***Bristol Public Schools***

**Office of Teaching & Learning**

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| **Department** | Mathematics |
| **Department Philosophy** | *Students learn by doing math, solving problems in mathematical and real-world contexts, and constructing arguments using precise language.* The Bristol mathematics curricula embeds this *learn-by-doing* philosophy by focusing on high expectations for all students and providing students with opportunities that build conceptual understanding, computational and procedural fluency, and problem solving through the use of a variety of strategies, tools, and technologies. The mathematics curriculum is responsive to the individual needs of students, while providing a structure tied to the Common Core State Standards in Connecticut.<br><br>The *learn-by-doing* philosophy develops mathematically literate and productive students who can effectively and efficiently apply mathematics in their lives to make informed decisions about the world around them by doing math. To be mathematically literate, one must understand major mathematics concepts, possess computational facility, and have the ability to apply these understandings to situations in daily life. Making connections between mathematics and other disciplines is key to the appropriate application of mathematics skills and concepts to solve problems. The ability to read, discuss, and write within the discipline of mathematics is an integral skill that supports mathematical understanding, reasoning and communication. The opportunity to think critically and creatively to solve problems is important to deepen mathematical knowledge and foster innovation. A rich hands-on mathematical experience is essential to provide the foundational knowledge and skills that prepare students to be mathematically literate, productive citizens. |
| **Course** | Grade 1 Mathematics |
| **Grade Level** | Grade 1 |
| **Pre-requisites** | Grade K |

**Table of Contents**

**M-Major Cluster, S-Supporting Cluster, A-Additional Cluster**

| District Learning Expectations and Standards | Unit 1 | Unit 2 | Unit 3 | Unit 4 | Unit 5 | Unit 6 | Unit 7 | Unit 8 (optional) |
|---|---|---|---|---|---|---|---|---|
| **Operations and Algebraic Thinking** | | | | | | | | |
| **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. | | M | M | M | M | M | | M |
| 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. | | M | M | | | M | | M |
| **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.2 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.) | | M | M | | | | | |
| 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. | M | M | M | | | M | | |
| **Add and subtract within 20.** | | | | | | | | |
| 1.OA.C.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). | M | M | M | M | M | M | | |

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| 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). | M | M | M | M | M | M | M | M |
| **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. | | M | M | M | M | | M | M |
| 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 = _ - 3, 6 + 6 = _. | | M | M | M | M | | | M |
| **Number and Operations in Base Ten** | | | | | | | | |
| **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. | | M | M | M | M | M | M | M |
| **Understand place value.** | | | | | | | | |
| 1.NBT.B.2<br>Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: | | | | M | M | | | |
| 1.NBT.B.2.A 10 can be thought of as a bundle of ten ones — called a "ten." | | | M | M | | | | |

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| 1.NBT.B.2.B The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. | | | M | M | | | | |
| 1.NBT.B.2.C 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). | | | | M | | | | |
| 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 <. | | | | M | M | M | | M |
| **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. | | | | M | M | M | M | M |
| 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. | | | | M | M | M | M | |
| 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. | | | | M | M | | | |
| **Measurement and Data** | | | | | | | | |
| **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. | | | | | | M | | |

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| 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. | | | | | | M | | |
| **Tell and write time.** | | | | | | | | |
| 1.MD.B.3 Tell and write time in hours and half-hours using analog and digital clocks. | | | | | | | A | |
| **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. | S | S | | | | | | |
| **Geometry** | | | | | | | | |
| **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. | | | | | | | A | |
| 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. | | | | | | | A | |
| 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. | | | | | | | A | |

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| 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 1: ADDING, SUBTRACTING, AND WORKING WITH DATA

Illustrative Mathematics Unit Focus: Students add and subtract within 10 and represent and interpret categorical data.

**Essential Questions:**
How do we decide what operation to use when solving a real-world problem?
How can we show mathematical situations in word problems?
How is subtraction related to addition?
How do the properties of operations help us add and subtract?
Why do we collect, organize, represent and analyze data?

**Unit Pacing: 19 days (11 required lessons, 6 flex, 2 assessment and reaction)**

### UNWRAPPED STANDARDS

| Grade Level Standard | Standard Progression | Concepts (Big Ideas/ Understandings) | Academic Vocabulary (Standard Based) |
|---|---|---|---|
| 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. | Students extend their problem solving work from kindergarten in three major and interrelated ways, by:<br>• Representing and solving a new type of problem situation (Compare);<br>• Representing and solving the subtypes for all unknowns in all three types;<br>• Using Level 2 and Level 3 methods to extend addition and subtraction problem solving beyond 10, to problems within 20.<br><br>In particular, the OA progression in Grade 1 deals with adding two single-digit addends, and related subtractions. | Recognizing how a real-world situation fits into a common operation category helps to solve the problem. We can show mathematical situations in word problems using objects, drawings, and equations. | Addition<br>Subtraction<br>Equation<br>Symbol<br>Unknown<br>Part<br>Add<br>Whole<br>Equals =<br>Sum<br>Plus +<br>Number sentence<br>Subtract<br>Difference<br>Minus −<br>Tier 2 |
| 1.OA.C.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). | Unlike counting down, counting on reinforces that subtraction is an unknown-addend problem. Learning to think of and solve subtractions as unknown addend problems makes subtraction as easy as addition (or even easier), and it emphasizes the relationship between addition and subtraction. | Subtraction is the opposite of or “undoes” addition. | Count on<br>Count back<br>Equals =<br>Sum<br>Plus +<br>Number sentence<br>Difference<br>Minus − |

| | | | |
|---|---|---|---|
| | | | Addends<br>Number line |
| 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). | Students might use the commutative property of addition to change ? + 6 = 15 to 6 + ? = 15, then count on or use methods to compose 4 (to make ten) plus 5 (ones in the 15) to find 9. Students might reverse the action in the situation represented by ? - 6 = 9 so that is becomes 9 + 6 = ?. Or they might use their knowledge that the total is the first number in a subtraction equation and the last number in an addition equation to rewrite the situation equation as a solution equation: ? - 6 = 9 becomes 9 + 6 = ? or 6 + 9 = ?. | Properties of operations allow us to reorder, decompose and/or compose numbers in order to make computation simpler | Fluent<br>Equals =<br>Sum<br>Plus +<br>Number sentence<br>Difference<br>Minus –<br>Addends<br>Tier 2<br>Compare |
| 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. | Through practice and structured learning time, students learn patterns in spoken number words and in written numerals, and how the two are related. This is the foundation of thinking about place value and the meaning of the digits in a numeral. | Rote counting is a repeating pattern. The cardinality of a group is the total number of objects in the group. | Ten<br>One<br>Hundred<br>Numeral<br>Tier 2<br>Count<br>Write |
| 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. | Students' data work in Grade 1 has important connections to addition and subtraction. Students in grade 1 can ask and answer questions about categorical data based on a representation of the data.Students can also ask and answer questions leading to other kinds of addition and subtraction problems (1.OA), such as compare problems or problems involving the addition of three numbers (for situations with three categories).<br><br>There is no single correct way to represent categorical data-and the Standards do not require Grade 1 students to use any specific format. However, students should be familiar with mark schemes. Another format that might be useful in Grade 1 is a picture graph in which one picture represents one object. (Note that picture graphs are not an expectation in the Standards until | We collect, organize, represent, and analyze data in order to answer a question or solve a problem.<br><br>Data can be represented (recorded with models, drawings, or graphic organizers) in more than one way. | Tally chart<br>Survey<br>Data<br>Graph<br>Picture<br>Picture graph<br>Bar graph<br>Models<br>Drawings<br>Graphic organizers |

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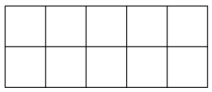
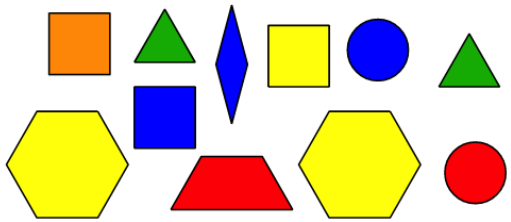
| | Grade 2.) | | |

## UNIT 1: ADDING, SUBTRACTING, AND WORKING WITH DATA

How do we decide what operation to use when solving a real-world problem?
How can we show mathematical situations in word problems?
How is subtraction related to addition?
How do the properties of operations help us add and subtract?
Why do we collect, organize, represent and analyze data?

| CCSS Standards # | Learning Targets | Summative Assessment Strategy | Lesson Progression and Connection to Math Practices | Common Learning Experiences and Assessments |
|---|---|---|---|---|
| **Section A: Adding and Subtracting within 10** | | | | |
| 1.OA.C.5<br>1.OA.C.6 | I can fluently add and subtract within 10. | X Selected Response<br>X Constructed Response<br>Performance<br>X Observation | **Lesson Progression:**<br>In this section, students engage with addition and subtraction within 10 through activities and centers. The work here allows teachers to assess students' understanding of addition and subtraction, as well as their fluency with facts within 5, a kindergarten goal.<br><br>There is an emphasis on adding and subtracting 1 or 2 to encourage students to count on or count back, which helps to build their awareness of how addition and subtraction relates to counting. To support this development, give students access to two-color counters and 10-frames throughout this section.<br><br>   | **Mandatory Lessons/Activities:**<br>iM Lessons 1, 2, 3, 4, 5 |
| **Pacing:** | 5 days | | **Math Practices:** | **Assessments:** |

<table>
<tr><td></td><td></td><td></td><td>SMP 5. 6. 7</td><td>Cool down 2<br>Checkpoint A</td></tr>
<tr><td colspan="5">Section B: Show Us Your Data</td></tr>
<tr><td>1.MD.C.4<br>1.NBT.A.1<br>1.OA.C.5</td><td>I can represent and interpret data.</td><td rowspan="2"><table><tr><td>X</td><td>Selected Response</td></tr><tr><td>X</td><td>Constructed Response</td></tr><tr><td></td><td>Performance</td></tr><tr><td>X</td><td>Observation</td></tr></table></td><td>Lesson Progression:<br>In this section, students organize and represent data. They begin by sorting objects into categories of their choice, describing their categories, and counting the number of objects in each category.<br>  <br>Next, students learn to collect data by conducting a survey. No specific data representations are required in grade 1, so students record and organize data in a way that makes sense to them. They may represent the results using objects, symbols, tally marks, or numbers. Students then make sense of one another’s representations (MP1).</td><td>Mandatory Lessons/Activities:<br>iM Lessons 7, 8, 9</td></tr>
<tr><td>Pacing:</td><td>3 days</td><td>Math Practices:<br>SMP 1, 2, 3, 4, 6</td><td>Assessments:<br>Checkpoint B</td></tr>
<tr><td colspan="5">Section C: What Does the Data Tell Us</td></tr>
<tr><td>1.MD.C.4<br>1.OA.A.1<br>1.OA.C.5<br>1.OA.C.6</td><td>I can represent and interpret data.</td><td><table><tr><td>X</td><td>Selected Response</td></tr><tr><td>X</td><td>Constructed Response</td></tr><tr><td></td><td>Performance</td></tr><tr><td>X</td><td>Observation</td></tr></table></td><td>Lesson Progression:<br>The focus of this section is on interpreting data represented in different ways and on asking and answering questions about them.<br><br>Students analyze representations of data and respond to “how many in each category” and “how many in all” questions. They consider which representation (tallies or numbers) is most helpful in answering certain types of questions. They also think about questions that could be asked given a</td><td>Mandatory Lessons/Activities:<br>iM Lessons 11, 12, 13</td></tr>
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| | | | representation of data.<br>  <br><br>  <br><br>Students begin responding to written questions in this section. To support students with the reading demand, consider reading the questions aloud or arranging students to work with a partner. | |
| **Pacing:** | 3 days | | **Math Practices:**<br>SMP 1, 2, 3, 4, 5, 6 | **Assessments:**<br>Cool downs 11, 12<br>Checkpoint C |

| **ADDITIONAL CONSIDERATIONS** | | | |
|---|---|---|---|
| **COMMON MISCONCEPTIONS** | **PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT** | **ADVANCED STANDARDS FOR STUDENTS WHO HAVE DEMONSTRATED PRIOR MASTERY** | **OPPORTUNITIES FOR STUDENT-DIRECTED LEARNING WITHIN THE UNIT** |
| Students may reverse the digits when writing a two-digit number, for example writing “12” instead of “21” for twenty-one.<br><br>When answering questions about data displays, students may not understand that “or” means to account for both categories. For example, “How many students chose dogs or cats” means that students should count dogs and cats together.<br><br>Students may be confused by the vocabulary of comparison situations. Students think that “more than” implies addition and “fewer than” implies subtraction, but in comparison questions this is not always true. | 1.OA.A.1: K.OA.A.2<br>1.OA.C.5: K.CC.B.4<br>1.OA.C.6 : 1.OA.B.3, 1.OA.B.4, 1.OA.C.5, K.OA.A.2, K.OA.A.3, K.OA.A.4, K.OA.A.5<br>1.MD.C.4 : 1.OA.A.1, 1.OA.A.2, K.MD.B.3<br>1.NBT.A.1: K.CC.A.1 | Choose from iM leveled centers and exploration problems to differentiate for students who are ready. | iM Centers<br>District-approved online resources |

| RESOURCES |
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| Kendall Hunt<br>Blackline masters and materials from Teacher Resource Pack<br>Connecting cubes, dot cubes, mathematical community poster, pattern blocks, two-color counters, Inch tiles, colored pencils or crayons, chart paper, sets of books, |

## UNIT 2: ADDITION AND SUBTRACTION STORY PROBLEMS

Illustrative Mathematics Unit Focus: Students solve new types of story problems within 10 using the relationship between addition and subtraction. They develop an understanding of the meaning of the equal sign and connect story problems to equations.

**Essential Questions:**
How do we decide what operation to use when solving a real-world problem?
How can we show mathematical situations in word problems?
How is subtraction related to addition?
What does the equal sign mean in a number sentence?
How do the properties of operations help us add and subtract?

**Unit Pacing: 27 days (17 required lessons, 8 flex, 2 assessment and reaction)**

### UNWRAPPED STANDARDS

| Grade Level Standard | Standard Progression | Concepts (Big Ideas/ Understandings) | Academic Vocabulary (Standard Based) |
|---|---|---|---|
| 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. | Students extend their work in three major and interrelated ways, by:<br>• Representing and solving a new type of problem situation (Compare);<br>• Representing and solving the subtypes for all unknowns in all three types;<br>• Using Level 2 and Level 3 methods to extend addition and subtraction problem solving beyond 10, to problems within 20.<br><br>In particular, the OA progression in Grade 1 deals with adding two single-digit addends, and related subtractions. | Recognizing how a real-world situation fits into a common operation category helps to solve the problem. We can show mathematical situations in word problems using objects, drawings, and equations. | Addition<br>Subtraction<br>Equation<br>Symbol<br>Unknown<br>Part<br>Add<br>Whole<br>Equals =<br>Sum<br>Plus +<br>Number sentence<br>Subtract<br>Difference<br>Minus − |
| 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 | First grade methods for adding and subtracting might involve decomposing an addend and composing it with the other addend to form an equivalent but easier problem. This relies on properties of operations. Students do not necessarily have to justify their representations or | Properties of operations allow us to reorder, decompose and/or compose numbers in order to make computation simpler. | Add<br>Part<br>Whole<br>Equals =<br>Sum<br>Plus + |

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| a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.) | solutions using properties, but they can begin to learn to recognize these properties in action and discuss their use after solving. | | Number sentence<br>Subtract<br>Difference<br>Minus − |
| 1.OA.C.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). | Unlike counting down, counting on reinforces that subtraction is an unknown-addend problem. Learning to think of and solve subtractions as unknown addend problems makes subtraction as easy as addition (or even easier), and it emphasizes the relationship between addition and subtraction. | Subtraction is the opposite of or "undoes" addition. | Count on<br>Count back<br>Equals =<br>Sum<br>Plus +<br>Number sentence<br>Difference<br>Minus −<br>Addends<br>Number line |
| 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). | Students might use the commutative property of addition to change ? + 6 = 15 to 6 + ? = 15, then count on or use methods to compose 4 (to make ten) plus 5 (ones in the 15) to find 9. Students might reverse the action in the situation represented by ? - 6 = 9 so that is becomes 9 + 6 = ?. Or they might use their knowledge that the total is the first number in a subtraction equation and the last number in an addition equation to rewrite the situation equation as a solution equation: ? - 6 = 9 becomes 9 + 6 = ? or 6 + 9 = ?. | Properties of operations allow us to reorder, decompose and/or compose numbers in order to make computation simpler | Fluent<br>Equals =<br>Sum<br>Plus +<br>Number sentence<br>Difference<br>Minus −<br>Addends<br>Tier 2<br>Compare |
| 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. | Critical to this standard is the understanding that the equal sign (=) represents a relationship and not an action. It establishes that the quantity on the left side is the same as the quantity on the right side of the equal sign. Reading "=" as *same as* rather than *equals* is one way to reinforce this important concept. | The equal sign tells us that the quantities on either side have the same value or balance. | True<br>False<br>Equals =<br>Sum<br>Plus +<br>Equation<br>Difference<br>Minus −<br>Addends |
| 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, | Students' data work in Grade 1 has important connections to addition and subtraction. Students in grade 1 can ask and answer questions about categorical data based on a representation of the | We collect, organize, represent, and analyze data in order to answer a question or solve a problem. | Tally chart<br>Survey<br>Data<br>Graph |

| | | | |
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| how many in each category, and how many more or less are in one category than in another. | data.Students can also ask and answer questions leading to other kinds of addition and subtraction problems (1.OA), such as compare problems or problems involving the addition of three numbers (for situations with three categories).<br><br>There is no single correct way to represent categorical data-and the Standards do not require Grade 1 students to use any specific format. However, students should be familiar with mark schemes. Another format that might be useful in Grade 1 is a picture graph in which one picture represents one object. (Note that picture graphs are not an expectation in the Standards until Grade 2.) | Data can be represented (recorded with models, drawings, or graphic organizers) in more than one way. | Picture<br>Picture graph<br>Bar graph<br>Models<br>Drawings<br>Graphic organizers |

## UNIT 2: ADDITION AND SUBTRACTION STORY PROBLEMS

How do we decide what operation to use when solving a real-world problem?
How can we show mathematical situations in word problems?
How is subtraction related to addition?
What does the equal sign mean in a number sentence?
How do the properties of operations help us add and subtract?

| CCSS Standards # | Learning Targets | Summative Assessment Strategy | Lesson Progression and Connection to Math Practices | Common Learning Experiences and Assessments |
|---|---|---|---|---|
| **Section A: Add To/Take From Story Problems** | | | | |
| 1.OA.A.1<br>1.OA.C.6<br>1.OA.D.7 | I can represent and solve a variety of word problems using addition and subtraction. | X Selected Response<br>X Constructed Response<br>Performance<br>X Observation | **Lesson Progression:**<br>Students revisit familiar problem types (Add To and Take From) where they can physically act out the problems with objects or drawings. They work formally with equations for the first time, writing addition and subtraction equations that match story problems. They write equations such as $2 + 7 = \boxed{9}$ and learn the convention of drawing a box around the answer to the question in the story problem. | **Mandatory Lessons/Activities:**<br>iM Lessons 1, 2, 3, 4 |

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| | | | Students also work with Add To, Change Unknown problems for the first time. In writing equations to match these problems, students see that the answer to the question doesn't necessarily come after the equal sign. For example:<br><br>*Kiran has 6 books.*<br>*His friend gives him some more books.*<br>*Now, he has 8 books.*<br><br>*How many books did Kiran's friend give him?*<br><br>Students solve this problem by counting on from 6 to 8 and write the equation $6 + \boxed{2} = 8$ to represent the story. Students come to see counting on as a way to solve Add To, Change Unknown problems. | |
| **Pacing:** | 4 days | | **Math Practices:**<br>SMP 1, 2, 3, 4, 5, 6, 7, 8 | **Assessments:**<br>Cool-down 4<br>Checkpoint A |
| **Section B: Put Together/Take Apart Problems** | | | | |
| 1.OA.A.1<br>1.OA.B.3<br>1.OA.C.6<br>1.OA.D.7 | I can represent and solve a variety of word problems using addition and subtraction. | X Selected Response<br>X Constructed Response<br>Performance<br>X Observation | **Lesson Progression:**<br>Students solve "Put Together/Take Apart" problems in which the total, one addend, or both addends are unknown. This builds on work from kindergarten when students composed numbers up to 10 in different ways.<br><br>Students consider problems in the context of Shake and Spill, a game that uses two-color counters. For example:<br><br>*Elena is playing Shake and Spill. She has 7 counters. What are some ways to show some red and some yellow?* | **Mandatory Lessons/Activities:**<br>iM Lessons 6, 7, 8, 9 |

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| | | |  <br>This problem type enables students to see the same situation represented by different equations, such as those where the total is written before the equal sign (7 = 4 + 3) and those illustrating the commutative property (4 + 3 = 7 and 3 + 4 = 7 ). When students analyze and connect quantities in story problems with the structure of equations, they are thinking quantitatively and abstractly (MP2).<br><br>Note that students do not need to use the terms “commutative property” or “associative property.” These are referred to as the “add in any order” property. | |
| **Pacing:** | 4 days | | **Math Practices:**<br>SMP 1, 2, 3, 4, 5, 6, 7, 8 | **Assessments:**<br>Cool-downs 7, 8<br>Checkpoint B |
| **Section C: Compare Story Problems** | | | | |
| 1.MD.C.4<br>1.OA.A.1<br>1.OA.C.5<br>1.OA.C.6<br>1.OA.D.7 | I can represent and solve a variety of word problems using addition and subtraction. | X Selected Response<br>X Constructed Response<br>Performance<br>X Observation | **Lesson Progression:**<br>Students solve Compare, Difference Unknown problems, reinforcing their understanding of the relationship between addition and subtraction.<br><br>Students begin by considering how many to add to a quantity to make the two quantities equal, such as, "How many cubes do we need to add so that both towers have the same number of cubes?"<br><br>Once they are familiar with this language, students answer “how many more” and “how many fewer” questions. For example, "How many more cubes does Clare have than Andre?" | **Mandatory Lessons/Activities:**<br>iM Lessons 11, 12, 13, 14, 15 |

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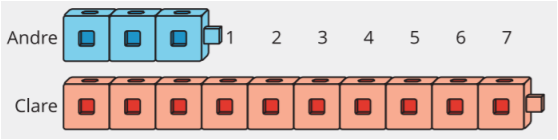
| | | |  <br>In this case, students may count the extra cubes in Clare's tower to find the answer. They may start at 3 and count up to 10 or start at 10 and count back to 3. Students analyze both addition (7 + 3 = 10) and subtraction (10 - 3 = 7) equations that can be used to represent the same problem.<br><br>When students reason about questions, quantities, and relationships in story problems and write equations to represent them, they make sense of problems to solve them (MP1) and reason quantitatively and abstractly (MP2). | |
| **Pacing:** | 5 days | | **Math Practices:**<br>SMP 1, 2, 3, 4, 5, 6, 7, 8 | **Assessments:**<br>Cool down 12<br>Checkpoint C |
| **Section D: All Kinds of Story Problems** | | | | |
| 1.OA.A.1<br>1.OA.B.4<br>1.OA.C.6<br>1.OA.D.7<br>1.OA.D.8 | I can represent and solve a variety of word problems using addition and subtraction. | X Selected Response<br>X Constructed Response<br>Performance<br>X Observation | **Lesson Progression:**<br>Students bring together the work of the unit to solve and compare a variety of problem types, write equations to represent problems, and make sense of equations with a symbol for the unknown. (They are not required to use symbols in the equations they write.) Students also reason in the other direction: writing stories and questions that correspond to given equations, and using drawings, numbers, and words to find the answers. | **Mandatory Lessons/Activities:**<br>iM Lessons 17, 18, 19, 20 |
| **Pacing:** | 4 days | | **Math Practices:**<br>SMP 1, 2, 3, 4, 5, 6, 7, 8 | **Assessments:**<br>Cool downs 18, 19<br>Checkpoint D |

**ADDITIONAL CONSIDERATIONS**

| COMMON MISCONCEPTIONS | PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT | ADVANCED STANDARDS FOR STUDENTS WHO HAVE DEMONSTRATED PRIOR MASTERY | OPPORTUNITIES FOR STUDENT-DIRECTED LEARNING WITHIN THE UNIT |
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| Students may be confused by the vocabulary of comparison situations. Students think that "more than" implies addition and "fewer than" implies subtraction, but in comparison questions this is not always true.<br><br>Students may incorrectly think that subtraction is commutative, i.e. 8-5=5-8.<br><br>Students may think that the unknown in an equation has to fall after the equal sign.<br><br>Students sometimes believe that the equal sign indicates the answer comes next or calls for doing the mathematical operation. | 1.OA.A.1: K.OA.A.2<br>1.OA.B.3: K.OA.A.2<br>1.OA.C.5: K.CC.B.4,<br>1.OA.C.6: 1.OA.B.3, 1.OA.B.4, 1.OA.C.5, K.OA.A.2, K.OA.A.3, K.OA.A.4, K.OA.A.5<br>1.MD.C.4: 1.OA.C.6, 1.OA.A.1, 1.OA.D.8, 1.OA.A.2, K.MD.B.3 | Choose from iM leveled centers and exploration problems to differentiate for students who are ready. | iM Centers<br>District-approved online resources |

| RESOURCES |
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| Kendall Hunt<br>Blackline masters and materials from Teacher Resource Pack<br>10-frames Connecting cubes, two-color counters, tools for creating a visual display, cups, colored pencils or crayons, number cubes, number cards 0-10 |

## UNIT 3: ADDING AND SUBTRACTING WITHIN 20

Illustrative Mathematics Unit Focus: Students add and subtract within 20. Students apply the properties of operations and the relationship between addition and subtraction.

**Essential Questions:**
How is subtraction related to addition?
What does the equal sign mean in a number sentence?
How do the properties of operations help us add and subtract?

**Unit Pacing: 33 days (21 required lessons, 10 flex, 2 assessment and reaction)**

### UNWRAPPED STANDARDS

| Grade Level Standard | Standard Progression | Concepts (Big Ideas/ Understandings) | Academic Vocabulary (Standard Based) |
|---|---|---|---|
| 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. | Students extend their work in three major and interrelated ways, by:<br>• Representing and solving a new type of problem situation (Compare);<br>• Representing and solving the subtypes for all unknowns in all three types;<br>• Using Level 2 and Level 3 methods to extend addition and subtraction problem solving beyond 10, to problems within 20.<br><br>In particular, the OA progression in Grade 1 deals with adding two single-digit addends, and related subtractions. | Recognizing how a real-world situation fits into a common operation category helps to solve the problem. We can show mathematical situations in word problems using objects, drawings, and equations. | Addition<br>Subtraction<br>Equation<br>Symbol<br>Unknown<br>Part<br>Add<br>Whole<br>Equals =<br>Sum<br>Plus +<br>Subtract<br>Difference<br>Minus −<br>Count on<br>Count back<br>Compare |
| 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. | When adding more than two addends, students need to understand that the numbers can be grouped in many different ways. This is an informal introduction into the commutative and associative properties for addition. At this grade, students do not need to know the formal names of the properties but they need to understand that when adding three addends that they should look for friendly numbers to add first. For example, when adding 2 + 9 + 8, add the 2 + 8 to make ten and then add the 9. Students need to | | |

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| | see addition problems written both vertically and horizontally. | | |
| 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.) | First grade methods for adding and subtracting might involve decomposing an addend and composing it with the other addend to form an equivalent but easier problem. This relies on properties of operations. Students do not necessarily have to justify their representations or solutions using properties, but they can begin to learn to recognize these properties in action and discuss their use after solving. | Properties of operations allow us to reorder, decompose and/or compose numbers in order to make computation simpler. | |
| 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. | Put Together/Take Apart problems with Addend Unknown afford students the opportunity to see subtraction as the opposite of addition in a different way than as reversing the action, namely as finding an unknown addend. The meaning of subtraction as an unknown-addend addition problem is one of the essential understandings students will need in middle school in order to extend arithmetic to negative rational numbers. | Subtraction is the opposite of or "undoes" addition. | |
| 1.OA.C.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). | Unlike counting down, counting on reinforces that subtraction is an unknown-addend problem. Learning to think of and solve subtractions as unknown addend problems makes subtraction as easy as addition (or even easier), and it emphasizes the relationship between addition and subtraction. | | |
| 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 | Students might use the commutative property of addition to change ? + 6 = 15 to 6 + ? = 15, then count on or use methods to compose 4 (to make ten) plus 5 (ones in the 15) to find 9. Students might reverse the action in the situation | Properties of operations allow us to reorder, decompose and/or compose numbers in order to make computation simpler | |

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| + 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. | represented by ? - 6 = 9 so that is becomes 9 + 6 = ?. Or they might use their knowledge that the total is the first number in a subtraction equation and the last number in an addition equation to rewrite the situation equation as a solution equation: ? - 6 = 9 becomes 9 + 6 = ? or 6 + 9 = ?. | | |
| 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. | Critical to this standard is the understanding that the equal sign (=) represents a relationship and not an action. It establishes that the quantity on the left side is the same as the quantity on the right side of the equal sign. Reading "=" as *same as* rather than *equals* is one way to reinforce this important concept. | The equal sign tells us that the quantities on either side have the same value or balance. | True<br>False<br>Equals =<br>Sum<br>Plus +<br>Equation<br>Difference<br>Minus −<br>Addends |
| 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 = _ - 3, 6 + 6 = _. | This standard is critical in developing students' problem-solving skills, algebraic foundations, and understanding of addition and subtraction. This work is grounded in the understanding of the meaning of the equal sign and the relationship between operations. Students should leverage understanding of part-part-whole relationships to write and find the unknown in an equation. This concept is an extension of the decomposing of numbers and students will use their understanding of decomposition of numbers when finding the missing part.<br><br>Students begin to write equations with unknowns as they solve problems. Later, given an equation with an unknown, students explain their reasoning as they find the missing value. | The equal sign tells us that the quantities on either side have the same value or balance. | Addends<br>Equals =<br>Sum<br>Plus +<br>Equation<br>Difference<br>Minus − |
| 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. | Through practice and structured learning time, students learn patterns in spoken number words and in written numerals, and how the two are related. This is the foundation of thinking about place value and the meaning of the digits in a numeral. | Understanding place value enables us to represent, compare and order numbers and perform computations. | Ten<br>One<br>Hundred<br>Numeral<br>Count<br>Numbers 0-120 |

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| 1.NBT.B.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. | More generally, first graders learn that the two digits of a two-digit number represent amounts of tens and ones, e.g., 67 represents 6 tens and 7 ones. Saying 67 as "6 tens, 7 ones" as well as "sixty-seven" can help students focus on the tens and ones structure of written numerals. | Our number system is a base-ten system. Any group of 10 in a given place value can be represented as one in the next greater place value (10 ones is 1 ten). | Tens<br>Ones<br>Digit<br>Zero<br>Group<br>Bundle |
| 1.NBT.B.2.A 10 can be thought of as a bundle of ten ones — called a "ten." | Ten ones become a ten just as ten tens become a hundred and ten hundreds become a thousand. Students need ample practice bundling. Using varied tools is important. Consider ten frames, beans on sticks, cm cubes in dixie cups, etc. Base ten blocks can be problematic early in first grade because students must understand that they cannot be grouped but are instead exchanged. | | |
| 1.NBT.B.2.B The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. | Students were exposed to this idea in kindergarten, and is a natural extension of the idea of bundling tens. Once this is understood deeply students should transfer this idea to numbers 21-29, 31-39, and so on. Students should see that all of these are related. | Understanding place value enables us to represent, compare and order numbers and perform computations. | |

## UNIT 3: ADDING AND SUBTRACTING WITHIN 20

How is subtraction related to addition?
What does the equal sign mean in a number sentence?
How do the properties of operations help us add and subtract?

| CCSS Standards # | Learning Targets | Summative Assessment Strategy | Lesson Progression and Connection to Math Practices | Common Learning Experiences and Assessments |
|---|---|---|---|---|
| **Section A: Develop Fluency with Addition and Subtraction within 10** | | | | |
| 1.OA.A.1<br>1.OA.B.3<br>1.OA.B.4<br>1.OA.C.5<br>1.OA.C.6 | I can fluently add and subtract within 10. | X Selected Response<br>X Constructed Response | **Lesson Progression:**<br>This section focuses on developing students' fluency with addition and subtraction within 10. All but a few sums within 10 can be found by counting on by 1, 2, or 3, or by making a sum of 10, so being able to count on up to 3 and make 10 are helpful | **Mandatory Lessons/Activities:**<br>iM Lessons 1, 2, 3, 4, 5, 6 |

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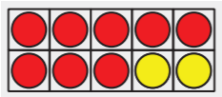
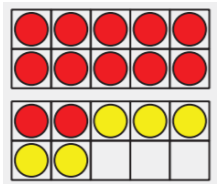
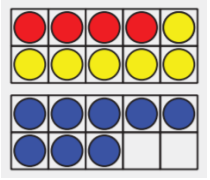
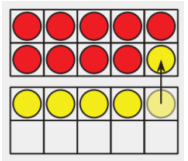
| 1.OA.D.7<br>1.OA.D.8 | | <table><tr><td></td><td>Performance</td></tr><tr><td>X</td><td>Observation</td></tr></table> | steps toward fluency. Students have a chance to self-assess the sums they know from memory and those they are still working on. (Fluency is not expected until the end of the school year).<br><br>Note that the term “sum” has so far been used to refer to a number—the total we have when adding two or more numbers. Here, the term is also used to refer to an addition expression like 5 + 4 because it represents the sum of two quantities.<br><br>The 10-frame can help students visualize sums of 10. For example, this 10-frame may allow students to recall several related facts:<br><br>  <br>For example, looking at this 10-frame may allow students to recall that 8 + 2 = 10 , 2 + 8 = 10 , 10- 8 = 2, and 10 - 2 = 8.<br><br>Changing one counter from red to yellow illustrates 7 + 3 = 10, and changing a counter from yellow to red illustrates 9 + 1 = 10 . Seeing ways to make 10 will support students in later work of adding and subtracting within 20 and within 100. It may also support students in recognizing that 7 + 3 = 10 if we change one counter from red to yellow. The focus on ways to make 10 supports students in later work of adding and subtracting within 20 and within 100.<br><br>Students are introduced to Add To, Start Unknown story problems. Because the starting number is unknown, students may find this challenging. Encourage them to act out the stories and apply what they have learned about adding within 10 to solve these problems. | |
| **Pacing:** | 6 days | | **Math Practices:**<br>SMP 1, 2, 3, 4, 5, 6, 7, 8 | **Assessments:**<br>Cool-downs 5, 6<br>Checkpoint A |

<table>
<tr><th colspan="5">Section B: Use the Structure of a Ten to Add and Subtract</th></tr>
<tr>
<td>1.OA.A.1<br>1.OA.B.3<br>1.OA.B.4<br>1.OA.C.5<br>1.OA.C.6<br>1.OA.D.7<br>1.OA.D.8</td>
<td>I can solve addition and subtraction problems using a variety of strategies.</td>
<td rowspan="2"><table>
<tr><td>X</td><td>Selected Response</td></tr>
<tr><td>X</td><td>Constructed Response</td></tr>
<tr><td></td><td>Performance</td></tr>
<tr><td>X</td><td>Observation</td></tr>
</table></td>
<td>Lesson Progression:<br>Students begin exploring the structure of the base-ten system and place value as they work with teen numbers. They see that ten ones are put together to compose a new unit, a ten. Students see that teen numbers are a unit of ten plus some number of ones. Double 10-frames are the main representation in this section because they encourage students to see the unit of ten in teen numbers. The double 10-frame allows students to easily see when the ten is complete, whereas with connecting cube towers, the individual cubes need to be counted to confirm that a tower is a unit of 10. Students use 10-frames, and the structure of teen numbers as a ten and some ones to help them add and subtract with teen numbers. Students only work with expressions that do not require composing or decomposing a ten (for example, 13 -2, 12 + 5)<br>  <br>They see that the unit of ten does not change, and relate that to subtracting ones from ones, which will be a focus in the next unit.</td>
<td>Mandatory Lessons/Activities:<br>iM Lessons 8, 9, 10, 11, 12, 13</td>
</tr>
<tr>
<td>Pacing:</td>
<td>7 days</td>
<td>Math Practices:<br>SMP 1, 2, 3, 4, 5, 6, 7, 8</td>
<td>Assessments:<br>Cool-downs 8, 10<br>Checkpoint B</td>
</tr>
<tr><th colspan="5">Section C: Add within 20</th></tr>
<tr>
<td>1.OA.A.1<br>1.OA.A.2<br>1.OA.B.3<br>1.OA.B.4</td>
<td>I can solve addition and subtraction problems using a variety of strategies.</td>
<td><table>
<tr><td>X</td><td>Selected Response</td></tr>
<tr><td>X</td><td>Constructed Response</td></tr>
</table></td>
<td>Lesson Progression:<br>Students make use of the base-ten structure and related facts to add two or three addends within 20. Students are encouraged to use sums of 10 and their understanding of the commutative and associative properties (referred to collectively as</td>
<td>Mandatory Lessons/Activities:<br>iM Lessons 15, 16, 17, 18, 19, 20</td>
</tr>
</table>

| | | | | |
|---|---|---|---|---|
| 1.OA.C.5<br>1.OA.C.6<br>1.OA.D.7<br>1.OA.D.8 | | <table><tr><td></td><td>Performance</td></tr><tr><td>X</td><td>Observation</td></tr></table> | the ‘add in any order’ property to students) to discover the usefulness of grouping numbers to find a sum of 10 when adding. Initially the addends that make a ten appear next to each other( 4+6+7) and eventually they do not (6 + 7 + 4) , which encourages students to see that they can group addends in different ways to make the problem easier by making a ten first.<br>  <br>Students find the sum of two addends using methods where they count on or use related facts they know. For example, for 9+5, students can think of 10 + 4 by thinking of the problem as 9 + 1 + 4 = 10 + 4.<br>  <br>Students may use other facts they know to find sums. For example, given 7+ 8, students may think of it as 7 + 7 + 1 if they know 7 + 7. There is not a focus on these methods because making a ten is a generalizable strategy and will be very important in students’ later work with larger numbers. | |
| **Pacing:** | 6 days | | **Math Practices:**<br>SMP 1, 2, 3, 4, 5, 6, 7, 8 | **Assessments:**<br>Cool-downs 17, 20<br>Checkpoint C |
| **Section D: Subtract within 20** | | | | |
| 1.NBT.A.1<br>1.OA.A.1<br>1.OA.A.2<br>1.OA.B.3<br>1.OA.B.4 | I can solve addition and subtraction problems using a variety of strategies. | <table><tr><td>X</td><td>Selected Response</td></tr><tr><td>X</td><td>Constructed Response</td></tr></table> | **Lesson Progression:**<br>In this section students subtract within 20, using both take away and counting on methods. Students use the relationship between addition and subtraction and their understanding of the usefulness of making a ten. Students work with | **Mandatory Lessons/Activities:**<br>iM Lessons 22, 23, 24, 25, 26 |

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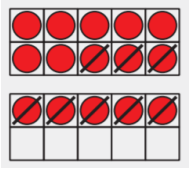
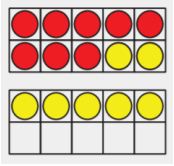
|---|---|---|---|---|
| 1.OA.C.5<br>1.OA.C.6<br>1.OA.D.7<br>1.OA.D.8 | | <table><tr><td></td><td>Performance</td></tr><tr><td>X</td><td>Observation</td></tr></table> | both subtraction expressions and missing addend equations. Presented with 15 - 8 they may take away 5 to get to 10 and then take away another 3 to find the difference of 7.<br>  <br>They may also use counting on and add 2 to 8 to get 10 and then add another 5 to get 15 and see the difference is 7.<br>  | |
| **Pacing:** | 6 days | | **Math Practices:**<br>SMP 1, 2, 3, 4, 5, 6, 7, 8 | **Assessments:**<br>Cool-downs 25<br>Checkpoint D |

| **ADDITIONAL CONSIDERATIONS** | | | |
|---|---|---|---|
| **COMMON MISCONCEPTIONS** | **PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT** | **ADVANCED STANDARDS FOR STUDENTS WHO HAVE DEMONSTRATED PRIOR MASTERY** | **OPPORTUNITIES FOR STUDENT-DIRECTED LEARNING WITHIN THE UNIT** |
| Students may incorrectly think that subtraction is commutative, i.e. 8-5=5-8.<br><br>Students believe that the equal sign indicates the answer comes next or calls for doing the mathematical operation.<br>Students may think that the unknown in an equation has to fall after the equal sign. | 1.OA.A.1: K.OA.A.2<br>1.OA.A.2: 1.OA.A.1<br>1.OA.B.3: K.OA.A.2<br>1.OA.B.4: K.OA.A.2<br>1.OA.C.5: K.CC.B.4,<br>1.OA.C.6: 1.OA.B.3, 1.OA.B.4, 1.OA.C.5, K.OA.A.2, K.OA.A.3, K.OA.A.4, K.OA.A.5<br>1.OA.D.8: 1.OA.D.7 | Choose from iM leveled centers and exploration problems to differentiate for students who are ready. | iM Centers<br>District-approved online resources |
| **RESOURCES** | | | |
| Kendall Hunt | | | |

Blackline masters and materials from Teacher Resource Pack
Bags (brown paper), envelopes, scissors,  10-frames, connecting cubes or two-color counters, two-color counters, crayons, cups, two-color counters, double 10-frames, number cards 0–10, tools for creating a visual display

## UNIT 4: NUMBERS TO 99

Illustrative Mathematics Unit Focus: Students develop an understanding of place value for numbers up to 99.

**Essential Questions:**
How is our number system organized?
How can understanding place value help us?

**Unit Pacing: 31 days (17 required lessons, 12 flex, 2 assessment and reaction)**

### UNWRAPPED STANDARDS

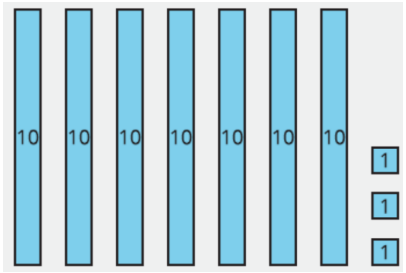
| Grade Level Standard | Standard Progression | Concepts (Big Ideas/ Understandings) | Academic Vocabulary (Standard Based) |
|---|---|---|---|
| 1.NBT.A.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral. | Through practice and structured learning time, students learn patterns in spoken number words and in written numerals, and how the two are related. This is the foundation of thinking about place value and the meaning of the digits in a numeral. | Understanding place value enables us to represent, compare and order numbers and perform computations. | Count<br>Numerals 0-120<br>Number words 0-120 |
| 1.NBT.B.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. | More generally, first graders learn that the two digits of a two-digit number represent amounts of tens and ones, e.g., 67 represents 6 tens and 7 ones. Saying 67 as "6 tens, 7 ones" as well as "sixty-seven" can help students focus on the tens and ones structure of written numerals. | Our number system is a base-ten system. Any group of 10 in a given place value can be represented as one in the next greater place value (10 ones is 1 ten). | Tens<br>Ones<br>Digit<br>Group<br>Bundle<br>Number words 0-120 |
| 1.NBT.B.2.C 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). | Once students have a firm grasp of the concept of teen numbers being made up of 1 ten and some ones, they continue to explore multiples of ten as groups of ten with no ones leftover. This prepares students for understanding place value with numbers greater than 20. | | |
| 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 <. | Grade 1 students use their base-ten work to help them recognize that the digit in the tens place is more important for determining the size of a two-digit number. Correctly placing the < and > | Understanding place value enables us to represent, compare and order numbers and perform computations. | Greater than >
Less than <
Equal to =
Digit |

| | | | |
|---|---|---|---|
| | symbols is a challenge for early learners. Accuracy can improve if students think of putting the wide part of the symbol next to the larger number. | | Tens<br>Ones |
| 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. | Students begin to develop understanding and skill with adding beyond the basic facts through the use of concrete representations. They progress to making generalizations and developing their own strategies for adding one- and two-digit numbers.<br><br>Include problems that provide a context for addition as often as possible. Equations should be written both horizontally and vertically.<br><br>Students should work with various models and representations to develop understanding of the mathematics, including blocks (physical or drawing), ten frames, partial sums, and symbols (equations).<br><br>There is no specific progression of representations. Instead, students should connect understanding from one representation to the next. Regardless of the representation being used by students, teachers should connect representations to a symbolic recording (equation). First graders should not be exposed to or taught the traditional algorithm for addition. | Properties of operations allow us to reorder, decompose and/or compose numbers in order to make computation simpler. | Add<br>Compose<br>Decompose<br>Tens<br>Ones<br>One-digit number<br>Two-digit number |
| 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. | [Students] may explain their reasoning by saying that they have one more or one less ten than before. | The digit in the ones place will remain the same when finding 10 more or 10 less of another number. | Ten<br>More<br>Less<br>Place value |
| 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. | Differences of multiples of 10, such as 70 – 40 can be viewed as 7 tens minus 4 tens and represented with concrete models such as objects bundled in tens or drawings. Children use the relationship between subtraction and addition when they view 80 – 70 as an unknown addend addition problem, 70 + ? = 80, and reason that 1 ten must be added to 70 to make 80, so 80 –70 = 10. | Properties of operations allow us to reorder, decompose and/or compose numbers in order to make computation simpler. | Subtract<br>Less<br>Place Value |

## UNIT 4: NUMBERS TO 99

How is our number system organized?
How can understanding place value help us?

| CCSS Standards # | Learning Targets | Summative Assessment Strategy | Lesson Progression and Connection to Math Practices | Common Learning Experiences and Assessments |
|---|---|---|---|---|
| **Section A: Units of Ten** | | | | |
| 1.NBT.A.1<br>1.NBT.B.2<br>1.NBT.B.2.c<br>1.NBT.C.4<br>1.NBT.C.5<br>1.NBT.C.6<br>1.OA.C.5<br>1.OA.C.6<br>1.OA.D.8 | I can count to tell how many.<br><br>I can solve addition and subtraction problems using a variety of strategies.<br><br>I can read, write, and represent numbers to 120. | X Selected Response<br>X Constructed Response<br>Performance<br>X Observation | **Lesson Progression:**<br>In this section, students move from using a ten-frame to represent a unit of ten, as they did in the previous unit, to using connecting cubes organized in towers of 10. Students count and represent collections. The total number of objects in each collection is a multiple of 10. They develop an understanding that counting the same group by ones or by tens yields the same number. Students make sense of base-ten representations (towers of 10, base-ten drawings, words and numbers).<br><br>Students use their understanding of units of ten to add and subtract multiples of ten and see that 3 tens and 2 tens is 5 tens. This sets the stage for the next section where students extend their base-ten understanding to all two-digit numbers.<br>Note: “Multiple of 10” is used in teacher-facing text, but it is not language that students need to learn or use. The concept of multiples does not become necessary until Grade 4. | **Mandatory Lessons/Activities:**<br>iM Lessons 1, 2, 3, 4 |
| **Pacing:** | 4 days | | **Math Practices:**<br>SMP 1, 2, 3, 4, 5, 6, 7, 8 | **Assessments:**<br>Cool-down 4<br>Checkpoint A |
| **Section B: Units of Ten and Units of One** | | | | |

<table>
<tr>
<td>1.NBT.A.1<br>1.NBT.B.2<br>1.NBT.B.2.a<br>1.NBT.B.2.c<br>1.NBT.C.4<br>1.NBT.C.5<br>1.NBT.C.6<br>1.OA.A.1<br>1.OA.C.5<br>1.OA.C.6<br>1.OA.D.8</td>
<td>I can read, write, and represent numbers to 100.<br><br>I can solve addition and subtraction problems using a variety of strategies.</td>
<td rowspan="2">
<table>
<tr><td>X</td><td>Selected Response</td></tr>
<tr><td>X</td><td>Constructed Response</td></tr>
<tr><td></td><td>Performance</td></tr>
<tr><td>X</td><td>Observation</td></tr>
</table>
</td>
<td>Lesson Progression:<br>Students use the same representations from the previous section to make sense of two-digit numbers. They begin the section by counting a new collection and representing it in a way that makes sense to them.<br> 
<br>Students are introduced to addition expressions to represent two-digit numbers. To ensure that students have a deep understanding of decomposing numbers, they are asked to consider expressions like 3 + 70 in addition to the traditional standard form 70 + 3. This flexibility is an essential part of students' later work.<br>At the end of the section, students use their base-ten understanding of two-digit numbers to add multiples of ten to any two-digit number and mentally find 10 more or 10 less than any number. They see that the value of the tens digit changes based on the number of tens added or subtracted, but the value of the ones digit remains the same. At this point, students may begin to draw long rectangles to represent the tens and small squares to represent the ones. If students are making these types of representations, it is important to ensure that they understand that the unit of ten includes 10 ones.</td>
<td>Mandatory Lessons/Activities:<br>iM Lessons 6, 7, 8, 9, 10, 11</td>
</tr>
<tr>
<td>Pacing:</td>
<td>6 days</td>
<td>Math Practices:<br>SMP 2, 3, 5, 6, 7, 8</td>
<td>Assessments:<br>Cool-downs 10, 11<br>Checkpoint B</td>
</tr>
<tr>
<td colspan="5">Section C: Comparing Numbers to 99</td>
</tr>
<tr>
<td>1.NBT.A.1</td>
<td>I can compare two-digit numbers.</td>
<td></td>
<td>Lesson Progression:</td>
<td>Mandatory Lessons/Activities:</td>
</tr>
</table>

| | | | | |
|---|---|---|---|---|
| 1.NBT.B.2<br>1.NBT.B.3<br>1.NBT.C.4<br>1.NBT.C.5<br>1.NBT.C.6<br>1.OA.C.5<br>1.OA.C.6<br>1.OA.D.7 | | X Selected Response<br>X Constructed Response<br>Performance<br>X Observation | In this section students compare and order numbers to 99. Students use their base-ten understanding to compare numbers and may recognize that the digit in the tens place is more important than the digit in the ones place when comparing two-digit numbers. Students are introduced to the < and > symbols. Students see the symbols and interpret them before they are asked to use them to make true comparison statements. The symbols can be tricky for students to learn, and accuracy using them can improve if students think of putting the wide part of the symbol next to the larger number. | iM Lessons 14, 15, 16, 17 |
| **Pacing:** | 4 days | | **Math Practices:**<br>SMP 2, 3, 5, 6, 7, 8 | **Assessments:**<br>Cool-down 16<br>Checkpoint C |
| **Section D: Different Ways to Make a Numbers** | | | | |
| 1.NBT.A.1<br>1.NBT.B.2<br>1.NBT.B.2.a<br>1.NBT.B.2.b<br>1.NBT.B.3<br>1.NBT.C.4 | I can read, write, and represent numbers to 100.<br><br>I can compare two-digit numbers. | X Selected Response<br>X Constructed Response<br>Performance<br>X Observation | **Lesson Progression:**<br>In this section, students dive deeper into base-ten understanding by breaking apart two-digit numbers using different amounts of tens and ones. The focus of this section is for students to see that there are different ways to decompose a number into tens and ones. Students revisit counting collections, this time with more than 9 ones, which provides an opportunity for students to consider how to represent the collection. Students then extend comparison work by using the <, =, or > signs to compare numbers broken apart in different ways. | **Mandatory Lessons/Activities:**<br>iM Lessons 19, 20, 21 |
| **Pacing:** | 3 days | | **Math Practices:**<br>SMP 2, 3, 5, 6, 7, 8 | **Assessments:**<br>Cool-down 20<br>Checkpoint D |

| ADDITIONAL CONSIDERATIONS | | | |
|---|---|---|---|
| **COMMON MISCONCEPTIONS** | **PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT** | **ADVANCED STANDARDS FOR STUDENTS WHO HAVE DEMONSTRATED PRIOR** | **OPPORTUNITIES FOR STUDENT-DIRECTED LEARNING WITHIN** |

| | | MASTERY | THE UNIT |
|---|---|---|---|
| Students may memorize the counting pattern without understanding. This could cause students to have difficulty counting on from a number other than 1.<br><br>When counting forwards or backwards, students may have trouble bridging the decade numbers (ex. 59 to 60).<br><br>Students may not see that a bundle of ten ones is the same as a ten or that numbers 10, 20, etc. can be identified as 10 ones or a group of ten, 20 ones or two groups of ten.<br><br>Students may not realize that the inequality symbols (< , >) can create true statements about any two numbers where one is greater/smaller than the other, (15 < 28 and 28 >15).<br><br>When comparing, students may think that if a number has more ones it is greater (ex. thinking 19 > 24). | 1.NBT.A.1: K.CC.A.1, K.CC.A.2, K.CC.B.4<br>1.NBT.B.2: K.NBT.A.1, 1.NBT.A.1<br>1.NBT.B.2.a : K.NBT.A.1, 1.NBT.A.1<br>1.NBT.B.2.b: K.NBT.A.1, 1.NBT.A.1<br>1.NBT.B.2.c: K.NBT.A.1, 1.NBT.A.1<br>1.NBT.B.3: K.CC.C.7, 1.NBT.B.2<br>1.NBT.C.4: 1.NBT.B.2, 1.OA.A.1, 1.OA.C.7<br>1.NBT.C.5: 1.NBT.B.2<br>1.NBT.C.6: 1.NBT.B.2<br>1.OA.C.5: K.CC.B.4, K.CC.A.1, K.CC.A.2<br>1.OA.C.6: K.OA.A.2, K.OA.A.3, K.OA.A.4, K.OA.A.5, 1.OA.B.3, 1.OA.B.4, 1.OA.C.5<br>1.OA.D.8: 1.OA.D.7 | Choose from iM leveled centers and exploration problems to differentiate for students who are ready. | iM Centers<br>District-approved online resources |

| RESOURCES |
|---|
| Kendall Hunt<br>Blackline masters and materials from Teacher Resource Pack<br>Bags, collections of objects, cups, double 10-frames, paper plates, connecting cubes in towers of 10 and singles, two-color counters, number cards 0–10, base-ten blocks, dry erase markers, sheet protectors, paper clips |

## UNIT 5: ADDING WITHIN 100

Illustrative Mathematics Unit Focus: Students use place value understanding and properties of operations to add within 100.

**Essential Questions:**
How is our number system organized?
How can understanding place value help us?
How do the properties of operations make computation simpler?

**Unit Pacing: 22 days (10 required lessons, 10 flex, 2 assessment and reaction)**

### UNWRAPPED STANDARDS

| Grade Level Standard | Standard Progression | Concepts (Big Ideas/ Understandings) | Academic Vocabulary (Standard Based) |
|---|---|---|---|
| 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. | Students extend their work in three major and interrelated ways, by:<br>• Representing and solving a new type of problem situation (Compare);<br>• Representing and solving the subtypes for all unknowns in all three types;<br>• Using Level 2 and Level 3 methods to extend addition and subtraction problem solving beyond 10, to problems within 20.<br><br>In particular, the OA progression in Grade 1 deals with adding two single-digit addends, and related subtractions. | Recognizing how a real-world situation fits into a common operation category helps to solve the problem. We can show mathematical situations in word problems using objects, drawings, and equations. | Addition<br>Subtraction<br>Equation<br>Symbol<br>Unknown<br>Part<br>Add<br>Whole<br>Equals =<br>Sum<br>Plus +<br>Number sentence<br>Subtract<br>Difference<br>Minus − |
| 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 = _ - 3, 6 + 6 = _. | This standard is critical in developing students' problem-solving skills, algebraic foundations, and understanding of addition and subtraction. This work is grounded in the understanding of the meaning of the equal sign and the relationship between operations. Students should leverage understanding of part-part-whole relationships to write and find the unknown in an equation. This concept is an extension of the decomposing of | To be a true equation, quantities on both sides of the equal sign must have the same value. The total can go on the right or left side of the equal sign. An equation can have an unknown in any position. | Addends<br>Equals =<br>Sum<br>Plus +<br>Equation<br>Difference<br>Minus − |

| | | | |
|---|---|---|---|
| | numbers and students will use their understanding of decomposition of numbers when finding the missing part.<br><br>Students should begin work with this standard by connecting symbolic representations to physical models, drawings, number charts, and/or number lines. Students should also connect these representations to the problems being solved as well as the equations that reflect the models and the problems. | | |
| 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. | Through practice and structured learning time, students learn patterns in spoken number words and in written numerals, and how the two are related. This is the foundation of thinking about place value and the meaning of the digits in a numeral. | Understanding place value enables us to represent, compare and order numbers and perform computations. | Count<br>Numerals 0-120<br>Number words 0-120 |
| 1.NBT.B.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. | More generally, first graders learn that the two digits of a two-digit number represent amounts of tens and ones, e.g., 67 represents 6 tens and 7 ones. Saying 67 as "6 tens, 7 ones" as well as "sixty-seven" can help students focus on the tens and ones structure of written numerals. | Our number system is a base-ten system. Any group of 10 in a given place value can be represented as one in the next greater place value (10 ones is 1 ten). | Tens<br>Ones<br>Digit<br>Group<br>Bundle<br>Number words 0-120 |
| 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. | Students begin to develop understanding and skill with adding beyond the basic facts through the use of concrete representations. They progress to making generalizations and developing their own strategies for adding one- and two-digit numbers.<br><br>Include problems that provide a context for addition as often as possible. Equations should be written both horizontally and vertically.<br><br>Students should work with various models and representations to develop understanding of the mathematics, including blocks (physical or drawing), ten frames, partial sums, and symbols (equations).<br><br>There is no specific progression of | Properties of operations allow us to reorder, decompose and/or compose numbers in order to make computation simpler. | Add<br>Compose<br>Decompose<br>Tens<br>Ones<br>One-digit number<br>Two-digit number |

| | | | |
|---|---|---|---|
| | representations. Instead, students should connect understanding from one representation to the next. Regardless of the representation being used by students, teachers should connect representations to a symbolic recording (equation). First graders should not be exposed to or taught the traditional algorithm for addition. | | |
| 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. | [Students] may explain their reasoning by saying that they have one more or one less ten than before. | The digit in the ones place will remain the same when finding 10 more or 10 less of another number. | Ten<br>More<br>Less<br>Place value |
| 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. | Differences of multiples of 10, such as 70 – 40 can be viewed as 7 tens minus 4 tens and represented with concrete models such as objects bundled in tens or drawings. Children use the relationship between subtraction and addition when they view 80 – 70 as an unknown addend addition problem, 70 + ? = 80, and reason that 1 ten must be added to 70 to make 80, so 80 –70 = 10. | Properties of operations allow us to reorder, decompose and/or compose numbers in order to make computation simpler. | Subtract<br>Less<br>Place Value |

## UNIT 5: ADDING WITHIN 100

How is our number system organized?
How can understanding place value help us?
How do the properties of operations make computation simpler?

| CCSS Standards # | Learning Targets | Summative Assessment Strategy | Lesson Progression and Connection to Math Practices | Common Learning Experiences and Assessments |
|---|---|---|---|---|
| **Section A: Add Without Composing a Ten** | | | | |
| 1.NBT.A.1<br>1.NBT.B.2<br>1.NBT.C.4<br>1.OA.A.1<br>1.OA.D.8 | I can solve addition problems using a variety of strategies. | X Selected Response<br>X Constructed Response | **Lesson Progression:**<br>This section focuses on adding one-digit or two-digit numbers and two-digit numbers within 100 without composing a ten. Students build on work from previous units in which they added one-digit numbers and teen numbers without composing a ten and added multiples of 10 to | **Mandatory Lessons/Activities:**<br>iM Lessons 1, 2, 3 |

| | | | | |
|---|---|---|---|---|
| | | | two-digit numbers. Students extend these ideas to add tens and tens and ones and ones. Students may initially use connecting cubes to create units of ten, and these should be available to students throughout the unit. At the end of the section, students write equations to represent their thinking. Students may write a single equation that shows the sum (52+46=98 ) or they may write a series of equations to represent how they solved the problem (50+40=90, 2+6=8, 90+8=98). | |
| **Pacing:** | 3 days | | **Math Practices:**<br>SMP 2, 3, 5, 6, 7, 8 | **Assessments:**<br>Cool-down 3<br>Checkpoint A |
| **Section B: Compose a Ten: One- and Two-Digit Numbers** | | | | |
| 1.NBT.C.4<br>1.OA.C.6<br>1.OA.D.8 | I can solve addition problems using a variety of strategies. | | **Lesson Progression:**<br>This section introduces the idea that sometimes when adding numbers within 100, a new ten must be composed. This work builds on previous units in which students made a ten to add within 20 (for example, 9+5=10+4=14). Students may use drawings, connecting cubes and double 10-frames to represent and solve the problems. Regardless of which representations they use, the focus is on composing a new ten using 10 ones. Students may compose a new ten as they count on (68+2+4=74) or they may combine the ones and then add the tens (8+6=14, 14+60=74). | **Mandatory Lessons/Activities:**<br>iM Lessons 5, 6, 7 |
| **Pacing:** | 3 days | | **Math Practices:**<br>SMP 2, 3, 5, 6, 7, 8 | **Assessments:**<br>Cool-down 7<br>Checkpoint B |
| **Section C: Compose a Ten: Add within 100** | | | | |
| 1.NBT.A.1<br>1.NBT.B<br>1.NBT.B.3<br>1.NBT.C.4<br>1.NBT.C.5<br>1.NBT.C.6 | I can solve addition problems using a variety of strategies. | | **Lesson Progression:**<br>In this section, students apply what they learned about adding one-digit numbers and two-digit numbers with and without composing a ten in order to add any numbers within 100. They apply the associative and commutative properties as | **Mandatory Lessons/Activities:**<br>iM Lessons 9, 10, 11, 12 |

| | |
|---|---|
| | Performance |
| X | Observation |

| | |
|---|---|
| X | Selected Response |
| X | Constructed Response |
| | Performance |
| X | Observation |

| | |
|---|---|
| X | Selected Response |
| X | Constructed Response |

| | | | | |
|---|---|---|---|---|
| 1.OA.C.5<br>1.OA.C.6<br>1.OA.D.8 | | <table><tr><td></td><td>Performance</td></tr><tr><td>X</td><td>Observation</td></tr></table> | they count on and add tens and tens and ones and ones. Students see that no matter which order they use to combine parts of each of the addends the sum remains the same. Students make sense of and use equations to represent their method for adding and generalize about when a new ten needs to be composed. | |
| **Pacing:** | 4 days | | **Math Practices:**<br>SMP 2, 3, 5, 6, 7, 8 | **Assessments:**<br>Cool-down 11, 12<br>Checkpoint C |

| **ADDITIONAL CONSIDERATIONS** | | | |
|---|---|---|---|
| **COMMON MISCONCEPTIONS** | **PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT** | **ADVANCED STANDARDS FOR STUDENTS WHO HAVE DEMONSTRATED PRIOR MASTERY** | **OPPORTUNITIES FOR STUDENT-DIRECTED LEARNING WITHIN THE UNIT** |
| Students may not understand that when adding two-digit numbers, one adds tens to tens and ones to ones.<br><br>When students compose a new ten, they may not know to combine that with the tens in the sum. Students may write both digits in the ones place, ignore the tens digit, or add the digits together.<br><br>Students ignore the value of the digits (ex. 53 is 5 tens and 3 ones or 50 and 3). | 1.NBT.A.1: K.CC.A.1, K.CC. A.2, K.CC.B.4<br>1.NBT.B.3: K.CC.C.7, 1.NBT.B.2<br>1.NBT.C.4: 1.OA.A.1, 1.OA.C.6, 1.NBT.B.2<br>1.NBT.C.5 : 1.NBT.B.2<br>1.NBT.C.6: 1.NBT.B.2<br>1.OA.C.5 : K.CC.A.1, K.CC.A.2, K.CC.B.4, K.CC.C.6<br>1.OA.C.6: K.OA.A.2, K.OA.A.3, K.OA.A.4, K.OA.A.5, 1.OA.B.3, 1.OA.B.4, 1.OA.C.5<br>1.OA.D.8: 1.OA.D.7 | Choose from iM leveled centers and exploration problems to differentiate for students who are ready. | iM Centers<br>District-approved online resources |

| **RESOURCES** |
|---|
| Kendall Hunt<br>Blackline masters and materials from Teacher Resource Pack<br>Connecting cubes in towers of 10 and singles, number cards 0–10, paper clips (2-inch), two-color counters, tools for creating a visual display, number cubes, paper clips, two-color counters |

## UNIT 6: MEASURING LENGTH

Illustrative Mathematics Unit Focus: Students measure length and count measurement units up to 120. They solve addition and subtraction story problems with unknowns in all positions.

**Essential Questions:**
How can you measure the length of an object?

**Unit Pacing: 21 days (13 required lessons, 6 flex, 2 assessment and reaction)**

### UNWRAPPED STANDARDS

| Grade Level Standard | Standard Progression | Concepts (Big Ideas/ Understandings) | Academic Vocabulary (Standard Based) |
|---|---|---|---|
| 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. | Students extend their work in three major and interrelated ways, by:<br>• Representing and solving a new type of problem situation (Compare);<br>• Representing and solving the subtypes for all unknowns in all three types;<br>• Using Level 2 and Level 3 methods to extend addition and subtraction problem solving beyond 10, to problems within 20.<br><br>In particular, the OA progression in Grade 1 deals with adding two single-digit addends, and related subtractions. | Recognizing how a real-world situation fits into a common operation category helps to solve the problem. We can show mathematical situations in word problems using objects, drawings, and equations. | Addition<br>Subtraction<br>Equation<br>Symbol<br>Unknown<br>Part<br>Add<br>Whole<br>Equals =<br>Sum<br>Plus +<br>Number sentence<br>Subtract<br>Difference<br>Minus − |
| 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. | When adding more than two addends, students need to understand that the numbers can be grouped in many different ways. This is an informal introduction into the commutative and associative properties for addition. At this grade, students do not need to know the formal names of the properties but they need to understand that when adding three addends that they should look for friendly numbers to add first. For example, when adding 2 + 9 + 8, add the 2 + 8 to make ten and then add the 9. Students need to see addition problems written both vertically and horizontally. | | |

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| 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. | Put Together/Take Apart problems with Addend Unknown afford students the opportunity to see subtraction as the opposite of addition in a different way than as reversing the action, namely as finding an unknown addend. The meaning of subtraction as an unknown-addend addition problem is one of the essential understandings students will need in middle school in order to extend arithmetic to negative rational numbers. | Subtraction is the opposite of or "undoes" addition. | Part<br>Add<br>Whole<br>Equals =<br>Sum<br>Plus +<br>Number sentence<br>Subtract<br>Difference<br>Minus −<br>Addends |
| 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 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). | Students might use the commutative property of addition to change ? + 6 = 15 to 6 + ? = 15, then count on or use methods to compose 4 (to make ten) plus 5 (ones in the 15) to find 9. Students might reverse the action in the situation represented by ? - 6 = 9 so that is becomes 9 + 6 = ?. Or they might use their knowledge that the total is the first number in a subtraction equation and the last number in an addition equation to rewrite the situation equation as a solution equation: ? - 6 = 9 becomes 9 + 6 = ? or 6 + 9 = ?. | Properties of operations allow us to reorder, decompose and/or compose numbers in order to make computation simpler | Fluent<br>Equals =<br>Sum<br>Plus +<br>Number sentence<br>Difference<br>Minus −<br>Addends |
| 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. | Critical to this standard is the understanding that the equal sign (=) represents a relationship and not an action. It establishes that the quantity on the left side is the same as the quantity on the right side of the equal sign. Reading "=" as *same as* rather than *equals* is one way to reinforce this important concept. | The equal sign tells us that the quantities on either side have the same value or balance. | True<br>False<br>Equals =<br>Sum<br>Plus +<br>Equation<br>Difference<br>Minus −<br>Addends |
| 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. | Through practice and structured learning time, students learn patterns in spoken number words and in written numerals, and how the two are related. This is the foundation of thinking about place value and the meaning of the digits in a numeral. | Understanding place value enables us to represent, compare and order numbers and perform computations. | Ten<br>One<br>Hundred<br>Numeral<br>Count<br>Numbers 0-120 |

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| 1.MD.A.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object. | Measurement involves a comparison of an attribute of an item with a unit that has the same attribute. This standard involves the transitivity principle of indirect measurement. Students do not need to know the term, "transitivity" but they need to apply the principle. The transitivity principle says If A > B and B > C then A > C or If A < B and B < C then A < C. If these statements are true, then you do not need to measure A and C. Transitivity can be explicitly discussed: If A is longer than B and B is longer than C, then A must be longer than C as well. | Measuring length is the process of counting the number of same-sized units, placed end-to-end without gaps or overlaps,that match the length of the object being measured. | Length<br>Short<br>Long<br>Compare<br>Shorter/shortest<br>Longer/longest |
| 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. | Students begin to understand the concepts of measurement through the use of nonstandard units. Nonstandard units make it easier for the students to focus on the attribute being measured. Nonstandard units also provide the basis for a discussion on why we need standard units so there is a common way to communicate about how long an object is. At first, students may need to use multiple nonstandard units and lay them next to the object being measured. Then they count how many units to say how long the object is ( the pencil is 6 paper clips). Students then can use one of the nonstandard units and iterate the unit and count how long the object is. It is important when students are using one unit that there is no space between the units as they count. This can be challenging for some students if their fine motor skills are not as developed. | | Length<br>Measure<br>Unit |

| UNIT 6: MEASURING LENGTH | | | | |
|---|---|---|---|---|
| How can you measure the length of an object? | | | | |
| **CCSS Standards #** | **Learning Targets** | **Summative Assessment Strategy** | **Lesson Progression and Connection to Math Practices** | **Common Learning Experiences and Assessments** |
| **Section A: From Direct to Indirect Measurements** | | | | |

<table>
<tr>
<td>1.MD.A.1<br>1.NBT.B.3<br>1.NBT.C.5<br>1.OA.C.5<br>1.OA.C.6</td>
<td>I can compare the length of two objects.</td>
<td rowspan="2">
<table>
<tr><td>X</td><td>Selected Response</td></tr>
<tr><td>X</td><td>Constructed Response</td></tr>
<tr><td></td><td>Performance</td></tr>
<tr><td>X</td><td>Observation</td></tr>
</table>
</td>
<td>Lesson Progression:<br>Students expand their understanding of measurement to use indirect comparison and apply the transitive property informally to order 3 objects by length. For example, if the highlighter is longer than the pen and the pencil is shorter than the pen, then we know the highlighter is longer than the pencil.<br>At the end of the section, students use towers of connecting cubes to indirectly compare lengths to prepare them to iterate units of measure in the next section.</td>
<td>Mandatory Lessons/Activities:<br>iM Lessons 1, 2, 3</td>
</tr>
<tr>
<td>Pacing:</td>
<td>3 days</td>
<td>Math Practices:<br>SMP 3, 5, 6</td>
<td>Assessments:<br>Cool-down 2<br>Checkpoint A</td>
</tr>
<tr>
<td colspan="5">Section B: Measure to 120 by Iterating Units</td>
</tr>
<tr>
<td>1.MD.A.1<br>1.MD.A.2<br>1.NBT.A.1<br>1.NBT.C.5<br>1.OA.C.5<br>1.OA.C.6</td>
<td>I can measure length using a variety of tools.<br><br>I can count to tell how many.<br><br>I can read, write, and represent numbers to 120.</td>
<td>
<table>
<tr><td>X</td><td>Selected Response</td></tr>
<tr><td>X</td><td>Constructed Response</td></tr>
<tr><td></td><td>Performance</td></tr>
<tr><td>X</td><td>Observation</td></tr>
</table>
</td>
<td>Lesson Progression:<br>In this section, students move beyond direct and indirect comparison and measure the length of objects by iterating units. Students learn the conventions of length measurement and represent length measurements with a number and a unit. They understand that the length measurement of an object is the number of same-size length units that span it without gaps or overlaps.<br><br>Students use manipulatives (connecting cubes, paper clips, and base-ten cubes) as length units. Units of measure are suggested that will yield a whole number of length units. It is important for students to measure lengths in whole units as they are developing the idea that the number of units should not change if different people measure the same length with the same units. As much as possible, students should measure the length of skinny objects.<br><br>Students use base-ten cubes to measure lengths that are longer than 99 units as they expand their counting and number-writing skills to 120.</td>
<td>Mandatory Lessons/Activities:<br>iM Lessons 5, 6, 7, 8, 9</td>
</tr>
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| | | | Students consider groups of 10 and see that 10 tens is 100. Students do not discuss a hundred as a unit in grade 1, but the written notation is introduced so students can read and write numbers from 100–120. | |
| **Pacing:** | 5 days | | **Math Practices:**<br>SMP 3, 5, 6 | **Assessments:**<br>Cool-downs 7, 9<br>Checkpoint B |
| **Section C: All Kinds of Story Problems** | | | | |
| 1.MD.A.2<br>1.NBT.A.1<br>1.OA.A.1<br>1.OA.A.2<br>1.OA.B.4<br>1.OA.C.6 | I can represent and solve a variety of word problems using addition and subtraction. | X Selected Response<br>X Constructed Response<br>Performance<br>X Observation | **Lesson Progression:**<br>In this section, students solve all types of story problems with unknowns in all positions. They interpret and write addition and subtraction equations to represent the problems. The context of arts and crafts is used throughout the section and students may be interested in exploring more about this topic outside of math time. Students use the context of measurement which invites them to build and compare concrete objects as they solve Compare problems with Bigger or Smaller Unknown for the first time. Students interpret diagrams that represent these problems which lay the foundation for the introduction of the tape diagram in grade 2. | **Mandatory Lessons/Activities:**<br>iM Lessons 11, 12, 13, 14, 15 |
| **Pacing:** | 5 days | | **Math Practices:**<br>SMP 1, 2, 3, 4, 5, 6, 7, 8 | **Assessments:**<br>Cool-downs 11, 13, 14<br>Checkpoint C |

| ADDITIONAL CONSIDERATIONS | | | |
|---|---|---|---|
| **COMMON MISCONCEPTIONS** | **PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT** | **ADVANCED STANDARDS FOR STUDENTS WHO HAVE DEMONSTRATED PRIOR MASTERY** | **OPPORTUNITIES FOR STUDENT-DIRECTED LEARNING WITHIN THE UNIT** |
| Students may not attend to the precision of measurement, having gaps or overlaps with the units they use to measure. | 1.MD.A.1: K.MD.A.2<br>1.MD.A.2: 1.MD.A.2<br>1.NBT.A.1: K.CC.A.1, K.CC.A.2, K.CC.B.4 | Choose from iM leveled centers and exploration problems to differentiate for students who are ready. | iM Centers<br>District-approved online resources |

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| Students may not line up objects end to end when comparing length.<br><br>Students may not understand how to write three-digit numbers. For example, for one hundred nine students write "1009". | 1.NBT.C.4: 1.NBT.B.2, 1.OA.A.1, 1.OA.C.7<br>1.NBT.C.5: 1.NBT.B.2<br>1.OA.A.1: K.OA.A.2<br>1.OA.A.2: 1.OA.A.1<br>1.OA.B.4: K.OA.A.2<br>1.OA.C.5: K.CC.B.4<br>1.OA.C.6: K.OA.A.2, K.OA.A.3, K.OA.A.4, K.OA.A.5, 1.OA.B.3, 1.OA.B.4, 1.OA.C.5 | | |
| **RESOURCES** | | | |
| Kendall Hunt<br>Blackline masters and materials from Teacher Resource Pack<br>Connecting cubes, objects of various lengths, pencils, scissors, string, connecting cubes in towers of 10 and singles, number cards 0–10, paper clips (1-inch and 2-inch), tape (painter's or masking), base-ten blocks, connecting cubes, dry erase markers, sheet protectors 10-frames, cups, paper plates, colored pencils, crayons or markers, construction, paper, glue | | | |

## UNIT 7: GEOMETRY AND TIME

Illustrative Mathematics Unit Focus: Students reason with shapes and their attributes, partition shapes into equal pieces and tell time to the hour and half hour.

**Essential Questions:**
How does partitioning help us reason about shapes?
How can we name, describe, and analyze two-and three-dimensional shapes?
How can we create new shapes using existing shapes?
How are clocks useful?

**Unit Pacing: 19 days (14 required lessons, 3 flex, 2 assessment and reaction)**

**UNWRAPPED STANDARDS**

| Grade Level Standard | Standard Progression | Concepts (Big Ideas/ Understandings) | Academic Vocabulary (Standard Based) |
|---|---|---|---|
| 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. | Through practice and structured learning time, students learn patterns in spoken number words and in written numerals, and how the two are related. This is the foundation of thinking about place value and the meaning of the digits in a numeral. | Understanding place value enables us to represent, compare and order numbers and perform computations. | Count<br>Numerals 0-120<br>Number words 0-120 |
| 1.MD.B.3 Tell and write time in hours and half-hours using analog and digital clocks. | Reading time on analog and digital clocks is introduced in first grade. Students in second grade read and write times to the five minutes, and students in third grade work to the nearest minute. This standard connects with students' work in 1.G.A.3 in that the half-hour partitions the circle of the analog clock face into halves. | Clocks help us keep track of time and plan and sequence events. | Hour<br>Hour hand<br>Minute<br>Minute hand<br>Analog clock<br>Digital clock<br>O'clock<br>Half hour<br>Penny<br>Dime<br>Coin<br>Value<br>Cent |
| 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, | Students' data work in Grade 1 has important connections to addition and subtraction. Students in grade 1 can ask and answer questions about categorical data based on a representation of the | We collect, organize, represent, and analyze data in order to answer a question or solve a problem. | Tally chart<br>Survey<br>Data<br>Graph |

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| how many in each category, and how many more or less are in one category than in another. | data.Students can also ask and answer questions leading to other kinds of addition and subtraction problems (1.OA), such as compare problems or problems involving the addition of three numbers (for situations with three categories).<br><br>There is no single correct way to represent categorical data-and the Standards do not require Grade 1 students to use any specific format. However, students should be familiar with mark schemes. Another format that might be useful in Grade 1 is a picture graph in which one picture represents one object. (Note that picture graphs are not an expectation in the Standards until Grade 2.) | Data can be represented (recorded with models, drawings, or graphic organizers) in more than one way. | Picture<br>Picture graph<br>Bar graph<br>Models<br>Drawings<br>Graphic organizers |
| 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. | [Students] differentiate between geometrically defining attributes (e.g., "hexagons have six straight sides") and non defining attributes (e.g., color, overall size, or orientation).For example, they might say of this shape, "This has to go with the squares, because all four sides are the same, and these are square corners. It doesn't matter which way it's turned" (MP3, MP7). They explain why the variants shown earlier (p. 6) are members of familiar shape categories and why the difficult distractors are not, and they draw examples and nonexamples of the shape categories (MP7, MP8). | Two- and three-dimensional shapes can be named, described and analyzed using attributes, such as number and lengths of sides and number of angles/vertices. Naming shapes is not dependent on their color, orientation or size. | Attribute<br>Sides<br>Vertex<br>Two-dimensional shapes<br>Square<br>Triangle<br>Trapezoid<br>Rectangle<br>Circle |
| 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. | From the early beginnings of informally matching shapes and solving simple shape puzzles, students learn to intentionally compose and decompose plane and solid figures (e.g., putting two congruent isosceles triangles together with the explicit purpose of making a rhombus), building understanding of part-whole relationships as well as the properties of the original and composite shapes. In this way, they learn to perceive a combination of shapes as a single new shape (e.g., recognizing that two isosceles triangles can be combined to make a rhombus, and simultaneously seeing the rhombus and the two | New shapes can be created by putting together existing shapes. | Composite<br>Two-dimensional<br>Square<br>Triangle<br>Trapezoid<br>Rectangle<br>Half-circle<br>Quarter-circle<br>Three-dimensional<br>Put together |

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| | triangles). | | |
| 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. | This standard connects the beginning concepts of equal parts (fractions) and how this relates to shapes. Equal parts and the names for halves and quarters should be a focus. Identifying the numerator and denominator is not part of this standard, and formal fraction notation should not be used at this time. Instead the focus is on how to partition a circle or rectangle into equal parts and name those equal parts. | Partitioning a shape into smaller parts allows us to describe the shape in different ways. | Whole<br>Equal part (s)<br>Halves<br>Fourth<br>Quarter<br>Half of<br>Fourth of<br>Quarter of<br>Share<br>Divide<br>Describe |

## UNIT 7: GEOMETRY AND TIME

How does partitioning help us reason about shapes?
How can we name, describe, and analyze two-and three-dimensional shapes?
How can we create new shapes using existing shapes?
How are clocks useful?

### Section A: Flat and Solid Shapes

| CCSS Standards # | Learning Targets | Summative Assessment Strategy | Lesson Progression and Connection to Math Practices | Common Learning Experiences and Assessments |
|---|---|---|---|---|
| 1.G.A.1<br>1.G.A.2 | I can sort shapes by their attributes.<br><br>I can draw shapes with a given attribute.<br><br>I can put shapes together to create new shapes. | X Selected Response<br>X Constructed Response<br>Performance<br>X Observation | **Lesson Progression:**<br>In this section, students explore and reason about attributes of two- and three-dimensional shapes. Students should be able to name shapes, (including, cone, sphere, cylinder, cube, square, rectangle, triangle, rhombus and hexagon) but they do not need to hear or produce formal definitions of the shape. Students identify defining attributes (number of straight sides and corners) of triangles, rectangles, and squares, and distinguish them from non-defining attributes (color, orientation, size). They describe why a shape belongs in a certain category using their own language. For example, “These are all triangles because they have 3 straight sides and 3 corners. This is not a triangle | **Mandatory Lessons/Activities:**<br>iM Lessons 1, 2, 3, 4, 5, 6, 7 |

<table>
<tr><td></td><td></td><td></td><td>because the sides don’t touch.”<br><br>Students learn that a square is a special rectangle, because it possesses all of the defining attributes of a rectangle (4 sides, 4 square corners) and also has the defining attribute of a square (4 equal length sides). Students compose shapes from smaller shapes to deepen their understanding of two- and three-dimensional shapes.</td><td></td></tr>
<tr><td>Pacing:</td><td>7 days</td><td></td><td>Math Practices:<br>SMP 3, 5, 6, 7, 8</td><td>Assessments:<br>Cool-downs 4, 5 (Lesson observations)<br>Checkpoint A</td></tr>
<tr><td colspan="5">Section B: Halves and Quarters</td></tr>
<tr><td>1.G.A.1<br>1.G.A.2<br>1.G.A.3</td><td>I can partition shapes into halves and fourths.<br><br>I can identify and describe halves and fourths.</td><td><table><tr><td>X</td><td>Selected Response</td></tr><tr><td>X</td><td>Constructed Response</td></tr><tr><td></td><td>Performance</td></tr><tr><td>X</td><td>Observation</td></tr></table></td><td>Lesson Progression:<br>Students build on their understanding of composite shapes as they explore the idea of halves and fourths or quarters as equal pieces of a whole. Students hear and use the terms fourths and quarters to describe a shape split into four equal pieces. Students initially fold paper shapes to create two and four equal pieces, then they move on to drawing lines to split shapes. They consider the size of a fourth and a half in relation to the same whole. They use the language whole, halves, quarters, fourths, a half of, a fourth of, and a quarter of, to describe the pieces and relationship of the pieces to the whole.</td><td>Mandatory Lessons/Activities:<br>iM Lessons 9, 10, 11</td></tr>
<tr><td>Pacing:</td><td>3 days</td><td></td><td>Math Practices:<br>SMP 3, 5, 6, 7, 8</td><td>Assessments:<br>Cool-downs 9, 10<br>Checkpoint B</td></tr>
<tr><td colspan="5">Section C: Tell Time in Hours and Half Hours</td></tr>
<tr><td>1.G.A.1<br>1.G.A.2<br>1.MD.B.3<br>1.NBT.A.1</td><td>I can tell time to the hour and half-hour.</td><td><table><tr><td>X</td><td>Selected Response</td></tr><tr><td>X</td><td>Constructed</td></tr></table></td><td>Lesson Progression:<br>Students learn to tell time in hours and half hours by relating the numbers 1–12 to a clock face and a written time. Although the lessons in this section focus on 12 hour clocks, some students may be</td><td>Mandatory Lessons/Activities:<br>iM Lessons 13, 14, 15, 16</td></tr>
</table>

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|---|---|---|---|---|
| | | <table><tr><td></td><td>Response</td></tr><tr><td></td><td>Performance</td></tr><tr><td>X</td><td>Observation</td></tr></table> | familiar with 24 hour clocks and may want to share their knowledge. For both hours and half hours, students begin by considering clock faces that only show an hour hand to draw their attention to the fact that the hour hand will point directly to a number or halfway in between two numbers. They connect their understanding of halves of shapes to see that the minute hand points to the 6 when it has gone halfway around the clock.<br><br>Students connect the language of “o’clock” and “half past” to clock faces and written times. To build students’ concept of time, consider having an alarm that goes off each half-hour to draw attention to time in hours and half hours. When the alarm goes off, students can look at the clock, draw the hands on a blank clock, and record the time using numbers. | |
| **Pacing:** | 4 days | | **Math Practices:**<br>SMP 3, 5, 6, 7, 8 | **Assessments:**<br>Cool-down 15<br>Checkpoint C |

| **ADDITIONAL CONSIDERATIONS** | | | |
|---|---|---|---|
| **COMMON MISCONCEPTIONS** | **PRIOR KNOWLEDGE NEEDED TO MASTER STANDARDS FOR THIS UNIT** | **ADVANCED STANDARDS FOR STUDENTS WHO HAVE DEMONSTRATED PRIOR MASTERY** | **OPPORTUNITIES FOR STUDENT-DIRECTED LEARNING WITHIN THE UNIT** |
| Students may have trouble distinguishing the differences between the two clock hands and what they represent.<br><br>One of the most common misconceptions in geometry is the belief that orientation, size, or color are tied to shape identification. Students may see the first of the figures below as a triangle, but claim to not know the name of the second or third. | 1.G.A.1: K.G.B.4, K.G.B.5<br>1.G.A.2: K.G.B.6<br>1.G.A.3: 1.G.A.2<br>1.NBT.A.1: K.CC.A.1, K.CC.A.2, K.CC.B.4 | Choose from iM leveled centers and exploration problems to differentiate for students who are ready. | iM Centers<br>District-approved online resources |

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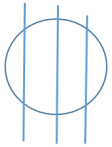
|  <br><br>Students may struggle to see a new shape from a composite shape. For example, a triangle and a square create a composite shape - pentagon. Students may see only the triangle and square not the pentagon.<br><br>Students may partition a shape into fourths or halves but not create equal parts. (i.e. fourths)  | | | |

**RESOURCES**

Kendall Hunt
Blackline masters and materials from Teacher Resource Pack
Bags (brown paper), geoblocks, solid shapes, chart paper, pattern blocks, picture books, folders, scissors, colored pencils, crayons or markers, two-color counters