

Teaching Unit B (Continued)

Math Background

Symmetry and Congruence In Unit B, students are introduced to lines of symmetry for the first time. They will see that a line of symmetry divides a figure in half so that if you fold the figure along the line, the two halves will match exactly. Each half of the figure formed by a line of symmetry is described as a congruent half. Students will also discover that a figure can be divided into congruent halves by lines other than lines of symmetry. For example, in a rectangle, a diagonal is not part of a line of symmetry, but it does divide the rectangle into two congruent halves. The introduction to congruent halves extends to having students identify congruent figures.

Classifying Triangles In grade 2, students drew unique triangles by varying side lengths and angles. They classified these triangles using their own criteria and language: categories such as “three-sides-equal” triangles and “no-big-angle” triangles were appropriate. In this unit, students classify triangles according to lengths of sides using the terms *equilateral*, *isosceles*, and *scalene*, and according to the measure of angles using the terms *obtuse*, *acute*, and *right*. Although these terms should be heard, seen, and used, it is not expected that all students will master them at this grade level.

Composing and Decomposing Quadrilaterals In this unit, students continue to investigate the relationship between different quadrilaterals and triangles by dividing quadrilaterals with diagonals and composing quadrilaterals with triangles. Through these investigations, students build their ideas about properties of figures and how they are related, laying the conceptual foundation for development of area formulas of complex figures in subsequent years.

Estimating Measures of Angles In grade 2, students experimented with making big angles and small angles and drawing triangles starting with different sizes of angles. In this unit, students use benchmark angles like 90° and 180° to estimate the measures of angles. These skills in estimating angles will provide students with the foundation to use protractors successfully in subsequent years. As with all measurement, estimating is an integral part of the process.

Sum of Measures of Angles in a Triangle In this unit, students physically rearrange the angles of a triangle to form a straight angle and to discover that the sum of the measures of the angles in a triangle is 180° . They then apply this property of triangles to find the measure of a missing angle in a triangle.

Math Expressions Geometry Poster

Quadrilaterals

Not Parallelograms	Parallelograms	
	Not Rectangles	Rectangles
	Not Squares	Squares

Triangles

By Angles			By Sides		
Acute (all angles $< 90^\circ$)	Right (one angle = 90°)	Obtuse (one angle $> 90^\circ$)	Equilateral (all sides =)	Isosceles (at least two sides =)	Scalene (no sides =)

Perimeter (in units)

$P = 5 + 3 + 5 + 3 = 16 \text{ in.}$
 $P = 2 * (5 + 3) = 16 \text{ in.}$

length l

$P = l + w + l + w$

Area (in square units)

$A = 5 * 3 = 15 \text{ sq in.}$
 $A = 3 * 5 = 15 \text{ sq in.}$

width w

$A = l * w$