

	Pre-Kindergarten	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	2015-16*
1st TRIMESTER	M1: Counting to 5 (45 days)	M1: Numbers to 10 (43 days)	M1: Sums and Differences to 10 (45 days)	M1: Sums and Differences to 100 (10 days) M2: Addition and Subtraction of Length Units (12 days) M3: Place Value, Counting, and Comparison of Numbers to 1,000 (25 days)	M1: Properties of Multiplication and Division and Solving Problems with Units of 2-5 and 10 (25 days) M2: Place Value and Problem Solving with Units of Measure (25 days) M3: Multiplication and Division with Units of 0, 1, 6-9, and Multiples of 10 (25 days)	M1: Place Value, Rounding, and Algorithms for Addition and Subtraction (25 days) **M2: Unit Conversions (7 days) M3: Multi-Digit Multiplication and Division (43 days)	M1: Place Value and Decimal Fractions (20 days) M2: Multi-Digit Whole Number Operations and Decimal Fraction (35 days) M3: Addition and Subtraction of Fractions (22 days)	1st QUARTER
2nd TRIMESTER	M2: Shapes (15 days) M3: Counting to 10 (50 days)	**M2: 2D and 3D Shapes (12 days) M3: Comparison of Length, Weight, Capacity, and Numbers to 10 (38 days)	M2: Introduction to Place Value Through Addition and Subtraction Within 20 (35 days) M3: Ordering and Comparing Length Measurements as Numbers (15 days)	M4: Addition and Subtraction Within 200 with Word Problems to 100 (35 days) M5: Addition and Subtraction Within 1,000 with Word Problems to 100 (24 days)	M4: Multiplication and Area (20 days) M5: Fractions as Numbers on the Number Line (35 days)	M4: Angle Measure and Plane Figures (20 days) M5: Fraction Equivalence, Ordering, and Operations (45 days)	M4: Multiplication and Division of Fractions and Decimal Fractions (38 days) M5: Addition and Multiplication with Volume and Area (25 days)	2nd QUARTER
3rd TRIMESTER	M4: Comparison of Length, Weight, Capacity, and Numbers to 5 (35 days) M5: Addition and Subtraction Stories and Counting to 20 (35 days)	M4: Number Pairs, Addition and Subtraction to 10 (47 days) M5: Numbers 10-20 and Counting to 100 (30 days) M6: Analyzing, Comparing, and Composing Shapes (10 days)	M5: Identifying, Composing, and Partitioning Shapes (15 days) M6: Place Value, Comparison, Addition and Subtraction to 100 (35 days)	M6: Foundations of Multiplication and Division (24 days) M7: Problem Solving with Length, Money, and Data (30 days) M8: Time, Shapes, and Fractions as Equal Parts of Shapes (20 days)	M6: Collecting and Displaying Data (10 days) M7: Geometry and Measurement Word Problems (40 days)	M6: Decimal Fractions (20 days) M7: Exploring Measurement with Multiplication (20 days)	M6: Problem Solving with the Coordinate Plane (40 days)	3rd QUARTER
								4th QUARTER

Key:			
Number	Geometry	Number and Geometry, Measurement	Fractions

*The columns indicating trimesters and quarters are provided to give you a rough guideline. Please use this additional column for your own pacing considerations based on the specific dates of your academic calendar.
 **Please refer to the modules themselves to identify partially labeled titles as well as the standards corresponding to all modules.



A Story of Units:

A Curriculum Overview for Grades P–5

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Introduction

This document provides an overview of the academic year for Pre-Kindergarten through Grade 5, beginning with a curriculum map and followed by detailed grade-level descriptions.

The curriculum map is a chart that shows, at a glance, the sequence of modules comprising each grade of the entire elementary curriculum. The map also indicates the approximate number of instructional days designated for each module of each grade. Details that elaborate on the curriculum map are found in the grade-level descriptions. Each grade-level description begins with a list of the five to eight modules that comprise the instruction of that grade. That introductory component is followed by three sections: the **Summary of Year**, the **Rationale for Module Sequence**, and the **Alignment Chart** with the grade-level standards. The **Summary of Year** portion of each grade level includes four pieces of information:

- The critical instructional areas for the grade, as described in the Common Core State Standards for Mathematics¹ (CCSS-M)
- The Key Areas of Focus² for the grade band (Note that this information is not available for Pre-Kindergarten.)
- The Required Fluencies for the grade (Note that this information is not available for Pre-Kindergarten.)
- The Major Emphasis Clusters for the grade (Note that this information is not available for Pre-Kindergarten.)

The **Rationale for Module Sequence** portion of each grade level provides a brief description of the instructional focus of each module for that grade and explains the developmental sequence of the mathematics.

The **Alignment Chart** for each grade lists the standards that are addressed in each module of the grade. Throughout the alignment charts, when a cluster is included without a footnote, it is taught in its entirety; there are also times when footnotes are relevant to particular standards within a cluster. All standards for each grade have been carefully included in the module sequence. Some standards are deliberately included in more than one module so that a strong foundation can be built over time.

¹ http://www.corestandards.org/wp-content/uploads/Math_Standards1.pdf

² <http://www.corestandards.org/other-resources/key-shifts-in-mathematics/>

Sequence of Pre-Kindergarten Modules Aligned with the Standards

Module 1: Counting to 5

Module 2: Shapes

Module 3: Counting to 10

Module 4: Comparison of Length, Weight, Capacity, and Numbers to 5

Module 5: Addition and Subtraction Stories and Counting to 20

Pre-Kindergarten mathematics focuses on

1. developing an understanding of whole numbers using concrete materials, including concepts of one-to-one correspondence, counting, cardinality, and comparison.
2. describing shapes in their environment.

Rationale for Module Sequence in Pre-Kindergarten

A Story of Units begins! Beans, pennies, apples, and cubes are some of the units, the objects being counted, that students playfully manipulate during their Pre-Kindergarten year. Lessons are planned from simple to complex so that, by the end of the year, students use their math words to communicate precise observations such as, “3 bananas and 2 bananas make 5 bananas.” Notice how this sets the foundation for later mathematics using, for example, place value and fractional units (e.g., “3 hundreds and 2 hundreds make 5 hundreds” and “3 fourths and 2 fourths make 5 fourths”).

The story kicks off in Module 1 with analyzing, sorting, and making a group sharing an attribute (e.g., things that have wheels). Students count the number of objects in the group in different configurations, match those quantities to numerals, and finally, construct a number stair by placing 1 more cube and verbalizing, “3. One more is 4.” Module 1 works exclusively with numbers 1, 2, 3, 4, and 5.

In Module 2, students also analyze their world, this time sorting, comparing, re-positioning, identifying, and constructing two-dimensional shapes. They then apply their observations to three-dimensional shapes. This module is carefully positioned between Modules 1 and 3 to allow students time to develop their fluency with numbers to 5 before moving on to the larger numbers of Module 3.



Module 3 builds the numbers 6–10 in relationship to 5. Students use their fingers to support the $5 + n$ perspective (e.g., “6 is 5 and 1.” “When I count to 8 on my fingers, I have 5 fingers here and 3 fingers here”). Thus, numbers 6–10 are “5 and some more,” making numbers 6–10 manageable. As in Module 1, students get busy manipulating units into different configurations and then counting them in systematic ways. For example, they learn to place 8 objects in a line and count from left to right. They then learn to arrange those same objects into an array and then into a circle, addressing the complexities that the new configurations bring. After eight objects have been under study for a few lessons, the next number is introduced by putting 1 more object. Notice how this sets the foundation for later mathematics using, for example, place value units and units of 8 (e.g., “236 has 3 tens. 1 more ten is 246. $236 + 10 = 246$.” “Five eights is 40. 1 more eight is 48. Six eights is 48”).

In Module 4, students recognize the measureable attributes of length, weight, capacity, and number and learn to use the language of comparison (e.g., *shorter than* and *taller than*, *heavier than* and *lighter than*, *empty* and *full*, *more* and *less*). This rich module develops the foundational concept of 2 quantities in relationship to each other. Remember, the second “chapter” in the Eureka Trilogy is *A Story of Ratios*. An understanding of ratio begins here at the concrete level as students compare. The critical use of the words *more than* and *less than* is embedded in a lovely, playful sequence of exploratory experiences while allowing their skills with counting to 10 develop during fluency practice.

In Module 5, as in Grades K–5, comparison work flows directly into addition and subtraction. “5 is more than 3” evolves into “5 is 3 and 2.” Students act out math stories with up to 5 objects and learn to decontextualize their stories. For example, a student might use his fingers to represent a story about students and say, “3 children were playing. (Shows 3 fingers.) 2 more children came. (Shows 2 more fingers.) 3 and 2 make 5. Five children are playing now.” The student represented the children with his fingers, described the situation with a number sentence (“3 and 2 make 5”), and then made a statement returning to the story’s context. (“Now there are 5 children playing.”) This ability to decontextualize translates in upper grades into the ability to solve word problems by modeling with math drawings such as tape diagram or arrays. The year culminates with acting out story problems in the Children’s Math Theater, a celebration of their learning intended for the whole family.

Alignment Chart³

Module and Approximate Number of Instructional Days	Standards ⁴ Addressed in Pre-Kindergarten Modules
Module 1: Counting to 5 ⁵ (45 days)	Know number names and the count sequence. PK.CC.1 Count to 20. PK.CC.2 Represent a number of objects with a written numeral 0–5 (with 0 representing a count of no objects). Count to tell the number of objects.⁶ PK.CC.3 Understand the relationship between numbers and quantities to 10; connect counting to cardinality. a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. c. Understand that each successive number name refers to a quantity that is one larger. PK.CC.4 Count to answer “how many?” questions about as many as 10 things arranged in a line, a rectangular array, or a circle, or as many as 5 things in a scattered configuration; given a number from 1–10, count out that many objects. Understand simple patterns. PK.OA.2 Duplicate and extend (e.g., What comes next?) simple patterns using concrete objects.

³ When a cluster is referred to in this chart without a footnote, the cluster is addressed in its entirety.

⁴ The Pre-Kindergarten standards originate from the New York State Common Core Learning Standards.

⁵ In this module, standards work is limited to within 5.

⁶ Within 5.

Module and Approximate Number of Instructional Days	Standards ⁴ Addressed in Pre-Kindergarten Modules
Module 2: Shapes (15 days)	Sort objects and count the number of objects in each category.⁷ PK.MD.2 Sort objects into categories; count the numbers of objects in each category. Identify and describe shapes (squares, circles, triangles, rectangles). PK.G.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as top, bottom, up, down, in front of, behind, over, under, and next to. PK.G.2 Correctly name shapes regardless of size. Analyze, compare, and sort objects. PK.G.3 Analyze, compare, and sort two- and three-dimensional shapes and objects, in different sizes, using informal language to describe their similarities, differences, and other attributes (e.g., color, size, and shape). PK.G.4 Create and build shapes from components (e.g., sticks and clay balls).
Module 3: Counting to 10 (50 days)	Know number names and the count sequence.⁸ PK.CC.1 Count to 20. Count to tell the number of objects. PK.CC.3 Understand the relationship between numbers and quantities to 10; connect counting to cardinality. a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

⁷ Within 5.

⁸ PK.CC.2 is addressed in Modules 1 and 5.

Module and Approximate Number of Instructional Days	Standards ⁴ Addressed in Pre-Kindergarten Modules
Module 4: Comparison of Length, Weight, Capacity, and Numbers to 5 (35 days)	c. Understand that each successive number name refers to a quantity that is one larger. PK.CC.4 Count to answer “how many?” questions about as many as 10 things arranged in a line, a rectangular array, or a circle, or as many as 5 things in a scattered configuration; given a number from 1–10, count out that many objects. Compare numbers. PK.CC.5 Identify whether the number of objects in one group is more, less, greater than, fewer, and/or equal to the number of objects in another group, e.g., by using matching and counting strategies. PK.CC.6 Identify “first” and “last” related to order or position. Describe and compare measurable attributes. PK.MD.1 Identify measurable attributes of objects, such as length, and weight. Describe them using correct vocabulary (e.g., small, big, short, tall, empty, full, heavy, and light).
Module 5: Addition and Subtraction Stories and Counting to 20 (35 days)	Know number names and the count sequence. PK.CC.1 Count to 20. PK.CC.2 Represent a number of objects with a written numeral 0–5 (with 0 representing a count of no objects). Understand addition as adding to, and understand subtraction as taking from. PK.OA.1 Demonstrate an understanding of addition and subtraction by using objects, fingers, and responding to practical situations (e.g., If we have 3 apples and add two more, how many apples do we have all together?). Understand simple patterns. PK.OA.2 Duplicate and extend (e.g., What comes next?) simple patterns using concrete objects.

Sequence of Kindergarten Modules Aligned with the Standards

- Module 1: Numbers to 10
- Module 2: Two-Dimensional and Three-Dimensional Shapes
- Module 3: Comparison of Length, Weight, Capacity, and Numbers to 10
- Module 4: Number Pairs, Addition and Subtraction to 10
- Module 5: Numbers 10–20 and Counting to 100
- Module 6: Analyzing, Comparing, and Composing Shapes

Summary of Year

Kindergarten mathematics is about (1) representing, relating, and operating on whole numbers, initially with sets of objects; and (2) describing shapes and space. More learning time in Kindergarten should be devoted to number than to other topics.

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

Required Fluency: K.OA.5 Add and subtract within 5.

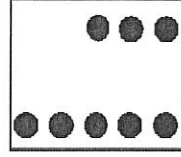
Major Emphasis Clusters
Counting and Cardinality - Know number names and count sequence. - Count to tell the number of objects. - Compare numbers. Operations and Algebraic Thinking - Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. Number and Operations in Base Ten - Work with numbers 11–19 to gain foundations for place value.

Rationale for Module Sequence in Kindergarten

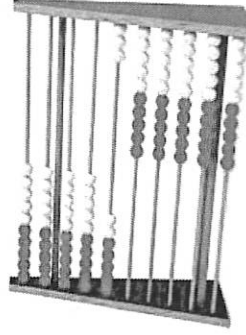
A Story of Units continues in Kindergarten. Just like in Pre-K, ladybugs, fingers, and plastic bears are manipulated and counted in Kindergarten, with work consistently moving to the pictorial and abstract levels. The new, foundational unit introduced in Kindergarten’s Module 5, is the supremely important unit of *one*. By the end of the Kindergarten year, students’ first steps into place value are evidenced as they make precise statements such as, “12 is the same as 10 ones and 2 ones!” Notice how this sets the foundation for later work with decimal units (e.g., in Grade 1, “12 is the same as 1 ten and 2 ones,” in Grade 2, “12 tens is the same as 10 tens and 2 tens or 1 hundred 2 tens;” and in Grade 4, “12 tenths is the same as 10 tenths and 2 tenths or 1 one and 2 tenths”).

To begin the year, Kindergarten students start out classifying and categorizing objects, leading to making one group (e.g., “I made a group of 9 goldfish. Look how I can count them in a line, in rows, and in a circle”). Students learn the way each number from 0 to 10 relates to five using fingers,

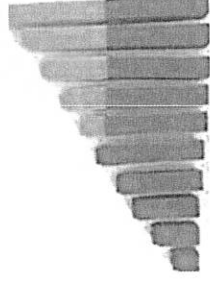
cubes, drawings, 5-groups (pictured below) and the Rekenrek, an abacus with a color change after the fifth bead (pictured below). The materials support students in seeing all numbers to ten in relationship to five, as they also see them on their fingers, the best manipulative of all! This renders 6, 7, 8, 9, and 10 more friendly as they see, for example, the 3 and 5 embedded within 8. Notice how the distribution of 8 beads as 5 beads and 3 beads sets the stage for the distributive property in Grade 3 ($8 \text{ fours} = 5 \text{ fours} + 3 \text{ fours}$, so $(5 \times 4) + (3 \times 4) = 20 + 12 = 32$). Students close the module by investigating patterns of *1 more* and *1 less* (excluding the word *than*) using models such as the number stairs (pictured below right) with a color change after the fifth cube.



5-Group Card



Rekenrek



Number Stairs

In Module 2, students take a needed break from numbers to analyze their environment and describe and identify squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres. During both Modules 2 and 3, students also practice their fluency by counting and manipulating numbers to 10 during their fluency practice, giving them ample time to prepare for the addition and subtraction of Module 4.

In Module 3, students directly compare two quantities, first learning to identify the attribute being compared. The use of the word *than* is carefully developed first in the context of length (e.g., *taller than*, *shorter than*), then weight (*heavier than*, *lighter than*), and finally capacity. Notice how *more than* and *less than* are used to compare capacities (e.g., “The bucket holds *more than* the cup”). This transitions students smoothly into comparing numbers (e.g., “9 chairs is *more than* 6 chairs”). This concrete foundation for comparison is essential to students’ entire K–12 experience. Ask any Grade 5 teacher which of the two following word problems is more challenging for students:

- There are 34.6 kilograms of sand and 3 kilograms more gravel than sand. What is the total weight of the gravel and sand?*
- There are 34.6 kilograms of sand and 3 times as much gravel. What is the total weight of the gravel and the sand?*

Problem (a) is more challenging because of the language of *more than*. Students consistently struggle to reason about the relationship of quantities, often resorting to using ineffective tricks (e.g., “If the problem says *more than*, subtract,” which is not correct in the sand and gravel problem). Module 3 in Kindergarten is intended to provide a solid foundation to future comparison work in the meaningful context of measurement.

In Module 4, comparison flows into addition and subtraction, as it does in all the elementary grades (e.g., “7 is more than 3” leads to, “ $7 = 3 + 4$,” and “ $3 + 4 = 7$ ”). Students represent *add to*, *take away*, and *put together* stories with blocks, drawings, and equations. Toward the end of the module,

students start to reorient from 5 toward 10 ones with “How much more does 7 need to make ten?” These final lessons set the stage for Module 5 wherein 10 ones is the structure on which students build the teen numbers. They are also critical foundation standards for Grade 1. Students must know how much a number needs to make ten in order to use the *make ten* strategy in Grades 1 and 2, shown to be an important route to place value understanding as they master their sums and differences to 20 by the end of Grade 2.

In Module 5, after an extended experience of addition and subtraction with totals up to 10, students progress to investigating numbers 10–20. For example, thirteen beans are decomposed as 10 beans and 3 beans just as 8 beans are decomposed as 5 beans and 3 beans. Students record their decompositions of the teen numbers as equations, $13 = 10 + 3$, and start to think, “10. 3 more is 13.” As mentioned at the beginning of the story in Grade 1, the unit *one* is introduced as students learn to think of the teen numbers as 10 ones and some ones. For the first time, *one* is not an object but rather a noun! Notice how this sets the stage for expanded form in the upper grades (e.g., $36 = 30 + 6$, or $13.6 = 10 + 3 + 0.6$).

Module 6 rounds out the year with an exploration of shapes. Students build shapes from components, analyze and compare them, and discover that they can be composed of smaller shapes, just as larger numbers are composed of smaller numbers.

Alignment Chart⁹

Module and Approximate Number of Instructional Days	Standards Addressed in Kindergarten Modules
Module 1: Numbers to 10 ¹⁰ (43 days)	Know number names and the count sequence.¹¹ K.CC.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects). Count to tell the number of objects.¹² K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality. a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.

⁹ When a cluster is referred to in this chart without a footnote, the cluster is addressed in its entirety.

¹⁰ In this module, standards work is limited to within 10.

¹¹ The balance of this cluster is addressed in Module 5.

¹² K.CC.4d is addressed in Module 6.

Module and Approximate Number of Instructional Days	Standards Addressed in Kindergarten Modules
	b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. c. Understand that each successive number name refers to a quantity that is one larger. K.CC.5 Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects. Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.¹³ K.OA.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$). Classify objects and count the number of objects in each category. K.MD.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (Limit category counts to be less than or equal to 10.) Classify objects and count the number of objects in each category. K.MD.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (Limit category counts to be less than or equal to 10.) Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres). K.G.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as <i>above</i>, <i>below</i>, <i>beside</i>, <i>in front of</i>, <i>behind</i>, and <i>next to</i>. K.G.2 Correctly name shapes regardless of their orientations or overall size.
Module 2: Two-Dimensional and Three-Dimensional Shapes (12 days)	

¹³ The balance of this cluster is addressed in Module 4.

Module and Approximate Number of Instructional Days	Standards Addressed in Kindergarten Modules
	K.G.3 Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”). Analyze, compare, create, and compose shapes.¹⁴ K.G.4 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).
Module 3: Comparison of Length, Weight, Capacity, and Numbers to 10 (38 days)	Compare numbers. K.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. (Include groups with up to ten objects.) K.CC.7 Compare two numbers between 1 and 10 presented as written numerals. Describe and compare measurable attributes. K.MD.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. K.MD.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. <i>For example, directly compare the heights of two children and describe one child as taller/shorter.</i>
Module 4: Number Pairs, Addition and Subtraction to 10 (47 days)	Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. (Drawings need not show details, but should show the mathematics in the problem.) K.OA.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

¹⁴ The balance of this cluster is addressed in Module 6.

Module and Approximate Number of Instructional Days	Standards Addressed in Kindergarten Modules
Module 5: Numbers 10–20 and Counting to 100 (30 days)	K.OA.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$). K.OA.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings and record the answer with a drawing or equation. K.OA.5 Fluently add and subtract within 5.¹⁵
	Know number names and the count sequence. K.CC.1 Count to 100 by ones and by tens. K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1). K.CC.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).¹⁶
	Count to tell the number of objects.¹⁶ K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. c. Understand that each successive number name refers to a quantity that is one larger.
	K.CC.5 Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

¹⁵ From this point forward, fluency practice is part of students’ on-going experience.

¹⁶ K.CC.4a, K.CC.4b, and K.CC.4c are addressed in Module 1; K.CC.4d is addressed in Module 6.

Module and Approximate Number of Instructional Days	Standards Addressed in Kindergarten Modules
	Work with numbers 11–19 to gain foundations for place value. K.NBT.1 Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings and record each composition or decomposition by a drawing or equation (such as $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two three, four, five, six, seven, eight or nine ones.
Module 6: Analyzing, Comparing, and Composing Shapes (10 days)	Count to tell the number of objects.¹⁷ K.CC.4 Understand the relationship between numbers and quantities: connect counting to cardinality. d. Develop understanding of ordinal numbers (first through tenth) to describe the relative position and magnitude of whole numbers.¹⁸ Analyze, compare, create and compose shapes.¹⁹ K.G.5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes. K.G.6 Compose simple shapes to form larger shapes. <i>For example, “Can you join these two triangles with full sides touching to make a rectangle?”</i>

¹⁷ Ordinality is introduced in the context of constructing and manipulating shapes. The balance of this cluster is addressed in Modules 1 and 5.

¹⁸ K.CC.4d originates from the New York State Common Core Learning Standards and is not part of the CCSS-M.

¹⁹ K.G.4 is addressed in Module 2.

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

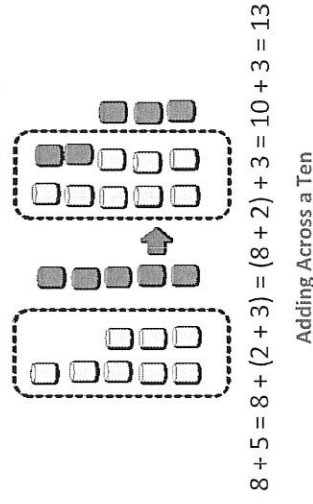
Required Fluency: 1.OA.6 Add and subtract within 10.

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., $4 \text{ m} + 80 \text{ cm} + 50 \text{ cm} = 4 \text{ m} + 1 \text{ m} + 30 \text{ cm} = 5 \text{ m } 30 \text{ cm}$).



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 Chart²⁰

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 1 Modules
Module 1: Sums and Differences to 10 ²¹ (45 days)	Represent and solve problems involving addition and subtraction.²² 1.OA.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. (See Standards Glossary, Table 1.) Understand and apply properties of operations and the relationship between addition and subtraction. 1.OA.3 Apply properties of operations as strategies to add and subtract. (Students need not use formal terms for these properties.) <i>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.)</i> 1.OA.4 Understand subtraction as an unknown-addend problem. <i>For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8.</i> Add and subtract within 20. 1.OA.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). 1.OA.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 $6 + 6 + 1 = 12 + 1 = 13$).

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

²¹ In this module, work is limited to within 10.

²² 1.OA.2 is addressed in Module 2.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 1 Modules
Module 2: Introduction to Place Value Through Addition and Subtraction Within 20 (35 days)	Work with addition and subtraction equations. 1.OA.7 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? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.</i> 1.OA.8 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 $8 + ? = 11$, $5 = _ - 3$, $6 + 6 = _$.</i>
	Represent and solve problems involving addition and subtraction. 1.OA.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. (See Standards Glossary, Table 1.) 1.OA.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.
	Understand and apply properties of operations and the relationship between addition and subtraction. 1.OA.3 Apply properties of operations as strategies to add and subtract. (Students need not use formal terms for these properties.) <i>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.)</i> 1.OA.4 Understand subtraction as an unknown-addend problem. <i>For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8.</i>

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 1 Modules
	Add and subtract within 20.²³ 1.OA.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 $6 + 6 + 1 = 12 + 1 = 13$). Understand place value.²⁴ 1.NBT.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: a. 10 can be thought of as a bundle of ten ones—called a “ten.” b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
Module 3: Ordering and Comparing Length Measurements as Numbers (15 days)	Represent and solve problems involving addition and subtraction.²⁵ 1.OA.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. (See Standards Glossary, Table 1.) Measure lengths indirectly and by iterating length units. 1.MD.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.

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

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

²⁵ The balance of this cluster is addressed in Module 2.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 1 Modules
Module 4: Place Value, Comparison, Addition and Subtraction to 40 ²⁶ (35 days)	1.MD.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. <i>Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.</i> Represent and interpret data. 1.MD.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.
	Represent and solve problems involving addition and subtraction.²⁷ 1.OA.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. (See Standards Glossary, Table 1.) Extend the counting sequence.²⁸ 1.NBT.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. Understand place value.²⁹ 1.NBT.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: a. 10 can be thought of as a bundle of ten ones—called a “ten.”

²⁶ 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.

²⁷ The balance of this cluster is addressed in Module 2.

²⁸ Focus on numbers to 40.

²⁹ 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
	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). 1.NBT.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$. Use place value understanding and properties of operations to add and subtract.³⁰ 1.NBT.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. 1.NBT.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. 1.NBT.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.
Module 5: Identifying, Composing, and Partitioning Shapes (15 days)	Tell and write time and money.³¹ 1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks. Recognize and identify coins, their names, and their value. Reason with shapes and their attributes. 1.G.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.

³⁰ Focus on numbers to 40.

³¹ 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
Module 6: Place Value, Comparison, Addition and Subtraction to 100 (35 days)	1.G.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. (Students do not need to learn formal names such as “right rectangular prism.”) 1.G.3 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. Represent and solve problems involving addition and subtraction.³² 1.OA.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. (See Standards Glossary, Table 1.) Extend the counting sequence. 1.NBT.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. Understand place value.³³ 1.NBT.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: a. 10 can be thought of as a bundle of ten ones—called a “ten.” 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).

³² The balance of this cluster is addressed in Module 2.

³³ 1.NBT.2b is addressed in Module 2.

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

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

Sequence of Grade 2 Modules Aligned with the Standards

- Module 1: Sums and Differences to 100
- Module 2: Addition and Subtraction of Length Units
- Module 3: Place Value, Counting, and Comparison of Numbers to 1,000
- Module 4: Addition and Subtraction Within 200 with Word Problems to 100
- Module 5: Addition and Subtraction Within 1,000 with Word Problems to 100
- Module 6: Foundations of Multiplication and Division
- Module 7: Problem Solving with Length, Money, and Data
- Module 8: Time, Shapes, and Fractions as Equal Parts of Shapes

Summary of Year

Grade 2 mathematics is about (1) extending understanding of base-ten notation; (2) building fluency with addition and subtraction; (3) using standard units of measure; and (4) describing and analyzing shapes.

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

Required Fluency: 2.OA.2 Add and subtract within 20.
2.NBT.5 Add and subtract within 100.

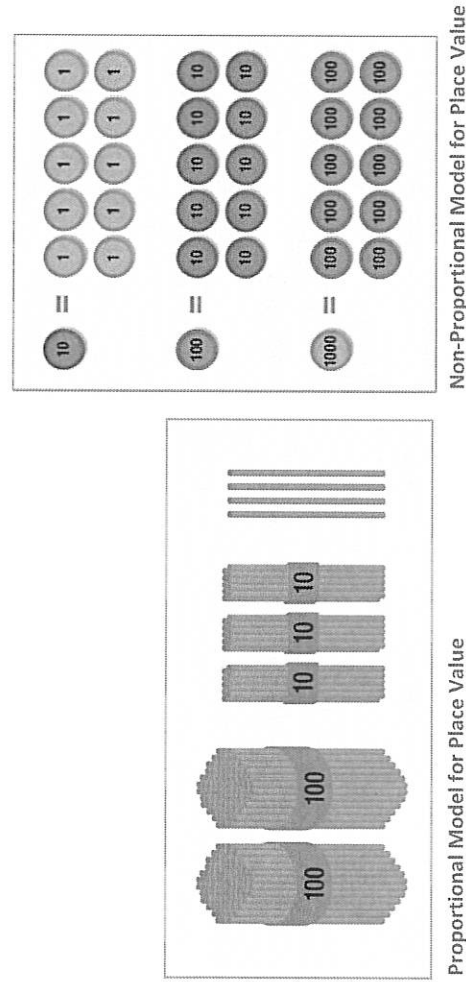
Rationale for Module Sequence in Grade 2

From Grade 1, students have fluency of addition and subtraction within 10 and extensive experience working with numbers to 100. Module 1 of Grade 2 establishes a motivating, differentiated fluency program in the first few weeks that will provide each student with enough practice to achieve mastery of the new required fluencies (i.e., adding and subtracting within 20 and within 100) by the end of the year. Students also solve all addition and subtraction word problem situations (See the Standards Glossary, Table 1) that do not involve comparison using the Read-Draw-Write process, a practice that will also continue throughout the year. Though encouraged to use math drawings that are intuitive for them, each situation is also modeled using the tape diagram, encouraging students to generalize and analyze part-whole relationships.

Major Emphasis Clusters
Operations and Algebraic Thinking - Represent and solve problems involving addition and subtraction. - Add and subtract within 20. Number and Operations in Base Ten - Understand place value. - Use place value understanding and properties of operations to add and subtract. Measurement and Data - Measure and estimate lengths in standard units. - Relate addition and subtraction to length.

In Module 2, students learn to measure and estimate using standard units for length and solve measurement problems involving addition and subtraction of length, now encountering the word problem situations involving comparison. A major objective is for students to use measurement tools with the understanding that linear measure involves an iteration of units and that the smaller a unit, the more iterations are necessary to cover a given length. Students work exclusively with metric units (e.g., centimeters and meters) in this module to support upcoming work with place value concepts in Module 3. Units also play a central role in the addition and subtraction algorithms of Modules 4 and 5. An underlying goal for this module is for students to learn the meaning of a *unit* in a different context, that of length. This understanding serves as the foundation of arithmetic, measurement, and geometry in elementary school. Students also solve word problems involving all addition and subtraction comparison situations, so that by the end of Module 2, they have encountered the full set of situations.

All arithmetic algorithms are manipulations of place value units: ones, tens, hundreds, etc. In Module 3, students extend their understanding of base-ten notation and apply their understanding of place value to count and compare numbers to 1,000. In Grade 2, the place value units move from a proportional model to a non-proportional number disk model (see the pictures below). The place value table with number disks can be used through Grade 5 for modeling very large numbers and decimals, thus providing students greater facility with, and understanding of, mental math and algorithms.



In Module 4, students apply their work with place value units to add and subtract within 200, moving from concrete to pictorial to abstract. This work deepens their understanding of base ten, place value, and the properties of operations. It also challenges them to apply their knowledge to one-step and two-step word problems. During this module, students also continue to develop one of the required fluencies of the grade: addition and subtraction within 100.

Module 5 builds upon the work of Module 4. Students again use place value strategies, manipulatives, and math drawings to extend their conceptual understanding of the addition and subtraction algorithms to numbers within 1,000. They maintain addition and subtraction fluency within 100 through daily application work to solve one- and two-step word problems of all types. A key component of Modules 4 and 5 is that students use place value reasoning to explain why their addition and subtraction strategies work.

In Module 6, students extend their understanding of a unit to build the foundation for multiplication and division wherein any number, not just powers of ten, can be a unit. Making equal groups of *four apples each* establishes the unit *four apples* (or just *four*) that can then be counted: *1 four, 2 fours, 3 fours*, etc. Relating the new unit to the one used to create it lays the foundation for multiplication: *3 groups of 4 apples equal 12 apples* (or *3 fours is 12*).

Module 7 provides another opportunity for students to practice their algorithms and problem-solving skills with perhaps the most well-known, interesting units of all: dollars, dimes, pennies, quarters, and nickels. Measuring and estimating length is revisited in this module in the context of units from both the customary system (e.g., inches and feet) and the metric system (e.g., centimeters and meters). As they study money and length, students represent data given by measurement and money data using picture graphs, bar graphs, and line plots.

Students finish Grade 2 by describing and analyzing shapes in terms of their sides and angles. In Module 8, students investigate, describe, and reason about the composition and decomposition of shapes to form other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.

Alignment Chart³⁵

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 2 Modules
Module 1: Sums and Differences to 100 (10 days)	Represent and solve problems involving addition and subtraction.³⁶ 2.OA.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. (See Standards Glossary, Table 1.) Add and subtract within 20.³⁷ 2.OA.2 Fluently add and subtract within 20 using mental strategies. (See standard 1.OA.6 for a list of mental strategies.) By end of Grade 2, know from memory all sums of two one-digit numbers. Use place value understanding and properties of operations to add and subtract.³⁸ 2.NBT.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
Module 2: Addition and Subtraction of Length Units (12 days)	Measure and estimate lengths in standard units.³⁹ 2.MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. 2.MD.2 Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen. 2.MD.3 Estimate lengths using units of inches, feet, centimeters, and meters.

³⁵ When a cluster is referred to in this chart without a footnote, the cluster is addressed in its entirety.

³⁶ In this module, word problems focus primarily on result unknown and change unknown situations.

³⁷ From this point forward, fluency practice with addition and subtraction to 20 is part of students' ongoing experience.

³⁸ This standard is addressed again in Modules 4 and 7; the balance of this cluster is addressed in Modules 4 and 5.

³⁹ Focus is on metric measurement in preparation for place value in Module 3. Customary measurement is addressed in Module 7.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 2 Modules
Module 3: Place Value, Counting, and Comparison of Numbers to 1,000 (25 days)	2.MD.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. Relate addition and subtraction to length. 2.MD.5 Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. 2.MD.6 Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.
	Understand place value. 2.NBT.1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: a. 100 can be thought of as a bundle of ten tens—called a “hundred.” b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones). 2.NBT.2 Count within 1000; skip-count by 5s⁴⁰, 10s, and 100s. 2.NBT.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. 2.NBT.4 Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.

⁴⁰ Use an analog clock to provide a context for skip-counting by fives.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 2 Modules
Module 4: Addition and Subtraction Within 200 with Word Problems to 100 (35 days)	Represent and solve problems involving addition and subtraction. 2.OA.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. (See Standards Glossary, Table 1.) Use place value understanding and properties of operations to add and subtract.⁴¹ 2.NBT.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. 2.NBT.6 Add up to four two-digit numbers using strategies based on place value and properties of operations. 2.NBT.7 Add and subtract within 1000, 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. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds. 2.NBT.8 Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900. 2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanations may be supported by drawings or objects.)
Module 5: Addition and Subtraction Within 1,000 with Word Problems to 100 (24 days)	Use place value understanding and properties of operations to add and subtract.⁴² 2.NBT.7 Add and subtract within 1000, 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. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is

⁴¹ In this module, work is limited to within 200. This work is extended to numbers within 1,000 in the next module.

⁴² The balance of this cluster is addressed in Modules 1, 4, and 7.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 2 Modules
	necessary to compose or decompose tens or hundreds. 2.NBT.8 Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900. 2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanations may be supported by drawings or objects.)
Module 6: Foundations of Multiplication and Division (24 days)	Work with equal groups of objects to gain foundations for multiplication. 2.OA.3 Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends. 2.OA.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends. Reason with shapes and their attributes.⁴³ 2.G.2 Partition a rectangle into rows and columns of same size squares and count to find the total number of them.
Module 7: Problem Solving with Length, Money, and Data (30 days)	Use place value understanding and properties of operations to add and subtract.⁴⁴ 2.NBT.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. Measure and estimate lengths in standard units. 2.MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

⁴³ 2.G.2 is included in this module because the array model is so important to the foundation for multiplication. The balance of this cluster is addressed in Module 8.

⁴⁴ This standard is also addressed in Modules 1 and 4; the balance of this cluster is addressed in Modules 4 and 5.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 2 Modules
	2.MD.2 Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen. 2.MD.3 Estimate lengths using units of inches, feet, centimeters, and meters. 2.MD.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. Relate addition and subtraction to length. 2.MD.5 Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. 2.MD.6 Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram. Work with time and money.⁴⁵ 2.MD.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately. <i>Example: If you have 2 dimes and 3 pennies, how many cents do you have?</i> Represent and interpret data. 2.MD.9 Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units. 2.MD.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems (See Standards Glossary, Table 1.) using information presented in a bar graph.

⁴⁵ Focus on money. Time is addressed in Module 8.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 2 Modules
Module 8: Time, Shapes, and Fractions as Equal Parts of Shapes (20 days)	Work with time and money.⁴⁶ 2.MD.7 Tell time and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. Reason with shapes and their attributes.⁴⁷ 2.G.1 Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. (Sizes are compared directly or visually, not compared by measuring.) Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. 2.G.3 Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words <i>halves</i>, <i>thirds</i>, <i>half of</i>, <i>a third of</i>, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

⁴⁶ Focus on time. Money is addressed in Module 7.

⁴⁷ 2.G.2 is addressed in Module 6.

Sequence of Grade 3 Modules Aligned with the Standards

- Module 1: Properties of Multiplication and Division and Solving Problems with Units of 2–5 and 10
- Module 2: Place Value and Problem Solving with Units of Measure
- Module 3: Multiplication and Division with Units of 0, 1, 6–9, and Multiples of 10
- Module 4: Multiplication and Area
- Module 5: Fractions as Numbers on the Number Line
- Module 6: Collecting and Displaying Data
- Module 7: Geometry and Measurement Word Problems

Summary of Year

Grade 3 mathematics is about (1) developing understanding of multiplication and division and strategies for multiplication and division within 100; (2) developing understanding of fractions, especially unit fractions (fractions with a numerator of 1); (3) developing understanding of the structure of rectangular arrays and of area; and (4) describing and analyzing two-dimensional shapes.

Key Areas of Focus for 3–5: Multiplication and division of whole numbers and fractions—concepts, skills, and problem solving

Required Fluency: 3.OA.7 Multiply and divide within 100.
3.NBT.2 Add and subtract within 1000.

Rationale for Module Sequence in Grade 3

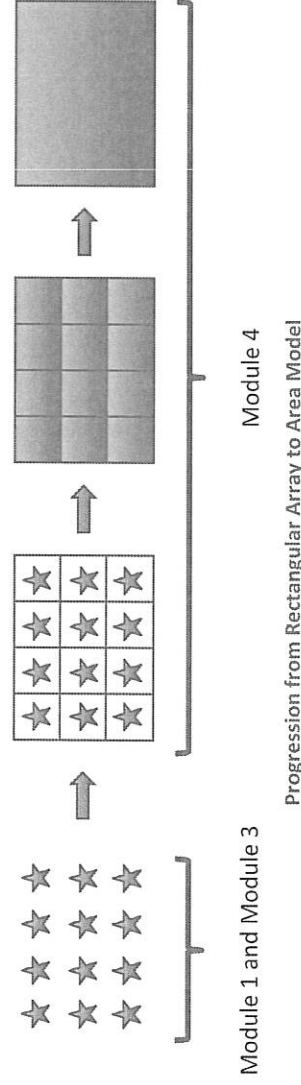
The first module builds upon the foundation of multiplicative thinking with units started in Grade 2. First, students concentrate on the meaning of multiplication and division and begin developing fluency for learning products involving factors of 2, 3, 4, 5, and 10 (see Key Areas of Focus and

Major Emphasis Clusters
Operations and Algebraic Thinking - Represent and solve problems involving multiplication and division. - Understand the properties of multiplication and the relationship between multiplication and division. - Multiply and divide within 100. - Solve problems involving the four operations and identify and explain patterns in arithmetic. Number and Operations—Fractions - Develop understanding of fractions as numbers. Measurement and Data - Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. - Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

Required Fluency above). The restricted set of facts keeps learning manageable, and also provides enough examples to do one- and two-step word problems and to start measurement problems involving weight, capacity, and time in the second module.

Module 2 focuses on measurement of time and metric weight and capacity. In exploratory lessons, students decompose a kilogram into 100 gram, 10 gram, and 1 gram weights and decompose a liter into analogous amounts of milliliters. Metric measurement thereby develops the concept of mixed units (e.g., 3 kilograms 400 grams is clearly related to 3 thousands, 4 hundreds). Students then apply their new understanding of number to place value, comparison and rounding, composing larger units when adding, decomposing into smaller units when subtracting. Students also draw proportional tape diagrams to solve word problems (e.g., “If this tape represents 62 kg, then a tape representing 35 kg needs to be slightly longer than half the 62 kg bar ...”). Drawing the relative sizes of the lengths involved in the model prepares students to locate fractions on a number line in Module 5 (where they learn to locate points on the number line relative to each other and relative to the whole unit). Module 2 also provides students with internalization time for learning the 2, 3, 4, 5, and 10 facts as part of their fluency activities.

Students learn the remaining multiplication and division facts in Module 3 as they continue to develop their understanding of multiplication and division strategies within 100 and use those strategies to solve two-step word problems. The “2, 3, 4, 5, and 10 facts” module (Module 1) and the “0, 1, 6, 7, 8, 9, and multiples of 10 facts” module (Module 3) both provide important, sustained time for work in understanding the structure of rectangular arrays to prepare students for area in Module 4. This work is necessary because students initially find it difficult to distinguish the different units in a grid (the third array in the picture below), count them, and recognize that the count is related to multiplication. Tiling also supports a correct interpretation of the grid. Modules 1 and 3 slowly build up to the area model (the fourth model in the picture below), using rectangular arrays in the context of learning multiplication and division:



By Module 4, students are ready to investigate area. They measure the area of a shape by finding the total number of same-size units of area (e.g., tiles) required to cover the shape without gaps or overlaps. When that shape is a rectangle with whole number side lengths, it is easy to partition the rectangle into squares with equal areas (as in the third stage of the illustration above).

One goal of Module 5 is for students to transition from thinking of fractions as area or parts of a figure to points on a number line and finally, as numbers. To make that jump, students think of fractions as being constructed out of unit fractions: *1 fourth* is the length of a segment on the number line such that the length of four concatenated fourth segments on the line equals 1 (the whole). Once the unit *1 fourth* has been established, counting them is as easy as counting whole numbers: 1 fourth, 2 fourths, 3 fourths, 4 fourths, 5 fourths, etc. Students also compare fractions, find equivalent fractions in special cases, and solve problems that involve fractions. They realize that equivalent fractions share the same point on the number line.

In Module 6, by applying their knowledge of fractions from Module 5, students round lengths to the nearest halves and fourths of an inch and record that information on line plots. This module also prepares students for the multiplicative comparison problems of Grade 4 by asking students “how many more” and “how many less” questions about scaled bar graphs.

The year rounds out with plenty of time to solve two-step word problems involving the four operations and to improve fluency for concepts and skills initiated earlier in the year. In Module 7, students also describe, analyze, and compare properties of two-dimensional shapes. By now, students have done enough work with both linear and area measurement models to understand that there is no relationship in general between the area of a figure and its perimeter, which is one of the concepts taught in the last module.

Alignment Chart⁴⁸

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 3 Modules
Module 1: Properties of Multiplication and Division and Solving Problems with Units of 2–5 and 10 (25 days)	Represent and solve problems involving multiplication and division.⁴⁹ 3.OA.1 Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. <i>For example, describe a context in which a total number of objects can be expressed as 5×7.</i> 3.OA.2 Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. <i>For example, describe a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.</i>

⁴⁸ When a cluster is referred to in this chart without a footnote, the cluster is addressed in its entirety.

⁴⁹ In this module, work is limited to factors of 2–5 and 10 and the corresponding dividends.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 3 Modules
	3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. (See Standards Glossary, Table 2.) 3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. <i>For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = _ \div 3$, $6 \times 6 = ?$</i> Understand properties of multiplication and the relationship between multiplication and division.⁵⁰ 3.OA.5 Apply properties of operations as strategies to multiply and divide. (Students need not use formal terms for these properties.) <i>Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)</i>⁵¹ 3.OA.6 Understand division as an unknown-factor problem. <i>For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.</i> Multiply and divide within 100.⁵² 3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. Solve problems involving the four operations, and identify and explain patterns in arithmetic.⁵³ 3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. (This standard

⁵⁰ In this module, work is limited to factors of 2–5 and 10 and the corresponding dividends.

⁵¹ The associative property is addressed in Module 3.

⁵² In this module, work is limited to factors of 2–5 and 10 and the corresponding dividends.

⁵³ In this module, problem solving is limited to multiplication and division and limited to factors of 2–5 and 10 and the corresponding dividends. 3.OA.9 is addressed in Module 3.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 3 Modules
Module 2: Place Value and Problem Solving with Units of Measure (25 days)	is limited to problems posed with whole numbers and having whole-number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order, i.e., Order of Operations.) Use place value understanding and properties of operations to perform multi-digit arithmetic.⁵⁴ 3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100. 3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. 3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram. 3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). (Excludes compound units such as cm^3 and finding the geometric volume of a container.) Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. (Excludes multiplicative comparison problems, i.e., problems involving notions of “times as much”; see Standards Glossary, Table 2.)

⁵⁴ From this point forward, fluency practice with addition and subtraction is part of students’ on-going experience. 3.NBT.3 is addressed in Module 3.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 3 Modules
Module 3: Multiplication and Division with Units of 0, 1, 6–9, and Multiples of 10 (25 days)	Represent and solve problems involving multiplication and division.⁵⁵ 3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. (See Standards Glossary, Table 2.) 3.OA.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. <i>For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = \underline{\quad} \div 3$, $6 \times 6 = ?$</i> Understand properties of multiplication and the relationship between multiplication and division.⁵⁶ 3.OA.5 Apply properties of operations as strategies to multiply and divide. (Students need not use formal terms for these properties.) <i>Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)</i> Multiply and divide within 100.⁵⁷ 3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. Solve problems involving the four operations, and identify and explain patterns in arithmetic.⁵⁸ 3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. (This standard is limited to problems posed with whole numbers and having whole-number answers; students

⁵⁵ The balance of this cluster is addressed in Module 1.

⁵⁶ The balance of this cluster is addressed in Module 1.

⁵⁷ From this point forward, fluency practice with multiplication and division facts is part of students' on-going experience.

⁵⁸ After being fully taught in Module 3, this standard (as well as 3.OA.3) continues being practiced throughout the remainder of the school year.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 3 Modules
	should know how to perform operations in the conventional order when there are no parentheses to specify a particular order, i.e., Order of Operations.) 3.OA.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. <i>For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.</i> Use place value understanding and properties of operations to perform multi-digit arithmetic. (A range of algorithms may be used.)⁵⁹ 3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9×80, 5×60) using strategies based on place value and properties of operations.
Module 4: Multiplication and Area (20 days)	Geometric measurement: understand concepts of area and relate area to multiplication and to addition. 3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement. a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area. b. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units. 3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units). 3.MD.7 Relate area to the operations of multiplication and addition. a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.

⁵⁹ The balance of this cluster is addressed in Module 2.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 3 Modules
	c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning. d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.
Module 5: Fractions as Numbers on the Number Line (35 days)	Develop understanding of fractions as numbers. (Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.) 3.NF.1 Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$. 3.NF.2 Understand a fraction as a number on the number line; represent fractions on a number line diagram. a. Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line. b. Represent a fraction a/b on a number line diagram by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line. 3.NF.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. b. Recognize and generate simple equivalent fractions, e.g., $1/2 = 2/4$, $4/6 = 2/3$. Explain why the fractions are equivalent, e.g., by using a visual fraction model.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 3 Modules
	c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. <i>Examples: Express 3 in the form $3 = 3/1$; recognize that $6/1 = 6$; locate $4/4$ and 1 at the same point of a number line diagram.</i> d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model. Reason with shapes and their attributes.⁶⁰ 3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area and describe the area of each part as $1/4$ of the area of the shape.
Module 6: Collecting and Displaying Data (10 days)	Represent and interpret data. 3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two- step “how many more” and “how many less” problems using information presented in scaled bar graphs. <i>For example, draw a bar graph in which each square in the bar graph might represent 5 pets.</i> 3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.
Module 7: Geometry and Measurement Word Problems ⁶¹ (40 days)	Solve problems involving the four operations, and identify and explain patterns in arithmetic.⁶² 3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. (This standard

⁶⁰ 3.G.1 is addressed in Module 7.

⁶¹ The seemingly eclectic set of standards in Module 7 allows for a new level of word problems, including perimeter and measurement word problems.

⁶² 3.OA.9 is addressed in Module 3.

Module and Approximate Number of Instructional Days	Standards Addressed in Grade 3 Modules
	is limited to problems posed with whole numbers and having whole-number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order, i.e., Order of Operations.) Represent and interpret data.⁶³ 3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures. 3.MD.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. Reason with shapes and their attributes.⁶⁴ 3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

⁶³ 3.MD.3 is addressed in Module 6.

⁶⁴ 3.G.2 is addressed in Module 5.