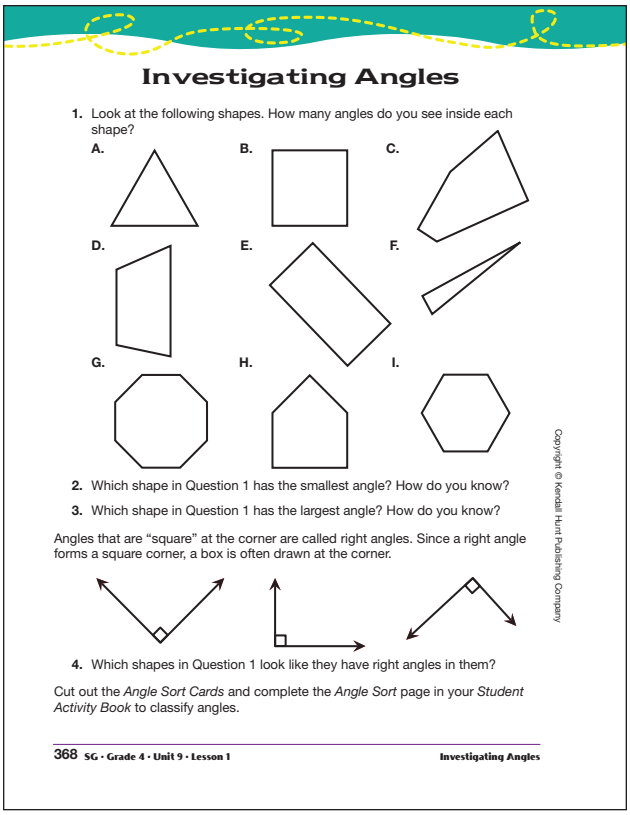
Student Guide

Investigating Angles

Questions 1–6 (SG pp. 368–370)

1. A.* 3
   B.* 4
   C.* 5
   D.* 4
   E.* 4
   F.* 3
   G.* 8
   H.* 5
   I.* 6
2.* The triangle in Part F. It has the sharpest angle.
3.* The shape in Part C. It has an angle that is nearly straight.
4. The shapes in Parts B, C, E, F, and H all have right angles.
5. Examples will vary. Ask students to compare their examples against a corner of paper to check their classifications.



Investigating Angles

1. Look at the following shapes. How many angles do you see inside each shape?

A. B. C.

D. E. F.

G. H. I.

2. Which shape in Question 1 has the smallest angle? How do you know?
3. Which shape in Question 1 has the largest angle? How do you know?

Angles that are "square" at the corner are called right angles. Since a right angle forms a square corner, a box is often drawn at the corner.

4. Which shapes in Question 1 look like they have right angles in them?

Cut out the *Angle Sort Cards* and complete the *Angle Sort* page in your *Student Activity Book* to classify angles.

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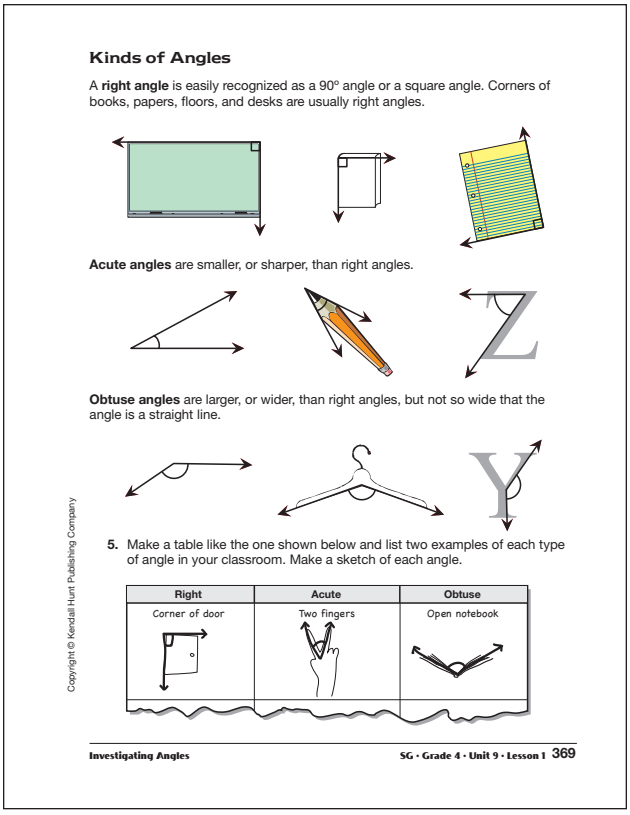

Kinds of Angles

A **right angle** is easily recognized as a 90° angle or a square angle. Corners of books, papers, floors, and desks are usually right angles.

Acute angles are smaller, or sharper, than right angles.

Obtuse angles are larger, or wider, than right angles, but not so wide that the angle is a straight line.

5. Make a table like the one shown below and list two examples of each type of angle in your classroom. Make a sketch of each angle.

Right	Acute	Obtuse
Corner of door	Two fingers	Open notebook

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

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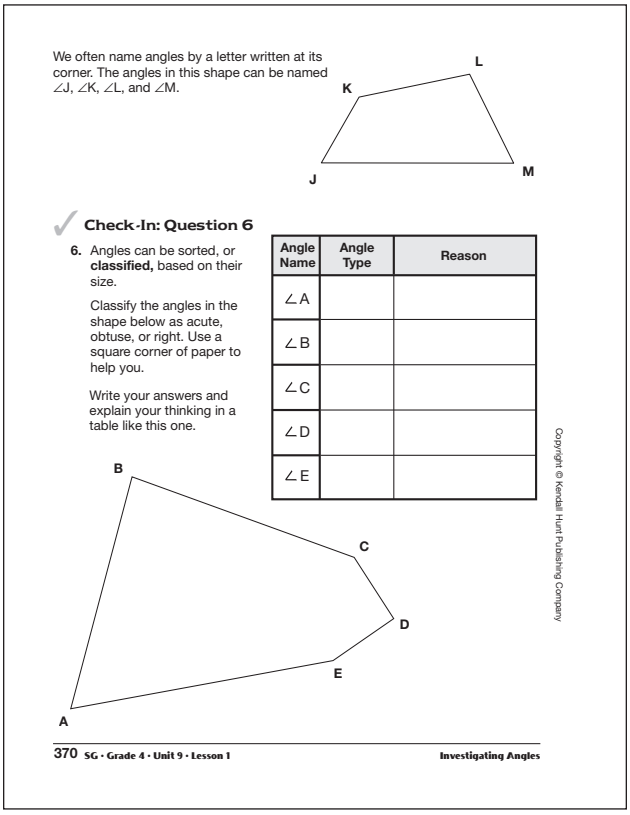

We often name angles by a letter written at its corner. The angles in this shape can be named ∠J, ∠K, ∠L, and ∠M.

Check-In: Question 6

6. Angles can be sorted, or **classified,** based on their size.

   Classify the angles in the shape below as acute, obtuse, or right. Use a square corner of paper to help you.

   Write your answers and explain your thinking in a table like this one.

Angle Name	Angle Type	Reason
∠A		
∠B		
∠C		
∠D		
∠E		

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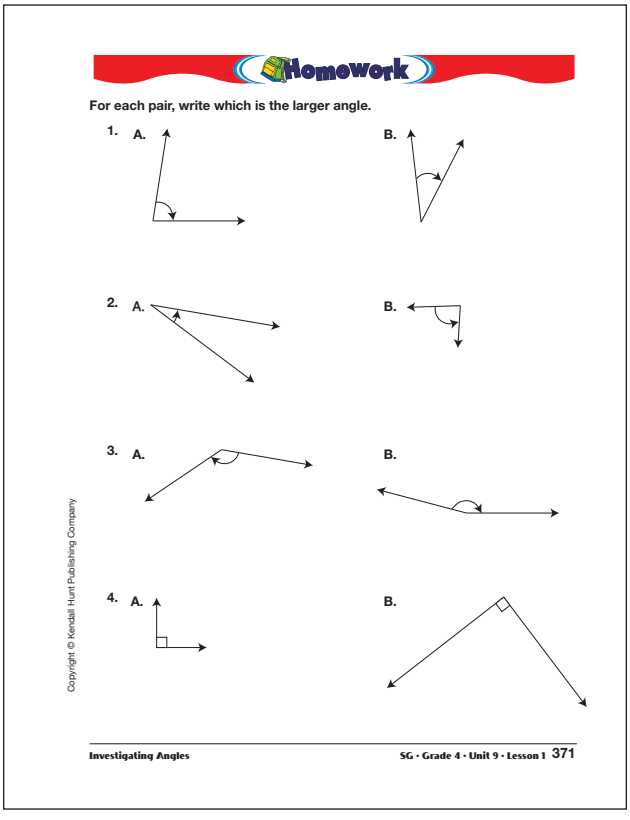
6.

Angle Name	Angle Type	Reason
∠A	acute	sharper than paper corner
∠B	acute	slightly sharper than paper corner
∠C	obtuse	wider than paper corner
∠D	right	same as paper corner
∠E	obtuse	wider than paper corner



Homework

For each pair, write which is the larger angle.

1. A. B.

2. A. B.

3. A. B.

4. A. B.

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Homework

Questions 1–13 (SG pp. 371–372)

1. A is larger.
2. B is larger.
3. B is larger.
4. Both are the same.

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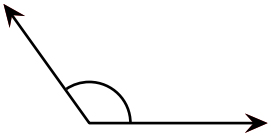
5. ∠F and ∠G are acute.
∠H is obtuse.

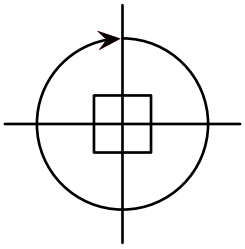
6. ∠A is right.
∠C is acute.
∠B, ∠D, and ∠E are obtuse.

7. Any 2 angles less than 90º.
E.g.,

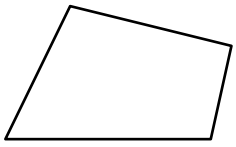
8. Any 2 angles between 90º and 180º.
E.g.,



9. Four right angles.



10. Any four-sided polygon (quadrilateral) is acceptable.
E.g.,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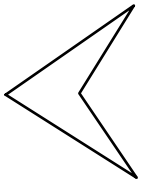
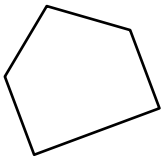


11. Any five-sided polygon (pentagon) is acceptable.
E.g.,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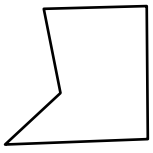
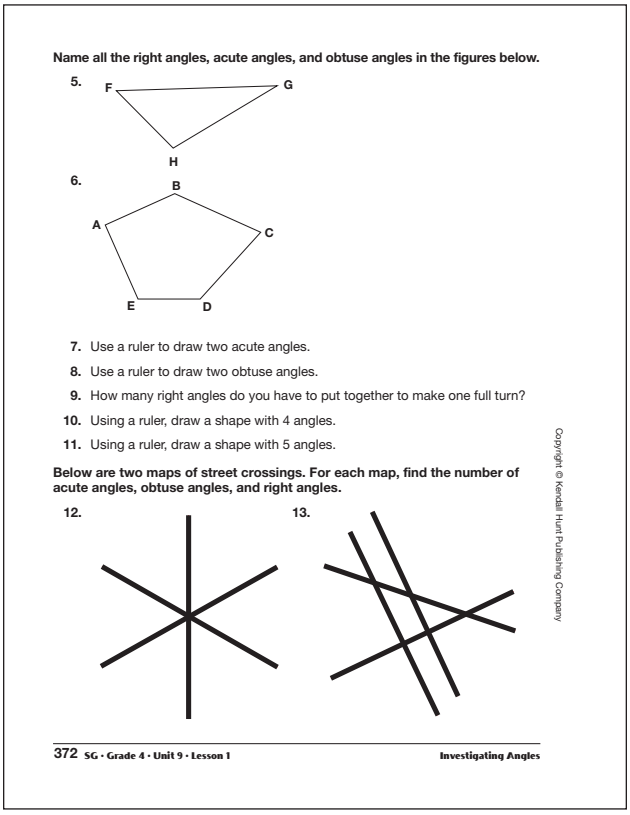


12. 6 acute angles; some students may notice 6 more obtuse angles as well.



Name all the right angles, acute angles, and obtuse angles in the figures below.

5.

6.

7. Use a ruler to draw two acute angles.
8. Use a ruler to draw two obtuse angles.
9. How many right angles do you have to put together to make one full turn?
10. Using a ruler, draw a shape with 4 angles.
11. Using a ruler, draw a shape with 5 angles.

Below are two maps of street crossings. For each map, find the number of acute angles, obtuse angles, and right angles.

12.

13.

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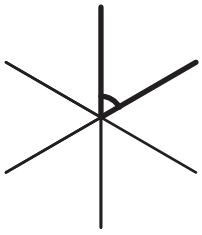
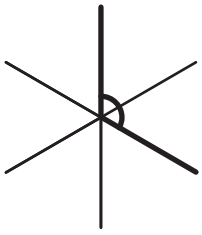
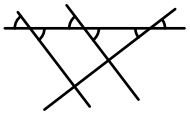
Possible acute angle:



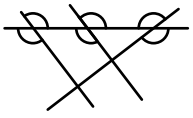
Possible obtuse angle:



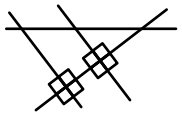
13. 6 acute angles;



6 obtuse angles;



8 right angles.



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