CORE Assessment Module
Module Overview

Content Area	Mathematics
Title	Tile Mural
Grade Level	Grade 3
Problem Type	Performance Task

Standards for Mathematical Practices	**Mathematical Practice 2 (MP2):** Reason abstractly and quantitatively.
	Mathematically proficient students:
	• Make sense of quantities and their relationships in problem situations.
	• Bring two complementary abilities to bear on problems involving quantitative relationships:
	  ○ Decontextualize—to abstract a given situation and represent it symbolically; and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents) and
	  ○ Contextualize— to pause as needed during the manipulation process in order to probe into the referents for the symbols involved).
	• Use quantitative reasoning that entails creating a coherent representation of the problem at hand, considering the units involved, attending to the meaning of quantities (not just how to compute them) and knowing and flexibly using different properties of operations and objects.

Common Core State Standards	**3.MD.6** Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units). **3.MD.8** Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.
SBAC Assessment Claims	**Claim 2:** Students can solve a range of complex well-posed problems in pure and applied mathematics, making productive use of knowledge and problem solving strategies.
Task Overview	Students will be asked to identify the perimeter and area of given shapes. Then they will be asked to create shapes with the same area, but with differing perimeters.
Module Components	1) Scoring Guide 2) Performance Task

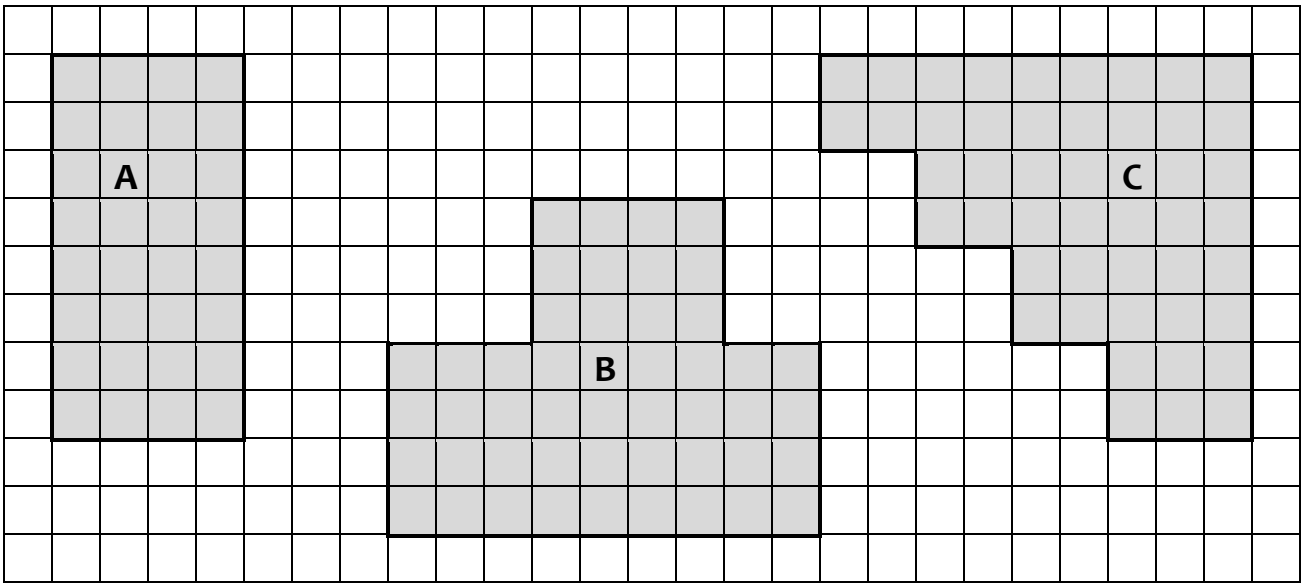
Tile Mural
Scoring Guide

Description Credit for specific aspects of performance should be given as follows:	**Points**	**Total Points**
1. Student gives correct answer: Perimeter of Area A: 24 square units	 1	1
2. Student gives correct answer: Perimeter of Area B: 32 units Area of Area B: 48 square units	 1 1	2
3. Student explanation includes: • Counting the side lengths • Counting up the squares	 1 1	2
4. Student answers will vary, but should include: • Creating a shape with an area of 24 square units. • Correctly building the perimeter of the shape.	 1 1	2
5. Student answers will vary, but should include: Figure X: • Creating a rectangle different than the one in problem 4, with the area of 24 square units • Correctly building the perimeter of the rectangle Figure Y: • Creating a rectangle that is different than Figure X and the one in problem 4, with the area of 24 square units • Correctly building the perimeter of the rectangle	 1 1 1 1	4
6. Student answers will vary, but must include: • Mural is rectangular. • Perimeter is less than 30 units. • All 4 colors are used correctly. • Perimeter of mural is listed. • Area of mural is listed.	 1 1 1 1 1	5
TOTAL POINTS: (possible points = 16 points)		

Student Name _____

Tile Mural

Ms. Wong's class went on a field trip to see some murals to get ideas about how to create their own class tile mural. Here is a diagram of what they saw.



1. The area of figure A is 32 square units. Find the perimeter of figure A in units.

   Perimeter: _____ units

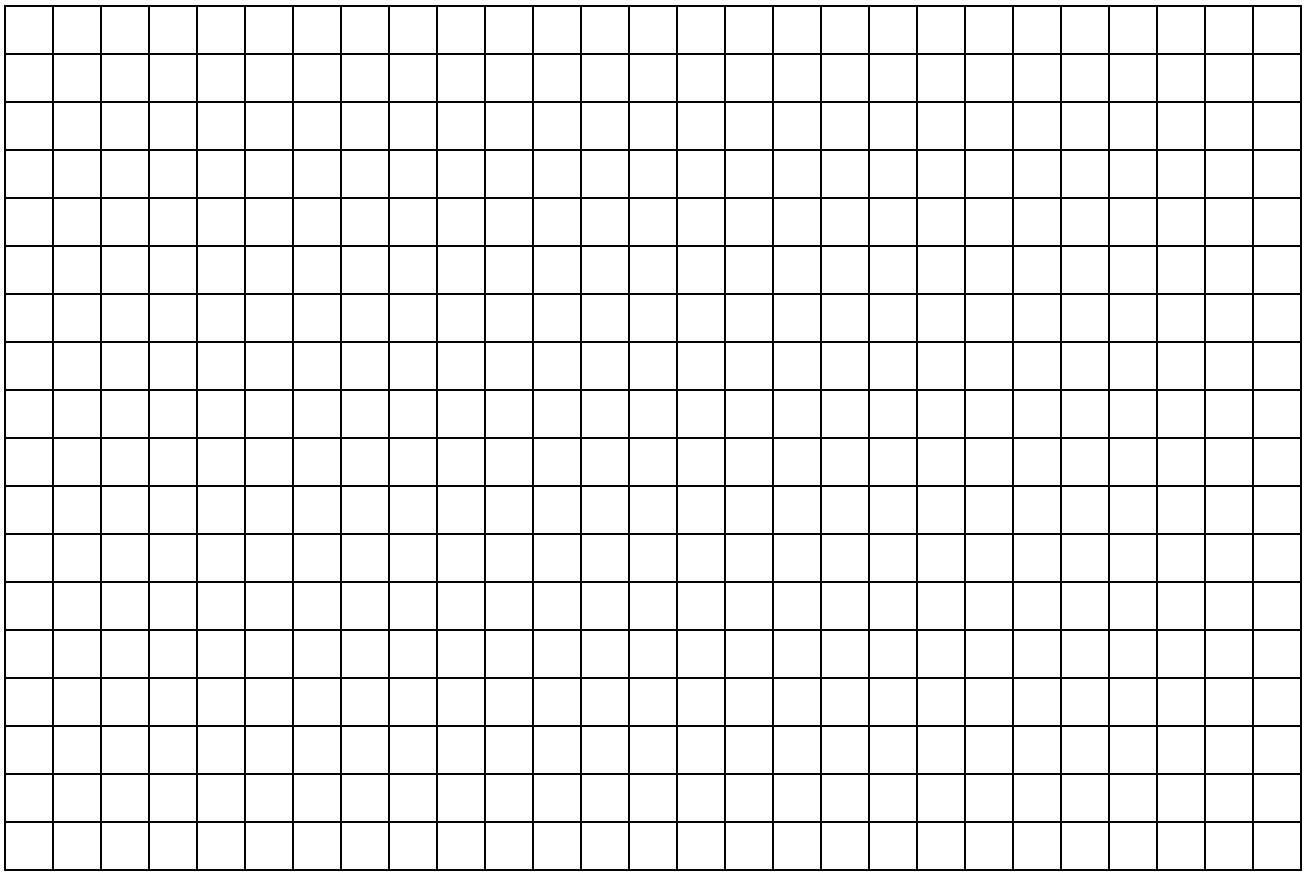
2. Find the area and perimeter for figure B.

   Perimeter: _____ units
   Area: _____ square units

3. Explain how to find the perimeter and area of figure C.

Student Name _____

4. Here is a grid of the wall where Ms. Wong's class will create their own tile mural. Ms. Wong's class has 24 students. Each student will decorate a square tile to add to the mural. No tiles can overlap and they must touch on at least one side. Give an example of one way Ms. Wong's students could arrange their tiles.



Perimeter: _____ units
Area: _____ square units

Student Name _____

5. On the grid below, draw at least two different rectangles that have the same area as your shape in problem 4, but have different perimeters. Label one shape Figure X and the other shape Figure Y. You may use base ten blocks or tiles to help you.

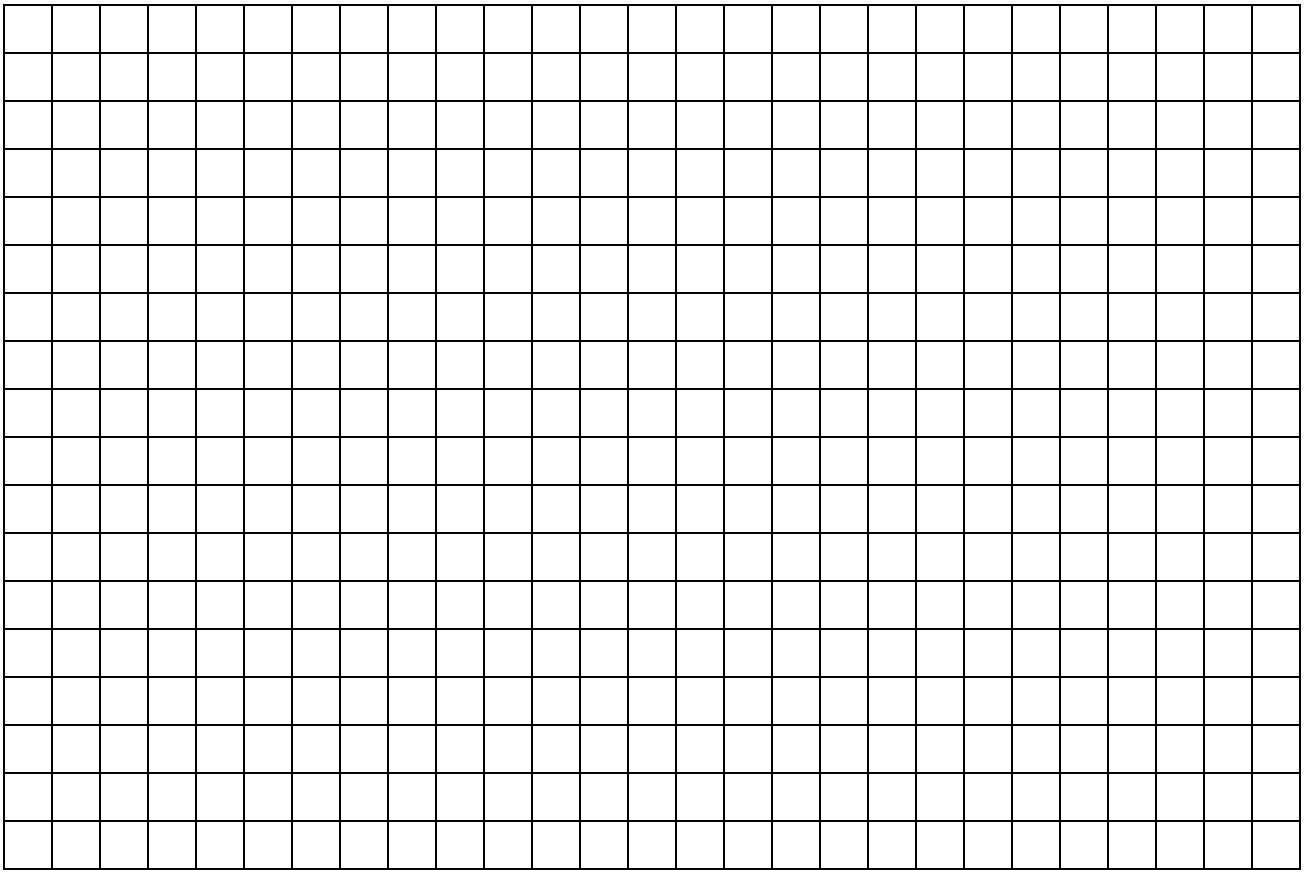


Figure X:
Perimeter: _____ units
Area: _____ square units

Figure Y:
Perimeter: _____ units
Area: _____ square units

Student Name _____

6. You have been given the chance to design a mural for your school. You may use one of the rectangles you have already drawn or create a new one. Use the following rules when designing your mural:
   - The mural must be rectangular.
   - The perimeter must be less than 30 units.
   - The colors blue, red, green, and yellow are the only color tiles you have and must be used at least once.
   - Color size chart:
     - Blue tiles: 1 unit x 1 unit
     - Red tiles: 2 units x 2 units
     - Green tiles: 2 units x 1 unit
     - Yellow tiles: 3 units x 1 unit

   Once your mural is designed, find the perimeter and the area of the entire mural.

Perimeter: _____ units Area: _____ square units