

ANSWER MAZE

CONGRUENCE AND RIGID MOTIONS

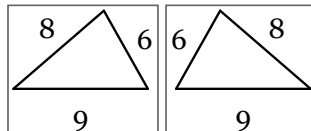
Congruent or Not? Look Again

One page · 10–15 minutes · nothing to prepare



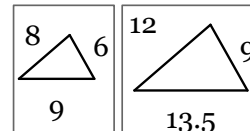
FREE

3



No. One faces the other way. → go to 7
Yes. A flip is an allowed move. → go to 6
Pair each number with one on the other triangle.

6



No. One has longer sides. → go to 1
Yes. Every angle matches. → go to 5
Read the numbers of both triangles in pairs.

1. **Hand out page 3**, one per student. Nothing else is needed.
2. **Say this once:** *“Start at box 3. Read every number and every mark on both shapes before you choose. A flip is allowed. Write every box number in the row at the bottom as you go.”*
3. **Check a sheet quickly.** A student with no mistakes writes **3 6 1 8 4 2**: six boxes, then out.

Student sheet page 3, one per student.

Answers page 4.

Every wrong answer comes from one of two mistakes. The first mistake is judging by how the shapes look. The student calls a mirror image a different shape, calls a square turned to look like a diamond a different shape, or passes a near miss because it looks the same. These wrong answers send the student to box 7. The second mistake is checking only part of what must match. The student passes a bigger copy because its angles match, two rectangles because their areas match, or a rectangle and a parallelogram because their sides match. These wrong answers send the student to box 5. Boxes 7 and 5 ask the same kind of question again, 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. The hint in every box says what to look at, never which answer is right.

Your class may have learned either definition of congruent. One says a slide, a turn or a flip, or several of them, moves one shape exactly onto the other. The other says every pair of matching sides and angles is equal. Every answer here is the same under both definitions.

Guessing does not get a student out. Every simple guessing rule, such as always taking the first answer, goes wrong within the first four 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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Answer Maze

Start at box 3 · congruent or not?

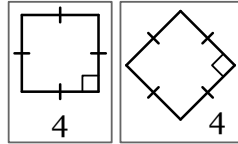
Name _____

Period _____

Date _____

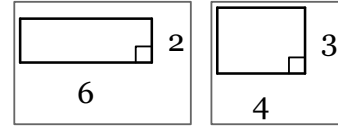
Are the two shapes congruent? Every box asks this about its two shapes. Congruent means every side and every angle matches. That is the same as slides, turns and flips moving one shape exactly onto the other. A flip is allowed. Choose an answer, and go to the box it names.

1



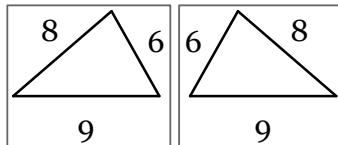
Yes. A turn is an allowed move. → go to 8
No. A square cannot be a diamond. → go to 7
Read the ticks, the number and the corner marks.

2



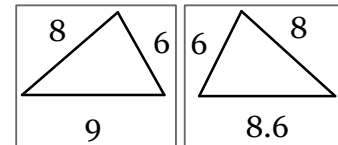
Both rectangles have area 12.
Yes. The areas are equal. → go to 5
No. The sides do not match. → you are out
Compare the numbers on the two rectangles.

3



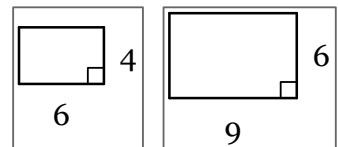
No. One faces the other way. → go to 7
Yes. A flip is an allowed move. → go to 6
Pair each number with one on the other triangle.

4



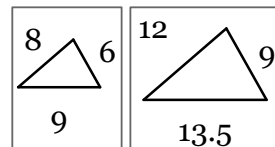
No. One side is 8.6, not 9. → go to 2
Yes. They look exactly alike. → go to 7
Read every number on both triangles.

5



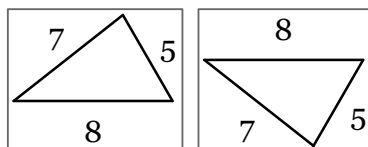
No. Its sides are longer. → go to 1
Yes. Every angle is a right angle. → go to 6
Read the numbers along the edges of both shapes.

6



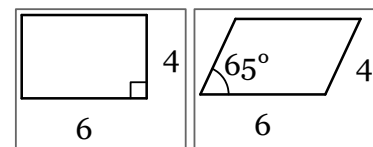
No. One has longer sides. → go to 1
Yes. Every angle matches. → go to 5
Read the numbers of both triangles in pairs.

7



No. A mirror image is not the same. → go to 3
Yes. It is a mirror image. → go to 6
Picture a tracing of one shape turned face down.

8



Yes. All four sides match. → go to 5
No. The angles do not match. → go to 4
Check the corners as well as the numbers.

Write each box number as you reach it:

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The route, in order. Boxes 7 and 5 are not on it. A student reaches them only by a wrong answer. They are the last two rows of the table.

3 → 6 → 1 → 8 → 4 → 2 → out

	Box	Right answer, and why	Wrong answer, and why a student picks it
1	Box 3	Yes. A flip is an allowed move. Both triangles have sides 6, 8 and 9. One is the other flipped over, and a flip is allowed.	“No. One faces the other way.” goes to box 7. A student who thinks a mirror image is a different shape picks this.
2	Box 6	No. One has longer sides. The sides 9, 12 and 13.5 are longer than 6, 8 and 9. The angles match, but the size does not.	“Yes. Every angle matches.” goes to box 5. A student who checks the angles and not the side lengths picks this.
3	Box 1	Yes. A turn is an allowed move. Both are squares with sides of 4 and right angles. The “diamond” is the same square turned.	“No. A square cannot be a diamond.” goes to box 7. A student who thinks turning a shape changes it picks this.
4	Box 8	No. The angles do not match. Both have sides 6 and 4, but the rectangle has a 90° angle where the parallelogram has 65°.	“Yes. All four sides match.” goes to box 5. A student who checks the sides and not the angles picks this.
5	Box 4	No. One side is 8.6, not 9. One triangle has a side of 9, and the matching side of the other is 8.6.	“Yes. They look exactly alike.” goes to box 7. A student who judges by eye and does not read every number picks this.
6	Box 2	No. The sides do not match. The sides are 6 and 2 on one rectangle and 4 and 3 on the other. Equal area does not make the sides match.	“Yes. The areas are equal.” goes to box 5. A student who thinks equal area means congruent picks this.
	Box 7	Yes. It is a mirror image. Both triangles have sides 8, 5 and 7. One is the other flipped over and turned.	“No. A mirror image is not the same.” goes to box 3. A student who still thinks a mirror image is a different shape picks this.
	Box 5	No. Its sides are longer. Every angle is a right angle on both, but the sides are 9 and 6 against 6 and 4.	“Yes. Every angle is a right angle.” goes to box 6. A student who checks the angles and not the side lengths picks this.

The answer is Yes only when the shapes are congruent: every side and every angle of one shape has a matching side or angle of the same size on the other.

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.