Lesson Maker Pro

Equal Area, Different Shapes

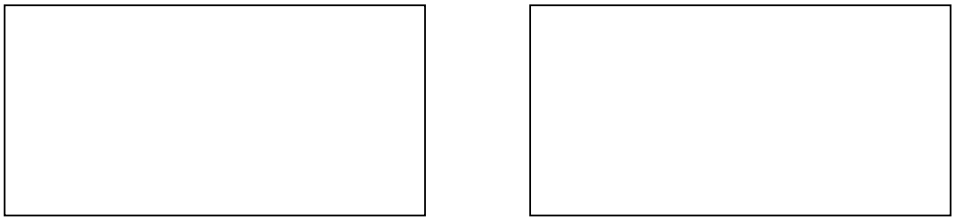
Partition congruent wholes and justify unit-fraction names.

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.

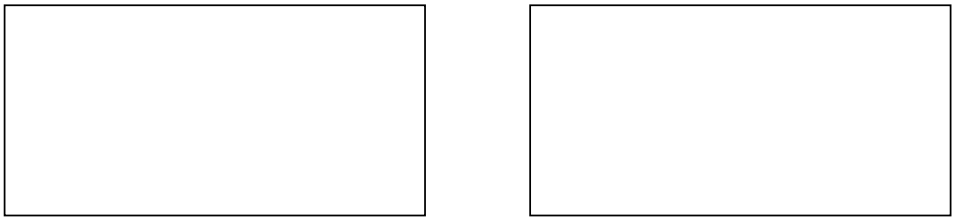
NAME _____ **DATE** _____

Make your own partitions

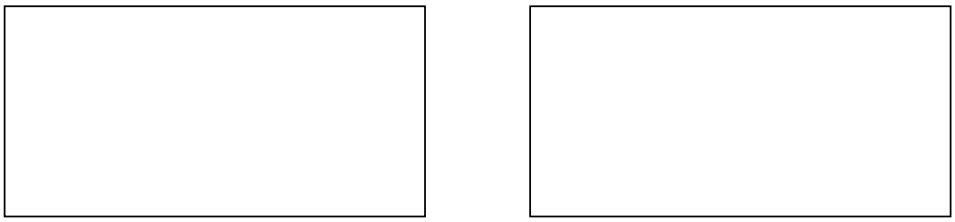
Partition BOTH congruent rectangles into 2 equal-area shares, using a different arrangement in the second. Label one share in each as 1/2. Explain how you know the shares have equal area.



Partition BOTH congruent rectangles into 3 equal-area shares, using a different arrangement in the second. Label one share in each as 1/3. Explain how you know the shares have equal area.



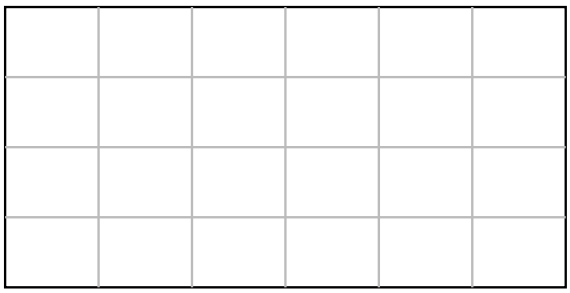
Partition BOTH congruent rectangles into 4 equal-area shares, using a different arrangement in the second. Label one share in each as 1/4. Explain how you know the shares have equal area.

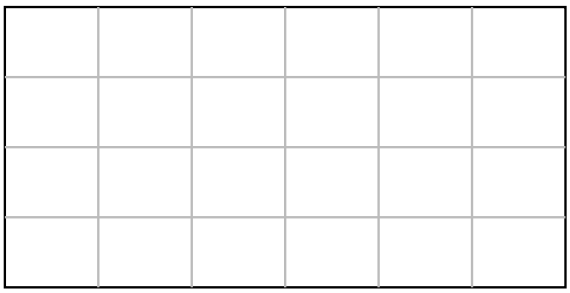


Explain your equal-area checks orally or on the back.

Test an equal-share claim

1. Two identical 6-by-4 unit rectangles are shown. In one, make four equal-area long strips. In the other, make four equal-area smaller rectangles in two rows. Shade one share in each. Count unit squares to compare their areas.





2. Sam splits a rectangle into one narrow strip and one wide strip and calls each part one half. Explain the error and draw a corrected model.

Teacher Key

Page 1: accept distinct valid arrangements with equal area within each whole. Halves: horizontal versus vertical halves or diagonals. Thirds: horizontal versus vertical thirds. Fourths: four strips versus a 2-by-2 partition, or other valid equal-area decompositions. Labels must be 1/2,1/3,1/4 respectively.

Page 2: whole area 24 square units, each fourth 6 square units. Four horizontal rows of 6 squares versus four 3-by-2 blocks produce different-shaped parts with the same area. A student choosing vertical strips may bisect unit squares; exact equal area is still valid. Sam's two parts differ in area, so neither is established as a half merely by there being two pieces. Correct by two equal-area regions.