



# Corrective Mathematics

Common Core State Standards for Grade 3	Lesson Reference
<p>Operations and Algebraic Thinking    3.OA</p> <p>Represent and solve problems involving multiplication and division.</p>	
<p>3.OA.1. Interpret products of whole numbers, e.g., interpret <math>5 \times 7</math> as the total number of objects in 5 groups of 7 objects each. <i>For example, describe a context in which a total number of objects can be expressed as <math>5 \times 7</math>.</i></p>	<p><b>Multiplication, TPB:</b> (Lesson.Exercise) 1.2, 2.1, 3.2, 4.4, 5.4, 6.5, 7.6, 8.7, 9.7, 10.8, 11.8, 12.8, 13.9, 14.9, 15.10</p> <p><b>Multiplication, WB:</b> (Lesson.Exercise) 1.2, 2.1, 3.2, 4.4, 5.4, 6.5, 7.6, 8.7, 9.7, 10.8, 11.8, 12.7, 13.8, 14.7, 15.8</p>
<p>3.OA.2. Interpret whole-number quotients of whole numbers, e.g., interpret <math>56 \div 8</math> as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. <i>For example, describe a context in which a number of shares or a number of groups can be expressed as <math>56 \div 8</math>.</i></p>	<p><b>Division, TPB:</b> (Lesson.Exercise) 1.5, 2.3, 3.3, 4.3, 5.4</p> <p><b>Division, WB:</b> (Lesson.Exercise) 1.5, 2.3, 3.3, 4.3, 5.4</p>
<p>3.OA.3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.</p>	<p><b>Multiplication, TPB:</b> (Lesson.Exercise) 10.8, 11.8, 12.8, 13.9, 14.9, 15.10, 16.10, 17.4, 17.5, 18.6, 18.7, 19.6, 19.7, 20.7, 20.8, 21.5, 21.7, 22.5, 22.7, 23.6, 24.5, 25.5, 26.5, 27.4, 32.7, 33.7, 34.6, 42.7, 43.8</p>

	<p><b>Multiplication, WB:</b>  (Lesson.Exercise) 10.8, 11.8, 12.7,  13.8, 14.7, 15.8, 16.8, 17.4, 18.6,  19.6, 20.7, 21.5, 21.7, 22.5, 22.7,  23.6, 24.5, 25.5, 26.5, 27.4, 28.7,  29.7, 30.7, 31.8, 32.7, 33.7, 34.6,  35.7, 36.7, 37.7, 38.9, 39.8, 40.7,  41.8, 42.7, 43.8, 44.8, 45.6, 46.7,  47.7, 48.6, 49.6, 50.7, 51.8, 52.8,  53.7, 54.8, 55.7, 56.8, 57.8, 58.6,  59.7, 60.7, 61.6, 62.6, 63.5, 64.5,  65.5</p> <p><b>Division, TPB: (Lesson.Exercise)</b>  11.8, 11.9, 12.8, 12.11, 13.5, 13.6,  14.7, 15.6, 15.7, 16.5, 16.6, 16.7,  17.8, 17.9, 18.6, 18.7, 18.8, 19.4,  19.5, 19.6, 20.5, 20.6, 21.7, 21.8,  22.7, 23.6, 24.6, 25.5, 26.6, 33.7,  48.4, 49.4, 50.4, 50.5, 51.5, 51.7,  51.8, 52.5, 52.6, 53.5</p> <p><b>Division, WB: (Lesson.Exercise)</b>  12.6, 12.7, 13.3, 14.5, 14.9, 15.5,  15.6, 15.9, 16.4, 16.5, 16.7, 17.6,  17.9, 18.5, 19.3, 19.4, 19.7, 20.4,  20.5, 21.4, 22.4, 23.5, 24.4, 25.2,  25.7, 26.4, 27.5, 28.9, 29.8, 31.8,  32.8, 33.6, 34.10, 35.8, 36.12,  37.11, 39.12, 40.14, 41.12, 42.7,  43.9, 44.8, 46.11, 47.10, 48.2,  49.3, 50.3, 50.4, 51.4, 51.6, 51.7,</p>
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	52.4, 52.5, 53.5, 54.9, 55.8, 56.8, 57.5, 58.4, 59.4, 60.1, 62.1, 62.2, 63.3, 64.2, 65.3
3.OA.4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers. <i>For example, determine the unknown number that makes the equation true in each of the equations <math>8 \times ? = 48</math>, <math>5 = \_ \div 3</math>, <math>6 \times 6 = ?</math></i>	<p><b>Multiplication, TPB:</b>  (Lesson.Exercise) 1.4, 2.3, 2.4, 3.5, 4.2, 4.3, 5.3, 6.4, 8.6, 9.6, 10.7, 11.7, 13.8, 14.8, 15.7, 16.8, 17.1, 18.1, 19.1, 20.3, 23.4, 24.4, 25.4, 26.4, 28.6, 29.5, 30.5, 31.7, 36.4, 37.4, 38.4, 39.5, 41.6, 42.6, 43.6, 44.6, 46.5, 47.5, 51.5, 52.5, 54.4, 55.5, 56.5, 57.5, 59.4, 60.4</p> <p><b>Multiplication, WB:</b>  (Lesson.Exercise) 1.4, 2.3, 2.4, 3.5, 4.2, 4.3, 5.3, 6.4, 8.6, 9.6, 10.7, 13.7, 14.6, 15.6, 16.7, 17.1, 18.1, 19.1, 20.3, 23.4, 24.4, 25.4, 26.4, 28.5, 29.4, 30.5, 31.6, 36.4, 37.4, 38.4, 39.5, 41.6, 42.6, 43.6, 44.6, 46.5, 47.5, 51.5, 52.5, 54.4, 55.5, 56.5, 57.5, 59.4, 60.4</p> <p><b>Division, TPB: (Lesson.Exercise)</b>  1.2, 1.3, 2.1, 2.1, 3.1, 3.2, 3.5, 4.1, 4.2, 4.4, 5.1, 5.3, 5.5, 6.1, 6.7, 7.1, 7.6, 8.1, 8.5, 9.1, 10.1, 14.1, 14.2, 15.1, 15.2, 16.2, 17.2, 17.3, 17.4, 18.2, 18.3, 19.2, 20.2, 22.2, 22.3, 23.2, 23.3, 24.2, 25.2, 27.1, 27.2, 28.1, 28.2, 29.2, 30.2, 30.3, 31.2, 31.3, 32.1, 33.2, 33.3, 33.4, 34.2,</p>

	<p>34.3, 35.2, 36.2, 36.3, 36.5, 37.2, 37.5, 38.2, 38.3, 38.6, 39.2, 39.6, 40.2-5, 41.2-5, 42.2, 42.3, 43.2, 43.3, 43.5, 44.2, 44.3, 45.2, 45.3, 45.5, 46.2, 46.3, 46.5, 47.2, 47.3, 47.5, 48.2, 48.3, 48.5, 49.2, 50.2, 51.2 51.3, 52.2, 52.3, 53.1, 53.2, 53.4, 54.2, 54.3, 54.5, 55.2, 55.3, 55.5, 56.2, 56.3, 56.5, 57.2, 58.2</p> <p>Division, WB: (Lesson.Exercise)</p> <p>1.2, 1.3, 2.1, 2.2, 3.1, 3.2, 3.5, 4.1, 4.2, 4.4, 5.1, 5.3, 5.5, 6.1, 6.5, 6.6, 7.1, 7.4, 7.5, 8.1, 8.3, 9.1, 10.1, 13.9, 14.1, 14.2, 15.1, 15.2, 16.1, 17.1, 17.2, 17.3, 18.1, 18.2, 19.1, 20.1, 22.1, 22.2, 23.1, 23.2, 24.1, 25.1, 27.1, 28.1, 28.2, 29.1, 30.1, 30.2, 31.1, 31.2, 32.1, 33.1, 33.2, 33.3, 34.1, 34.2, 35.1, 36.1, 36.2, 37.1, 37.1-4, 38.1, 39.2, 39.1, 39.4, 40.1, 40.2, 40.4, 41.1, 41.2, 42.1, 42.2, 43.1, 43.2, 44.1, 44.2, 45.1, 45.2, 45.4, 46.1, 46.2, 46.4, 47.1, 47.2, 47.4, 48.1, 48.2, 48.4, 49.1, 50.1, 51.1, 51.2, 52.1, 52.2, 53.1, 53.2, 54.1, 54.2, 54.4, 55.1, 55.2, 55.4, 56.1, 56.3, 56.4, 57.1, 58.1</p>
<p>Understand properties of multiplication and the relationship between multiplication and division.</p>	
<p>3.OA.5. Apply properties of operations as strategies to multiply and divide. <i>Examples: If <math>6 \times 4 = 24</math> is known, then <math>4 \times 6 = 24</math> is also known. (Commutative property of multiplication.) <math>3 \times 5 \times 2</math> can be found by <math>3 \times 5 = 15</math>, then <math>15 \times 2 = 30</math>, or by <math>5 \times 2 = 10</math>, then <math>3 \times 10 = 30</math>.</i></p>	<p>Multiplication, TPB: (Lesson.Exercise) 3.4, 4.2, 4.3, 5.2, 6.4, 8.6, 9.6, 10.7, 11.7, 13.8,</p>

<p><i>(Associative property of multiplication.) Knowing that <math>8 \times 5 = 40</math> and <math>8 \times 2 = 16</math>, one can find <math>8 \times 7</math> as <math>8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56</math>. (Distributive property.)</i></p>	<p>14.8, 15.7, 16.8, 17.1, 18.1, 19.1, 20.3, 23.4, 24.4, 25.4, 26.4, 28.6, 29.5, 30.5, 31.7, 36.4, 37.4, 38.4, 39.5, 41.6, 42.6, 43.6, 44.6, 46.5, 47.5, 51.5, 52.5, 54.4, 55.5, 56.5, 57.5, 59.4, 60.4</p> <p><b>Multiplication, WB:</b> (Lesson.Exercise) 3.4, 4.2, 4.3, 5.3, 6.4, 8.6, 9.6, 10.7, 11.7, 13.7, 14.6, 15.6, 16.7, 17.1, 18.1, 19.1, 20.3, 23.4, 24.4, 25.4, 26.4, 28.5, 29.4, 30.5, 31.6, 36.4, 37.4, 38.4, 39.5, 41.6, 42.6, 43.6, 44.6, 46.5, 47.5, 51.5, 52.5, 54.4, 55.5, 56.5, 57.5, 59.4, 60.4</p> <p><b>Fractions-Decimals-Percents, TPB:</b> (Lesson.Exercise) 1.1, 2.1, 3.1</p>
<p>3.OA.6. Understand division as an unknown-factor problem. <i>For example, find <math>32 \div 8</math> by finding the number that makes 32 when multiplied by 8.</i></p>	<p><b>Division, TPB:</b> (Lesson.Exercise) 1.4, 2.4, 3.4</p> <p><b>Division, WB:</b> (Lesson.Exercise) 1.4, 2.4, 3.4</p>
<p><b>Multiply and divide within 100.</b></p>	
<p>3.OA.7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that <math>8 \times 5 = 40</math>, one knows <math>40 \div 5 = 8</math>) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.</p>	<p><b>Multiplication, TPB:</b> (Lesson.Exercise) 1.2-4, 2.2-4, 3.1, 3.3-5, 4.1-5, 5.1-4, 5.6, 6.1, 6.3-5, 6.7, 7.1, 7.4-6, 7.8, 8.1, 8.4-8, 8.10, 9.1, 9.4-7, 9.9, 10.1, 10.5-8, 10.10, 11.1, 11.5-7, 11.10, 12.1, 12.6, 12.7, 12.10, 13.1, 13.5-7,</p>





	<p>56.2, 56.4, 56.5, 57.1, 57.2, 57.4, 57.5, 58.1, 58.3, 59.1, 59.2, 59.4, 60.1, 60.3, 60.4, 61.1, 61.3, 62.1, 62.3, 63.1-3, 64.1-4, 65.1, 65.2</p> <p><b>Division, TPB: (Lesson.Exercise)</b>  1.1-4, 2.1-4, 3.1-5, 4.1-4, 5.1-6, 6.1-7, 6.10, 7.1-6, 7.10, 8.1-5, 8.8, 9.1-6, 9.9, 10.1-6, 10.9, 11.1-10, 11.13, 12.1-12, 11.15, 12.1-12, 12.15, 13.1-6, 13.9, 14.1-7, 14.10, 15.1-7, 15.10, 16.1-7, 16.10, 17.1-8, 17.12, 18.1-8, 18.11, 19.1-6, 19.9, 20.1-7, 20.10, 21.1-3, 21.5-8, 21.13, 22.1-3, 22.5-8, 22.11, 23.1-7, 23.1-, 24.1, 24.2, 24.4-7, 24.10, 25.1, 25.2, 25.4-6, 25.9, 26.1, 26.2, 26.4, 26.6, 26.9, 27.1-3, 27.6, 27.7, 27.10, 28.1, 28.2, 28.5, 28.8, 29.1, 29.2, 29.6, 29.9, 30.1-4, 30.8, 30.11, 31.1-3, 31.6, 31.7, 31.10, 32.1, 32.5, 32.8, 33.1-4, 33.8, 33.11, 34.1-4, 34.8, 34.11, 35.1, 35.2, 35.6, 35.9, 36.1-3, 36.5, 36.7, 36.10, 37.1-5, 37.9, 37.12, 38.1-3, 38.6, 38.7, 38.10, 39.1, 39.2, 39.6, 39.10, 39.13, 40.1-3, 4-.5, 40.10, 40.13, 41.14, 41.9, 41.10, 41.13, 42.1-3, 42.6, 42.9, 43.1-3, 43.5, 43.7, 43.10, 44.1-4, 44.7, 44.1-, 45.1-5, 45.8, 45.11, 46.1-5, 46.7,</p>
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	<p>46.1-, 47.1-5, 47.8, 47.11, 48.1-4, 48.5-7, 48.1-, 49.1-3, 49.5, 49.8, 50.1, 50.2, 50.7, 50.10, 51.1-4, 51.7, 51.10, 52.1-4, 51.9, 51.12, 52.1-3, 52.7, 52.10, 53.1, 53.2, 53.4, 53.6, 53.9, 54.1-3, 54.5, 54.7, 54.10, 55.1-5, 55.7, 55.10, 56.1-3, 56.7, 56.10, 57.1-4, 57.7, 58.1-3, 58.6, 59.1, 59.2, 59.5, 60.2, 60.5, 61.1, 61.2, 61.5, 62.1, 62.4, 63.1, 63.4, 64.1, 64.4, 65.1, 65.4</p> <p><b>Division, WB: (Lesson.Exercise)</b>  1.1-4, 2.1-4, 3.1-5, 4.1-4, 5.1-5, 6.1-6, 7.1-4, 8.1-3, 9.1-4, 10.1-5, 11.1-6, 12.1-8, 13.1-3, 14.1-5, 15.1-6, 16.1-5, 17.1-6, 18.1-5, 19.1-4, 20.1-5, 21.1-5, 22.1-5, 23.1-6, 24.1-55, 25.1-4, 26.1, 26.3-5, 27.1, 27.2, 27.5, 27.6, 28.1, 28.2, 28.5, 29.1, 29.5, 30.1-3, 30.7, 31.1, 31.2, 31.4, 32.1, 32.5, 33.1-3, 33.7, 34.1-3, 34.7, 35.1, 35.5, 36.1, 36.2, 36.4, 36.6, 37.1, 37.4, 37.6, 38.1, 38.2, 38.4, 38.5, 39.1, 39.4, 39.7, 40.1, 40.2, 40.4, 40.8, 41.1-3, 41.8, 42.1, 42.2, 42.5, 43.1, 43.2, 43.4, 43.6, 44.1, 44.3, 44.6, 45.1-4, 45.7, 46.1-4, 46.6, 47.1-4, 47.7, 48.1, 48.2, 48.4, 48.5, 49.1, 49.2, 49.4, 50.1, 50.6, 51.1-3, 51.8, 52.1, 52.2, 52.6, 53., 53.2, 53.4, 53.6,</p>
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	54.1, 54.2, 54.4, 54.6, 55.1-4, 55.6, 56.1, 56.2, 56.5, 57.1-3, 58.1, 58.2, 59.1, 59.2, 60.2, 61.1, 62.1, 63.1, 64.1, 65.1
Solve problems involving the four operations, and 3.OA.8.	identify and explain patterns in arithmetic.

	<p>57.6, 57.7, 57.8, 58.6, 58.7, 58.8, 59.5, 59.6, 59.7, 60.5, 60.6, 61.4, 62.4, 63.3, 65.2</p> <p><b>Subtraction, WB:</b> (Lesson.Exercise) 25.7, 26.7, 27.2, 27.4, 28.4, 29.5, 30.7, 31.6, 31.7, 32.7, 33.7, 33.8, 34.5, 34.6, 35.3, 35.6, 36.4, 36.6, 37.6, 37.7, 38.6, 39.6, 40.5, 40.6, 41.6, 41.7, 42.5, 43.4, 44.5, 44.7, 45.5, 45.7, 46.5, 46.6, 47.6, 47.7, 48.6, 48.7, 49.6, 50.5, 50.7, 51.5, 51.7, 52.5, 52.7, 53.5, 53.7, 54.5, 54.6, 55.5, 55.6, 56.5, 56.6, 57.5, 57.6, 58.5, 58.6, 59.4, 59.5, 60.4, 60.5, 61.3, 62.4, 63.3, 64.3, 65.2</p> <p><b>Multiplication, TPB:</b> (Lesson.Exercise) 10.8, 11.8, 12.8, 13.9, 14.9, 15.10, 16.10, 17.4, 17.5, 18.6, 18.7, 19.6, 19.7, 20.7, 20.8, 21.5, 21.7, 22.5, 22.7, 23.6, 24.5, 25.5, 26.5, 27.4, 32.7, 33.7, 34.6, 42.7, 43.8</p> <p><b>Multiplication, WB:</b> (Lesson.Exercise) 10.8, 11.8, 12.7, 13.8, 14.7, 15.8, 16.8, 17.4, 18.6, 19.6, 20.7, 21.5, 21.7, 22.5, 22.7, 23.6, 24.5, 25.5, 26.5, 27.4, 28.7, 29.7, 30.7, 31.8, 32.7, 33.7, 34.6, 35.7, 36.7, 37.7, 38.9, 39.8, 40.7,</p>
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	<p>41.8, 42.7, 43.8, 44.8, 45.6, 46.7, 47.7, 48.6, 49.6, 50.7, 51.8, 52.8, 53.7, 54.8, 55.7, 56.8, 57.8, 58.6, 59.7, 60.7, 61.6, 62.6, 63.5, 64.5, 65.5</p> <p>Division, TPB: (Lesson.Exercise)  11.8, 11.9, 12.8, 12.11, 13.5, 13.6, 14.7, 15.6, 15.7, 16.5, 16.6, 16.7, 17.8, 17.9, 18.6, 18.7, 18.8, 19.4, 19.5, 19.6, 20.5, 20.6, 21.7, 21.8, 22.7, 23.6, 24.6, 25.5, 26.6, 33.7, 48.4, 49.4, 50.4, 50.5, 51.5, 51.7, 51.8, 52.5, 52.6, 53.5</p> <p>Division, WB: (Lesson.Exercise)  12.6, 12.7, 13.3, 14.5, 14.9, 15.5, 15.6, 15.9, 16.4, 16.5, 16.7, 17.6, 17.9, 18.5, 19.3, 19.4, 19.7, 20.4, 20.5, 21.4, 22.4, 23.5, 24.4, 25.2, 25.7, 26.4, 27.5, 28.9, 29.8, 31.8, 32.8, 33.6, 34.10, 35.8, 36.12, 37.11, 39.12, 40.14, 41.12, 42.7, 43.9, 44.8, 46.11, 47.10, 48.2, 49.3, 50.3, 50.4, 51.4, 51.6, 51.7, 52.4, 52.5, 53.5, 54.9, 55.8, 56.8, 57.5, 58.4, 59.4, 60.1, 62.1, 62.2, 63.3, 64.2, 65.3</p>
<p>3.OA.9. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. <i>For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.</i></p>	<p>Subtraction, TPB:  (Lesson.Exercise) 1.4, 2.6, 3.2, 4.2, 4.3, 4.4, 5.2, 5.3, 6.4, 6.5, 7.4, 7.5, 8.5, 8.6, 9.5, 9.6, 10.7, 10.8,</p>

	11.5, 11.6, 12.8, 13.8, 13.9 <b>Subtraction, WB:</b> (Lesson.Exercise) 4.2, 5.2, 6.2, 7.3, 8.4, 9.4, 10.4, 11.3, 13.6
<b>Number and Operations in Base Ten 3.NBT</b>	
Use place value understanding and properties of operations to perform multi-digit arithmetic.	

	<p>23.4, 24.3, 24.6, 25.5, 25.8, 26.4, 26.8, 27.5, 27.8, 28.5, 28.8, 29.3, 30.3, 31.4, 31.7, 31.8, 32.5, 32.7, 32.8, 33.6, 33.6, 34.8, 35.7, 36.9, 37.3, 37.6, 37.7, 38.6, 39.3, 39.6, 40.6, 41.2, 42.4, 43.2, 44.2, 45.2, 46.3, 47.3, 48.6, 49.6, 512.5, 53.5, 54.5, 55.4, 56.5, 57.5, 58.5, 59.5, 60.5, 61.4, 62.5, 63.5, 64.5</p> <p><b>Subtraction, TPB:</b> (Lesson.Exercise) 11.12, 12.12, 20.8, 21.10, 25.9, 25.10, 26.11, 27.10, 28.9, 29.9, 34.9, 35.9, 36.13</p> <p><b>Subtraction, WB:</b> (Lesson.Exercise) 11.9, 12.8, 13.10, 14.9, 15.10, 16.8, 17.9, 18.7, 19.7, 20.7, 21.10, 23.9, 24.7, 25.8, 26.8, 27.7, 28.7, 29.7, 30.9, 31.9, 32.9, 33.9, 34.7, 35.7, 36.7, 37.8, 38.7, 39.7, 40.7, 41.8, 42.6, 43.6, 44.8, 45.8, 46.7, 47.8, 49.7, 52.8, 61.4, 62.5, 63.4, 65.3</p> <p><b>Multiplication, TPB:</b> (Lesson.Exercise) 7.3, 8.3, 9.3, 10.3, 11.4, 12.5, 13.6, 14.7, 16.7, 17.8, 18.3, 19.3, 20.5, 21.3, 25.7, 26.7, 27.2, 28.4, 29.4, 30.4, 31.1, 32.1, 33.2, 34.2, 35.5, 36.5, 37.5, 38.6, 39.3, 40.4, 41.4, 42.4, 43.5,</p>
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	<p>44.4, 45.3, 46.3, 47.4, 48.3, 49.3, 50.3, 51.3, 52.3, 53.3, 54.3, 55.3, 56.3, 57.3, 58.2, 59.3, 60.2, 61.2, 62.2</p> <p><b>Multiplication, WB:</b>  (Lesson.Exercise) 7.3, 8.3, 9.3, 10.3, 11.4, 12.4, 13.5, 14.5, 16.6, 17.7, 18.3, 19.3, 20.5, 21.3, 25.7, 26.7, 27.2, 28.3, 29.3, 30.4, 31.1, 32.1, 33.2, 34.2, 35.5, 36.5, 37.5, 38.6, 39.3, 40.4, 41.4, 42.4, 43.5, 44.4, 45.3, 46.3, 47.4, 48.3, 49.3, 50.3, 51.3, 52.3, 53.3, 54.3, 55.3, 56.3, 57.3, 58.2, 59.3, 60.2, 61.2, 62.2</p>
3.NBT.3. Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., $9 \times 80$ , $5 \times 60$ ) using strategies based on place value and properties of operations.	<p><b>Multiplication, TPB:</b>  (Lesson.Exercise) 1.3, 2.2, 3.3, 4.5</p> <p><b>Multiplication, WB:</b>  (Lesson.Exercise) 1.3, 2.2, 3.3, 4.5</p>
<b>Number and Operations–Fractions 3.NF</b>	
<b>Develop understanding of fractions as numbers.</b>	
3.NF.1. Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into $b$ equal parts; understand a fraction $a/b$ as the quantity formed by $a$ parts of size $1/b$ .	<p><b>Basic Fractions, TPB:</b>  (Lesson.Exercise) 4.1, 4.2, 5.1, 5.2, 5.3, 6.1, 6.2, 6.3, 7.1, 7.2, 7.3, 8.1, 8.2, 8.3, 9.1, 9.2, 10.1, 11.1, 11.2, 14.1, 15.4, 16.4</p> <p><b>Basic Fraction, WB:</b>  (Lesson.Exercise) 4.1, 5.1, 6.1, 6.2, 7.1, 7.2, 8.1, 8.2, 9.1, 10.1, 11.1</p>
3.NF.2. Understand a fraction as a number on the number line; represent fractions on a	

number line diagram.	
3.NF.2a. Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into $b$ equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line.	
3.NF.2b. Represent a fraction $a/b$ on a number line diagram by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size $a/b$ and that its endpoint locates the number $a/b$ on the number line.	
3.NF.3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.	
3.NF.3a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.	<p>Fractions-Decimals-Percents, TPB: (Lesson.Exercise) 5.3, 6.2, 7.2, 7.3, 8.2, 9.2, 10.2, 11.2, 12.3, 13.2, 14.3, 14.4, 15.1, 15.2, 16.2, 17.2, 18.2, 18.3, 19.2, 20.3, 20.4, 21.3, 21.4, 22.3, 22.4, 23.3, 24.3, 25.2, 25.3, 26.3, 27.2, 27.3, 28.3, 28.4, 29.2, 29.3, 30.2, 31.2, 32.2, 34.2, 37.1, 39.1</p> <p>Fractions-Decimals-Percents, WB: (Lesson.Exercise) 7.2, 8.2, 9.2, 10.2, 11.2, 12.2, 13.2, 14.2, 15.1, 17.2, 18.2, 18.33, 19.2, 20.2, 21.2, 22.3, 24.3, 25.2, 25.3, 26.2, 27.1, 27.2, 28.2, 29.2, 30.2, 31.2, 3.2, 34.2, 37.1, 39.1</p>
3.NF.3b. Recognize and generate simple equivalent fractions, e.g., $1/2 = 2/4$ , $4/6 = 2/3$ ). Explain why the fractions are equivalent, e.g., by using a visual fraction model.	<p>Basic Fractions, TPB: (Lesson.Exercise) 37.1, 38.1, 39.1, 39.2, 40.1, 40.2, 41.1, 41.2, 42.1, 43.1, 44.1, 44.3, 45.1, 45.3, 46.1, 46.4, 47.1, 48.3, 49.2, 49.3, 50.1, 50.2, 51.1, 52.1, 53.1, 54.1, 55.1</p>



**Basic Fractions, WB:**

(Lesson.Exercise) 41.1, 42.1, 43.1,  
44.1, 45.1, 46.1, 46.3, 47.1, 48.3,  
49.2, 50.1, 51.1, 52.1, 53.1, 54.1,  
55.1

**Fractions-Decimals-Percents,  
TPB:**



halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.	
Geometric measurement: understand concepts of area and relate area to multiplication and addition.	
3.MD.5. Recognize area as an attribute of plane figures and understand concepts of area measurement.	
3.MD.5a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.	
3.MD.5b. A plane figure which can be covered without gaps or overlaps by $n$ unit squares is said to have an area of $n$ square units.	
3.MD.6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).	
3.MD.7. Relate area to the operations of multiplication and addition.	
3.MD.7a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.	
3.MD.7b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.	
3.MD.7c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths $a$ and $b + c$ is the sum of $a \times b$ and $a \times c$ . Use area models to represent the distributive property in mathematical reasoning.	
3.MD.7d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.	
Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.	
3.MD.8. Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	
<b>Geometry 3.G</b>	
Reason with shapes and their attributes.	
3.G.1. Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	

3.G.2. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as  $\frac{1}{4}$  of the area of the shape.*