

Title: Mardi Gras Parade Route

Subject: Math (STEM)

Grade: 3rd Grade

Overview: After mastering area, perimeter and measurement students will create a city map with a parade route. Students will use their knowledge of area and perimeter to design buildings and/or neighborhood amenities to be placed along the route. Students will use their knowledge of measurement to map out the parade route.

Approximate Duration: 3-5 Days

Math Common Core Standards

3.OA.3 Operations & Algebraic Thinking: Use multiplication and division within 100 to solve measurement quantities.

3.MD.5 Measurement & Data: Recognize area as an attribute of a plane figures and understand concepts of area and measurement.

3.MD.6 Measurement & Data: Measure areas by counting unit squares.

3.MD.7 Measurement & Data: Relate area to the operations of multiplication and addition.

3.MD.8 Measurement & Data: Solve mathematical problems involving perimeters, find the perimeter given the side lengths, exhibit rectangles with the same perimeter and different areas or with the same area and different perimeter.

ISTE Student Standards

1.d Empowered Learner: understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.

4.a Innovative Designer: know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems

4.d Innovative Designer: exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.

5.c Computational Thinker: break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

Learning Objectives: Students will design a parade route with measurement, area and perimeter constraints as defined for each group.

Background Information: Students should have mastered area, perimeter and measurement. Students should be familiar with routines and procedures for working in small groups. Students should be able to use the ActivPanel Whiteboard. Students should be familiar with coding Ozobots through block coding or marker coding.

Materials:

Centimeter Mat or Poster Board
Drawing Paper
Markers
Area Cards
Perimeter Cards
ActivPanel
Ozobot
iPad

Lesson Procedures:

1. Students will group themselves into groups of four.
2. Teacher will explain that groups will work together to create a city block or neighborhood for a Mardi Gras parade route.
3. Teacher will explain the parameters of the project:
Each group will get a task card with instructions.
Each group will choose area cards and perimeter cards. (The number of cards is at the teacher's discretion due to differentiation or time constraints).
The students must design a building to meet the area and/or perimeter dimensions on each card.
Each building should be along the parade route.
Students will create a rough draft of their design on drawing paper.
Students will use the ActivPanel Whiteboard with Grid background to draw their route to scale.
Peer groups will check that all specifications are met.
Students will transfer their design onto their centimeter mat or poster board to scale.
Students will code an Ozobot to 'drive' their planned parade route.
Block coding with Ozoblockly.com or marker coding with Ozobot markers.

Assessment:

Formative Assessment: Check for understanding, Group discussion, Review rough draft, Review scaled design on ActivPanel Whiteboard, Student self reflection
Summative Assessment: Project rubric

Student Reflection

Mardi Gras Parade Route Project

What did you learn by completing this project?

What did your group do well?

What was your favorite part of this project?

How can you improve next time?

Name: _____

Date: _____

Mardi Gras Parade Route Project

Name: _____

	3	2	1	0
Area	All building designs meet area card measurements	Some building designs meet area card measurements	No building designs meet area card measurements	There are no buildings labeled with area
Perimeter	All building designs meet perimeter card measurements	Some building designs meet perimeter card measurements	No building designs meet perimeter card measurements	There are no buildings labeled with perimeter
Labels	All buildings are correctly labeled with area, perimeter and multiplication or addition equation	Some buildings are correctly labeled with area, perimeter and multiplication or addition equation	No buildings are correctly labeled with area, perimeter and multiplication or addition equation	There are no labels or multiplication or addition equations.
Road Dimensions	All roads are 5cm wide	Some roads are 5cm wide	No roads are 5cm wide	There are no roads
Coding	Completed a successful code sequence for Ozobot	Completed a partially successful code sequence for Ozobot	Completed an unsuccessful code sequence for Ozobot	Did not complete a code sequence

Total _____

$$A = 15 - 14$$

$$B = 13$$

$$C = 12$$

$$D = 11$$

$$F = 10 - 0$$