

Same Space Sort

Do equal parts always look alike?

MA.2.FR.1.2 "Partition rectangles into two, three or four equal-sized parts in two different ways showing that equal-sized parts of the same whole may have different shapes."

NAME _____

DATE _____

EQUAL PARTS

Equal-sized parts cover the same amount of one rectangle. They can have different shapes.

A rectangle is split into 3 horizontal rows that are the same height.

UNEQUAL PARTS

Unequal parts do not cover the same amount of the rectangle.

A rectangle is split into 3 horizontal rows. The top row is taller than the other two.

1 SORT _____ 8 items

Circle EQUAL or UNEQUAL for each item, then choose two items and write how you know.

1. A rectangle is split down the middle into 2 same-size halves. EQUAL UNEQUAL
2. A rectangle is split into a small top part and a large bottom part. EQUAL UNEQUAL
3. A rectangle has 4 parts. One part is larger than the other 3. EQUAL UNEQUAL
4. A 12-by-6 rectangle has 3 parts: one 4-by-6 part and two 8-by-3 parts. EQUAL UNEQUAL
5. A rectangle is split into 4 same-size squares. EQUAL UNEQUAL
6. A rectangle is split into 3 vertical parts. The middle part is wider. EQUAL UNEQUAL
7. A rectangle is split from corner to corner both ways, making 4 equal-size triangles. EQUAL UNEQUAL
8. A rectangle is split into 2 parts. One part covers twice as much space as the other. EQUAL UNEQUAL

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

Draw and label one new EQUAL rectangle and one new UNEQUAL rectangle.

EQUAL

UNEQUAL

CHALLENGE

Draw a rectangle split into 3 equal-sized parts that are not all the same shape. Explain why the parts are equal-sized.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	A rectangle is split down the middle into 2 same-size halves.	EQUAL	Both halves cover the same area.
2	A rectangle is split into a small top part and a large bottom part.	UNEQUAL	The two parts do not cover the same area.
3	A rectangle has 4 parts. One part is larger than the other 3.	UNEQUAL	At least one part has a different area.
4	A 12-by-6 rectangle has 3 parts: one 4-by-6 part and two 8-by-3 parts.	EQUAL	Each part has an area of 24 square units, even though the shapes are different.
5	A rectangle is split into 4 same-size squares.	EQUAL	All four parts cover the same area.
6	A rectangle is split into 3 vertical parts. The middle part is wider.	UNEQUAL	The middle part covers more area than the narrower parts.
7	A rectangle is split from corner to corner both ways, making 4 equal-size triangles.	EQUAL	The four triangles cover equal areas of the same rectangle.
8	A rectangle is split into 2 parts. One part covers twice as much space as the other.	UNEQUAL	One part has a larger area.

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)

- **EQUAL:** An 8-by-4 rectangle is split into four 2-by-4 parts.
- **UNEQUAL:** A rectangle is split into two vertical parts, one 1 square wide and one 5 squares wide.

Challenge: Draw a 15-by-8 rectangle. Make a 5-by-8 part on the left, then split the rest into two 10-by-4 parts. Each part covers 40 square units.

For the two explanations, accept statements that compare area or count equal square units, not only statements about shape. In the challenge, all 3 parts must have equal area and at least two parts must have different shapes.