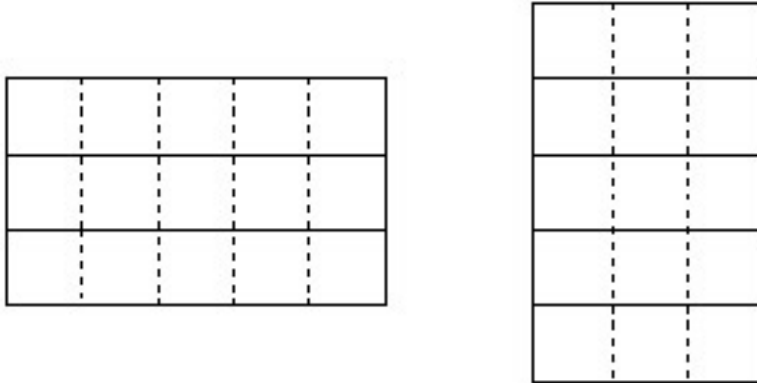


Geometric Representations of Arithmetical Operations

Use area model to illustrate commutative property of multiplication and provide your own examples. Describe the two rectangles first in plain English and then with numbers. "Three rows of five squares", "Five rows of three squares."



$$5 \times 3 = 3 \times 5$$

The use of geometric diagrams can help students see algebraic properties at a glance. In this case, the area model shows immediately that multiplication is commutative ("just rotate the rectangle"). Unless the compute the sum on both sides, this may not be evident to students from the representation of multiplication as repeated addition.

$$3 + 3 + 3 + 3 + 3 = 5 + 5 + 5$$

Geometric representation of distributive property

The following rectangle illustrates $(4 + 2) \times 3 = 4 \times 3 + 2 \times 3$

