

Side Pair Detectives

Sort side pairs by how they relate.

4.MG.5.c "Identify and describe parallel, intersecting, perpendicular, and congruent sides in quadrilaterals."

NAME _____

DATE _____

PARALLEL SIDES

Parallel sides stay the same distance apart. If you extend them, they never meet.

The two long edges of a paper strip are parallel.

PERPENDICULAR SIDES

Perpendicular sides meet to make a square corner, called a right angle.

At a corner of a window, the two edges are perpendicular.

1 SORT _____ 8 items

For each item, circle PARALLEL or CORNERS, then in PROVE IT choose two item numbers and tell which sides you used and why.

1. In a rectangle, the top side and bottom side

PARALLEL

CORNERS

2. In a square, the left side and right side

PARALLEL

CORNERS

3. In a square, the top side and left side

PARALLEL

CORNERS

4. In a trapezoid, the two bases

PARALLEL

CORNERS

5. In a rectangle, the bottom side and right side

PARALLEL

CORNERS

6. In a rectangle, the top side and right side

PARALLEL

CORNERS

7. In a parallelogram, two opposite sides

PARALLEL

CORNERS

8. In a square, the bottom side and left side

PARALLEL

CORNERS

2 PROVE IT Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ HOW I KNEW _____

ITEM # _____ HOW I KNEW _____

3 MAKE YOUR OWN One of each

Write one new example of parallel sides and one new example of perpendicular sides. Name the quadrilateral and the two sides in each example.

PARALLEL

CORNERS

CHALLENGE

Draw a quadrilateral with one pair of parallel sides and one pair of perpendicular sides. Label both pairs.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	In a rectangle, the top side and bottom side	PARALLEL	Opposite sides of a rectangle are parallel.
2	In a square, the left side and right side	PARALLEL	Opposite sides of a square are parallel.
3	In a square, the top side and left side	CORNERS	The sides meet at a right angle.
4	In a trapezoid, the two bases	PARALLEL	The bases of a trapezoid are parallel.
5	In a rectangle, the bottom side and right side	CORNERS	The sides meet at a right angle.
6	In a rectangle, the top side and right side	CORNERS	The sides meet at a right angle.
7	In a parallelogram, two opposite sides	PARALLEL	Opposite sides of a parallelogram are parallel.
8	In a square, the bottom side and left side	CORNERS	The sides meet at a right angle.

PART 2 • PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 • MAKE YOUR OWN (SAMPLE ANSWERS)

- **PARALLEL:** In a rectangle, the left side and right side are parallel.
- **CORNERS:** In a rectangular tile, the top side and right side are perpendicular.

Challenge: Draw a right trapezoid with horizontal top and bottom bases and a vertical left side. Label the bases as parallel, and label the left side as perpendicular to both bases.

The sort answers are 1 PARALLEL, 2 PARALLEL, 3 CORNERS, 4 PARALLEL, 5 CORNERS, 6 CORNERS, 7 PARALLEL, and 8 CORNERS. For PROVE IT, accept explanations that say parallel sides never meet or perpendicular sides form a right angle.