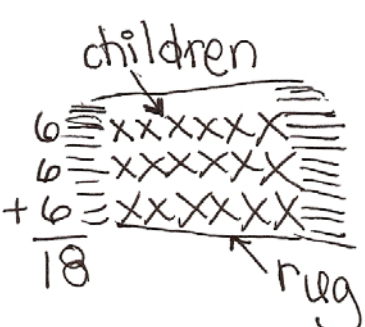


Domain: <b>OPERATIONS AND ALGEBRAIC THINKING</b>	Cluster: <b>Work with equal groups of objects to gain foundations for multiplication.</b>
<b>2.OA.D.4</b> <b>Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.</b>	
<b>Notes to Teacher:</b>	
<p>Notice that the standard states that students will use addition to find the number of objects. Again, avoid the urge to use the vocabulary and symbols for multiplication at this point.</p> <p>This standard continues the concept of repeated addition developed in 2.OA.3. Discussion could begin with an example of 3 teams, rather than two. Guide students to verbalize that teams should all be of equal number. Pose several examples of numbers of teams and numbers of players on each team. Have students use objects to determine the total number of players for each situation.</p> <p>Students will begin arranging objects in arrays. This is the perfect opportunity to develop the vocabulary of arrays, columns, and rows. As you model, point out that each of the rows must have the same number of objects. Encourage students to attend to precision as they arrange objects in straight rows that line up in straight columns.</p> <p>This is also a good opportunity to teach representational drawings as students transition from the concrete objects to writing equations.</p> <p>As students transition to writing addition equations to represent their work, questions will arise about whether to count the objects in each row or in each column. Encourage students to experiment to discover that either approach will lead to the same solution.</p> <p>As students work with this concept, encourage them to share their own thinking and listen to the thinking of others. This dialog will lead to a deeper conceptual understanding and a more solid foundation for multiplication.</p>	

Task	Explanation/Comments	Sample Student Work
<p>The children in Mrs. Baker's class sat on the rug to listen to a guest speaker. There were 3 rows of children seated on the rug. Each row had 6 children. How many children were in Mrs. Baker's class?</p> <p>Use your counters to help you find the answer to this problem.</p> <p>Draw a picture to show how you solved it.</p> <p>Write an equation to represent the work you did.</p>	<p>Encourage children to share their thinking and listen to the thinking of others.</p> <p>In the beginning, students may simply count to find the total. During the discussions, strategically call on ones who used addition strategies.</p> <p>Exposure to other students' more sophisticated thinking will help to develop the thinking of those who have not yet moved beyond counting</p>	 <p>children</p> <p>6 = xxxxxx</p> <p>6 = xxxxxx</p> <p>+ 6 = xxxxxx</p> <p>18</p> <p>rug</p> <p>There are 18 children.</p>