Foundations of Multiplication and Division

In this module, students learn to make equal groups, moving from concrete work with objects to more abstract pictorial representations. Finally, they learn about even and odd numbers.
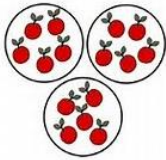
$$15 \div 3 = 5$$

Grade Level Standards

2.G.2, 2.OA.3, 2.OA.4

Student Report Card

Adds and subtracts in word problems and uses grouping strategies.

Reasons with shapes and their characteristics.

Key Vocabulary

- **Array:** Arrangement of objects in rows and columns
- **Columns:** The vertical groups in a rectangular array
- **Even Number:** A whole number whose last digit is 0, 2, 4, 6 or 8
- **Odd Number:** A number that is not even
- **Repeated Addition:** e.g., 2 + 2 + 2
- **Rows:** The horizontal groups in a rectangular array
- **Tessellation:** Tiling of a plane using one or more geometric shapes with no overlaps and no gaps
- **Whole Number:** e.g., 0, 1, 2, 3,…

Familiar Terms

|	
Addend	Double
Equation	Pair
Rectangle	Skip Counting
Square	Sum
Tape Diagram	Total

How you can help at home:

- Using any number of small objects, challenge your student to sort them into equal groups.
- Practice skip counting by 2s. This will help as students work with odd an even numbers in this module.

Models and Representations

Students begin making equal groups using concrete materials

3 + 3 + _3_ + _3_ = 12

4 groups of 3
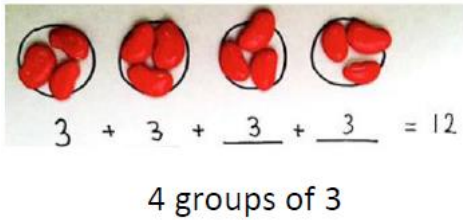
Students further develop their understanding as they build arrays. An array is made of horizontal rows and vertical columns. Students can then use them to write equations showing repeated addition.
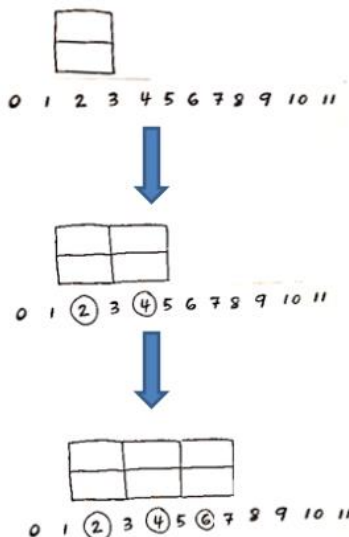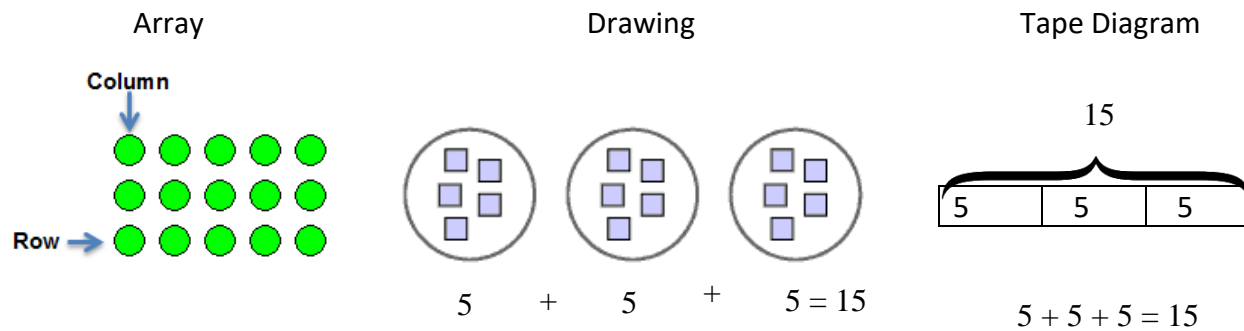

4 rows of 3

3 + 3 + 3 + 3 = 12

Students will explore multiple methods to show repeated addition.

Example: Three Groups of Five

Array	Drawing	Tape Diagram

Column

Row

$5 + 5 + 5 = 15$

15

5   5   5

$5 + 5 + 5 = 15$

The module ends with students using arrays to investigate even and odd numbers.

0 1 2 3 4 5 6 7 8 9 10 11

0 1 ② 3 ④ 5 6 7 8 9 10 11

0 1 ② 3 ④ 5 ⑥ 7 8 9 10 11