Rectangle Match-Up

Sort rectangle pairs by what stays the same.

3.GSR.8.2 "Investigate and describe how rectangles with the same perimeter can have different areas or how rectangles with the same area can have different perimeters."

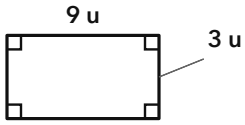
NAME _____ DATE _____

SAME PERIMETER, DIFFERENT AREAS

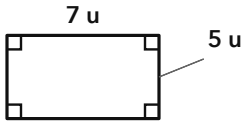
Choose this when two rectangles have the same perimeter but different areas. They need the same length of fence, but cover different amounts of space.

A 3 by 9 rectangle and a 5 by 7 rectangle each have a perimeter of 24 units. Their areas are 27 and 35 square units.

Rectangle A



Rectangle B

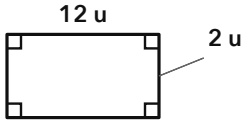


SAME AREA, DIFFERENT PERIMETERS

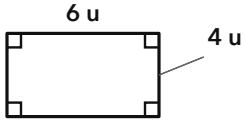
Choose this when two rectangles have the same area but different perimeters. They cover the same amount of space, but need different lengths of fence.

A 2 by 12 rectangle and a 4 by 6 rectangle each have an area of 24 square units. Their perimeters are 28 and 20 units.

Rectangle A



Rectangle B



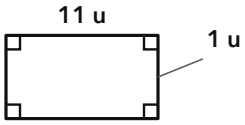
1 SORT

8 items

For each figure, circle PERIMETER or AREA, then choose two figures, find each rectangle's perimeter and area, and explain how you knew.

1.

Rectangle A



Rectangle B

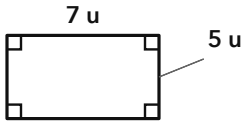
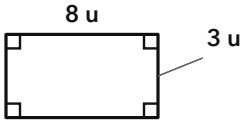


Figure 1

PERIMETER **AREA**

2.

Rectangle A



Rectangle B

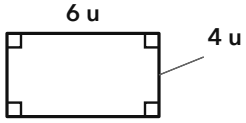
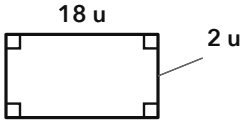


Figure 2

PERIMETER **AREA**

3.

Rectangle A



Rectangle B

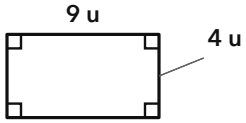
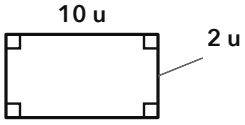


Figure 3

PERIMETER **AREA**

4.

Rectangle A



Rectangle B

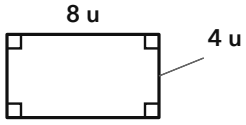
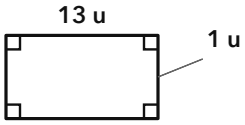


Figure 4

PERIMETER **AREA**

5.

Rectangle A



Rectangle B

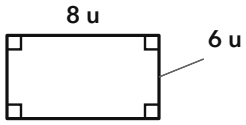
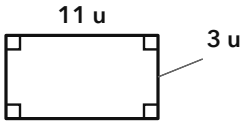


Figure 5

PERIMETER **AREA**

6.

Rectangle A



Rectangle B

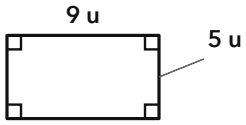
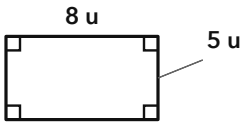


Figure 6

PERIMETER **AREA**

7.

Rectangle A



Rectangle B

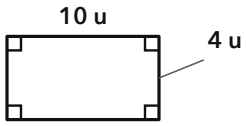
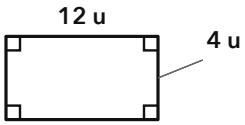


Figure 7

PERIMETER **AREA**

8.

Rectangle A



Rectangle B

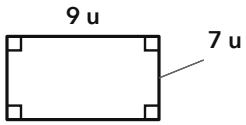


Figure 8

PERIMETER **AREA**

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 pair of rectangles for PERIMETER and one new pair of rectangles for AREA. Show the perimeter and area of each rectangle.

PERIMETER

AREA

CHALLENGE

Draw three different rectangles with a perimeter of 20 units. Make sure all three areas are different.

ANSWER KEY

Rectangle Match-Up

GRADE 3 · 3.GSR.8.2

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (pair)	**PERIMETER**	Both perimeters are 24 units, and the areas are 11 and 35 square units.
2	Figure 2 (pair)	**AREA**	Both areas are 24 square units, and the perimeters are 22 and 20 units.
3	Figure 3 (pair)	**AREA**	Both areas are 36 square units, and the perimeters are 40 and 26 units.
4	Figure 4 (pair)	**PERIMETER**	Both perimeters are 24 units, and the areas are 20 and 32 square units.
5	Figure 5 (pair)	**PERIMETER**	Both perimeters are 28 units, and the areas are 13 and 48 square units.
6	Figure 6 (pair)	**PERIMETER**	Both perimeters are 28 units, and the areas are 33 and 45 square units.
7	Figure 7 (pair)	**AREA**	Both areas are 40 square units, and the perimeters are 26 and 28 units.
8	Figure 8 (pair)	**PERIMETER**	Both perimeters are 32 units, and the areas are 48 and 63 square units.

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)

- **PERIMETER**: A 2 by 14 rectangle and a 7 by 9 rectangle both have a perimeter of 32 units. Their areas are 28 and 63 square units.
- **AREA**: A 3 by 10 rectangle and a 5 by 6 rectangle both have an area of 30 square units. Their perimeters are 26 and 22 units.

Challenge: A 1 by 9 rectangle has area 9 square units, a 2 by 8 rectangle has area 16 square units, and a 3 by 7 rectangle has area 21 square units. Each rectangle has a perimeter of 20 units.

Sort answers are 1 PERIMETER, 2 AREA, 3 AREA, 4 PERIMETER, 5 PERIMETER, 6 PERIMETER, 7 AREA, 8 PERIMETER. For Part 2, accept explanations that correctly calculate or compare both perimeter and area.