

DMT INSTITUTE

Developing Mathematical Thinking Institute (DMTI)



Professional
Development



Curricular
Resources



Assessment

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Grade 6-8: Multiplication Fluency

DMTI VARIED PRACTICE

DMTI Varied Practice Worksheets

This PowerPoint or PDF displays the worksheets that have varied situations (context, visual, equations, and other mathematical models) for children to work on. By completing these worksheets, children increase their foundational skills in the topic, which will help them with these standards and future mathematical topics.

1. If using a journal, have children present the worksheet and complete all the problems.
2. Or print the 'Varied Practice Worksheet Slides' for them to work on. Then, you can return to the PowerPoint or PDF to look at the keys to check their work.

Grade 6-8: Multiplication Fluency

Materials Needed

Printed copies of the Multiplication Fluency- Part 1 worksheet

Instructions

You will be given a double digit multiplication expression and will find the product using a decomposing strategy. The challenge is to decompose one number into a benchmark number (typically, 5's, 10's, doubles or squares) and use the two partial products to find the total.

- A. Decompose one of the factors to a benchmark number,
- B) Draw an area model to match the two partial products, and
- C) State the process using a sentence frame.

Worksheet 1.1 is to practice each step.

Then cutout the different expressions in Worksheet 1.2 and practice steps B and C out loud (without writing anything down).

Grade 6-8: Multiplication Fluency

Example:

Expression	Area Model	Sentence Frame
13×17	<p>$3 \times 17 = 51$</p> <p>$10 \times 17 = 170$</p> <p>$13 \times 17 = 170 + (30 + 21) = 221$</p>	<p>I decomposed the 13 into a 10 and 3. I multiplied 10×17 to get 170 and 3×17 to get 51.</p> <p>I composed 170 and 51 by adding 170 and 30 to get 200 and then 21 more to get 221.</p>

Expression	Model	Sentence Frame		
16×15 $16 \times 10 = 160$ $16 \times 5 = 80$ $160 + 80 = 240$ $16 \times 15 = 160$				
		<p><i>I decomposed 12 into a 10 and 2.</i> <i>I multiplied 19 x 10 to get 190.</i> <i>I multiplied 19 x 2 to 38.</i> <i>I composed 190 and 38 to get 228.</i> <i>So, 19 times 12 is 228.</i></p>		
	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 5px;">$6 \times 14 = 84$</td> </tr> <tr> <td style="padding: 5px;">$10 \times 14 = 140$</td> </tr> </table> $16 \times 14 = 224$	$6 \times 14 = 84$	$10 \times 14 = 140$	
$6 \times 14 = 84$				
$10 \times 14 = 140$				

Worksheet 1.2: Practice Cards

$$16 \times 9$$

$$18 \times 16$$

$$14 \times 12$$

$$14 \times 11$$

$$19 \times 18$$

$$19 \times 17$$

$$14 \times 16$$

$$12 \times 18$$

$$19 \times 16$$

$$16 \times 15$$

$$18 \times 14$$

$$19 \times 15$$



“The Developing Mathematical Thinking Institute (DMTI) is dedicated to enhancing students’ learning of mathematics by supporting educators in the implementation of research-based instructional strategies through high-quality professional development, curricular resources and assessments.”

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Expressions	Model	Sentence Frame
16×15 $16 \times 10 = 160$ $16 \times 5 = 80$ $160 + 80 = 240$ $16 \times 15 = 160$	<div style="border: 1px solid black; padding: 5px; display: inline-block; margin-right: 20px;"> $16 \times 5 = 80$ </div> <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-right: 20px;"> $16 \times 10 = 160$ </div> $16 \times 15 = 240$	<p><i>I decomposed 15 into a 10 and 5.</i> <i>I multiplied 16 x 10 to get 160.</i> <i>I multiplied 16 x 5 to 80.</i> <i>I composed 160 and 80 to get 240.</i> <i>So, 16 times 15 is 240.</i></p>
19×12 $19 \times 10 = 190$ $19 \times 2 = 38$ $190 + 38 = 228$ $19 \times 12 = 228$	<div style="border: 1px solid black; padding: 5px; display: inline-block; margin-right: 20px;"> $19 \times 2 = 38$ </div> <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-right: 20px;"> $19 \times 10 = 190$ </div> $19 \times 12 = 228$	<p><i>I decomposed 12 into a 10 and 2.</i> <i>I multiplied 19 x 10 to get 190.</i> <i>I multiplied 19 x 2 to 38.</i> <i>I composed 190 and 38 to get 228.</i> <i>So, 19 times 12 is 228.</i></p>
16×14 $10 \times 14 = 140$ $6 \times 14 = 84$ $140 + 84 = 224$ $16 \times 14 = 224$	<div style="border: 1px solid black; padding: 5px; display: inline-block; margin-right: 20px;"> $6 \times 14 = 84$ </div> <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-right: 20px;"> $10 \times 14 = 140$ </div> $16 \times 14 = 224$	<p><i>I decomposed 16 into a 10 and 6.</i> <i>I multiplied 14 x 10 to get 140.</i> <i>I multiplied 14 x 6 to 84.</i> <i>I composed 140 and 84 to get 224.</i> <i>So, 16 times 14 is 224.</i></p>

$$16 \times 9$$

$$10 \times 9 = 90$$

$$6 \times 9 = 54$$

$$16 \times 9 = 144$$

$$18 \times 16$$

$$10 \times 16 = 160$$

$$8 \times 16 = 128$$

$$18 \times 16 = 288$$

$$14 \times 12$$

$$10 \times 12 = 120$$

$$4 \times 12 = 48$$

$$14 \times 12 = 168$$

$$14 \times 11$$

$$14 \times 10 = 140$$

$$14 \times 1 = 14$$

$$14 \times 12 = 154$$

$$19 \times 18$$

$$19 \times 10 = 190$$

$$19 \times 8 = 152$$

$$19 \times 18 = 342$$

$$19 \times 17$$

$$19 \times 10 = 190$$

$$19 \times 7 = 133$$

$$19 \times 17 = 323$$

$$14 \times 16$$

$$14 \times 10 = 140$$

$$14 \times 6 = 84$$

$$14 \times 16 = 224$$

$$12 \times 18$$

$$10 \times 18 = 180$$

$$2 \times 18 = 36$$

$$12 \times 18 = 216$$

$$19 \times 16$$

$$19 \times 10 = 190$$

$$19 \times 6 = 114$$

$$19 \times 18 = 304$$

$$16 \times 15$$

$$16 \times 10 = 160$$

$$16 \times 6 = 96$$

$$16 \times 18 = 256$$

$$18 \times 14$$

$$18 \times 10 = 180$$

$$18 \times 4 = 72$$

$$18 \times 14 = 252$$

$$19 \times 15$$

$$19 \times 10 = 190$$

$$19 \times 5 = 95$$

$$19 \times 15 = 285$$