



Algebra/Geometry Institute Summer 2007



Felicia G. McKinney

Robert L. Merritt Middle School

6th Grade Math

1. Teaching Objectives:

- ✚ Find the perimeter of a polygon
- ✚ Create figures with specified and unspecified perimeters.

2. Instructional Activities:

- ✚ Inform students to complete the “Do Now” on board in their math journals. (3-5 minutes) {Do Now: *The perimeter of a regular pentagon is 100 cm. How long is each side? Draw a picture to justify your answer.*}
- ✚ Provide students with vocabulary words to define on “word wall”. Students will write this information in their math journals. (15 minutes)
 - i. Perimeter – the sum of the lengths of the sides of a polygon.
 - ii. Polygon – a closed plane figure made up of several line segments that are joined together.
 - iii. Variable – a letter used to represent a number value in an expression or an equation.
 - iv. Formula – an equation that states a rule or a fact.
 - v. Line segment – two points on a line and all the points between those two points.
 - vi. Parallel lines – two lines are parallel if they are in the same plane and never intersect.

- ✚ Review types of polygons. Students will give the definition of a polygon. {A polygon is a closed plane figure made up of several line segments} Students will name types of polygons and tell how many sides each one has. {Examples: hexagon – 6 sides; pentagon – 5 sides; rectangle – 4 sides; heptagon – 7 sides; octagon – 8 sides; triangle – 3 sides; square – 4 sides; nonagon – 9 sides; and decagon – 10 sides} (15 minutes)
- ✚ Go over with students how to find the perimeter of polygons. Inform them that the formula to find the perimeter of a rectangle is $2L + 2W = P$. Students may also add all sides together to get the perimeter. If all sides are given except one and the perimeter is given, the students will add all sides that are given and subtract that sum from the perimeter to get the unknown side value. (15 minutes)
- ✚ Activity 1: Students will work in groups of 3 on this activity. On the geoboard, to find the perimeter of a rectangle, you can count the number of spaces between pins along the path of the rubberband. Students will see if they can find the following:
 - i. Two rectangles with the same perimeter.
 - ii. How many different sized squares and rectangles can be made on the geoboard.
(Hint: You cannot use diagonals.) (20 minutes)
- ✚ Have students place geoboards and rubberbands in the center of the activity table.
- ✚ Activity 2: Students will remain in groups and will create two polygons with different perimeters using play-dough, ruler, pencil, cardstock or construction paper and markers. Students will measure each side of the polygon they create using a ruler. Students will identify the polygon they create and determine the perimeter to post in the classroom. (15 minutes)
- ✚ Students will return to their individual desk to complete an activity sheet on finding the perimeter of different types of polygons for daily assignment. After completing the assignment, students will write a reflection in their math journal about what they

learned in class. The reflection must be at least five sentences. (15 minutes)

3. Materials and Resources

- ✚ Pencil
- ✚ Paper
- ✚ Cardstock or construction paper
- ✚ Geoboard
- ✚ Rubberbands
- ✚ Markers
- ✚ Play-dough
- ✚ Math Journal
- ✚ Overhead Projector

4. Assessment

- ✚ Teacher will assess students' oral responses, group cooperation, and neatness and explanations of created polygons. Students will be given a test at the end of the week to check for benchmark mastery.

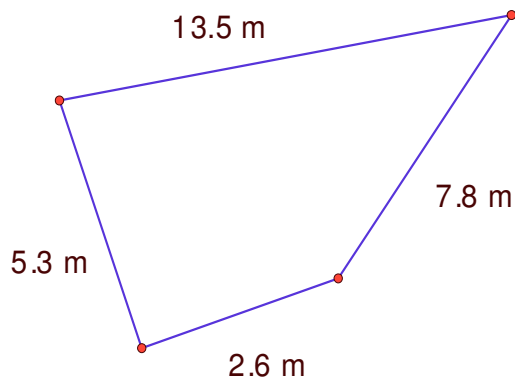
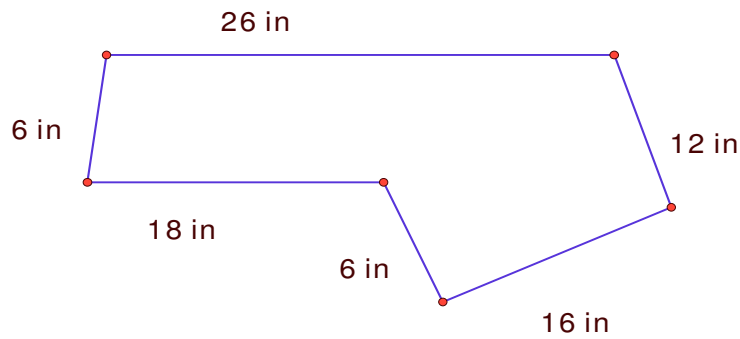
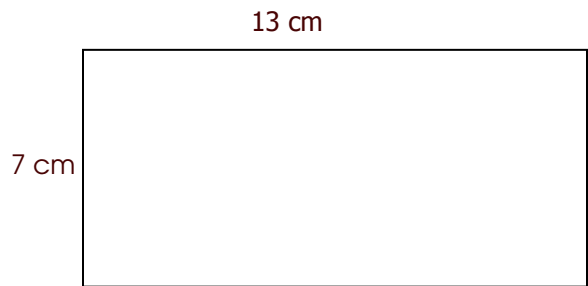
5. Math Sources:

Shapes were constructed through Geometer's Sketchpad.

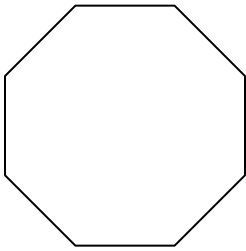
Perimeter

Name: _____ Date/Section: _____

Directions: Calculate the perimeter without using calculators. Show all work.



Find the perimeter of an octagon with each side measuring 8 meters.
Show all work.



Find the value of n if the perimeter is 53 inches.

