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In the Middle

Learning Segment Focus: Quantitative Measures of Center

Lesson 1 of 3 **Topic: M&M's Colors** **Date: 04/01/21** **Grade: 6th**

Student Outcomes

Specific learning **objectives** for this lesson.	Students will summarize numerical data sets in relation to their context.
Justify how learning tasks are appropriate using examples of **students' prior academic learning**.	Learning tasks are appropriate because students have prior academic learning about mean and attributes.
Justify how learning tasks are appropriate using examples of **students' personal, cultural, linguistic, or community assets**.	Learning tasks are appropriate because it will build on students personal, cultural, linguistic, and community assets.

State Academic Content Standards

List the **state academic content standards** with which this lesson is aligned. Include abbreviation, number & text of the standard(s).	**AR.Math.Content.6.SP.B.5** 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 units of measurement • Calculate quantitative measures of center (including but not limited to median and mean) and variability (including but not limited to interquartile range and mean absolute deviation)

Key Vocabulary

What **vocabulary terms/content specific terminology** must be addressed for students to master the content?	• Numerical data • Observation • Attributes • mean • median • mode • range • maximum • minimum

Academic Language Support

What are the **Academic Language Function(s)** (the content and language focus of the learning task represented by the active verbs within the learning objectives/outcomes) and explain how they are utilized in the lesson plan? What planned **Academic Language Supports** will you use to assist students in their understanding of key academic language to express and develop their content learning and to provide varying supports for students at different levels of Academic Language development? How do these supports address all three **Academic Language Demands (vocabulary, syntax, and discourse)?**	**Academic Language Function(s)** • Summarize: Students will use mathematical words such as mean, median, mode, range, maximum, and minimum to describe a set of data in a way that a person who has not seen the data may have a general understanding of the data set. **Academic Language Supports** • I will provide a word wall for students that has pictures, definitions, Spanish cognates, and examples. I will go over the word wall with the students at the beginning of the lesson and keep it available to them during the lesson. • Pictures relating to statistics will be provided with the bell ringer question. • I will suggest mnemonics to help students remember vocabulary

	Academic Language Demands Vocabulary: Students have to distinguish between meanings of multiple words beginning in "m" which may cause confusing. I will direct students in was to remember what each word means such as "mode" sounds like "most" and the mode is the most occurring number. Discourse: • Making and supporting a conjecture • Interpreting graphic representations • Collecting and organizing data in a table Syntax: • Mathematical Sentences • Elaborate noun phrases

Materials

Materials needed by the teacher for this lesson. (such as books, writing materials, computers, models, colored paper, etc.)	Excel Template Computer Projector Link to Video Word Wall
Materials needed by **students** for this lesson. (computers, journals, textbook, etc.)	M&M's Student Journal Personal Computer Bowls Ziplock Bags Excel Program

Lesson Timeline with Instructional Strategies & Learning Tasks

Amount of Time	**Teaching & Learning Activities (This should be a BULLETED LIST)**	**Describe what YOU (teacher) will be doing and/or what STUDENTS will be doing during this part of the lesson. (This should be VERY DETAILED)**
• 10 minutes	**Introduction**: • Video and discussion.	Introduce topic to students • Tell students to watch and look for things that are familiar and unfamiliar. ○ Watch Mean, Median, Mode, & Range • Class discussion, Ask: ○ Did you like the video? ○ What did you recognize? ○ What did you see that you are not sure of? • Encourage students that by the end of today, they will be experts on mean, median, mode, and more!
• 5min	**Instruction:** • **Word Wall and handouts**	**Word Wall and handouts** • Present Word wall • Handout graphic organizer for students to take notes over mean, median, mode, range, minimum, and maximum.

• 25 mins	• **PowerPoint Presentation with Examples**	**PowerPoint Presentation with Examples** • Mean is the average ○ Add up numbers of a set and divide by the occurrences. ○ Like average ○ I work out example ○ Provide students with another example for them to respond with an answer using 1-4 fingers • Median is the middle: ○ Order numbers and take steps from each side. If there is no middle, add both and dived by two. ○ Like median of road (middle) ○ I work out example ○ Provide students with another example for them to respond with an answer using 1-4 fingers ****Ask students: Is the mean and the median always the same? (yes=thumbs up, no=thumbs down)** **Optional: Provide example when they are and when they aren't ---student discovery • Mode is the most occurring number: ○ Which is most occurring? ○ Mode sounds like most ○ I work out example ○ Provide students with another example for them to respond with an answer using 1-4 fingers • Range is the distance: ○ Maximum – minimum = range ○ Like a farm range, see two ends, how long is it? ○ I work out example ○ Provide students with table partner on another example for them to respond with an answer using 1-4 fingers ○ Provide students with another example for them to respond with an answer using 1-4 fingers
• 20 minutes	• **M&M's Activity**	**M&M's Activity:** • **Display Groups (12 pairs of 2)** • **Hand out M&M's Activity Packets** ○ Table to Keep Records ○ Instructions Sheet ○ Individual Packets of Regular, Peanut, Pretzel, and Crisp M&M's ○ Plates for organization • **Describe Activity**

		○ We are going to collect and organize data to look at in our next lesson. ○ In your pairs, count the colors of each M&M's flavor and record your data on the sheets. ○ As you get finished, Send one representative to the front of the room to type the information into the excel sheet on the smart board ○ We will look at mean, median, mode and range of these data tomorrow! • I will be assisting students inputting data into the computer.
5 min	**Closure:** • Exit Ticket	Exit Ticket • Answer this question: What is one thing you learned today about mean, median, mode, or range?

Technology Integration

Provide your **rationale** for your technology choices that accurately reflects those choices within your teaching context. **Identify** what technology(s) you are using as part of your lesson plan. **Describe** how the use of technology aligns to your learning objectives, content standards, and central focus. **Explain** how technology-based instructional strategies are essential to students accomplishing the learning objectives (beyond what could be accomplished without using the technology). **Specify** how the technology selections meet or exceed the needs/strengths of all students**. Justify the "fit"** of chosen technologies, showing how the content, instructional strategies, and technology "fit" together.	It was required for this assignment ☺ Excel is a wonderful tool for this assignment. It will help students and me keep data organized as we collect it and expose students to the benefit of Excel. The graphs that are automatically created on Excel, students will learn to make on paper in another lesson so seeing them prior to this lesson will be helpful.

Accommodations/Modifications

How might I **modify** instruction for: *Remediation?* *Intervention?* *IEP/504?* *LEP/ESL?* (All students who have plans mandated by federal and state law.)	• Word wall with cognate will help students differentiate between the vocabulary words we are using during the lesson. • I will group students together according to needs and encourage student supporting one another • I will provide handout of word wall information to those who need a close up physical copy.

Differentiation

How might you provide a variety of techniques (enhanced scaffolding, explicit instruction, contextualized materials, highlighters/color coding, etc.) **to ensure all student needs are met?** (All students who are not on specific plans mandated by federal and state law.)	• Excel sheet is color coded • Word Wall has cognates and pictures • Mnemonics to assist in vocabulary comprehension

Assessments: Formative and/or Summative

Describe the **tools/procedures** that will be used in this lesson to monitor students' learning of the lesson objective(s) (include type of assessment & what is assessed).	● Formative /☐ Summative	Students will respond to examples by holding up 1-4 fingers during lesson
	● Formative /☐ Summative	Students respond to questions with thumbs up/down
	● Formative /☐ Summative	Students will turn in a exit slip

Research/Theory

Explain **connections to theories and/or researc**h (as well as experts in the field or national organization positions) that support the approach you chose and justify your choices using **principles of the connected theories and/or research.**	Mnemonics in Vocabulary Comprehension : Article Mnemonics help students learn and comprehend vocabulary.

Lesson Reflection/Evaluation

What went **well**? What **changes** should be made? How will I **use assessment data** for next steps?	*TO BE FILLED IN AFTER TEACHING*

Include supporting material such as slides, pictures, copy of textbook, and handouts for any activities students will be using as part of your lesson.

*adapted from:http://webcache.googleusercontent.com/search?q=cache:EsQcNWuG1ZoJ:web.mnstate.edu/harms/StudentTeachers/edTPA-LessonPlan.doc+&cd=2&hl=en&ct=clnk&gl=us; http://www.moreheadstate.edu/getmedia/cd3fd026-939f-4a47-a938-29c06d74ca01/Lesson-Plan-and-Reflections.aspx; http://www.mcneese.edu/f/c/9cb690d2/Lesson%20Plan%20Rubric%20Aligned%20with%20InTASC.docx;https://www.uwsp.edu/education/Documents/edTPA/Resource12.pdf; https://www.uwsp.edu/education/Documents/edTPA/Resource11.pdf; https://www.uwsp.edu/education/Documents/edTPA/Resource11a.pdf; https://www.uwsp.edu/education/Documents/edTPA/LessonPlanTemplateSOE.docx; https://www.uwsp.edu/education/Documents/edTPA/SpecEdLessonPlanGuide.docx; https://www.uwsp.edu/education/Documents/edTPA/SpecEdLessonPlanTemplate.docx