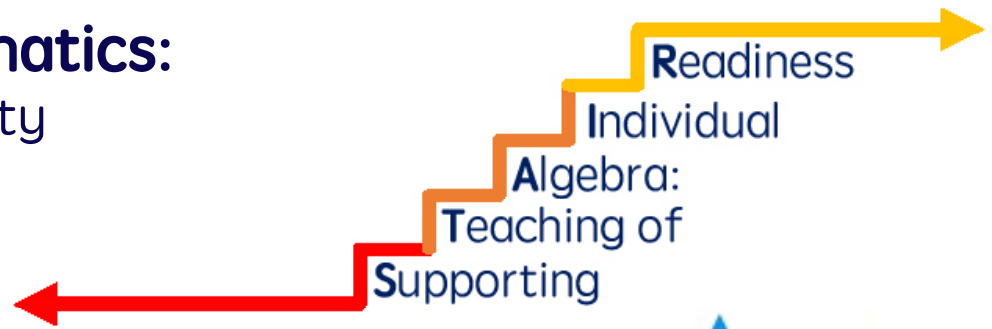


Ideas in Mathematics:

Distributive Property

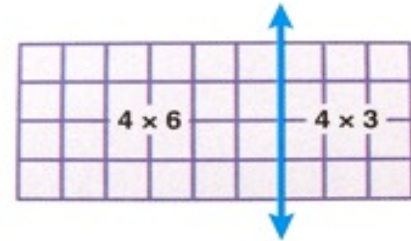


Concepts to Know

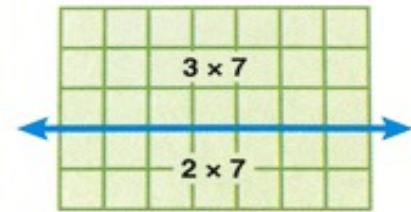
You can split (i.e., decompose) either of the two factors in a multiplication problem into two or more parts and then multiply each of the parts by the other factors and add the results.

Strategies to Teach the Distributive Property

Have students use graph paper and arrays to draw a rectangle and then divide that rectangle into two or more parts. Students can then find the areas of the parts and the sum to the total area of the original rectangle.



$$4 \times 9 = (4 \times 6) + (4 \times 3)$$



$$5 \times 7 = (3 \times 7) + (2 \times 7)$$

FIGURE 8.15 Models for the distributive property of multiplication over addition.

Activities to Try

- Supply students with several sheets of 1-centimeter grid paper or color tiles to represent a small garden that will be planted with two different kinds of vegetables. Assign a pair of students (or individual student) a garden plot size, such as 6×8 . Garden sizes (products) can vary across student groups to differentiate for students.

Ask students to find all of the different ways to make a single slice to cut through the garden to divide the plot for the two different vegetables. For each slice, students write an equation. For example: $6 \times 8 = (5 \times 8) + (1 \times 8)$.*
- Once students are comfortable with the distributive property with multiplication of number factors, replace one factor with a variable (e.g., $6x = 5x + 1x$).

Self-Check Activities

Khan Academy Practice Problems:

<https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-expressions-and-variables/cc-6th-distributive-property/e/distributive-property-with-variables>

Manipulatives

Area/Perimeter Array: <https://toytheater.com/area-perimeter-explorer/>

Algebra Tiles: <https://www.didax.com/apps/algebra-tiles/>

Use the long green tiles as a variable and the unit blocks as constants