

## Sequence of Grade 1 Modules Aligned with the Standards

Module 1: Sums and Differences to 10

Module 2: Introduction to Place Value Through Addition and Subtraction Within 20

Module 3: Ordering and Comparing Length Measurements as Numbers

Module 4: Place Value, Comparison, Addition and Subtraction to 40

Module 5: Identifying, Composing, and Partitioning Shapes

Module 6: Place Value, Comparison, Addition and Subtraction to 100

### Summary of Year

Grade 1 mathematics is about (1) developing understanding of addition, subtraction, and strategies for addition and subtraction within 20; (2) developing understanding of whole number relationships and place value, including grouping in tens and ones; (3) developing understanding of linear measurement and measuring lengths as iterating length units; and (4) reasoning about attributes of, and composing and decomposing geometric shapes.

**Key Areas of Focus for K–2:** Addition and subtraction—concepts, skills, and problem solving

**Required Fluency:** 1.OA.6 Add and subtract within 10.

### Major Emphasis Clusters

#### Operations and Algebraic Thinking

- Represent and solve problems involving addition and subtraction.
- Understand and apply properties of operations and the relationship between addition and subtraction.
- Add and subtract within 20.
- Work with addition and subtraction equations.

#### Number and Operations in Base Ten

- Extend the counting sequence.
- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

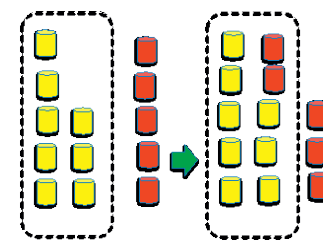
#### Measurement and Data

- Measure lengths indirectly and by iterating length units.

### Rationale for Module Sequence in Grade 1

In Grade 1, work with numbers to 10 continues to be a major stepping-stone in learning the place value system. In Module 1, students work to further understand the meaning of addition and subtraction begun in Kindergarten, largely within the context of the Grade 1 word problem types. They begin intentionally and energetically building fluency with addition and subtraction facts—a major gateway to later grades.

In Module 2, students add and subtract within 20. Work begins by modeling *adding and subtracting across ten* in word problems and with equations. Solutions involving decomposition and composition like that shown to the right for  $8 + 5$  reinforce the need to *make 10*. In Module 1, students grouped 10 objects, saw numbers 0 to 9 in relationship to ten, added to make ten, and subtracted from ten. They now transition to conceptualizing that ten as a single unit (e.g., using 10 linking cubes stuck together). This is the next major stepping-stone in understanding place value, learning to group *10 ones* as a single unit: 1 ten. Learning to *complete a unit* empowers students in later grades to understand *renaming* in the addition algorithm, to add 298 and 35 mentally (i.e.,  $298 + 2 + 33$ ), and to add measurements like 4 m, 80 cm, and 50 cm (i.e.,  $4 \text{ m} + 80 \text{ cm} + 20 \text{ cm} + 30 \text{ cm} = 4 \text{ m} + 1 \text{ m} + 30 \text{ cm} = 5 \text{ m } 30 \text{ cm}$ ).



$$8 + 5 = 8 + (2 + 3) = (8 + 2) + 3 = 10 + 3 = 13$$

Adding Across a Ten

Module 3, which focuses on measuring and comparing lengths indirectly and by iterating length units, gives students a few weeks to practice and internalize *making a 10* during daily fluency activities.

Module 4 returns to understanding place value. Addition and subtraction within 40 rest on firmly establishing a *ten* as a unit that can be counted, first introduced at the close of Module 2. Students begin to see a problem like  $23 + 6$  as an opportunity to separate the 2 tens in 23 and concentrate on the familiar addition problem  $3 + 6$ . Adding  $8 + 5$  is related to solving  $28 + 5$ ; complete a unit of ten and add 3 more.

In Module 5, students think about attributes of shapes and practice composing and decomposing geometric shapes. They also practice working with addition and subtraction within 40 during daily fluency activities (from Module 4). Thus, this module provides important internalization time for students between two intense number-based modules. The module placement also gives more spatially-oriented students the opportunity to build their confidence before they return to arithmetic.

Although Module 6 focuses on *adding and subtracting within 100*, the learning goal differs from the *within 40* module. Here, the new level of complexity is to build off the place value understanding and mental math strategies that were introduced in earlier modules. Students explore by using simple examples and the familiar units of 10 made out of linking cubes, bundles, and drawings. Students also count to 120 and represent any number within that range with a numeral.

Alignment Chart<sup>20</sup>

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 1 Modules
<b>Module 1:</b> <b>Sums and Differences to 10</b> <sup>21</sup> (45 days)	<p><b>Represent and solve problems involving addition and subtraction.</b><sup>22</sup></p> <p><b>1.OA.1</b> 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. (See Standards Glossary, Table 1.)</p> <p><b>Understand and apply properties of operations and the relationship between addition and subtraction.</b></p> <p><b>1.OA.3</b> Apply properties of operations as strategies to add and subtract. (Students need not use formal terms for these properties.) <i>Examples: If <math>8 + 3 = 11</math> is known, then <math>3 + 8 = 11</math> is also known. (Commutative property of addition.) To add <math>2 + 6 + 4</math>, the second two numbers can be added to make a ten, so <math>2 + 6 + 4 = 2 + 10 = 12</math>. (Associative property of addition.)</i></p> <p><b>1.OA.4</b> Understand subtraction as an unknown-addend problem. <i>For example, subtract <math>10 - 8</math> by finding the number that makes 10 when added to 8.</i></p> <p><b>Add and subtract within 20.</b></p> <p><b>1.OA.5</b> Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).</p> <p><b>1.OA.6</b> Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., <math>8 + 6 = 8 + 2 + 4 = 10 + 4 = 14</math>); decomposing a number leading to a ten (e.g., <math>13 - 4 = 13 - 3 - 1 = 10 - 1 = 9</math>); using the relationship between addition and subtraction (e.g., knowing that <math>8 + 4 = 12</math>, one knows <math>12 - 8 = 4</math>); and creating equivalent but easier or known sums (e.g., adding <math>6 + 7</math> by creating the known equivalent <math>6 + 6 + 1 = 12 + 1 = 13</math>).</p>

<sup>20</sup> When a cluster is referred to in this chart without a footnote, the cluster is addressed in its entirety.

<sup>21</sup> In this module, work is limited to within 10.

<sup>22</sup> 1.OA.2 is addressed in Module 2.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 1 Modules
	<p><b>Work with addition and subtraction equations.</b></p> <p><b>1.OA.7</b> Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. <i>For example, which of the following equations are true and which are false? <math>6 = 6</math>, <math>7 = 8 - 1</math>, <math>5 + 2 = 2 + 5</math>, <math>4 + 1 = 5 + 2</math>.</i></p> <p><b>1.OA.8</b> Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. <i>For example, determine the unknown number that makes the equation true in each of the equations <math>8 + ? = 11</math>, <math>5 = \_ - 3</math>, <math>6 + 6 = \_</math>.</i></p>
<p><b>Module 2:</b>  <b>Introduction to Place Value Through Addition and Subtraction Within 20</b>            (35 days)</p>	<p><b>Represent and solve problems involving addition and subtraction.</b></p> <p><b>1.OA.1</b> 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. (See Standards Glossary, Table 1.)</p> <p><b>1.OA.2</b> 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.</p> <p><b>Understand and apply properties of operations and the relationship between addition and subtraction.</b></p> <p><b>1.OA.3</b> Apply properties of operations as strategies to add and subtract. (Students need not use formal terms for these properties.) <i>Examples: If <math>8 + 3 = 11</math> is known, then <math>3 + 8 = 11</math> is also known. (Commutative property of addition.) To add <math>2 + 6 + 4</math>, the second two numbers can be added to make a ten, so <math>2 + 6 + 4 = 2 + 10 = 12</math>. (Associative property of addition.)</i></p> <p><b>1.OA.4</b> Understand subtraction as an unknown-addend problem. <i>For example, subtract <math>10 - 8</math> by finding the number that makes 10 when added to 8.</i></p>

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 1 Modules
	<p><b>Add and subtract within 20.</b><sup>23</sup></p> <p><b>1.OA.6</b> Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., <math>8 + 6 = 8 + 2 + 4 = 10 + 4 = 14</math>); decomposing a number leading to a ten (e.g., <math>13 - 4 = 13 - 3 - 1 = 10 - 1 = 9</math>); using the relationship between addition and subtraction (e.g., knowing that <math>8 + 4 = 12</math>, one knows <math>12 - 8 = 4</math>); and creating equivalent but easier or known sums (e.g., adding <math>6 + 7</math> by creating the known equivalent <math>6 + 6 + 1 = 12 + 1 = 13</math>).</p> <p><b>Understand place value.</b><sup>24</sup></p> <p><b>1.NBT.2</b> Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:</p> <ol style="list-style-type: none"> <li>10 can be thought of as a bundle of ten ones—called a “ten.”</li> <li>The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.</li> </ol>
<p><b>Module 3:</b> <b>Ordering and Comparing Length Measurements as Numbers</b> (15 days)</p>	<p><b>Represent and solve problems involving addition and subtraction.</b><sup>25</sup></p> <p><b>1.OA.1</b> 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. (See Standards Glossary, Table 1.)</p> <p><b>Measure lengths indirectly and by iterating length units.</b></p> <p><b>1.MD.1</b> Order three objects by length; compare the lengths of two objects indirectly by using a third object.</p>

<sup>23</sup> From this point forward, fluency practice is part of students’ on-going experience; the balance of this cluster is addressed in Module 1.

<sup>24</sup> Focus in this module is on numbers to 20. The balance of this cluster is addressed in Modules 4 and 6.

<sup>25</sup> The balance of this cluster is addressed in Module 2.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 1 Modules
	<p><b>1.MD.2</b> 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. <i>Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.</i></p> <p><b>Represent and interpret data.</b></p> <p><b>1.MD.4</b> 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.</p>
<p><b>Module 4:</b> <b>Place Value, Comparison, Addition and Subtraction to 40</b><sup>26</sup> (35 days)</p>	<p><b>Represent and solve problems involving addition and subtraction.</b><sup>27</sup></p> <p><b>1.OA.1</b> 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. (See Standards Glossary, Table 1.)</p> <p><b>Extend the counting sequence.</b><sup>28</sup></p> <p><b>1.NBT.1</b> 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.</p> <p><b>Understand place value.</b><sup>29</sup></p> <p><b>1.NBT.2</b> Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:</p> <ol style="list-style-type: none"> <li>10 can be thought of as a bundle of ten ones—called a “ten.”</li> </ol>

<sup>26</sup> While pennies and dimes are used throughout the module, 1.MD.3 is not a focus grade level standard in Module 4. Instead, this standard becomes a focal standard in Module 6, when all coins are introduced and used.

<sup>27</sup> The balance of this cluster is addressed in Module 2.

<sup>28</sup> Focus on numbers to 40.

<sup>29</sup> Focus on numbers to 40; 1.NBT.2b is addressed in Module 2.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 1 Modules
	<p>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).</p> <p><b>1.NBT.3</b> Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, and <math>&lt;</math>.</p> <p><b>Use place value understanding and properties of operations to add and subtract.</b><sup>30</sup></p> <p><b>1.NBT.4</b> 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.</p> <p><b>1.NBT.5</b> Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.</p> <p><b>1.NBT.6</b> 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.</p>
<p><b>Module 5:</b> <b>Identifying, Composing, and Partitioning Shapes</b> (15 days)</p>	<p><b>Tell and write time and money.</b><sup>31</sup></p> <p><b>1.MD.3</b> Tell and write time in hours and half-hours using analog and digital clocks. Recognize and identify coins, their names, and their value.</p> <p><b>Reason with shapes and their attributes.</b></p> <p><b>1.G.1</b> 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.</p>

<sup>30</sup> Focus on numbers to 40.

<sup>31</sup> Time alone is addressed in this module. Although money is not addressed until Grade 2 in the CCSS-M, it is addressed in Grade 1 Module 6.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 1 Modules
	<p><b>1.G.2</b> 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. (Students do not need to learn formal names such as “right rectangular prism.”)</p> <p><b>1.G.3</b> Partition circles and rectangles into two and four equal shares, describe the shares using the words <i>halves</i>, <i>fourths</i>, and <i>quarters</i>, and use the phrases <i>half of</i>, <i>fourth of</i>, and <i>quarter of</i>. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.</p>
<p><b>Module 6:</b> <b>Place Value, Comparison, Addition and Subtraction to 100</b> (35 days)</p>	<p><b>Represent and solve problems involving addition and subtraction.</b><sup>32</sup></p> <p><b>1.OA.1</b> 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. (See Standards Glossary, Table 1.)</p> <p><b>Extend the counting sequence.</b></p> <p><b>1.NBT.1</b> 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.</p> <p><b>Understand place value.</b><sup>33</sup></p> <p><b>1.NBT.2</b> Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:</p> <ul style="list-style-type: none"> <li>a. 10 can be thought of as a bundle of ten ones—called a “ten.”</li> <li>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).</li> </ul>

<sup>32</sup> The balance of this cluster is addressed in Module 2.

<sup>33</sup> 1.NBT.2b is addressed in Module 2.



Module and Approximate Number of Instructional Days	Standards Addressed in Grade 1 Modules
	<p><b>1.NBT.3</b> Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, and <math>&lt;</math>.</p> <p><b>Use place value understanding and properties of operations to add and subtract.</b></p> <p><b>1.NBT.4</b> 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.</p> <p><b>1.NBT.5</b> Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count: explain the reasoning used.</p> <p><b>1.NBT.6</b> 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.</p> <p><b>Tell and write time and money.<sup>34</sup></b></p> <p><b>1.MD.3</b> Tell and write time in hours and half-hours using analog and digital clocks. Recognize and identify coins, their names, and their value.</p>

<sup>34</sup> Although money is not addressed until Grade 2 in the CCSS-M, money is addressed in this module. Time is addressed in Module 5.