Teacher led station
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	students will measure each other's height in centimeters and record it on their data sheets. Next, the teacher will model how to find the mean of a set of data using a predetermined set of numbers. Students will then practice with the data they gathered. Teacher will then discuss what this data tells them by using probing questions.	
Procedures/Co-Teaching Approaches-Group B	<p>Median</p> <p>Students will gather and analyze data regarding their family sizes. Teachers will give each student cubes according to how many people are in their family (choose another descriptor if needed). Cubes will then be ordered from least to greatest and teacher will discuss how to determine median. Repeat this activity for several other descriptors that students can relate to. Next, teacher will share data regarding average daily rainfall for the previous month in their area. As a group they will determine median together by listing the numbers in order from least to greatest. Once teacher feels students are okay to practice on their own, students will complete activity sheets and teacher will work one-on-one with students as needed.</p>	Teacher led station
Procedures/Co-Teaching Approaches-Group C	<p>Mode</p> <p>This will be an independent, student led station. Students will have a baggie with numbers in them. They will place the numbers in order as they would appear on a number line. The number appearing most frequently will be identified as mode. Next, students will complete a practice sheet where they identify the mode. Student leader will review sheet silently by displaying the correct answer on the whiteboard.</p>	Independent station/ Silent station led by student.
Practice/Application	This will occur in each station and in closure activity and homework below.	
Closure	<p>After stations are complete students will go back to large group while teachers use teaming to wrap up the lesson. Teachers will take turns asking question to help students summarize information while making inferences about the data and measures of center. As a class, students will find the mean, median, and mode of all heights in the classroom. Teachers will then guide them in a discussion to determine which is the best measure of center with regards to student height in their classroom. Teachers will repeat this process with average daily rainfall numbers. Teachers will review homework and model a few problems prior to the end of class. Ticket out the door will be there data sheets they completed at each station.</p>	
Assessment	Individual data sheets will assess student's ability to gather data and analyze for measures of center. A follow up sheet for homework will provide additional practice and assess mastery.	

**Specially designed instruction/accommodations for students with disabilities or other special needs**

Students will work with a partner for anticipatory set as needed. (acc)

Calculators will be provided for all students. (acc)

Expectations for behavior in stations will be stated and reviewed explicitly before students transition. (acc)

Special consideration should be taken if there are students in wheelchairs and teacher may opt to use a different characteristic other than height.

While other students do the warm-up, one teacher will use alternative teaching to pre-teach concepts. See notes above.

Possible IEP Goal Connection: Using collected data, the student will be able to display and interpret data in a variety of graphs and tables with 75% accuracy by the end of the year.