2nd Grade Math

Module 6: Foundations of Multiplication and division.

Math Parent Letter

This document is created to give parents and students a better understanding of the math concepts found in the material taught in the classroom. Module 6 covers introduction to multiplication and division. This newsletter will discuss Module 6, Topic B.

Topic B. Arrays and equal groups.

Words to know

- Arrays
- Column
- Row
- Repeated addition
- Equal groups
- Horizontal line
- Vertical line
- Square tile

Things to remember!!!

An array is made of horizontal rows and vertical columns. It can be written in a repeated addition form.

```
x x x        x x x x
x x x        x x x x
x x x        x x x x
x x x        x x x x
```

3 + 3 + 3 + 3 = 12   4 + 4 + 4 = 12

OBJECTIVE OF TOPIC B

1 Compose arrays from rows and columns, and count to find the total using objects.

2 Decompose arrays into rows and columns, and relate to repeated addition.

3 Represent arrays and distinguish rows and columns using math drawings.

4 Create arrays using square tiles with gaps.

5 Solve word problems involving addition of equal groups in rows and columns

Focus Area– Topic B

Arrays and equal groups

In **Lesson 5**, students compose arrays either one row or one column at a time and count to find the total, using the scattered sets from Topic A. For example, they might arrange 6 bears, to compose a 3 by 2 array of 6 bears (shown below). They count to find the total, noticing that each row contains the same number of units. Thus, for 2 rows of 3, a student might observe: "There are 2 equal groups of 3." This is foundational to the spatial structuring students will need to discern a row or column as a single entity, or unit, when working with tiled arrays without gaps and overlaps in Topic C.

In **Lesson 6**, students decompose one array by both rows and columns.

Note: This Application Problem includes drawing a simple array in preparation for the Concept Development.

Sam is organizing her greeting cards. She has 8 red cards and 8 blue cards. She puts the red ones in 2 columns and the blue ones in 2 columns to make an array.

    a. Draw a picture of Sam's greeting cards in the array.

    b. Write a statement about Sam's array.
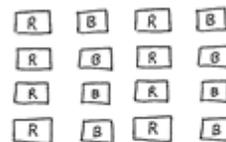
8 + 8 = 16

Sam has 16 cards.

In **Lesson 7**, students move to the pictorial as they use math drawings to represent arrays and relate the drawings to repeated addition. For example, students are asked to draw an array with 4 rows of 3 or 3 rows of 4 on their personal white boards then use their marker to draw horizontal lines to see the rows within the array (shown below). When counting rows containing 3 or 4 objects, students apply repeated addition strategies once again, adding from left to right to find the sum (e.g., 4 + 4 + 4 = 12, such that 4 plus 4 equals 8 and 8 plus 4 equals 12). Additionally, when representing arrays with rows of 2 or 5, students may add to find the total, and naturally point out a connection to skip-counting by twos or fives (2.NBT.2); however, the focus is on establishing a strong connection between the array and repeated addition.
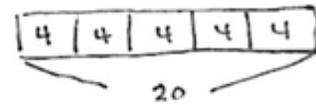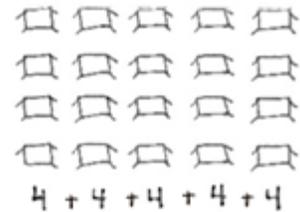
X X X
X X X
X X X
X X X

3 + 3 + 3 + 3 = 12

X X X X
X X X X
X X X X

4 + 4 + 4 = 12

In **Lesson 8**, students work with square tiles to create arrays with gaps, composing the arrays from part to whole, either one row or one column at a time. They draw the individual, separated tiles as a foundational step for Topic C where they will be working with square tiles without gaps. As usual, students relate the arrays to repeated addition.
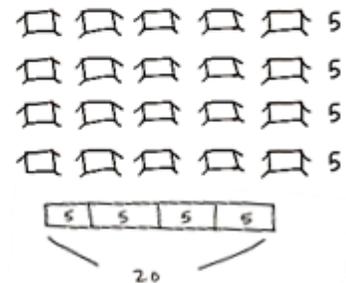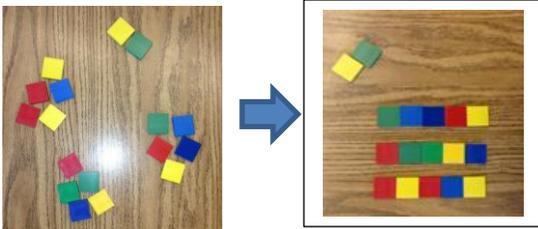

In **Lesson 9**, students apply this work to word problems involving repeated addition (shown at right), interpreting array situations as either rows or columns and using the RDW process, e.g., "**Miss Tam arranges desks into 4 rows of 5. How many desks are in her classroom?** " In addition to drawing objects, students may also represent the situation via more abstract tape diagrams, just as they did in the final lesson of Topic A.

4 + 4 + 4 + 4 + 4

| 4 | 4 | 4 | 4 | 4 |
20

There are 20 desks in Miss Tam's room.

5
5
5
5

| 5 | 5 | 5 | 5 |
20

5+5+5+5 = 20 desks