

Same Space Sort

Compare shaded parts in matching wholes.

3.6.E “decompose two congruent two-dimensional figures into parts with equal areas and express the area of each part as a unit fraction of the whole and recognize that equal shares of identical wholes need not have the same shape.”

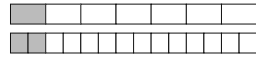
NAME _____

DATE _____

SAME AREA

The shaded parts cover the same amount of two same-size wholes. The wholes may be cut into different numbers of equal pieces.

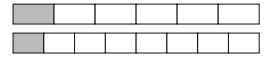
One same-size bar has 7 equal parts with 1 shaded. Another has 14 equal parts with 2 shaded. Both shaded areas are $\frac{1}{7}$.



DIFFERENT AREA

The shaded parts cover different amounts of two same-size wholes. Count the equal pieces in each whole.

One same-size bar has 6 equal parts with 1 shaded. Another has 8 equal parts with 1 shaded. The shaded areas are different.



1 SORT

8 items

Look at each pair of same-size bars, then circle SAME or DIFFERENT to show whether the shaded areas match.

1.

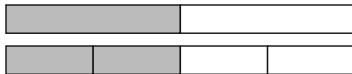


Figure 1

SAME

DIFFERENT

2.



Figure 2

SAME

DIFFERENT

3.

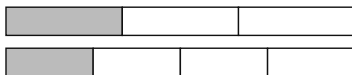


Figure 3

SAME

DIFFERENT

4.

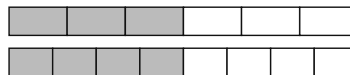


Figure 4

SAME

DIFFERENT

5.

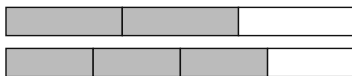


Figure 5

SAME

DIFFERENT

6.

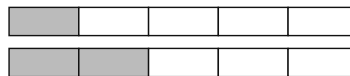


Figure 6

SAME

DIFFERENT

7.

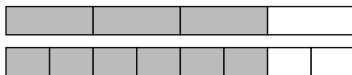


Figure 7

SAME

DIFFERENT

8.



Figure 8

SAME

DIFFERENT

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

PROVE IT: Pick two item numbers, one from each category, and explain how the shaded amounts helped you decide. MAKE YOUR OWN: Draw two same-size bars for a new SAME example and two same-size bars for a new DIFFERENT example.

SAME _____

DIFFERENT _____

CHALLENGE

Draw two congruent rectangles. Shade $\frac{1}{2}$ of each rectangle, but make the two shaded parts different shapes.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (fractionbars)	SAME	The shaded areas are $\frac{1}{2}$ and $\frac{2}{4}$, which are equal.
2	Figure 2 (fractionbars)	SAME	The shaded areas are $\frac{2}{5}$ and $\frac{4}{10}$, which are equal.
3	Figure 3 (fractionbars)	DIFFERENT	The shaded areas are $\frac{1}{3}$ and $\frac{1}{4}$, which are different.
4	Figure 4 (fractionbars)	SAME	The shaded areas are $\frac{3}{6}$ and $\frac{4}{8}$, which are both $\frac{1}{2}$.
5	Figure 5 (fractionbars)	DIFFERENT	The shaded areas are $\frac{2}{3}$ and $\frac{3}{4}$, which are different.
6	Figure 6 (fractionbars)	DIFFERENT	The shaded areas are $\frac{1}{5}$ and $\frac{2}{5}$, which are different.
7	Figure 7 (fractionbars)	SAME	The shaded areas are $\frac{3}{4}$ and $\frac{6}{8}$, which are equal.
8	Figure 8 (fractionbars)	DIFFERENT	The shaded areas are $\frac{3}{5}$ and $\frac{1}{2}$, which are different.

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)

- **SAME:** Draw one bar with 6 equal parts and shade 1 part. Draw a same-size bar with 18 equal parts and shade 3 parts. Both shaded areas are $\frac{1}{6}$.
- **DIFFERENT:** Draw one bar with 8 equal parts and shade 1 part. Draw a same-size bar with 8 equal parts and shade 3 parts. The shaded areas are different.

Challenge: Split one rectangle down the middle and shade the left half. Split the matching rectangle with a diagonal and shade one triangle. Both shaded parts have area $\frac{1}{2}$ of a whole.

Answers: 1 SAME, 2 SAME, 3 DIFFERENT, 4 SAME, 5 DIFFERENT, 6 DIFFERENT, 7 SAME, 8 DIFFERENT. Accept proofs that compare the number of shaded equal pieces to the total number of equal pieces in each same-size whole.