

Unit 9: Chapter 11 Perimeter and Area

Content Area: **Mathematics**
Course(s): **Math 3**
Time Period: **May**
Length: **3 weeks**
Status: **Published**

Unit Summary

Students will solve problems that involve perimeter and area. They will calculate the area and perimeter of a polygon. Students will compare the area and perimeter of a shape. They will use various problem solving strategies to solve word problems with area and perimeter.

Standards

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.3.MD.C.5a	A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.
MA.3.MD.C.5b	A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.
MA.3.MD.C.6	Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units).
MA.3.MD.C.7a	Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
MA.3.MD.C.7b	Multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
MA.3.MD.C.7c	Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.
MA.3.MD.C.7d	Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.
MA.3.MD.D.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.
TECH.8.1.5	Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

Student Learning Objectives

Students will learn to:

- determine the area and perimeter.
- compare area and perimeter.
- solve problems using area and perimeter.

Essential Questions

How do you use measurement in your life?

What standard unit of measure do you use for area?

How do you find an unknown side by measuring perimeter?

How do we take a constructed figure and decompose it into separate rectangles to find the area?

Enduring Understandings

Students will understand that:

- perimeter is a linear measurement to measure the distance around the outside edge of 2-D figure.
- area is the measurement of square units occupying a space.
- when measuring area, the space being measured must be completely covered with no gaps or overlaps.

Application

Students will be able to independently use their learning to:

- find perimeter.
- find area.
- determine when you need to estimate or measure perimeter and area.

Skills

Students will be skilled at:

- finding the area of an object by counting whole square units.
- using the perimeter of a polygon to determine the length of unknown side.
- designing and tile a rectangle to determine a given area; understanding that this same area can be found by multiplying the side lengths.
- multiplying side lengths of any given rectangle to determine its area
- using tiling to calculate the area of two given rectangles; combine these two rectangles; then find the area of this newly created rectangle; students will represent the area of this new rectangle using the distributive property
- decomposing a rectilinear figure into different rectangles, then find the area of the figure by adding the areas of the rectangles together; applying of this skill to real-world problems

- applying the understanding through real-world problems that rectangles with the same perimeter can have different area