

A Correlation of  
**INVESTIGATIONS**   
IN NUMBER, DATA, AND SPACE®  
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To the

**Alabama Course of Study  
Mathematics 2019  
Grade 1**

**A Correlation of Investigations 3 In Number, Data, and Space, ©2017  
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**Grade 1 Units**

**Unit 1 - Building Numbers and Solving Story Problems**

**Unit 2 - Comparing and Combining Shapes**

**Unit 3 - How Many of Each? How Many in All**

**Unit 4 - Fish Lengths and Fraction Rugs**

**Unit 5 - Number Games and Crayon Problems**

**Unit 6 - Would You Rather Be an Eagle or a Whale?**

**Unit 7 - How Many Tens? How Many Ones?**

**Unit 8 - Blocks and Buildings**

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Alabama Course of Study Mathematics 2019	Investigations 3 In Number, Data, and Space Grade 1
<b>Student Mathematical Practices</b>	
<b>1. Make sense of problems and persevere in solving them.</b>	<b>Unit 1:</b> 1.1 (pp. 23-33), 1.2 (pp. 34-43), 2.3 (pp. 95-102), 2.4 (pp. 103-111), 2.7 (pp. 128-133), 2.8 (pp. 134-141), 3.1 (pp. 150-159), 3.2 (pp. 160-166), 3.4 (pp. 175-182), 3.6 (pp. 189-197), 3.7 (pp. 198-205) <b>Unit 6:</b> 1.2 (pp. 34-41), 1.3 (pp. 42-49), 1.4 (pp. 50-59), 1.5 (pp. 60-66), 1.6 (pp. 67-71), 1.7 (pp. 72-82), 2.1 (pp. 108-113), 2.2 (pp. 114-121)
<b>2. Reason abstractly and quantitatively.</b>	<b>Unit 3:</b> 1.1 (pp. 22-30), 1.2 (pp. 31-40), 2.1 (pp. 64-70), 2.2 (pp. 71-77), 2.4 (pp. 84-90), 2.5 (pp. 91-99), 2.6 (pp. 100-108), 2.7 (pp. 109-113), 3.1 (pp. 127-135), 3.2 (pp. 136-142), 3.5 (pp. 157-162) <b>Unit 7:</b> 1.1 (pp. 24-30), 1.3 (pp. 38-43), 1.6 (pp. 60-67), 1.7 (pp. 68-73), 1.8 (pp. 74-79), 2.1 (pp. 88-95), 2.2 (pp. 96-103), 2.3 (pp. 104-111), 2.4 (pp. 112-119), 2.5 (pp. 120-127), 2.7 (pp. 136-140), 2.8 (pp. 141-144), 3.1 (pp. 154-161), 3.2 (pp. 162-168), 3.6 (pp. 195-201)
<b>3. Construct viable arguments and critique the reasoning of others.</b>	<b>Unit 2:</b> 1.4 (pp. 43-47), 1.5 (pp. 48-54), 1.6 (pp. 55-62), 1.7 (pp. 63-68), 2.1 (pp. 77-84), 2.2 (pp. 85-93), 2.3 (pp. 94-100), 2.4 (pp. 101-106) <b>Unit 5:</b> 1.1 (pp. 24-33), 1.4 (pp. 49-55), 2.1 (pp. 90-97), 2.3 (pp. 108-115), 2.4 (pp. 116-122), 2.5 (pp. 123-130), 2.6 (pp. 131-139), 2.7 (pp. 140-147), 2.8 (pp. 148-151), 3.1 (pp. 160-166), 3.5 (pp. 188-195)
<b>4. Model with mathematics.</b>	<b>Unit 4:</b> 1.1 (pp. 24-31), 1.2 (pp. 32-37), 1.3 (pp. 38-43), 1.5 (pp. 51-61), 1.6 (pp. 62-70), 2.1 (pp. 89-99), 2.2 (pp. 100-106), 2.3 (pp. 107-113), 2.4 (pp. 114-119) <b>Unit 6:</b> 1.1 (pp. 25-33), 1.2 (pp. 34-41), 1.3 (pp. 42-49), 1.4 (pp. 50-59), 1.5 (pp. 60-66), 1.6 (pp. 67-71), 2.1 (pp. 108-113), 2.2 (pp. 114-121)

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Alabama Course of Study Mathematics 2019	Investigations 3 In Number, Data, and Space Grade 1
<b>5. Use appropriate tools strategically.</b>	<p><b>Unit 2:</b> 1.1 (pp. 22-29), 1.6 (pp. 55-62), 1.7 (pp. 63-68), 2.2 (pp. 85-93), 2.3 (pp. 94-100), 2.4 (pp. 101-106)</p> <p><b>Unit 4:</b> 1.2 (pp. 32-37), 1.3 (pp. 38-43), 1.4 (pp. 44-50), 1.5 (pp. 51-61), 1.6 (pp. 62-70), 1.7 (pp. 71-75)</p>
<b>6. Attend to precision.</b>	<p><b>Unit 3:</b> 1.2 (pp. 31-40), 2.2 (pp. 71-77), 2.4 (pp. 84-90), 2.5 (pp. 91-99), 2.8 (pp. 114-119), 3.1 (pp. 127-135), 3.2 (pp. 136-142), 3.4 (pp. 150-156), 4.1 (pp. 176-181)</p> <p><b>Unit 8:</b> 1.1 (pp. 23-28), 1.2 (pp. 29-35), 1.3 (pp. 36-41), 1.5 (pp. 48-53), 1.6 (pp. 54-59)</p>
<b>7. Look for and make use of structure.</b>	<p><b>Unit 5:</b> 1.2 (pp. 34-41), 1.4 (pp. 49-55), 2.1 (pp. 909-97), 2.2 (pp. 98-107), 2.3 (pp. 108-115), 2.4 (pp. 116-122), 2.5 (pp. 123-130), 2.7 (pp. 140-147), 2.8 (pp. 148-151), 3.1 (pp. 160-166), 3.3 (pp. 174-180)</p> <p><b>Unit 8:</b> 1.2 (pp. 29-35), 1.3 (pp. 36-41), 1.4 (pp. 42-47), 1.5 (pp. 48-53), 1.6 (pp. 54-59), 1.7 (pp. 60-66), 1.8 (pp. 67-72)</p>
<b>8. Look for and express regularity in repeated reasoning.</b>	<p><b>Unit 1:</b> 1.2 (pp. 34-43), 1.4 (pp. 52-58), 2.2 (pp. 85-94), 2.4 (pp. 103-111), 2.5 (pp. 112-120), 2.6 (pp. 121-127), 2.7 (pp. 128-133), 3.1 (pp. 150-159), 3.2 (pp. 160-166), 3.3 (pp. 167-174), 3.4 (pp. 175-182), 3.5 (pp. 183-188)</p> <p><b>Unit 7:</b> 1.2 (pp. 31-37), 1.4 (pp. 44-53), 2.2 (pp. 96-103), 2.3 (pp. 104-111), 2.5 (pp. 120-127), 2.6 (pp. 128-135), 2.7 (pp. 136-140), 3.1 (pp. 154-161), 3.3 (pp. 169-176), 3.4 (pp. 177-186), 3.5(pp. 187-194), 3.6 (pp. 195-201), 3.7 (pp. 202-207)</p>

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Alabama Course of Study Mathematics 2019	Investigations 3 In Number, Data, and Space Grade 1
<b>Operations and Algebraic Thinking</b>	
<b>Represent and solve problems involving addition and subtraction.</b>	
<p>1. Use addition and subtraction to solve word problems within 20 by using concrete objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p>	<p><b>Unit 1:</b> 2.3 (pp. 95-102), 2.4 (pp. 103-111), 2.6 (pp. 121-127), 2.7 (pp. 128-133), 2.8 (pp. 134-141), 3.1 (pp. 150-159), 3.2 (pp. 160-166), 3.4 (pp. 175-183), 3.5 (pp. 183-188), 3.6 (pp. 189-197), 3.7 (pp. 198-205)</p> <p><b>Unit 3:</b> 2.1 (pp. 64-70), 2.4 (pp. 84-90), 2.6 (pp. 100-108), 2.7 (pp. 109-113), 2.8 (pp. 114-119), 3.1 (pp. 127-135), 3.2 (pp. 136-142), 3.6 (pp. 163-166)</p> <p><b>Unit 4:</b> 1.5 (pp. 51-61), 1.6 (pp. 62-70), 1.7 (pp. 71-75), 1.8 (pp. 76-80), 2.6 (pp. 125-130)</p> <p><b>Unit 5:</b> 1.1 (pp. 24-33), 1.5 (pp. 56-63), 1.6 (pp. 64-71), 1.7 (pp. 72-87), 1.8 (pp. 78-81), 2.3 (pp. 108-115), 2.4 (pp. 116-122), 2.6 (pp. 131-139), 3.2 (pp. 167-173), 3.3 (pp. 174-180), 3.4 (pp. 181-187), 3.5 (pp. 188-195), 3.6 (pp. 196-202), 3.7 (pp. 203-206)</p> <p><b>Unit 6:</b> Investigation 1 (pp25-101), CR 2.2 (p. 115), 2.3 (pp. 122-128)</p> <p><b>Unit 7:</b> CR 1.1 (p. 25), CR 1.2 (p. 32), CR 1.3 (p. 39)</p>
<p>a. Add to with change unknown to solve word problems within 20.</p>	<p><b>Unit 1:</b> 2.3 (pp. 95-102), 2.4 (pp. 103-111), 2.6 (pp. 121-127), 2.7 (pp. 128-133), 2.8 (pp. 134-141)</p> <p><b>Unit 3:</b> 2.1 (pp. 64-70), 2.4 (pp. 84-90), 2.6 (pp. 100-108), 2.7 (pp. 109-113), 2.8 (pp. 114-119), 3.1 (pp. 127-135), 3.2 (pp. 136-142), 3.6 (pp. 163-166)</p> <p><b>Unit 5:</b> 1.1 (pp. 24-33), 1.5 (pp. 56-63), 1.6 (pp. 64-71), 1.7 (pp. 72-87), 1.8 (pp. 78-81), 2.3 (pp. 108-115), 2.4 (pp. 116-122), 2.6 (pp. 131-139), 3.2 (pp. 167-173), 3.3 (pp. 174-180), 3.4 (pp. 181-187), 3.5 (pp. 188-195), 3.6 (pp. 196-202), 3.7 (pp. 203-206)</p> <p><b>Unit 6:</b> Investigation 1 (pp25-101), CR 2.2 (p. 115), 2.3 (pp. 122-128)</p> <p><b>Unit 7:</b> CR 1.1 (p. 25), CR 1.2 (p. 32), CR 1.3 (p. 39)</p>

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b. Take from with change unknown to solve word problems within 20.	<p><b>Unit 1:</b> 3.1 (pp. 150-159), 3.2 (pp. 160-166), 3.4 (pp. 175-183), 3.5 (pp. 183-188), 3.6 (pp. 189-197), 3.7 (pp. 198-205)</p> <p><b>Unit 3:</b> 2.1 (pp. 64-70), 2.4 (pp. 84-90), 2.6 (pp. 100-108), 2.7 (pp. 109-113), 2.8 (pp. 114-119), 3.1 (pp. 127-135), 3.2 (pp. 136-142), 3.6 (pp. 163-166)</p> <p><b>Unit 5:</b> 1.1 (pp. 24-33), 1.5 (pp. 56-63), 1.6 (pp. 64-71), 1.7 (pp. 72-87), 1.8 (pp. 78-81), 2.3 (pp. 108-115), 2.4 (pp. 116-122), 2.6 (pp. 131-139), 3.2 (pp. 167-173), 3.3 (pp. 174-180), 3.4 (pp. 181-187), 3.5 (pp. 188-195), 3.6 (pp. 196-202), 3.7 (pp. 203-206)</p> <p><b>Unit 6:</b> Investigation 1 (pp25-101), CR 2.2 (p. 115), 2.3 (pp. 122-128)</p> <p><b>Unit 7:</b> CR 1.1 (p. 25), CR 1.2 (p. 32), CR 1.3 (p. 39)</p>
c. Put together/take apart with addend unknown to solve word problems within 20.	<p><b>Unit 1:</b> 2.3 (pp. 95-102), 2.4 (pp. 103-111), 2.6 (pp. 121-127), 2.7 (pp. 128-133), 2.8 (pp. 134-141), 3.1 (pp. 150-159), 3.2 (pp. 160-166), 3.4 (pp. 175-183), 3.5 (pp. 183-188), 3.6 (pp. 189-197), 3.7 (pp. 198-205)</p> <p><b>Unit 3:</b> 2.1 (pp. 64-70), 2.4 (pp. 84-90), 2.6 (pp. 100-108), 2.7 (pp. 109-113), 2.8 (pp. 114-119), 3.1 (pp. 127-135), 3.2 (pp. 136-142), 3.6 (pp. 163-166)</p> <p><b>Unit 5:</b> 1.1 (pp. 24-33), 1.5 (pp. 56-63), 1.6 (pp. 64-71), 1.7 (pp. 72-87), 1.8 (pp. 78-81), 2.3 (pp. 108-115), 2.4 (pp. 116-122), 2.6 (pp. 131-139), 3.2 (pp. 167-173), 3.3 (pp. 174-180), 3.4 (pp. 181-187), 3.5 (pp. 188-195), 3.6 (pp. 196-202), 3.7 (pp. 203-206)</p> <p><b>Unit 6:</b> Investigation 1 (pp25-101), CR 2.2 (p. 115), 2.3 (pp. 122-128)</p> <p><b>Unit 7:</b> CR 1.1 (p. 25), CR 1.2 (p. 32), CR 1.3 (p. 39)</p>
d. Compare quantities, with difference unknown, bigger unknown, and smaller unknown while solving word problems within 20.	<p><b>Unit 1:</b> 2.3 (pp. 95-102), 2.4 (pp. 103-111), 2.6 (pp. 121-127), 2.7 (pp. 128-133), 2.8 (pp. 134-141)</p> <p><b>Unit 6:</b> Investigation 1 (pp25-101), CR 2.2 (p. 115), 2.3 (pp. 122-128)</p> <p><b>Unit 7:</b> CR 1.1 (p. 25), CR 1.2 (p. 32), CR 1.3 (p. 39)</p>
2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20 by using concrete objects, drawings, or equations with a symbol for the unknown number to represent the problem.	<p><b>Unit 2:</b> 1.3 (pp. 36-42)</p> <p><b>Unit 3:</b> 3.1 (pp. 127-135), 3.6 (pp. 163-166)</p> <p><b>Unit 6:</b> Investigation 2 (pp. 108-128)</p> <p><b>Unit 7:</b> 1.1 (pp. 24-30), 1.2 (pp. 31-37)</p>

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Alabama Course of Study Mathematics 2019	Investigations 3 In Number, Data, and Space Grade 1
<b>Understand and apply properties of operations and the relationship between addition and subtraction.</b>	
<p>3. Apply properties of operations as strategies to add and subtract. <i>Examples: If <math>8 + 3 = 11</math> is known, then <math>3 + 8 = 11</math> is also known (commutative property of addition). To add <math>2 + 6 + 4</math>, the second and third numbers can be added to make a ten, so <math>2 + 6 + 4 = 2 + 10 = 12</math> (associative property of addition). When adding 0 to a number, the result is the same number (identity property of zero for addition).</i></p>	<p><b>Unit 1:</b> 2.2 (pp. 85-94), 2.3 (pp. 95-102), 2.4 (pp. 103-111), 2.5 (pp. 112-120), 2.6 (pp. 121-127), 2.7 (pp. 128-133), 2.8 (pp. 134-141), 3.1 (pp. 150-159), 3.2 (pp. 160-166), 3.4 (pp. 175-183), 3.5 (pp. 183-188), 3.6 (pp. 189-197), 3.7 (pp. 198-205) <b>Unit 2:</b> 1.3 (pp. 36-42) <b>Unit 3:</b> 1.1 (pp. 22-30), 2.1 (pp. 64-70), CR 2.3 (p. 79), 2.4 (pp. 84-90), 2.5 (pp. 91-99), 2.6 (pp. 100-108), 2.7 (pp. 109-113), 3.1 (pp. 127-135), 3.2 (pp. 136-142), 3.3 (pp. 143-149), 3.4 (pp. 150-156), 3.6 (pp. 163-166), 4.8 (pp. 220-224) <b>Unit 4:</b> 1.5 (pp. 51-61), 1.6 (pp. 62-70), 1.7 (pp. 71-75), 1.8 (pp. 76-80), 2.6 (pp. 125-130) <b>Unit 5:</b> Investigation 1 (pp. 24-81), Investigation 2 (pp. 90-151), Investigation 3 (pp. 160-206)</p>
<p>4. Explain subtraction as an unknown-addend problem. <i>Example: subtracting <math>10 - 8</math> by finding the number that makes 10 when added to 8</i></p>	<p><b>Unit 1:</b> 3.2 (pp. 160-166), 3.3 (pp. 167-174), 3.4 (pp. 175-183), 3.5 (pp. 183-188), 3.6 (pp. 189-197), 3.7 (pp. 198-205) <b>Unit 3:</b> 1.3 (pp. 41-47), 2.2 (pp. 71-77), 2.3 (pp. 78-83), 2.7 (pp. 109-113) <b>Unit 4:</b> 1.5 (pp. 51-61), 1.6 (pp. 62-70), 1.7 (pp. 71-75), 1.8 (pp. 76-80), 2.6 (pp. 125-130) <b>Unit 5:</b> 1.1 (pp. 24-33), 1.5 (pp. 56-63), 1.6 (pp. 64-71), 1.7 (pp. 72-77), 1.8 (pp. 78-81), 3.2 (pp. 167-173), 3.3 (pp. 174-180), 3.4 (pp. 181-187), 3.5 (pp. 188-195), 3.6 (pp. 196-202), 3.7 (pp. 203-206)</p>
<b>Add and subtract within 20.</b>	
<p>5. Relate counting to addition and subtraction. <i>Example: counting on 2 to add 2</i></p>	<p><b>Unit 1:</b> 1.4 (pp. 52-58), 1.5 (pp. 59-67), Investigation 2 (pp. 76-141), Investigation 3 (pp. 150-205) <b>Unit 2:</b> CR 1.3 (pp. 36-42), CR 1.6 (pp. 55-62), CR 2.5 (pp. 107-111) <b>Unit 3:</b> 1.1 (pp. 22-30), 1.3 (pp. 41-47), 1.4 (pp. 48-55), 2.5 (pp. 91-99), 3.1 (pp. 127-135), 3.2 (pp. 136-142) <b>Unit 5:</b> 2.4 (pp. 116-122), 2.6 (pp. 131-139) <b>Unit 7:</b> 1.1 (pp. 24-30), 1.2 (pp. 31-37), 1.3 (pp. 38-43)</p>

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<b>Alabama Course of Study Mathematics 2019</b>	<b>Investigations 3 In Number, Data, and Space Grade 1</b>
6. Add and subtract within 20.	<p><b>Unit 1:</b> Investigation 2 (pp. 76-141), Investigation 3 (pp. 150-205)</p> <p><b>Unit 2:</b> 1.1 (pp. 22-29), 1.2 (pp. 30-35), 1.3 (pp. 36-42), 1.4 (pp. 43-47)</p> <p><b>Unit 3:</b> Investigation 1 (pp. 22-55), Investigation 2 (pp. 64-119), Investigation 3 (pp. 127-166), 4.8 (pp. 220-224)</p> <p><b>Unit 4:</b> 1.5 (pp. 51-61), 1.6 (pp. 62-70), 1.7 (pp. 71-75), 1.8 (pp. 76-80), 2.6 (pp. 125-130)</p> <p><b>Unit 5:</b> Investigation 1 (pp. 24-81), Investigation 2 (pp. 90-151), Investigation 3 (pp. 160-206)</p> <p><b>Unit 6:</b> Investigation 1 (pp. 25-101), CR 2.2 (p. 115), 2.3 (pp. 122-128)</p> <p><b>Unit 7:</b> 1.1 (pp. 24-30), 1.2 (pp. 31-37), 1.3 (pp. 38-43), 2.1 (pp. 88-95), 2.2 (pp. 96-103), 2.3 (pp. 104-111), 2.4 (pp. 112-119), 2.5 (pp. 120-127)</p>
a. Demonstrate fluency with addition and subtraction facts with sums or differences to 10 by counting on.	<p><b>Unit 1:</b> Investigation 2 (pp. 76-141), Investigation 3 (pp. 150-205)</p> <p><b>Unit 3:</b> Investigation 1 (pp. 22-55), Investigation 2 (pp. 64-119), Investigation 3 (pp. 127-166), 4.8 (pp. 220-224)</p> <p><b>Unit 4:</b> 1.5 (pp. 51-61), 1.6 (pp. 62-70), 1.7 (pp. 71-75), 1.8 (pp. 76-80), 2.6 (pp. 125-130)</p> <p><b>Unit 5:</b> Investigation 2 (pp. 90-151), Investigation 3 (pp. 160-206)</p> <p><b>Unit 7:</b> 2.2 (pp. 96-103), 2.3 (pp. 104-111), 2.4 (pp. 112-119), 2.5 (pp. 120-127)</p>
b. Demonstrate fluency with addition and subtraction facts with sums or differences to 10 by making ten.	<p><b>Unit 3:</b> Investigation 1 (pp. 22-55), Investigation 2 (pp. 64-119), Investigation 3 (pp. 127-166), 4.8 (pp. 220-224)</p> <p><b>Unit 5:</b> Investigation 1 (pp. 24-81), Investigation 2 (pp. 90-151), Investigation 3 (pp. 160-206)</p> <p><b>Unit 7:</b> 1.1 (pp. 24-30), 1.2 (pp. 31-37), 1.3 (pp. 38-43), 2.1 (pp. 88-95), 2.2 (pp. 96-103), 2.3 (pp. 104-111), 2.4 (pp. 112-119), 2.5 (pp. 120-127)</p>
c. Demonstrate fluency with addition and subtraction facts with sums or differences to 10 by decomposing a number leading to a ten. <i>Example: <math>13 - 4 = 13 - 3 - 1 = 10 - 1 = 9</math></i>	<p><b>Unit 3:</b> Investigation 3 (pp. 127-166), 4.8 (pp. 220-224)</p> <p><b>Unit 7:</b> 1.1 (pp. 24-30), 1.2 (pp. 31-37), 1.3 (pp. 38-43), 2.1 (pp. 88-95), 2.2 (pp. 96-103), 2.3 (pp. 104-111), 2.4 (pp. 112-119), 2.5 (pp. 120-127)</p>



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<p>d. Demonstrate fluency with addition and subtraction facts with sums or differences to 10 by using the relationship between addition and subtraction. <i>Example: Knowing that <math>8 + 4 = 12</math>, one knows <math>12 - 8 = 4</math>.</i></p>	<p><b>Unit 3:</b> Investigation 1 (pp. 22-55), Investigation 2 (pp. 64-119), Investigation 3 (pp. 127-166), 4.8 (pp. 220-224) <b>Unit 5:</b> Investigation 1 (pp. 24-81), Investigation 2 (pp. 90-151), Investigation 3 (pp. 160-206) <b>Unit 6:</b> Investigation 1 (pp. 25-101), CR 2.2 (p. 115), 2.3 (pp. 122-128) <b>Unit 7:</b> 1.1 (pp. 24-30), 1.2 (pp. 31-37), 1.3 (pp. 38-43), 2.1 (pp. 88-95), 2.2 (pp. 96-103), 2.3 (pp. 104-111), 2.4 (pp. 112-119), 2.5 (pp. 120-127)</p>
<p>e. Demonstrate fluency with addition and subtraction facts with sums or differences to 10 by creating equivalent but easier or known sums. <i>Example: adding <math>6 + 7</math> by creating the known equivalent <math>6 + 6 + 1 = 12 + 1 = 13</math></i></p>	<p><b>Unit 3:</b> Investigation 1 (pp. 22-55), Investigation 2 (pp. 64-119), Investigation 3 (pp. 127-166), 4.8 (pp. 220-224) <b>Unit 5:</b> Investigation 1 (pp. 24-81), Investigation 2 (pp. 90-151), Investigation 3 (pp. 160-206) <b>Unit 6:</b> Investigation 1 (pp. 25-101), CR 2.2 (p. 115), 2.3 (pp. 122-128) <b>Unit 7:</b> 1.1 (pp. 24-30), 1.2 (pp. 31-37), 1.3 (pp. 38-43), 2.1 (pp. 88-95), 2.2 (pp. 96-103), 2.3 (pp. 104-111), 2.4 (pp. 112-119), 2.5 (pp. 120-127)</p>
<b>Work with addition and subtraction equations.</b>	
<p>7. Explain that the equal sign means “the same as.” Determine whether equations involving addition and subtraction are true or false. <i>Example: determining which of the following equations are true and which are false: <math>6 = 6</math>, <math>7 = 8 - 1</math>, <math>5 + 2 = 2 + 5</math>, <math>4 + 1 = 5 + 2</math></i></p>	<p><b>Unit 1:</b> 2.2 (pp. 85-94), 2.4 (pp. 103-111), 2.5 (pp. 112-120), 2.6 (pp. 121-127), 3.2 (pp. 160-166), 3.4 (pp. 175-182) <b>Unit 3:</b> 1.2 (pp. 31-40), 2.5 (pp. 91-99), 2.6 (pp. 100-108), 2.7 (pp. 109-113), 2.8 (pp. 114-119), Investigation 3 (pp. 127-166), 4.8 (pp. 220-224) <b>Unit 5:</b> 2.1 (pp. 90-97), 2.3 (pp. 108-115), 2.5 (pp. 123-130), 2.7 (pp. 140-147), 2.8 (pp. 148-151), 3.1 (pp. 160-166), 3.6 (pp. 196-202)</p>
<p>8. Solve for the unknown whole number in various positions in an addition or subtraction equation, relating three whole numbers that would make it true. <i>Example: determining the unknown number that makes the equation true in each of the equations <math>8 + ? = 11</math>, <math>5 = ? - 3</math>, and <math>6 + 6 = ?</math></i></p>	<p><b>Unit 1:</b> 2.3 (pp. 95-102), 2.5 (pp. 112-120), 2.6 (pp. 121-127), 2.7 (pp. 128-133), 2.8 (pp. 134-141), 3.2 (pp. 160-166), 3.3 (pp. 167-174), 3.4 (pp. 175-182), 3.6 (pp. 189-197), 3.7 (pp. 198-205) <b>Unit 3:</b> 1.1 (pp. 22-30), 1.3 (pp. 41-47), 1.4 (pp. 48-55) <b>Unit 4:</b> CR 1.6 (p. 63) <b>Unit 5:</b> 1.2 (pp. 34-41), CR 1.3 (p. 43), 1.4 (pp. 49-55), 1.5 (pp. 56-63), 1.6 (pp. 64-71), 1.7 (pp. 72-77), 1.8 (pp. 78-81), 2.1 (pp. 90-97), 2.2 (pp. 98-107), 2.3 (pp. 108-115), 2.4 (pp. 116-122), 2.6 (pp. 131-139), Investigation 3 (pp. 160-206) <b>Unit 7:</b> 1.6 (pp. 60-67), 1.7 (pp. 68-73), 1.8 (pp. 74-79)</p>

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Alabama Course of Study Mathematics 2019	Investigations 3 In Number, Data, and Space Grade 1
<b>Understand simple patterns.</b>	
9. Reproduce, extend, and create patterns and sequences of numbers using a variety of materials.	<b>Unit 3:</b> 4.3 (pp. 188-194), 4.4 (pp. 195-200), 4.5 (pp. 201-206), 4.7 (pp. 214-219), 4.8 (pp. 220-224), Differentiation in Investigation 4, (pp. 225-227)
<b>Operations with Numbers: Base Ten</b>	
<b>Extend the counting sequence.</b>	
10. Extend the number sequence from 0 to 120.	<b>Unit 1:</b> Investigation 1 (pp. 23-67), 3.6 (pp. 189-197) <b>Unit 3:</b> Investigation 4 (pp. 176-224) <b>Unit 7:</b> 1.3 (pp. 38-43), 1.4 (pp. 44-53), 1.5 (pp. 54-59), 1.6 (pp. 60-67), 1.7 (pp. 68-73), 1.8 (pp. 74-79), Investigation 2 (pp. 88-144), Investigation 3 (pp. 154-211)
a. Count forward and backward by ones, starting at any number less than 120.	<b>Unit 1:</b> Investigation 1 (pp. 23-67), 3.6 (pp. 189-197) <b>Unit 2:</b> 2.3 (pp. 94-100) <b>Unit 3:</b> Investigation 1 (pp. 20-59), Investigation 4 (pp. 176-224) <b>Unit 7:</b> 1.3 (pp. 38-43), 1.4 (pp. 44-53), 1.5 (pp. 54-59), 1.6 (pp. 60-67), 1.7 (pp. 68-73), 1.8 (pp. 74-79), Investigation 2 (pp. 88-144), Investigation 3 (pp. 154-211)
b. Read numerals from 0 to 120.	<b>Unit 1:</b> Investigation 1 (pp. 23-67), Investigation 2 (pp. 76-141), Investigation 3 (pp. 150-205) <b>Unit 2:</b> CR 1.3 (pp. 36-42), CR 1.6 (pp. 55-62), CR 2.5 (pp. 107-111) <b>Unit 3:</b> Investigation 2 (pp. 64-119), Investigation 4 (pp. 176-224) <b>Unit 5:</b> Investigation 1 (pp. 24-81) <b>Unit 7:</b> Investigation 1 (pp. 24-79), Investigation 2 (pp. 88-144), Investigation 3 (pp. 154-211)
c. Write numerals from 0 to 120.	<b>Unit 1:</b> Investigation 1 (pp. 23-67), Investigation 2 (pp. 76-141), Investigation 3 (pp. 150-205) <b>Unit 2:</b> CR 1.3 (pp. 36-42), CR 1.6 (pp. 55-62), CR 2.5 (pp. 107-111) <b>Unit 3:</b> Investigation 2 (pp. 64-119), Investigation 4 (pp. 176-224) <b>Unit 5:</b> Investigation 1 (pp. 24-81) <b>Unit 7:</b> Investigation 1 (pp. 24-79), Investigation 2 (pp. 88-144), Investigation 3 (pp. 154-211)

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d. Represent a number of objects from 0 to 120 with a written numeral.	<p><b>Unit 1:</b> Investigation 1 (pp. 23-67), Investigation 2 (pp. 76-141), Investigation 3 (pp. 150-205)</p> <p><b>Unit 2:</b> CR 1.3 (pp. 36-42), CR 1.6 (pp. 55-62), CR 2.5 (pp. 107-111)</p> <p><b>Unit 3:</b> Investigation 2 (pp. 64-119), Investigation 4 (pp. 176-224)</p> <p><b>Unit 5:</b> Investigation 1 (pp. 24-81)</p> <p><b>Unit 7:</b> Investigation 1 (pp. 24-79), Investigation 2 (pp. 88-144), Investigation 3 (pp. 154-211)</p>
<b>Understand place value.</b>	
11. Explain that the two digits of a two-digit number represent amounts of tens and ones.	<p><b>Unit 1:</b> 1.3 (pp. 44-51), 1.4 (pp. 52-58), 1.5 (pp. 59-67)</p> <p><b>Unit 3:</b> CR 1.1 (p. 23), 1.2 (pp. 31-40), CR 1.3 (p. 42), 1.4 (pp. 48-55), CR 2.1 (p. 65), 2.4 (pp. 84-90), CR 2.8 (p. 115), CR 3.5 (p. 158), 4.1 (pp. 176-181), CR 4.2 (p. 183), 4.4 (pp. 195-200), CR 4.6 (p. 208)</p> <p><b>Unit 5:</b> CR 1.4 (p. 50), CR 1.6 (p. 65), 2.1 (pp. 90-97), 2.1 (pp. 90-97), CR 2.2 (p. 99), 2.3 (pp. 108-115), CR 2.6 (p. 132)</p> <p><b>Unit 6:</b> 1.1 (pp. 25-33)</p> <p><b>Unit 7:</b> 1.3 (pp. 38-43), 1.4 (pp. 44-53), 1.5 (pp. 54-59), 1.6 (pp. 60-67), 1.7 (pp. 68-73), 1.8 (pp. 74-79), Investigation 2 (pp. 88-144), Investigation 3 (pp. 154-211)</p>
a. Identify a bundle of ten ones as a “ten.”	<p><b>Unit 3:</b> 1.2 (pp. 31-40), 1.4 (pp. 48-55), 2.4 (pp. 84-90), 4.1 (pp. 176-181), CR 4.2 (p. 183), CR 4.4 (p. 196), CR 4.6 (p. 208)</p> <p><b>Unit 4:</b> CR 1.2, CR 1.4, CR 1.6, CR 2.3</p> <p><b>Unit 5:</b> CR 1.4 (p. 50), CR 1.6 (p. 65), 2.1 (pp. 90-97), CR 2.2 (p. 99), 2.3 (pp. 108-115), CR 2.6 (p. 132)</p> <p><b>Unit 6:</b> 1.1 (pp. 25-33)</p> <p><b>Unit 7:</b> 1.3 (pp. 38-43), 1.4 (pp. 44-53), 1.5 (pp. 54-59), 1.6 (pp. 60-67), 1.7 (pp. 68-73), 1.8 (pp. 74-79), Investigation 2 (pp. 88-144), Investigation 3 (pp. 154-211)</p>
b. Identify the numbers from 11 to 19 as composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.	<p><b>Unit 1:</b> 1.3 (pp. 44-51), 1.4 (pp. 52-58), 1.5 (pp. 59-67)</p> <p><b>Unit 3:</b> CR 1.1 (p. 23), 1.2 (pp. 31-40), CR 1.3 (p. 42), 1.4 (pp. 48-55), CR 2.1 (p. 65), 2.4 (pp. 84-90)</p> <p><b>Unit 5:</b> 2.1 (pp. 90-97), 2.3 (pp. 108-115)</p>

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c. Identify the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 as one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).	<b>Unit 3:</b> CR 1.1 (p. 23), 1.4 (pp. 48-55), CR 2.1 (p. 65), CR 2.4 (p. 85), CR 2.8 (p. 115), CR 3.5 (p. 158), CR 4.2 (p. 183), 4.4 (pp. 195-200), CR 4.6 (p. 208) <b>Unit 5:</b> CR 1.4 (p. 50), CR 1.6 (p. 65), CR 2.2 (p. 99), CR 2.6 (p. 132) <b>Unit 6:</b> 1.1 (pp. 25-33) <b>Unit 7:</b> 1.3 (pp. 38-43), 1.4 (pp. 44-53), 1.5 (pp. 54-59), 1.6 (pp. 60-67), 1.7 (pp. 68-73), 1.8 (pp. 74-79), Investigation 2 (pp. 88-144), Investigation 3 (pp. 154-211)
12. Compare pairs of two-digit numbers based on the values of the tens and ones digits, recording the results of comparisons with the symbols $>$ , $=$ , and $<$ and orally with the words “is greater than,” “is equal to,” and “is less than.”	<b>Unit 1:</b> 2.5 (pp. 112-120), 3.6 (pp. 189-197) <b>Unit 3:</b> 3.3 (pp. 143-149), 3.4 (pp. 150-156) <b>Unit 7:</b> 1.6 (pp. 60-67), 2.2 (pp. 96-103), 2.4 (pp. 112-119), 2.5 (pp. 120-127), 2.6 (pp. 128-135), 2.7 (pp. 136-140), 2.8 (pp. 141-144)
<b>Use place value understanding and properties of operations to add and subtract.</b>	
13. Add within 100, using concrete models or drawings and strategies based on place value.	<b>Unit 7:</b> 1.2 (pp. 31-37), 1.3 (pp. 38-43), 1.4 (pp. 44-53), 1.5 (pp. 54-59), 1.7 (pp. 68-73), 1.8 (pp. 74-79), 2.3 (pp. 104-111), 2.4 (pp. 112-119), 2.5 (pp. 120-127), 2.6 (pp. 128-135), 2.7 (pp. 136-140), 2.8 (pp. 141-144), Investigation 3 (pp. 154-211)
a. Add a two-digit number and a one-digit number.	<b>Unit 7:</b> 2.3 (pp. 104-111), 2.4 (pp. 112-119), 2.5 (pp. 120-127), 2.6 (pp. 128-135), 2.7 (pp. 136-140), 2.8 (pp. 141-144), Investigation 3 (pp. 154-211)
b. Add a two-digit number and a multiple of 10.	<b>Unit 7:</b> 1.2 (pp. 31-37), 1.3 (pp. 38-43), 1.4 (pp. 44-53), 1.5 (pp. 54-59), 1.7 (pp. 68-73), 1.8 (pp. 74-79), 2.3 (pp. 104-111), 2.4 (pp. 112-119), 2.5 (pp. 120-127), 2.6 (pp. 128-135), 2.7 (pp. 136-140), 2.8 (pp. 141-144), Investigation 3 (pp. 154-211)
c. Demonstrate that in adding two-digit numbers, tens are added to tens, ones are added to ones, and sometimes it is necessary to compose a ten.	<b>Unit 7:</b> 1.2 (pp. 31-37), 1.3 (pp. 38-43), 1.4 (pp. 44-53), 1.5 (pp. 54-59), 1.7 (pp. 68-73), 1.8 (pp. 74-79), Investigation 3 (pp. 154-211)
d. Relate the strategy for adding a two-digit number and a one-digit number to a written method and explain the reasoning used.	<b>Unit 7:</b> 2.3 (pp. 104-111), 2.4 (pp. 112-119), 2.5 (pp. 120-127), 2.6 (pp. 128-135), 2.7 (pp. 136-140), 2.8 (pp. 141-144), Investigation 3 (pp. 154-211)

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14. Given a two-digit number, mentally find 10 more or 10 less than the number without having to count, and explain the reasoning used.	<b>Unit 7:</b> 1.3 (pp. 38-43), 1.4 (pp. 44-53), 1.5 (pp. 54-59), 1.6 (pp. 60-67), 1.8 (pp. 74-79), 2.5 (pp. 120-127), 2.6 (pp. 128-135), 2.7 (pp. 136-140), 2.8 (pp. 141-144), Investigation 3 (pp. 154-211)
15. Subtract multiples of 10 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. Relate the strategy to a written method and explain the reasoning used.	<b>Unit 7:</b> 1.6 (pp. 60-69), 1.7 (pp. 68-73), 1.8 (pp. 74-79)
<b>Data Analysis</b>	
<b>Collect and analyze data and interpret results.</b>	
16. Organize, represent, and interpret data with up to three categories.	<b>Unit 1:</b> 1.5 (pp. 59-67) <b>Unit 2:</b> Investigation 2 (pp. 77-111) <b>Unit 3:</b> 4.1 (pp. 176-182) <b>Unit 6:</b> Investigation 1 (pp. 25-101), Investigation 2 (pp. 108-128)
a. Ask and answer questions about the total number of data points in organized data.	<b>Unit 3:</b> 4.1 (pp. 176-182) <b>Unit 6:</b> Investigation 1 (pp. 25-101), Investigation 2 (pp. 108-128)
b. Summarize data on Venn diagrams, pictographs, and "yes-no" charts using real objects, symbolic representations, or pictorial representations.	<b>Unit 6:</b> 1.3 (pp. 43-49), 1.5 (pp. 60-66), 2.1 (pp. 108-113), 2.2 (pp. 114-121)
c. Determine "how many" in each category using up to three categories of data.	<b>Unit 3:</b> 4.1 (pp. 176-182) <b>Unit 6:</b> Investigation 1 (pp. 25-101), Investigation 2 (pp. 108-128)
d. Determine "how many more" or "how many less" are in one category than in another using data organized into two or three categories.	<b>Unit 6:</b> Investigation 1 (pp. 25-101), Investigation 2 (pp. 108-128)
<b>Measurement</b>	
<b>Describe and compare measurable attributes.</b>	
17. Order three objects by length; compare the lengths of two objects indirectly by using a third object.	<b>Unit 4:</b> 1.1 (pp. 24-31), 1.2 (pp. 32-37), 1.3 (pp. 38-43)

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18. Determine the length of an object using non-standard units with no gaps or overlaps, expressing the length of the object with a whole number.	<b>Unit 4:</b> 1.3 (pp. 38-43), 1.4 (pp. 44-50), 1.5 (pp. 51-61), 1.6 (pp. 62-70), 1.7 (pp. 71-75)
<b>Work with time and money.</b>	
19. Tell and write time to the hours and half hours using analog and digital clocks.	<b>Unit 1:</b> 1.4 (pp. 52-58) <b>Unit 4:</b> CR 1.1 (p. 25), 1.2 (pp. 32-37), CR 1.3 (p. 39), CR 1.5 (p. 52), CR 1.7 (p. 72), 2.1 (pp. 89-99), 2.5 (pp. 120-124), 2.6 (pp. 125-130) <b>Unit 5:</b> CR 1.1 (p. 25), CR 1.7 (p. 73), CR 2.4 (p. 117), CR 2.8 (p. 149) <b>Unit 8:</b> 1.6 (pp. 54-59)
20. Identify pennies and dimes by name and value.	For related content, please see: <b>Unit 1:</b> 1.3 (pp. 44-51), 1.4 (pp. 52-58), 1.5 (pp. 59-67), CR 2.1 (p. 77), CR 2.6 (p. 122), 3.5 (pp. 183-188), CR 3.6 (p. 190) <b>Unit 5:</b> 3.2 (pp. 167-173), 3.3 (pp. 174-180), 3.4 (pp. 181-187), 3.5 (pp. 188-195), 3.6 (pp. 196-202), 3.7 (pp. 203-206) <b>Unit 6:</b> CR 1.3 (p. 43), CR 1.5 (p. 61), CR 2.2 (p. 115), CR 2.3 (p. 123) <b>Unit 7:</b> CR 1.1 (p. 25), CR 1.2 (p. 32), CR 1.3 (p. 39), CR 3.4 (p. 178)
<b>Geometry</b>	
<b>Reason with shapes and their attributes.</b>	
<b>Note: Students do not need to learn formal names such as “right rectangular prism.”</b>	
21. Build and draw shapes which have defining attributes.	<b>Unit 2:</b> 1.1 (pp. 22-29), 1.2 (pp. 30-35), 1.3 (pp. 36-42), 1.4 (pp. 43-47), 1.6 (pp. 55-62), 1.7 (pp. 63-68), Investigation 2 (pp. 77-111) <b>Unit 4:</b> CR 1.8 (p. 77), CR 2.1 (p. 90), 2.2 (pp. 100-106), 2.3 (pp. 107-113), CR 2.4 (p. 115), CR 2.5 (p. 121), CR 2.6 (p. 126) <b>Unit 8:</b> Investigation 1 (pp. 23-77)
a. Distinguish between defining attributes and non-defining attributes. <i>Examples: Triangles are closed and three-sided, which are defining attributes; color, orientation, and overall size are non-defining attributes.</i>	<b>Unit 2:</b> 1.1 (pp. 22-29), 1.2 (pp. 30-35), 1.3 (pp. 36-42), 1.4 (pp. 43-47), 1.6 (pp. 55-62), 1.7 (pp. 63-68), Investigation 2 (pp. 77-111) <b>Unit 4:</b> CR 1.8 (p. 77), CR 2.1 (p. 90), 2.2 (pp. 100-106), 2.3 (pp. 107-113), CR 2.4 (p. 115), CR 2.5 (p. 121), CR 2.6 (p. 126) <b>Unit 8:</b> Investigation 1 (pp. 23-77)

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22. Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.	<b>Unit 1:</b> Investigation 1 (pp. 23-67) <b>Unit 2:</b> Investigation 1 (pp. 22-68) <b>Unit 4:</b> CR 1.8 (p. 77), CR 2.1 (p. 90), 2.2 (pp. 100-106), 2.3 (pp. 107-113), 2.4 (pp. 114-119), 2.5 (pp. 120-124), CR 2.6 (p. 126)
23. Partition circles and rectangles into two and four equal shares and describe the shares using the words <i>halves</i> , <i>fourths</i> , and <i>quarters</i> , and use the phrases <i>half of</i> , <i>fourth of</i> , and <i>quarter of</i> .	<b>Unit 4:</b> Investigation 2 (pp. 89-130)
a. Describe “the whole” as two of or four of the shares of circles and rectangles partitioned into two or four equal shares.	<b>Unit 4:</b> Investigation 2 (pp. 89-130)
b. Explain that decomposing into more equal shares creates smaller shares of circles and rectangles.	<b>Unit 4:</b> Investigation 2 (pp. 89-130)

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