Student Guide

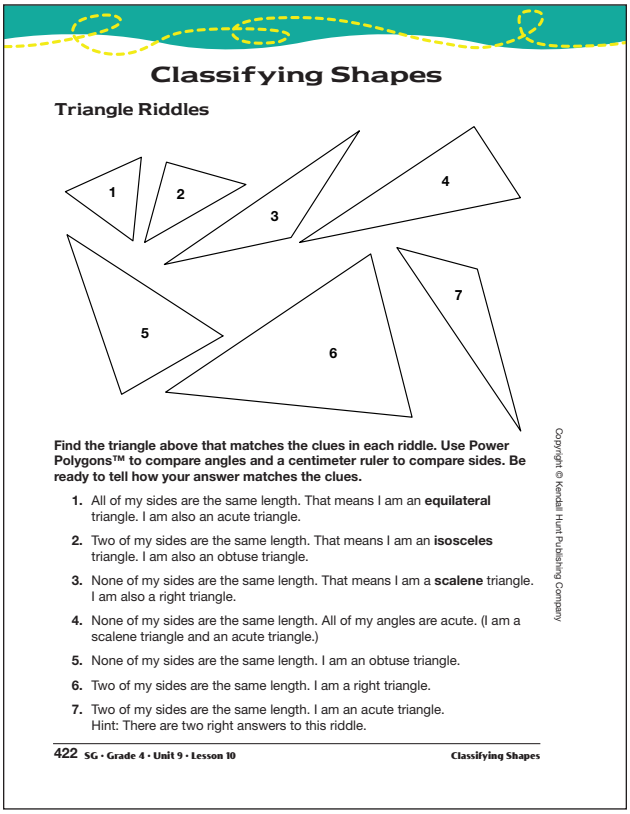
Classifying Shapes

Questions 1–10 (SG pp. 422–424)

1. 1
2. 3
3. 4
4. 5
5. 7
6. 2
7. 6, 1
8. Box A: G, M, O
   Box A and B: A, B
   Box B: C
   Outside the boxes: F, K
9. **A.*** Yes, a square is a rhombus, it has 4 sides of equal length.

   B.* Yes, a square is a rectangle, it has 4 sides and 4 right angles.

   C.* No, not all rectangles are squares. A rectangle doesn't need all 4 sides to be equal.



Classifying Shapes

Triangle Riddles

Find the triangle above that matches the clues in each riddle. Use Power Polygons™ to compare angles and a centimeter ruler to compare sides. Be ready to tell how your answer matches the clues.

1. All of my sides are the same length. That means I am an **equilateral** triangle. I am also an acute triangle.
2. Two of my sides are the same length. That means I am an **isosceles** triangle. I am also an obtuse triangle.
3. None of my sides are the same length. That means I am a **scalene** triangle. I am also a right triangle.
4. None of my sides are the same length. All of my angles are acute. (I am a scalene triangle and an acute triangle.)
5. None of my sides are the same length. I am an obtuse triangle.
6. Two of my sides are the same length. I am a right triangle.
7. Two of my sides are the same length. I am an acute triangle.
   Hint: There are two right answers to this riddle.

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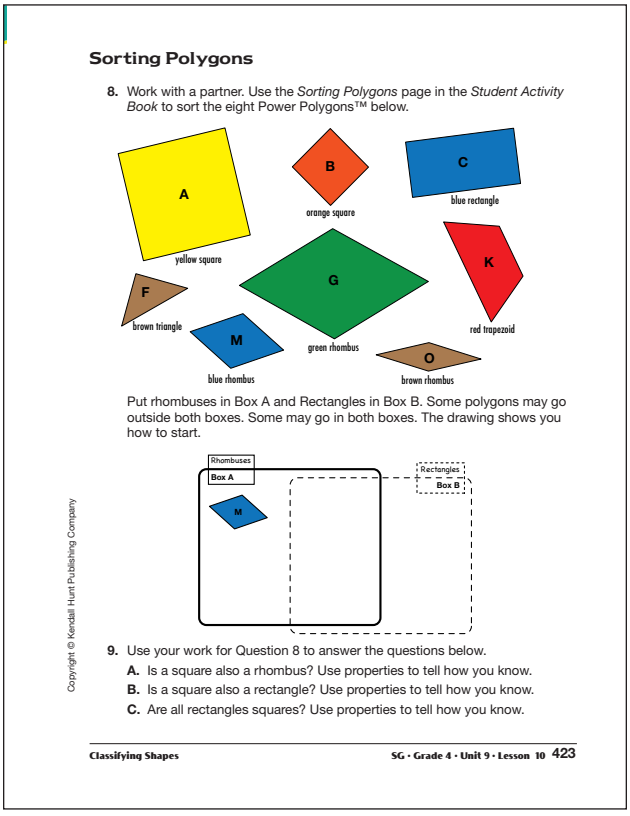

Sorting Polygons

8. Work with a partner. Use the *Sorting Polygons* page in the *Student Activity Book* to sort the eight Power Polygons™ below.

Put rhombuses in Box A and Rectangles in Box B. Some polygons may go outside both boxes. Some may go in both boxes. The drawing shows you how to start.

9. Use your work for Question 8 to answer the questions below.
   A. Is a square also a rhombus? Use properties to tell how you know.
   B. Is a square also a rectangle? Use properties to tell how you know.
   C. Are all rectangles squares? Use properties to tell how you know.

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***Answers and/or discussion are included in the lesson.**

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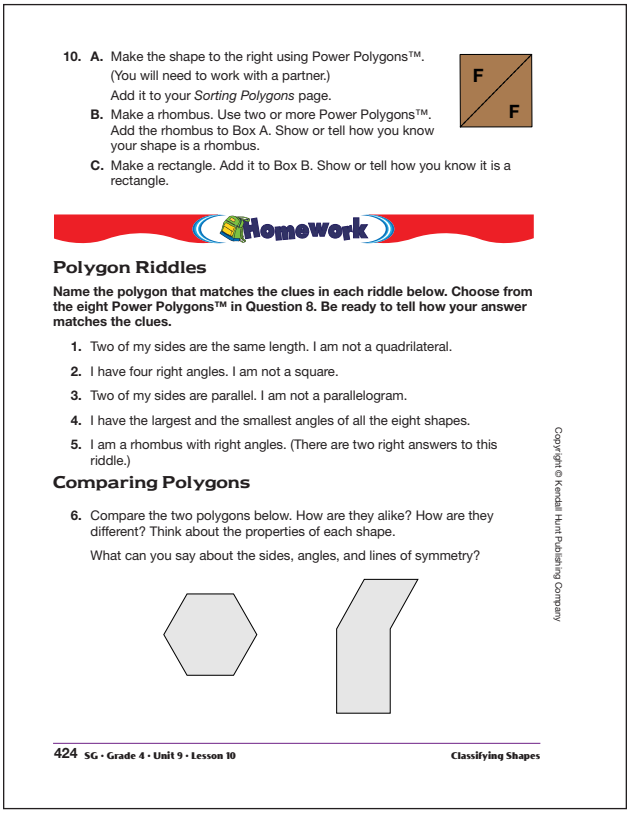

10. **A.** Make the shape to the right using Power Polygons™. (You will need to work with a partner.) Add it to your *Sorting Polygons* page.
B. Make a rhombus. Use two or more Power Polygons™. Add the rhombus to Box A. Show or tell how you know your shape is a rhombus.
C. Make a rectangle. Add it to Box B. Show or tell how you know it is a rectangle.

F F

Homework

Polygon Riddles

Name the polygon that matches the clues in each riddle below. Choose from the eight Power Polygons™ in Question 8. Be ready to tell how your answer matches the clues.

1. Two of my sides are the same length. I am not a quadrilateral.
2. I have four right angles. I am not a square.
3. Two of my sides are parallel. I am not a parallelogram.
4. I have the largest and the smallest angles of all the eight shapes.
5. I am a rhombus with right angles. (There are two right answers to this riddle.)

Comparing Polygons

6. Compare the two polygons below. How are they alike? How are they different? Think about the properties of each shape.
What can you say about the sides, angles, and lines of symmetry?

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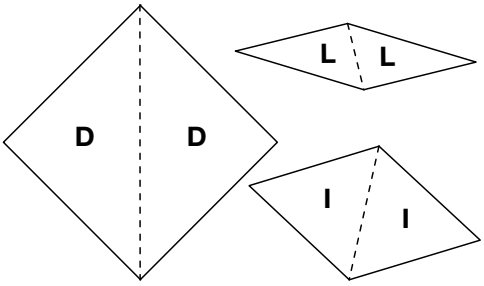
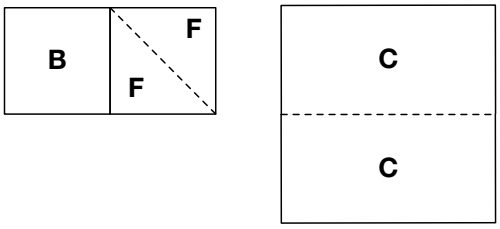
10. A. The shape belongs in both Box A and Box B.

B. Shapes will vary. If it has 4 sides of equal length, it is a rhombus. Possible solutions for a rhombus:



C. Shapes will vary. If it has 4 sides with 4 right angles, it is a rectangle.Two possible solutions for a rectangle:



Homework

Questions 1–6 (SG p. 424)

1. F
2. C
3. K
4. O
5. A, B
6. Both shapes have 6 sides. The first shape has 6 equal sides, and 6 equal angles. The second shape has different side lengths and angles. The first shape has 6 lines of symmetry, the second shape has none.

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