

Math: Grade 3, Lesson 3, Multiplication as Factoring

Lesson Objective: Multiplication as Factoring

Practice Focus: Interpret the meaning of factors as the size of the group or as the number of groups.

TN Standard: 3.OA.A.1

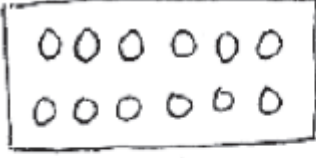
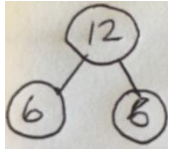
Teacher Video Materials:

- White board and markers

Student Materials:

- Paper and pencil, and a surface to write on
- the student packet for Math, Grade 3, Lesson 3 which can be found at www.tn.gov/education

Teacher Do	Student Do
<p><u>Opening</u></p> <p>Hello! Welcome to Tennessee's At Home Learning Series for math! Today's lesson is for all our 3rd graders out there, though all children are welcome to tune in. This lesson is the third in our series.</p> <p>My name is _____ and I'm a _____ grade teacher in Tennessee schools! I'm so excited to be your teacher for this lesson! Welcome to my virtual classroom!</p> <p>Today we will be learning about how to interpret the meaning of factors as the size of the group or as the number of groups. If you didn't see our previous lesson, you can find it on www.tn.gov/education. You can still tune in to today's lesson if you haven't seen any of our others, but it might be more fun if you first go back and watch our other lessons, since we'll be talking about things we learned previously. Before we get started, to participate fully in our lesson today, you will need:</p> <ul style="list-style-type: none"> • Paper and a pencil, and a surface to write on • the student packet for Math, Grade 3, Lesson 3 which can be found at www.tn.gov/education <p>Okay, let's begin!</p>	<p>Students get materials ready for the lesson.</p>
<p><u>Intro</u></p> <p>Yesterday, we reviewed using array models for our equal groups in our multiplication expressions and our multiplication equations. Let's warm up with a story problem that reviews our learning from yesterday. I will read the problem to you and give you a moment to think about its solution.</p> <p>Robbie sees that a carton of eggs shows an array with two rows of six eggs. What is the total number of eggs in the</p>	

<p>carton? Write a multiplication sentence that describes the array. [Pause for student to write their answers.]</p> <p>The multiplication sentence that describes the array is $2 \times 6 = 12$. There are 12 eggs in Robbie's carton.</p>  <p>$2 \times 6 = 12$</p> <p>There are 12 eggs in Robbie's carton.</p>	<p>Students write answers on paper.</p>
<p>Teacher Model</p> <p>In our opening problem, we saw that $2 \times 6 = 12$ describes the array that has 2 equal rows of 6 eggs. In my equation, the 2 and the 6 are the factors. The factor 2 represents the number of equal groups and the factor 6 represents the size of each group.</p> <p>I can also draw a number bond to show this same relationship. [Teacher draws number bond on white board.]</p>  <p>You can see how this is the same as the equation $2 \times 6 = 12$. In the number bond, the product of 12 is in the top circle. The factor 2 isn't written but is shown as the 2 circles of equal groups. The factor 6 is the size within each group.</p> <p>I could have a carton that has 18 eggs. Then the carton is arranged as an array of 3 rows with 6 eggs in each row. The multiplication equation is $3 \times 6 = 18$. In this case, the number bond is going to have 3 parts to match the factor 3 as being 3 equal groups of. It looks like this. [Teacher draws number bond on white board.]</p> <p>This number bond is the same as the equation $3 \times 6 = 18$. In the number bond, the product of 18 is in the top circle. The factor 3 isn't written but is shown as the three circles of equal groups. The factor 6 is the size within each group.</p>	
<p>Guided Practice</p> <p>Let's look at some math problems together to practice interpreting the meaning of the factors as the size of the</p>	

group or as the number of groups. You will need your paper and pencil for this part.



There are *blank* flowers in each bunch. How many total flowers are in the 4 bunches? To begin this problem, we need to know the number of groups and the size of each group. Work out that part right now. [Pause while student works.]

The number of groups is 4. The size of each group is 5.

Now, we need to write a multiplication sentence to match the number of groups and size of each group. $4 \times \text{blank} = \text{blank}$. Work that part out now. [Pause while student works.]

The multiplication sentence is $4 \times 5 = 20$. There are 20 flowers in 4 bunches, or 20 flowers altogether.

Very good! Let's try another problem.

Write a multiplication equation for the array of bread shown. [Pause while student works.]



Now, draw a number bond for the array where each part represents the amount in one row. [Pause while student works.]

The multiplication equation is $5 \times 2 = 10$. The factor 5 represents the number of rows or equal groups. The factor 2 represents the size of each row or group. Does your number bond look like mine? [Pause.] There are 5 circles because the factor 5 is the number of equal groups. There is a 2 inside each circle because 2 represents the size of each group which in this situation is 2 loaves of bread.

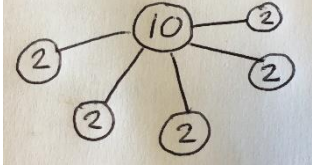
Student answers.

Student answers.

Student answers.

Student answers.

Student answers.

	
<p><u>Independent Practice</u> Today we have practiced Interpreting the meaning of factors in multiplication problems. You sure did a great job! After the video, you will have some problems to practice on your own. Good luck and do your best!</p>	
<p><u>Closing</u> Boys and Girls, I enjoyed learning about math with you today! Thank you for inviting me into your home. I look forward to seeing you in our next lesson in Tennessee's At Home Learning Series!</p> <p>Bye!</p>	

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