

Extending Multiplication & Fractions

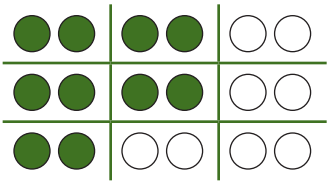
In this unit, your student will:

- Develop and use strategies for multiplying by 11 and 12
- Multiply 1-digit numbers by multiples of 10
- Multiply 1-digit numbers by 2-digit numbers
- Solve problems involving fractions



Your student will practice these skills by solving problems such as these:

PROBLEM	COMMENTS
<p>Label the dimensions of the array, and write at least two equations to show how many units there are.</p> <p style="text-align: center;">12</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">6</div> <div style="display: flex;"> <div style="border: 1px solid black; width: 100px; height: 100px; position: relative;"> <!-- Array of 6 rows and 10 columns --> </div> <div style="border: 1px solid black; width: 40px; height: 100px; position: relative;"> <!-- Array of 6 rows and 2 columns --> </div> </div> </div>	<p>In this array, each group of 12 is shown as one row of 10 and two more individual squares. This helps students see 6 groups of 10 and 6 groups of 2. This in turn helps them understand a general strategy for multiplying by 12: First multiply by 10, then multiply by 2, and finally add the two products.</p> $(6 \times 10) + (6 \times 2) = 72$ $60 + 12 = 72$ $6 \times 12 = 72$ <p>The strategy for multiplying any number by 11 is closely related: Multiply by 10 and then add the number.</p>
<p>Andre got some free carpet squares at a carpet store. He got enough blue squares to cover 3 feet by 6 feet and enough red squares to cover 5 feet by 12 feet. How many total square feet can be covered if Andre puts all of the carpet squares together?</p> <p>Blue: $3 \times 6 = 18$</p> <p>Red: 5×12 $= (5 \times 10) + (5 \times 2)$ $= 50 + 10 = 60$ $18 + 60 = 78$</p> <p>The squares cover 78 square feet in all.</p>	<p>In this problem, students apply their understanding of area to solve a multistep problem that relates to the measurement of area. Multiplication can help them find the total number of carpet squares, while addition allows them to combine the blue and red squares to find the total area to be covered.</p>

PROBLEM	COMMENTS
<p>Shade $\frac{5}{9}$ of the circles.</p>  <p>$18 \div 9 = 2$</p> <p>18 total circles divided into 9 equal groups makes groups of 2.</p>	<p>Partitioning a single shape into equal parts and coloring some of them is a familiar way to represent fractions.</p> <p>Other problems, like this one showing circles, ask students to partition a set of objects or shapes into equal groups, then count or color some of them to show a fraction. This reinforces the connection between fractions and division.</p> <p>$2 \times 5 = 10$</p> <p>Coloring in 5 sets of 2 ($\frac{1}{9}$ of the set) shows 10 circles total.</p>
<p>Susie's friends were coming over, and she wanted to give each friend a bag of treats. She had 4 bags. She put the same number of stickers in each bag. Then her dad gave her some more stickers and she put 3 more stickers in each bag. When she was done, the bags had 28 stickers in all. How many stickers did Susie put in each bag before her dad gave her more?</p> <p>She put 4 stickers in each bag before her dad gave her more.</p> <p>$28 \div 4 = 7$</p> <p>$7 - 3 = 4$</p> <p>Write an equation that shows one way to solve the problem.</p> <p>$28 \div 4 - 3 = 4$</p>	<p>Students might need to visualize the problem situation to make sense of what is happening. They might use convenient objects like blocks or coins to act out the action in the story, or they might draw a picture. These strategies support sensemaking.</p> <p>Students might also express their solution strategy with a single equation or a series of equations.</p>

For additional support, you can use the Math Vocabulary Cards app at apps.mathlearningcenter.org.

Frequently Asked Questions About Unit 7

Q: In some assignments my student is asked to write an equation or choose an equation to represent a problem situation. How can I help?

A: It is important for students to connect the words in the problem, as well as their strategies for solving the problem, to equations. Invite your student to solve everyday problems and then talk about what they did. Help them write what they did using numbers and symbols. Then put the numbers and symbols together into a single equation. (See the problem about Susie in the table for an example.)

Q: How can I support my student's learning?

A: To support your student in learning mathematics, you can:

- Visit mathathome.mathlearningcenter.org and work through some or all of the activities in Grade 3 Set 7 together. These activities complement the learning that takes place in the classroom during Unit 7 and provide fun ways to engage children in mathematical thinking. This set also includes digital versions of games that your student has learned at school, such as Dozens of Eggs and Racing Fractions.
- Visit apps.mathlearningcenter.org and invite your student to explore the Partial Product Finder app. This app can help your student see different ways to apply the partial products strategy.