

Grade 3, Module 7: Geometry and Measurement Word Problems



What is this module about? In Module 7, students will get intensive practice with word problems, as well as hands-on experiences with geometry and perimeter. Students will solve word problems, classify shapes, study perimeter and area, and end with a review of Grade 3 fundamental skills.



What came before this module? Students worked extensively with data, displaying both categorical and measurement data in bar graphs, line plots, and other types of graphs.

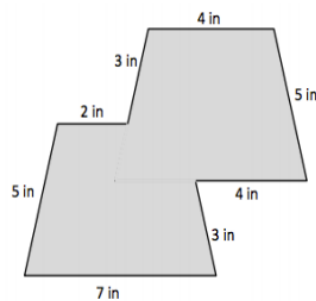


What comes after this module? This is the final module for Grade 3.

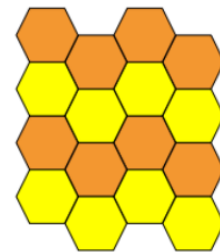
How can you help at home?

- Ask your child about the attributes of basic shapes you encounter (how many sides, are the angles equal, are the sides the same length, are they parallel, etc.).
- Play Tetris, a tetrominoe-based game.

Students are asked to find the perimeter of shapes.



A simple tessellation of hexagons



Key Words and Ideas in this Module

- **Attribute:** any characteristic of a shape, including properties and other defining characteristics, e.g., straight sides, and non-defining characteristics
- **Diagonal:** e.g., the line drawn between opposite corners of a quadrilateral
- **Perimeter:** boundary or length of the boundary of a two-dimensional shape
- **Property:** e.g., having all sides equal length
- **Regular polygon:** polygon whose side lengths and interior angles are all equal
- **Tessellate:** to tile a plane without gaps or overlaps
- **Tetrominoes:** four squares arranged to form a shape so that every square shares at least one side with another square

Key Standards in this Module

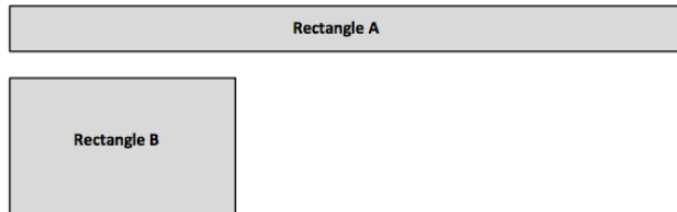
- Solve problems involving the four operations and identify and explain patterns in arithmetic.
- Represent and interpret data.
- Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.
- Reason with shapes and their attributes.



Spotlight on Math Skills

Calculating Perimeter and Area: Foundational Geometric Skills

Students in Grade 3 work extensively for the first time in this module with the important geometric concept of area. The foundations have been laid through earlier work with arrays, as well as the time spent defining and describing attributes of geometric shapes. Now, students learn how to calculate the perimeter (the length of the boundary of a two-dimensional shape) of various figures, including rectangles and regular polygons. Students even explore a method to estimate the perimeter of a circle. They also work to understand the relationship between perimeter and area. The two rectangles below pose a typical question about the connection between perimeter and area.



Both Rectangle A and Rectangle B are made of 15 square units. Students are asked to determine which one has the greatest perimeter, and why? They will explore what happens to perimeter as side lengths change and in shapes with the same area.

Sample problem from Module 7 (Lesson 4)

The third-graders raised \$437 in a fundraiser. The fourth-graders raised \$68 less than the third-graders. How much money did the two grade levels raise altogether?

(Sample of a two-step word problem)

Handwritten student work for a word problem. It includes a box with "\$437", a box with "f \$68 less", a subtraction problem $3217 - 68 = 3149$, a diagram showing two boxes labeled "\$437" and "\$369" with a bracket above them labeled "t", and an addition problem $437 + 369 = 806$. Below the addition is the text "The 2 grades raise \$806 altogether."

Adapted from Eureka Math Tips for Parents, Prepared by Erin Schweng, Math Coach