Co-Teaching Lesson Plan – Middle School Math

Subject: <u>Math</u>   Topic/Lesson: <u>Measures of Central Tendency</u>

Competencies/Objectives: <u>6th Grade Students will earn how to 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.</u>

Common Core Standard: 6.SP.5 a-d: 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:
<u>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.</u>

Student Grouping Plan:
<u>Students will be grouped heterogeneously/ mixed ability for each station.</u>

Anticipatory Set/Needed Background Knowledge Students will engage in a warm up activity to practices ordering of numbers. Teachers will use the teaming model for this activity. While one teacher explains the activity, the other teacher will model the process on the white board, smart board, or overhead projector. 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. Every student will have the same number line and manipulatives allowing teachers to easily check for understanding.		
Procedures/Co-Teaching Approaches-Gp.A	Mean Students will gather and analyze data regarding their heights. First, 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	Teacher led station

	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-Gp.B	Median 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.	Teacher led station
Procedures/Co-Teaching Approaches-Gp.C	Mode 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.	Independent station/ Silent station led by student.
Practice/Application	This will occur in each station and in closure activity and homework below.	
Closure	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.	
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/accomodations for students with disabilities or other special needs

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

Calculators will be provided for all students.

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

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

One-on-one assistance provided as needed.

Manipulatives can be modified (or replaced with assistive technology) as needed for students with visual and/or motor impairments.

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.