

Parent Guide for Student Success

For use with Chapter 6

Chapter Overview One way that you can help your student succeed in Chapter 6 is by discussing the lesson goals in the chart below. When a lesson is completed, ask your student to interpret the lesson goals for you and to explain how the mathematics of the lesson relates to one of the key applications listed in the chart.

<i>Lesson Title</i>	<i>Lesson Goals</i>	<i>Key Applications</i>
6.1: Polygons	Identify, name, and describe polygons. Use the sum of the measures of the interior angles of a quadrilateral.	<ul style="list-style-type: none"> • Tile Patterns • Traffic Signs • Plant Shapes
6.2: Properties of Parallelograms	Use properties of parallelograms in real-life situations.	<ul style="list-style-type: none"> • Furniture Design • Baklava • Scissors Lift
6.3: Proving Quadrilaterals are Parallelograms	Prove that a quadrilateral is a parallelogram. Use coordinate geometry with parallelograms.	<ul style="list-style-type: none"> • Hinged Boxes • Bike Gears • Bird Watching
6.4: Rhombuses, Rectangles, and Squares	Use properties of sides and angles of rhombuses, rectangles, and squares. Use properties of diagonals of rhombuses, rectangles, and squares.	<ul style="list-style-type: none"> • Theater Set • Screen Door • Portable Table
6.5: Trapezoids and Kites	Use properties of trapezoids and kites.	<ul style="list-style-type: none"> • Spider Webs • Wedding Cake • Flying Kites
6.6: Special Quadrilaterals	Identify special quadrilaterals based on limited information. Prove that a quadrilateral is a special type.	<ul style="list-style-type: none"> • Tent Shapes • Gem Cutting
6.7: Areas of Triangles and Quadrilaterals	Find the areas of squares, rectangles, parallelograms, and triangles. Find the areas of trapezoids, kites, and rhombuses.	<ul style="list-style-type: none"> • Roof Area • Energy Conservation • Parade Floats

Study Strategy

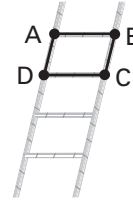
Form a Study Group is the study strategy featured in Chapter 6 (see page 320). Encourage your student to form a study group with other geometry students. Having your student try to explain ideas to members of the group can provide an opportunity for him or her to pull ideas together, to identify and overcome misunderstanding, and to review and prepare for tests.

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Key Ideas Your student can demonstrate understanding of key concepts by working through the following exercises with you.

Lesson	Exercise
6.1	If you connect the tips of the arms of a starfish, what polygon is formed? Is it regular in an “ideal” starfish?
6.2	You are making a rope ladder like the one diagrammed on the right. To make sure the rungs are horizontal, $ABCD$ must be a parallelogram. Which sides are congruent? Which angles are supplementary to $\angle DAB$?
6.3	After the rope ladder in Exercise 6.2 is made, how can you make sure $ABCD$ is a parallelogram? What theorem could you use?
6.4	To make the rope ladder like the one diagrammed in the Exercise for Lesson 6.2 so that the rails are vertical and the rungs are horizontal, $ABCD$ would need to be a rectangle. How could you guarantee that it is a rectangle? What theorem or corollary would you use?
6.5	Quadrilateral $WXYZ$ is a kite. Its diagonals intersect at point V . $WV = VY = 3$ m, $XV = 4$ m and $ZV = 6$ m. Find the lengths of the sides of the kite.
6.6	The diagonals of quadrilateral $JKLM$ are congruent. What quadrilaterals always meet this condition? What quadrilaterals sometimes meet this condition?
6.7	Quadrilateral $ABCD$ has vertices $A(-3, 2)$, $B(-1, 4)$, $C(4, 2)$, and $D(-1, 0)$. Find its area.



Home Involvement Activity

You will need: Materials to make sketches

Directions: Challenge your student to a quadrilateral scavenger hunt. Try to find and sketch a real-life example of each of the following: a square, a rectangle that is not a square, a rhombus that is not a square, a kite, a parallelogram that is not a rhombus or a rectangle, a trapezoid, and a quadrilateral that is none of these. See who can finish first.

6.1: pentagon; yes 6.2: $\overline{AB} \cong \overline{DC}$, $\overline{AD} \cong \overline{BC}$, $\angle ADC$ and $\angle ABC$ 6.3: Sample answer: make sure $AB = DC$ and $AD = BC$; Theorem 6.6 (See p. 338.) 6.4: make sure $AC = BD$; Theorem 6.13 (See p. 349.) 6.5: $WX = XY = 5$ m, $WZ = YZ \approx 6.71$ m 6.6: always: rectangle, square, isosceles trapezoid; sometimes: parallelogram, rhombus 6.7: 14 square units

Answers