Correlation

The following is a correlation of *Investigations 3* to the Common Core State Standards for Mathematics. Assessment Benchmarks are included with their associated standards.

Common Core State Standards for Mathematics Grade 1	Grade 1 *Investigations 3*
Operations and Algebraic Thinking 1.OA	
Represent and solve problems involving addition and subtraction.	
1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	**Unit 1** 2.3, 2.4, 2.6, 2.7, 2.8, 3.1, 3.2, 3.4, 3.5, 3.6, 3.7 **Benchmark 3:** Determine which of two pairs of numbers to 10 is greater. **Benchmark 4:** Solve a take from story problem with result unknown. **Benchmark 5:** Solve an add to story problem with result unknown. **Benchmark 6:** Solve a put together story problem with total unknown. **Unit 3** 2.1, 2.4, 2.6, 2.7, 2.8, 3.1, 3.2, 3.6 **Benchmark 3:** Find at least 5 solutions to a put together/take apart problem with both addends unknown. **Unit 4** 1.5, 1.6, 1.7, 1.8, 2.6 **Benchmark 5:** Solve comparison problems with the difference unknown (how many more, and how many fewer). **Unit 5** 1.1, 1.5, 1.6, 1.7, 1.8, 2.3, 2.4, 2.6, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 **Benchmark 1:** Fluency with addition and subtraction within 10. **Benchmark 2:** Solve a put together/take apart problem with one addend unknown. **Benchmark 5:** Solve add to and take from problems with unknown change. **Unit 6** Investigation 1, 2.3 **Benchmark 1:** Represent and describe a set of data with two or three categories (e.g., how many are in each group, which group has more/how many more, and how many people responded to the survey). **Benchmark 2:** Solve comparison story problems with bigger or smaller unknown. **Unit 7** CR 1.1, CR 1.2, CR 1.3

CR = Classroom Routine

Common Core State Standards for Mathematics Grade 1	Grade 1 *Investigations 3*
1.OA.A.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	**Unit 2** 1.3 **Unit 3** CR 2.3, CR 2.5, 3.1, CR 3.1, CR 3.2, CR 3.4, 3.6, CR 3.6 **Benchmark 4:** Solve story problems with 3 addends. **Benchmark 6:** Represent numbers with equivalent expressions. **Unit 6** Investigation 2 **Unit 7** 1.1, 1.2
Understand and apply properties of operations and the relationship between addition and subtraction.	
1.OA.B.3 Apply properties of operations as strategies to add and subtract. *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)*	**Unit 1** 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 3.1, 3.2, 3.4, 3.5, 3.6, 3.7 **Benchmark 3:** Determine which of two pairs of numbers to 10 is greater. **Benchmark 4:** Solve a take from story problem with result unknown. **Benchmark 5:** Solve an add to story problem with result unknown. **Benchmark 6:** Solve a put together story problem with total unknown. **Unit 2** 1.3 **Unit 3** 1.1, 2.1, 2.4, 2.5, 2.6, 2.7, 3.1, 3.2, 3.3, 3.4, 3.6, 4.8 **Benchmark 3:** Find at least 5 solutions to a put together/take apart problem with both addends unknown. **Benchmark 4:** Solve story problems with 3 addends. **Benchmark 6:** Represent numbers with equivalent expressions. **Unit 4** 1.5, 1.6, 1.7, 1.8, 2.6 **Benchmark 5:** Solve comparison problems with the difference unknown (how many more, and how many fewer). **Unit 5** Investigation 1, Investigation 2, Investigation 3 **Benchmark 1:** Fluency with addition and subtraction within 10. **Benchmark 2:** Solve a put together/take apart problem with one addend unknown. **Benchmark 5:** Solve add to and take from problems with unknown change.

CR = Classroom Routine

Common Core State Standards for Mathematics Grade 1	Grade 1 *Investigations 3*
1.OA.B.4 Understand subtraction as an unknown-addend problem. *For example, subtract 10 − 8 by finding the number that makes 10 when added to 8.*	**Unit 1** 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 **Benchmark 4:** Solve a take from story problem with result unknown. **Unit 3** 1.3, 2.2, 2.3, 2.7 **Unit 4** 1.5, 1.6, 1.7, 1.8, 2.6 **Benchmark 5:** Solve comparison problems with the difference unknown (how many more, and how many fewer). **Unit 5** 1.1, 1.5, 1.6, 1.7, 1.8, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 **Benchmark 1:** Fluency with addition and subtraction within 10. **Benchmark 2:** Solve a put together/take apart problem with one addend unknown. **Benchmark 3:** Understand the meaning of the equal sign. **Benchmark 4:** Determine the unknown in an addition or subtraction equation relating 3 numbers (e.g., $5 + \text{\underline{\hphantom{xx}}} = 8$). **Benchmark 5:** Solve add to and take from problems with unknown change. **Unit 6** CR 1.3, CR 1.5, CR 2.2, CR 2.3
Add and subtract within 20.	
1.OA.C.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).	**Unit 1** 1.4, 1.5, Investigation 2, Investigation 3 **Benchmark 1:** Understand that you can count on/back to add/subtract 1 or 2. **Benchmark 2:** Fluency with $+1$, $+2$, $−1$, $−2$ facts. **Unit 2** CR 1.3, CR 1.6, CR 2.5 **Unit 3** 1.1, 1.3, 1.4, 2.5, 3.1, 3.2 **Benchmark 1:** Understand that you can count on/back to add/subtract. **Unit 5** 2.4, 2.6 **Unit 7** 1.1, 1.2, 1.3

CR = Classroom Routine

Common Core State Standards for Mathematics Grade 1	Grade 1 *Investigations 3*
1.OA.C.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).	**Unit 1** Investigation 2, Investigation 3 **Benchmark 1:** Understand that you can count on/back to add/subtract 1 or 2. **Benchmark 2:** Fluency with $+1$, $+2$, -1, -2 facts. **Benchmark 3:** Determine which of two pairs of numbers to 10 is greater. **Benchmark 4:** Solve a take from story problem with result unknown. **Benchmark 5:** Solve an add to story problem with result unknown. **Benchmark 6:** Solve a put together story problem with total unknown. **Unit 2** 1.1, 1.2, 1.3, 1.4 **Unit 3** Investigation 1, Investigation 2, Investigation 3, 4.8 **Benchmark 3:** Find at least 5 solutions to a put together/take apart problem with both addends unknown. **Benchmark 6:** Represent numbers with equivalent expressions. **Unit 4** 1.5, 1.6, 1.7, 1.8, 2.6 **Benchmark 5:** Solve comparison problems with the difference unknown (how many more, and how many fewer). **Unit 5** Investigation 1, Investigation 2, Investigation 3 **Benchmark 1:** Fluency with addition and subtraction within 10. **Benchmark 2:** Solve a put together/take apart problem with one addend unknown. **Benchmark 5:** Solve add to and take from problems with unknown change. **Unit 6** Investigation 1, 2.3 **Benchmark 1:** Represent and describe a set of data with two or three categories (e.g., how many are in each group, which group has more/how many more, and how many people responded to the survey). **Benchmark 2:** Solve comparison story problems with bigger or smaller unknown. **Unit 7** 1.1, 1.2, 1.3, 2.1, 2.2, 2.4, 2.5

CR = Classroom Routine

Common Core State Standards for Mathematics Grade 1	Grade 1 *Investigations 3*
Work with addition and subtraction equations.	
1.OA.D.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.	**Unit 1** 2.2, 2.4, 2.5, 2.6, 3.2, 3.4 **Unit 3** 1.2, 2.5, 2.6, 2.7, 2.8, Investigation 3, 4.8 **Benchmark 6:** Represent numbers with equivalent expressions. **Unit 5** 2.1, 2.3, 2.5, 2.7, 2.8, 3.1, 3.6 **Benchmark 3:** Understand the meaning of the equal sign. **Benchmark 4:** Determine the unknown in an addition or subtraction equation relating 3 numbers (e.g., $5 +$ _____ $= 8$).
1.OA.D.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = \square - 3$, $6 + 6 = \square$.*	**Unit 1** 2.3, 2.5, 2.6, 2.7, 2.8, 3.2, 3.3, 3.4, 3.6, 3.7 **Benchmark 1:** Understand that you can count on/back to add/subtract 1 or 2. **Benchmark 2:** Fluency with $+1$, $+2$, -1, -2 facts. **Unit 3** 1.1, 1.3, 1.4 **Unit 4** CR 1.2, CR 1.4, 1.6, CR 1.6, CR 2.3 **Unit 5** 1.2, 1.4, 1.5, 1.6, 1.7, 1.8, 2.1, 2.2, 2.3, 2.4, 2.6, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 **Benchmark 3:** Understand the meaning of the equal sign. **Benchmark 4:** Determine the unknown in an addition or subtraction equation relating 3 numbers (e.g., $5 +$ _____ $= 8$). **Unit 7** 1.6, 1.7, 1.8
Number and Operations in Base Ten 1.NBT	
Extend the counting sequence.	
1.NBT.A.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.	**Unit 1** Investigation 1, 3.6 **Unit 2** 2.3 **Unit 3** Investigation 4 **Benchmark 5:** Rote count, read, and write numbers to 120. **Unit 4** CR 1.2, CR 1.4, CR 1.6, CR 2.3 **Unit 5** CR 1.5, CR 1.8, CR 2.1, CR 2.3, CR 2.5, CR 2.7, CR 3.1, CR 3.3, CR 3.4, CR 3.5, CR 3.6, CR 3.7 **Unit 6** CR 1.3, CR 1.5, CR 2.2, CR 2.3 **Unit 7** 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, Investigation 2, Investigation 3 **Benchmark 1:** Understand that the multiples of 10 through 90 refer to 1–9 tens and 0 ones. **Benchmark 2:** Use a numeral to represent a number of objects organized into tens and ones and, given a numeral, represent it with tens and ones.

CR = Classroom Routine

Common Core State Standards for Mathematics Grade 1	Grade 1 *Investigations 3*
Understand place value.	
1.NBT.B.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:	
1.NBT.B.2a 10 can be thought of as a bundle of ten ones—called a "ten."	**Unit 3** 1.2, 1.4, 2.4, 4.1 **Benchmark 2:** Understand ten ones and one ten, and the teen numbers as one ten and some number of ones. **Unit 4** CR 1.2, CR 1.4, CR 1.6, CR 2.3 **Unit 5** CR 1.4, CR 1.6, 2.1, CR 2.2, 2.3, CR 2.6, CR 3.3, CR 3.4, CR 3.5 **Unit 6** 1.1, CR 1.1, CR 1.2, CR 1.4, CR 1.6, CR 1.7, CR 1.9 **Unit 7** 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, Investigation 2, Investigation 3
1.NBT.B.2b The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.	**Unit 1** 1.3, 1.4, 1.5 **Unit 2** CR 1.3, CR 1.6, CR 2.5 **Unit 3** 1.2, 1.4, 2.4 **Benchmark 2:** Understand ten ones and one ten, and the teen numbers as one ten and some number of ones. **Unit 4** CR 1.2, CR 2.3 **Unit 5** 2.1, 2.3, CR 3.3, CR 3.4, CR 3.5
1.NBT.B.2c The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).	**Unit 3** 1.4, CR 2.1, CR 2.4, CR 2.8, CR 3.5, CR 4.2, 4.4, CR 4.4, CR 4.6 **Unit 4** CR 1.4, CR 1.6, CR 2.3 **Unit 5** CR 1.4, CR 1.6, CR 2.2, CR 2.6 **Unit 6** 1.1, CR 1.1, CR 1.2, CR 1.4, CR 1.6, CR 1.7, CR 1.9 **Unit 7** 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, Investigation 2, Investigation 3 **Benchmark 1:** Understand that the multiples of 10 through 90 refer to 1–9 tens and 0 ones. **Benchmark 2:** Use a numeral to represent a number of objects organized into tens and ones and, given a numeral, represent it with tens and ones.

Common Core State Standards for Mathematics Grade 1	Grade 1 *Investigations 3*
1.NBT.B.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.	**Unit 1** 2.5, 3.6, CR 3.7 **Unit 2** CR 1.1, CR 1.2, CR 1.5, CR 1.7, CR 2.2 **Unit 3** CR 1.2, CR 1.3, CR 2.1, CR 2.2, CR 2.4, CR 2.6, CR 2.8, 3.3, CR 3.3, 3.4, 3.5, CR 4.1, CR 4.2, CR 4.4, CR 4.5, CR 4.6, CR 4.7, CR 4.8 **Unit 4** CR 1.2, CR 1.4, CR 1.6, CR 2.3 **Unit 7** 1.6, 2.2, 2.4, 2.5, 2.6, 2.7, 2.8 **Benchmark 2:** Use a numeral to represent a number of objects organized into tens and ones and, given a numeral, represent it with tens and ones. **Benchmark 4:** Use standard notation ($<$, $>$) to represent the comparison of two 2-digit numbers.
Use place value understanding and properties of operations to add and subtract.	
1.NBT.C.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, 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. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.	**Unit 7** 1.2, 1.3, 1.4, 1.5, 1.7, 1.8, Investigation 3 **Benchmark 5:** Add or subtract 10 to/from any 2-digit number. **Benchmark 6:** Add within 100 using concrete models that represent tens and ones.
1.NBT.C.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.	**Unit 7** 1.3, 1.4, 1.5, 1.6, 1.8, 2.5, 2.6, 2.7, 2.8, Investigation 3 **Benchmark 1:** Understand that the multiples of 10 through 90 refer to 1–9 tens and 0 ones. **Benchmark 2:** Use a numeral to represent a number of objects organized into tens and ones and, given a numeral, represent it with tens and ones. **Benchmark 3:** Subtract multiples of 10 from multiples of 10 using concrete models that represent tens and ones. **Benchmark 4:** Use standard notation ($<$, $>$) to represent the comparison of two 2-digit numbers. **Benchmark 5:** Add or subtract 10 to/from any 2-digit number.

CR = Classroom Routine

Common Core State Standards for Mathematics Grade 1	Grade 1 *Investigations 3*
1.NBT.C.6 Subtract multiples of 10 in the range 10–90 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.	**Unit 7** 1.6, 1.7, 1.8 **Benchmark 1:** Understand that the multiples of 10 through 90 refer to 1–9 tens and 0 ones. **Benchmark 2:** Use a numeral to represent a number of objects organized into tens and ones and, given a numeral, represent it with tens and ones. **Benchmark 3:** Subtract multiples of 10 from multiples of 10 using concrete models that represent tens and ones. **Benchmark 5:** Add or subtract 10 to/from any 2-digit number.

Measurement and Data   1.MD

Measure lengths indirectly and by iterating length units.

1.MD.A.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.	**Unit 4** 1.1, 1.2, 1.3 **Benchmark 1:** Compare the lengths of two objects indirectly by using a third length.
1.MD.A.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*	**Unit 4** 1.3, 1.4, 1.5, 1.6, 1.7 **Benchmark 2:** Demonstrate accurate measuring techniques when measuring an object or distance with multiples units. These techniques include starting at the beginning, ending at the end, leaving no gaps or overlaps, measuring in a straight line, and keeping track of the number of units.

Tell and write time.

1.MD.B.3 Tell and write time in hours and half-hours using analog and digital clocks.	**Unit 1** CR 2.3 **Unit 3** CR 1.4, CR 2.7, CR 4.3 **Unit 4** 1.2, 2.1, 2.5 **Benchmark 3:** Tell time to the hour. **Unit 5** CR 1.1, CR 1.7, CR 2.4, CR 2.8, CR 3.2 **Unit 6** CR 1.8, CR 2.1 **Unit 7** CR 2.1, CR 3.3 **Unit 8** CR 1.1, CR 1.3, CR 1.5, 1.6, CR 1.6 **Benchmark 4:** Tell time to the half hour.

Common Core State Standards for Mathematics Grade 1	Grade 1 *Investigations 3*
Represent and interpret data.	
1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	**Unit 1** 1.5 **Unit 2** 2.1, 2.2, 2.3, 2.4 **Unit 3** 4.1 **Unit 6** Investigation 1, Investigation 2 **Benchmark 1:** Represent and describe a set of data with two or three categories (e.g., how many are in each group, which group has more/how many more, and how many people responded to the survey). **Benchmark 2:** Solve comparison story problems with bigger or smaller unknown.
Geometry 1.G	
Reason with shapes and their attributes.	
1.G.A.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.	**Unit 2** 1.1, 1.2, 1.3, 1.4, 1.6, 1.7, Investigation 2 **Benchmark 1:** Compose and decompose shapes in different ways. **Benchmark 2:** Build and draw familiar 2-D shapes. **Benchmark 3:** Use geometric language to describe and identify important attributes, and use those attributes to sort familiar 2-D shapes. **Unit 4** CR 1.8, CR 2.1, 2.2, CR 2.2, 2.3, CR 2.4, CR 2.5, CR 2.6 **Unit 8** Investigation 1 **Benchmark 1:** Use geometric language to describe and identify defining attributes of familiar 3-D shapes. **Benchmark 3:** Match a 2-D representation of a 3-D shape to the outline of one of its faces.
1.G.A.2 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.	**Unit 1** Investigation 1 **Unit 2** Investigation 1 **Benchmark 1:** Compose and decompose shapes in different ways. **Unit 4** 2.2, 2.3, 2.4, 2.5 **Unit 8** 1.3, 1.5, 1.6, 1.7, 1.8, 1.9 **Benchmark 2:** Compose 3-D shapes.
1.G.A.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves, fourths,* and *quarters,* and use the phrases *half of, fourth of,* and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.	**Unit 4** Investigation 2 **Benchmark 4:** Understand that halves or fourths (quarters) apply to wholes divided into two (four) equal parts; partition circles and rectangles into two and four equal parts.

CR = Classroom Routine