



Topic D

Two-Dimensional Figures and Symmetry

4.G.1, 4.G.2, 4.G.3

Focus Standard:	4.G.1	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	
	4.G.2	Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.	
	4.G.3	Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	
Instructional Days:	5		
Coherence	-Links from:	G3–M7	Geometry and Measurement Word Problems
	-Links to:	G5–M5	Addition and Multiplication with Volume and Area

An introduction to symmetry opens Topic D. In Lesson 12, students recognize lines of symmetry for two-dimensional figures, identify line-symmetric figures, and draw lines of symmetry. Given half of a figure and a line of symmetry, they draw the missing half. The topic then builds on students' prior knowledge of two-dimensional figures and allows students time to explore each figure's properties. Throughout this culminating topic, students use all of their prior knowledge of line and angle measure to classify and construct two-dimensional figures (**4.G.2, 4.G.3**).

In Lesson 13, students are introduced to the precise definition of a triangle and further their understanding of right, acute, and obtuse angles by identifying them in triangles. They then classify triangles as right, acute, or obtuse based on angle measurements. Through a paper-folding activity with a right triangle, students see that the non-right angles of a right triangle are complementary. They also learn that triangles can be classified as equilateral, isosceles, or scalene based on side lengths. For isosceles triangles, lines of symmetry are identified, and a folding activity demonstrates that base angles are equal. Folding an equilateral triangle highlights multiple lines of symmetry and proves that not only are all sides equal in length, but also that all interior angles have the same measure. Students apply their understanding of triangle classification in Lesson 14 as they construct triangles given a set of classifying criteria (e.g., create a triangle that is both right and isosceles).

As the topic progresses into Lesson 15, students explore the definitions of familiar quadrilaterals and reason about their attributes, including angle measure and parallel and perpendicular lines. This work builds on Grade 3 reasoning about the attributes of shapes and lays a foundation for hierarchical classification of two-dimensional figures in Grade 5. In Lesson 16, students compare and analyze two-dimensional figures according to their properties and use grid paper to construct two-dimensional figures given a set of criteria.

A Teaching Sequence Toward Mastery of Two-Dimensional Figures and Symmetry

Objective 1: Recognize lines of symmetry for given two-dimensional figures. Identify line-symmetric figures, and draw lines of symmetry.
(Lesson 12)

Objective 2: Analyze and classify triangles based on side length, angle measure, or both.
(Lesson 13)

Objective 3: Define and construct triangles from given criteria. Explore symmetry in triangles.
(Lesson 14)

Objective 4: Classify quadrilaterals based on parallel and perpendicular lines and the presence or absence of angles of a specified size.
(Lesson 15)

Objective 5: Reason about attributes to construct quadrilaterals on square or triangular grid paper.
(Lesson 16)