

Grade 2	Lesson: 4-2	Reference to English
<b>Math Standard(s): 2.OA.4 Domain: Operations and Algebraic Thinking</b>		
<b>Content Objective(s):</b>		<b>Language Objective(s):</b>
Students will build arrays to model repeated addition situations. <i>I can build arrays to model repeated addition situations.</i>		Students will use the words column and row to describe arrays. <i>I can use the words column and row to describe arrays.</i>
<b>Essential Understanding:</b> An array involves joining equal groups and is one way to think about repeated addition.		<b>Academic Vocabulary:</b> <b>Listen:</b> array, row, column <b>Read:</b> <b>Write:</b> <b>Speak:</b> row, column, equal <b>Sentence Frame:</b> <b>How many rows?</b> <b>How many columns?</b> <b>Are they equal?</b>
<b>Materials:</b> • Two color counters (Teaching tool 10)		<b>Language and Word Wall:</b> Array, row, column
<b>Lesson: Building Arrays</b>		<b>Instructional Time: 45 mins</b>
<p><b>Opening: (3 minutes) –</b> Students should have page 105 <b>T: “Last time we learned about repeated addition. Today we’re going to learn about making models, called arrays, to help with addition.”</b> Draw 15 counters on the board, shown as 3 rows with 5 counters in each row. <b>T: “What are some good ways to find out how many all together? Talk with your partner about your ideas.”</b> S: will talk with partners</p> <p><b>Introduction to New Material (Direct Instruction): (8 minutes)</b> <b>T: Point to the drawing on the board. “This is an array. An array has the same number of counters in each row.”</b> Point to a row. <b>“An array also has the same number of counters in each column. You can write an addition sentence to show this array.”</b> Write <math>5+5+5=15</math> on the board. <b>T: “Look at the array on your workmat. How many rows are there? Show me with your fingers.”</b> S: will show 3 fingers <b>T: “Are the rows equal? Nod or shake your head.”</b> S: will nod their heads <b>T: “What about the columns? Are the columns equal?”</b> S: nod their heads <b>T: “So. Equal rows, equal columns. Is this an array? Thumbs up or down.”</b> S: thumbs up Erase the counters and draw more counters on the board, this time making two of the columns shorter than the others. <b>T: “Here are some more counters. Is this an array? Thumbs up or down.”</b> S: thumbs down <b>T: why not?</b> S: “Because the columns are not equal.”</p> <p><b>Guided Practice: (10 minutes)</b> Arrange students in pairs. Each pair should have page 105 and counters. <b>T: “Make an array on your page of two rows with 4 counters in each row.”</b> S: will use counters <b>T: “Good! Each row has to be equal. But you can see you don’t have to fill all the spaces. To write the matching addition sentence, find number 1 and write in <math>4+4=8</math>”</b> S: will fill in the addition sentence <b>T: “With your partner make an array with 3 rows. You can choose how many counters in each column. Remember to make it an array, each column has to be equal.”</b> S: will make an array with their partners <b>T: “Great work! Now that you have your array, write in the addition sentence in the spaces on number two, and find the answer.”</b> S: will write in their sentences</p>		

**T: "With your partner, make another array with three rows, but different than the one you just made. See if you can also figure out the addition sentence and the answer."**

S: will work with partners

*Use the modeling cycle:*

Teacher Does:

**T: "Look at page 106. Find number one and point to it"**

S: Students will point to number 1

**T: "This is just like what you did in partners, but these arrays are made for you out of fruit! Your job is to find the addition sentence that matches the array shown."**

**"Number one has an array with two rows of 5 bananas each. So our sentence is:  $5+5=?$  Count the bananas if you don't know, and write in the answer."**

2 Students Do with Teacher:

**T: "Let's have 2 helpers come show us how to do number 2."**

S: two students will come up and lead the class in doing number 2.

**Independent Practice: (7 minutes)**

**T: "Now you have time to practice on your own. Do through number 7."**

S: will work independently

Walk around the room, watching students work.

**Closing: (10 minutes)**

**Gather students at the rug.**

**T: "Great job today! Now we're going to try something really tricky. When I say stand up, I'm going to give you two minutes to see if you can make an array with the people in our class. I'm not going to tell you how. You can talk with each other to decide, using the words columns, rows, and equal. There is no one right way to do it. When I clap my hands, no matter where you are, freeze. Are you ready?! Stand up!"**

S: will stand and decide how to use their bodies to make a class array.

When the two minutes is up, clap hands and students freeze. Discuss what happened and why.

**T: "Very last I want to make sure you all understand how to make and use arrays.**

**I'm going to give you a piece of paper. On your paper, please draw an array to match the story. Then write the addition sentence: I am picking flowers. I place my flowers in three rows. In each row I put 4 flowers."**

S: will draw, then turn in their papers.

**Assessment:**

**Collect half-sheets of paper and assess children's understanding**