

Core Content

Cluster Title: Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

Standard 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.

MASTERY Patterns of Reasoning:

Conceptual:

Students will recognize polygons in real-world situations.

Students will be able to recognize the perimeter of polygons in real-world situations.

Students will understand that polygons with the same area can have different perimeters and that polygons with the same perimeter can have different areas.

Procedural:

Students know how to find the perimeter of polygons, including finding an unknown side length.

Students can solve mathematical problems with polygons of the same perimeter, finding varying areas, and apply them to real-world situations.

Students can solve mathematical problems with polygons of the same area, finding varying perimeters, and apply them to real-world situations.

Students can find the perimeter of polygons in real-world situations.

Students can find an unknown side length in a problem situation.

Representational:

Students can represent, pictorially or with objects, polygons with missing sides and find the length of the missing side.

Students can represent polygons with a fixed perimeter and varying areas.

Students can represent polygons with a fixed area and varying perimeters.

Supports for Teachers

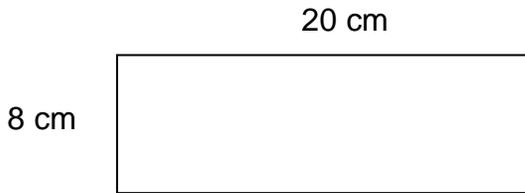
Critical Background Knowledge	
<p>Conceptual: Students will understand the concepts of perimeter and area. Students will be able to analyze a real-world or mathematical problem in order to solve it. Students will know how to find the side length of a polygon.</p> <p>Procedural: Students can find the perimeter of a polygon. Students can find the area of a polygon.</p> <p>Representational: Students can draw polygons and show the perimeter and the area. Students can draw polygons and identify the sides.</p>	
Academic Vocabulary and Notation	
<p>polygon, side length, area, perimeter</p>	
Instructional Strategies Used	Resources Used
<p>Use a task such as the following to help students understand this concept:</p> <p>Mei wants to build a pen for her dog to be safe and run around without being chained up. Her dad gave her 30 meters of fence to use. What is the perimeter of the pen that will give her the largest area for her dog to run in?</p> <p>Allow the students to use whatever strategies and materials they choose to solve the problem. Have students share strategies. Debrief with the students, making sure that the mathematical concepts are stressed and understood.</p>	<p>http://www.mathgoodies.com/lessons/toc_vol1.html</p> <p>My UEN: “Math All Around Us: Space to Play”</p>

Assessment Tasks Used

Skill-Based Task:

Find two possible perimeters for a rectangle with an area of 60 square feet.

Find the length of the missing side of this polygon:



Problem Task:

Jaclyn's stepfather told her she could make a garden in her backyard large enough for 100 square feet of flowers. She wants to make it easy to work on without stepping on flowers or dirt. Create a garden that Jaclyn will like. Find the perimeter of the garden you create.