

ANSWER MAZE

CLASSIFYING QUADRILATERALS

What Is the Most Specific Name?

One page · 10–15 minutes · nothing to prepare



FREE

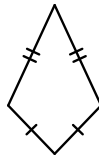
6

What is the most specific name the marks prove?

quadrilateral → **go to 5**

kite → **go to 2**

Count the sides that carry ticks, and see which of them meet at a corner.



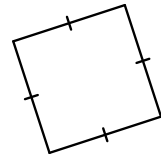
2

What is the most specific name the marks prove?

rhombus → **go to 7**

square → **go to 4**

Look only at the marks, not at the shape of the drawing. Check every corner.



1. **Hand out page 3**, one per student. Nothing else is needed.
2. **Say this once:** *“Start at box 6. Choose the most specific name the marks prove. Use only the marks. Write every box number in the row at the bottom as you go.”*
3. **Check a sheet quickly.** A student with no mistakes writes **6 2 7 3 8 1**: six boxes, then out.

Student sheet	page 3, one per student. It shows the seven names as small marked drawings, with the marks that prove each one.
Answers	page 4.

Every box asks the same question about a different marked shape: what is the most specific name the marks prove? A square is a special rectangle and a special rhombus. A rectangle and a rhombus are special parallelograms, a rhombus is also a special kite, and a parallelogram is a special trapezoid. So a shape often has several true names, and the most specific one is the lowest of them in that list.

The definitions this sheet uses. A trapezoid has at least one pair of parallel sides, so every parallelogram is a trapezoid. A kite has two pairs of congruent sides next to each other, so every rhombus is a kite. Some textbooks use other definitions, so tell the class which ones this sheet uses.

Every wrong answer comes from one of two mistakes. The first is a name that is true but too general, such as “parallelogram” for a shape marked with four congruent sides. Many students give the name they know best. These wrong answers send the student to box 5. The second is a name the drawing suggests but the marks do not prove, such as “square” for a shape drawn as a square with only four congruent sides marked. These wrong answers send the student to box 4. Boxes 5 and 4 ask the same question about a new shape, and both of their answers lead back to the route.

The row at the bottom is the check. A clean run is six numbers. Each wrong answer adds at least one more. Guessing does not get a student out: every simple guessing rule, such as always taking the first answer, goes wrong within the first two boxes.



This is the free lesson this activity came from. The worksheet, the full answers and the lesson plan are on it, at three levels of difficulty.

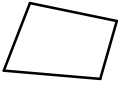
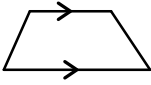
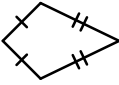
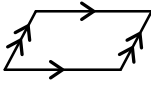
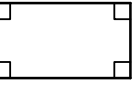
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Name _____

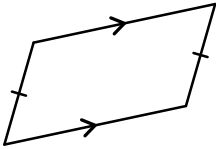
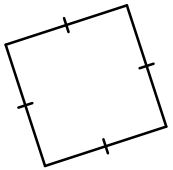
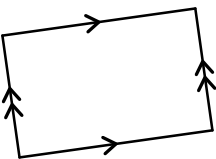
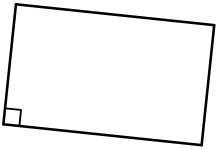
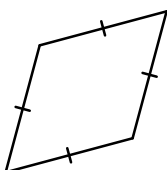
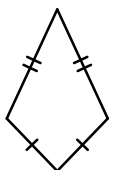
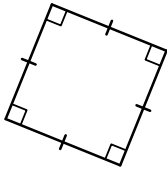
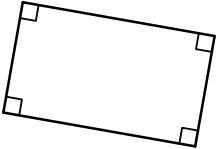
Period _____

Date _____

Each box shows a quadrilateral with marks. Choose the most specific name the marks prove, and go to the box it names. Use only the marks. Do not trust how the shape looks. Write each box number in the row at the bottom as you reach it.

 quadrilateral Four sides.	 trapezoid At least one pair of parallel sides.	 kite Two pairs of congruent sides next to each other.	 parallelogram Both pairs of opposite sides parallel, or both pairs congruent.	 rectangle Four right angles, or a parallelogram with one right angle.	 rhombus Four congruent sides.	 square Four congruent sides and four right angles.
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A square is a **special** rectangle and a **special** rhombus. A rectangle and a rhombus are **special** parallelograms. A rhombus is also a **special** kite. A parallelogram is a **special** trapezoid.

1 What is the most specific name the marks prove? trapezoid → you are out parallelogram → go to 4 <i>Look at each pair of opposite sides. Read what the marks on each pair say.</i> 	2 What is the most specific name the marks prove? rhombus → go to 7 square → go to 4 <i>Look only at the marks, not at the shape of the drawing. Check every corner.</i> 
3 What is the most specific name the marks prove? rectangle → go to 4 parallelogram → go to 8 <i>Look only at the marks, not at the shape of the drawing. Check every corner.</i> 	4 What is the most specific name the marks prove? rectangle → go to 2 quadrilateral → go to 7 <i>Look only at the marks, not at the shape of the drawing. Check every side.</i> 
5 What is the most specific name the marks prove? rhombus → go to 2 parallelogram → go to 6 <i>Count the sides that carry ticks. Then read what the marks prove together.</i> 	6 What is the most specific name the marks prove? quadrilateral → go to 5 kite → go to 2 <i>Count the sides that carry ticks, and see which of them meet at a corner.</i> 
7 What is the most specific name the marks prove? rhombus → go to 5 square → go to 3 <i>Check every side and every corner for a mark.</i> 	8 What is the most specific name the marks prove? rectangle → go to 1 parallelogram → go to 5 <i>Check every corner for a mark as well as every side.</i> 

Write each box number as you reach it:

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The route, in order. Boxes 5 and 4 are not on it. A student reaches them only by a wrong answer. They are the last two rows of the table.

6 → 2 → 7 → 3 → 8 → 1 → out

Box	Right answer, and why	Wrong answer, and why a student picks it
1 Box 6 What is the most specific name the marks prove? <i>Marked: one tick on two sides that meet and two ticks on the other two sides.</i>	kite Two pairs of congruent sides next to each other make a kite. The one-tick sides and the two-tick sides are not marked equal, so a rhombus is not proved.	“quadrilateral” goes to box 5. “quadrilateral” is true, but it is not the most specific name: every kite is a quadrilateral. Students often give the name they know best.
2 Box 2 What is the most specific name the marks prove? <i>Marked: one tick on each of the four sides.</i>	rhombus Four congruent sides make a rhombus. No right angle is marked, so a square is not proved.	“square” goes to box 4. The drawing looks like a square, but the marks do not prove it. Students who name what they see pick this.
3 Box 7 What is the most specific name the marks prove? <i>Marked: one tick on each of the four sides and four right-angle marks.</i>	square Four congruent sides and four right angles make a square. No name is more specific than square.	“rhombus” goes to box 5. “rhombus” is true, but it is not the most specific name: every square is a rhombus. Students often give the name they know best.
4 Box 3 What is the most specific name the marks prove? <i>Marked: arrowheads on both pairs of opposite sides.</i>	parallelogram Both pairs of opposite sides are parallel, so it is a parallelogram. No right angle and no congruent sides next to each other are marked, so nothing more is proved.	“rectangle” goes to box 4. The drawing looks like a rectangle, but the marks do not prove it. Students who name what they see pick this.
5 Box 8 What is the most specific name the marks prove? <i>Marked: four right-angle marks.</i>	rectangle Four right angles make a rectangle. No sides are marked congruent, so a square is not proved.	“parallelogram” goes to box 5. “parallelogram” is true, but it is not the most specific name: every rectangle is a parallelogram. Students often give the name they know best.
6 Box 1 What is the most specific name the marks prove? <i>Marked: arrowheads on one pair of opposite sides and ticks on the other pair.</i>	trapezoid One pair of sides is parallel, so it is a trapezoid. The other pair is marked congruent, not parallel. An isosceles trapezoid has these marks too, so a parallelogram is not proved.	“parallelogram” goes to box 4. The drawing looks like a parallelogram, but the marks do not prove it. Students who name what they see pick this.
Box 5 What is the most specific name the marks prove? <i>Marked: one tick on each of the four sides.</i>	rhombus Four congruent sides make a rhombus. No right angle is marked, so a square is not proved.	“parallelogram” goes to box 6. “parallelogram” is true, but it is not the most specific name: every rhombus is a parallelogram. Students often give the name they know best.
Box 4 What is the most specific name the marks prove? <i>Marked: one right-angle mark and nothing else.</i>	quadrilateral Only one right angle is marked. One right angle proves no special name, so it is only a quadrilateral.	“rectangle” goes to box 2. The drawing looks like a rectangle, but the marks do not prove it. Students who name what they see pick this.

How to check any box. Ask: “Which names do the marks prove? Cross out every name they do not prove. Which name that is left is the most special?” Read only the marks: ticks for congruent sides, arrowheads for parallel sides, and small squares for right angles.

A student can find the last four boxes of the route by following the arrows backward from “you are out.” So ask a student with a clean row to explain one box.