Title: Applying a Coordinate Plane to Find Measurements on a Larger Scale

Learning Targets: Student will be able to translate locations on the mural through coordinate points to compare different elements of the mural.

Understandings/Prior Knowledge:	Essential Question(s):
- How to apply the area, circumference, perimeter and distance formulas, and Pythagorean Theorem. - How to state and locate coordinates using an x-y axis. - Converting percent, fractions and decimals and relating to money.	1. How does the vision of Mele Murals and the final mural connect with you as a student of this community? 2. How is the information in the pictures related to linear functions? 3. What is the difference in total circumference length of the (bubbles, planets, sun/moon, etc.) to the perimeter of the (specific item in the mural). 4. Predict which item (2-3 different shaped items that look similar in area coverage in the mural) covers the most area, then explain why you predicted what you did? Then solve to see if you're right. 5. What was the cost to paint (specific part of the mural) if the total mural is (sq. footage) and cost the school ($ amount)?

Key Understanding

Standards Addressed: G-GPE.7

- Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.

HA Connection: Belonging

a. Know who I am and where I am from
b. Know about the place I live and go to school
c. Am open to new ideas and different ways of doing things.
d. Communicate with clarity and confidence.

Set-up

Classroom Set-Up:
1. Individual first and then pair work.

Materials and Equipment Needed:
1. Write up on Mele Murals Organization.
2. Picture of the final mural with an x-y coordinate plane drawn in or maybe a transparency of an x-y plane that can be placed over the picture.

	RUBRIC:	
Product	A-Exceeds:	- Student is able to clearly explain using academic vocabulary and accurate math terminology in reasoning. - Able to accurately compute information when converting to give accurate and realistic answers. - Correct formulas are used with appropriate units. - Accurate application/substitution/formulas and units are used when answering questions.
	B-Proficient:	- Student is able to explain using some academic vocabulary and accurate math terminology in reasoning. - Able to compute information by using accurate information when converting to give accurate and realistic answers, but minor computing errors are present. - Correct formulas are used with appropriate units. - Accurate application/substitution/formulas and units are used when answering questions.
	C-Meets:	- Content of written explanation makes sense, but is hard to follow and or goes off topic in reasoning. - Able to compute information by using accurate information when converting to give accurate and realistic answers, but minor computing errors are present. - Correct formulas are used with appropriate units. - Accurate application/substitution and units are used when answering questions. - Student is able to explain steps, but uses inconsistent or inaccurate vocabulary. - Inaccurate application/substitution and units are used when answering questions.
	D-Approaching:	- Student is able to explain basic reasoning using limited math terminology, but not able to finish or connect reasoning with information. - Limited reasoning and overall does not make sense and or is not in chronological order. - Substitution steps and or values are not accurate. - Incorrect formulas applied.
	F-Well Below:	- Student is not able to reason through questions. - Content of writing has limited to no connection to the work. - Inaccurate numbers and or formulas applied. - No work or writing shown

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Lesson Flow	10	Pass out a write up about the Mele Mural Organization: individual reading or read out loud and have students follow along pausing along the way to explain or answer specific ideas, vocabulary and or areas that may be misinterpreted.
	5	**EXPLAIN** the activity and materials and answer any questions: Activity 1. Break up into pairs. 2. Each student will get the same picture (x-y axis should be given as well if not on the picture of the mural). 3. Students will analyze the picture and get an idea of how the x-y axis will be used as a measuring tool. 4. Students will work in pairs to problem solve to compute and answer questions. 5. While going through the problems, students will discuss and collaborate their plan of action on how to solve each problem. Materials 1. Each student will get a picture with an x-y axis. 2. Worksheet with questions.
	10	Transition, passing out materials, and explaining the picture/x-y axis 1. Direct students to get into pairs. 2. Pass out pictures 3. Go over the picture and the x-y axis 4. Pass out worksheets
	30	Group work 1. Students will examine their pictures and use the x-y axis to find measurements. 2. Students will discuss with their partner how to approach each question before computing, then compute by applying accurate formulas, ratios and or conversions. 3. Teacher should be walking around giving prompts or posing questions to help guide struggling groups.
	5	Closing: 1. Students clean up 2. Return desks to individual seating. 3. Wrap up lesson

Reflection	How will you check for understanding during instruction and how will you know if learning targets are met? Component 1F → 3D
	While activity is going on, walking around and listening to the conversation will give an idea of the level of understanding. Throughout, pose extended questions and or prompting questions depending on whether or not students are able to relate and connect real world concepts into the math concepts being covered. When class work time begins continue to walk around the room to make sure accurate substituting is being done followed by accurate computation.