# Parent Information: Multiplication (3rd Grade)

Students in 3rd grade need to solve multiplication facts through 10 x 10 fluently (without counting on fingers or using objects to count). Students use arrays, number lines, skip counting, repeated addition, and area models to represent and solve multiplication facts. Students represent and solve one-step and multi-step problems involving multiplication and division within 100 using arrays, strip diagrams, and equations.

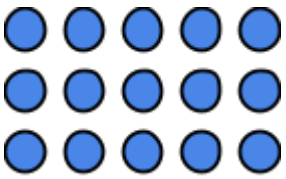
**Factor**: A number being multiplied.

**Product:** The answer in a multiplication problem.

3 x 5 = 15  3 and 5 are factors. 15 is the product.

**Representing Multiplication**: 3 x 5 = 15

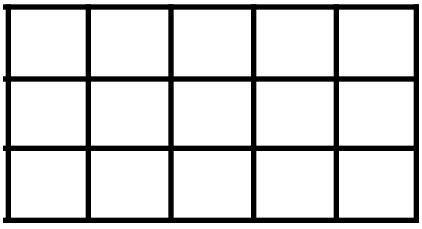
**Array**: Items arranged in equal rows and columns.



3 rows of 5

**Area Model**: A grid with equal rows and columns.

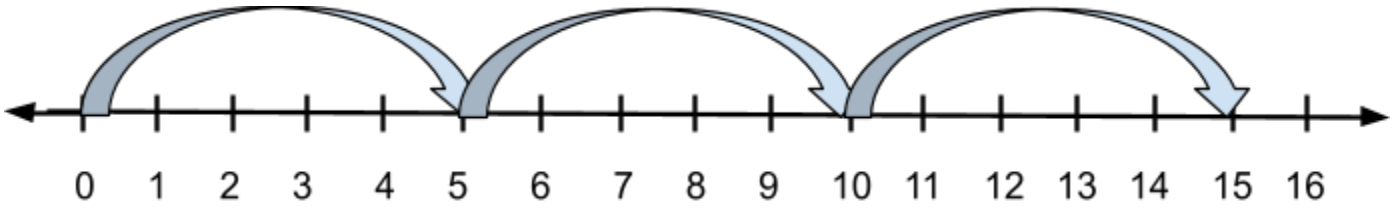
3 rows of 5



**Repeated Addition**: Adding the same number multiple times. **5 + 5 + 5**

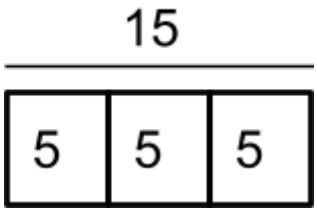
**Skip Counting**: Counting by a number other than one. **5, 10, 15**

**Number Line**: A line marked in regular intervals.




Three jumps of five is 15

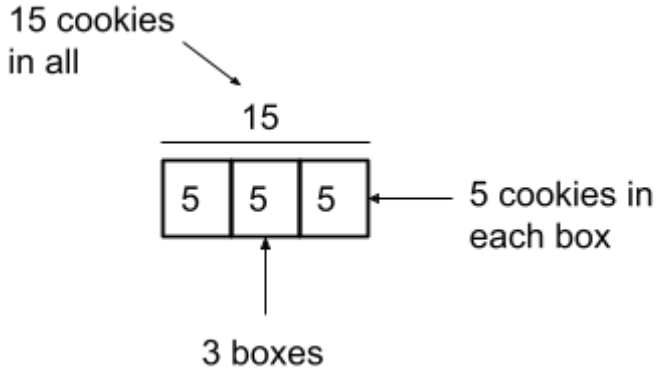
**Strip Diagram:** A part-part-whole model that represents a problem.




**Students need to identify the action that is taking place in a word problem to know how to solve the problem.**

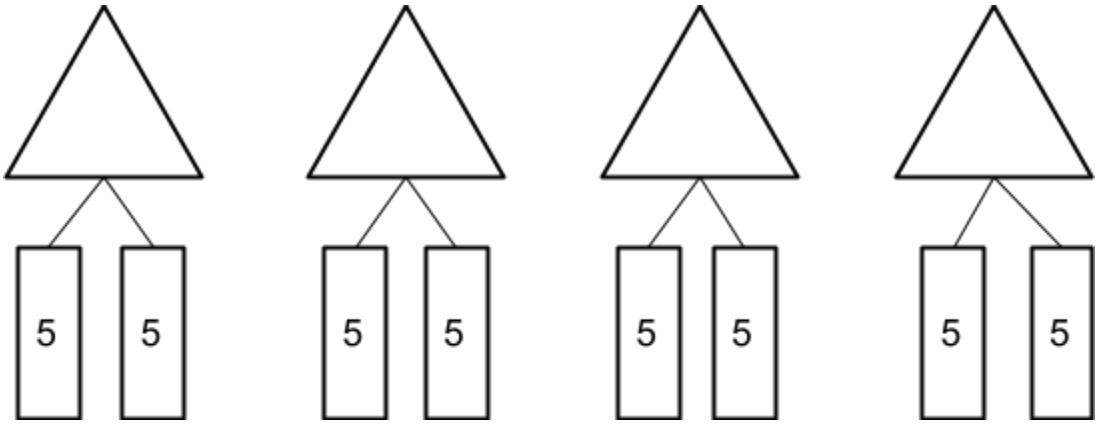
**Combine**: When a problem involves combining two or more same-size groups to find the total, you can multiply to solve.

*Ariel has three boxes. Each box has 5 cookies in it. How many cookies does Ariel have in all?*



**Multi-Step Problem:** A problem that requires two or more actions to solve.

*There are 4 teachers in 3rd grade. Each teacher received two boxes of markers. Each box had 5 markers. How many markers did the 3rd grade teachers receive?*

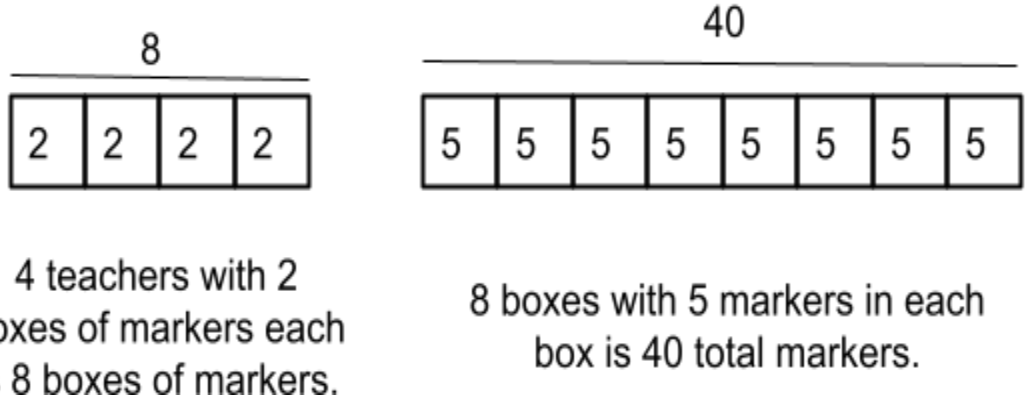



This problem can be solved in more than one way.

- You can multiply the number of teachers by the number of boxes (4 x 2) to find the total number of boxes (8) and then multiply the total number of boxes by the number of markers in each box (8 x 5) to find the total number of markers (40).

- You can multiply the number of boxes per teacher times the number of markers in each box (2 x 5) to find the total number of markers for each teacher (10) and then multiply the number of teachers by the number of markers per teacher (4 x 10) to get the total number of markers (40).

Multi-step problems may be represented by more than one strip diagram.



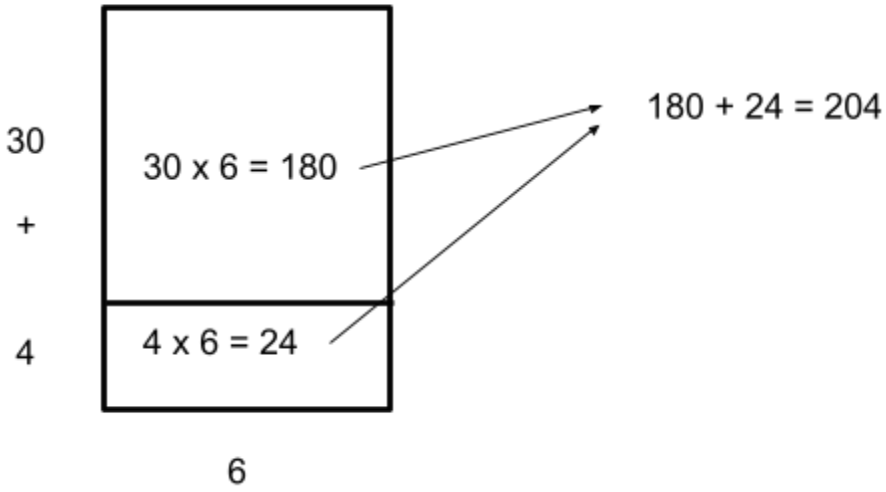
Word problems may also require students to find a missing factor.

> *Roberto can put 6 sports cards on each page of his album. If he has 24 sports cards, how many pages can he fill?*
>
> 6 x _____ = 24 Roberto can fill 4 pages.

You can solve by using a memorized fact or by drawing groups of six until you have 24 in all and then counting the number of groups.

Two-digit by one-digit multiplication is introduced with an area model, which visually represents the traditional algorithm.

**34 x 6 = _____**




**Distributive Property**: You can multiply a number by the addends of a number.

34 x 6 = (30 x 6) + (4 x 6)
34 x 6 = 180 + 24
34 x 6 = 204