Dennis-Yarmouth Regional School District
Mathematics Scope and Sequence
Grade: 2

Unit Name	Unit Description / Overview	Enduring Understandings - Students will understand that...	Essential Questions	Standards
M1:Sums and Differences to 100	Module 1 sets the foundation for students to master sums and differences to 20 (2.OA.2). Students subsequently apply these skills to fluently add one-digit to two-digit numbers at least through 100 using place value understanding, properties of operations, and the relationship between addition and subtraction (2.NBT.5). In Grade 1, students worked extensively with numbers to gain fluency with sums and differences within 10 (1.OA.5) and became proficient in counting on (a Level 2 strategy). They also began to make easier problems to add and subtract within 20 and 100 by making ten and taking from ten (Level 3 strategies) (1.OA.6, 1.NBT.4–6). In Module 1, students advance from Grade 1's subtraction of a multiple of ten to a new complexity, subtracting single-digit numbers from both multiples of ten (e.g., 40 – 9) and from any two-digit number within 100 (e.g., 41 – 9).	Addition and subtraction model quantitative relationships Addition and subtraction can be used to solve problems Relationship between addition and subtraction is inverse Subtraction as "take from",(inverse actions from addition), missing addend, and finding a difference Use of embedded amounts in numbers help derive easier methods of solving	How did you decide on your answer? How are these solutions related? How are the total/parts represented? Will that work for other numbers?	2.NBT.B.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.OA.A.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. 2.OA.B.2 Fluently add and subtract within 20 using mental strategies. By end of grade 2 know from memory all sums of two single-digit numbers and related differences. MP.2 Reason abstractly and quantitatively. MP.5 Use appropriate tools strategically. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.
M2: Addition and Subtraction of Length Units	In this 12-day Grade 2 module, students engage in activities designed to deepen their conceptual understanding of measurement and to relate addition and subtraction to length. Their work in Module 2 is exclusively with metric units in order to support place value concepts. Customary units are introduced in Module 7.	the digits 0 and 9 are used in our place value system to create numbers and manipulate amounts. how addition and subtraction affect quantities and are related to each other. the inverse operation can be used to check that the problem is solved correctly.	How can we decide on appropriate units of measurement (i.e. inch, foot, yard, centimeter, meter, seconds, minutes, hours, days)? Why is it important for us to know how to measure different objects using different tools of measurement? How can we tell if an estimate is reasonable?	2.MD.A.1 Measure the length of an object by selecting and using appropriate tools such as rulers yardsticks meter sticks and measuring tapes. 2.MD.A.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.A.3 Estimate lengths using units of inches feet centimeters and meters. 2.MD.A.4 Measure to determine how much longer one object is than another expressing the length difference in terms of a standard length unit. 2.MD.B.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.B.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. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.5 Use appropriate tools strategically. MP.6 Attend to precision.

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M3: Place Value, Counting, and Comparison of Numbers to 1,000	In this 25-day Grade 2 module, students expand their skill with and understanding of units by bundling ones, tens, and hundreds up to a thousand with straws. In this module instruction includes a great deal of counting: by ones, tens, and hundreds (2.NBT.2). Counting up using the centimeter tape or a classroom number line shows movement from left to right as the numbers increase. Counting up on the place value chart shows movement from right to left as the numbers increase. In this module, the place value story has advanced. Along with changing 10 ones for 1 ten, students now also change 10 tens for 1 hundred. This changing leads to the use of counting strategies to solve word problems (2.OA.1). In the next module, this change leads to mental math and the formal algorithms for addition and subtraction. Comparison extends into finding 100 more and 100 less, 10 more and 10 less, etc. Just as in Grade 1, more and less translate into formal addition and subtraction at the onset of Module 4 (2.NBT.8).	Ten tens can be thought of as a unit called a hundred. Three digit numerals represent amounts of hundreds, tens, and ones. Hundred words represent amounts of hundreds (ie four hundred is the word way of talking about 4 hundreds) 100 (the smallest three-digit number) is greater than any amount of tens and ones represented by a two- digit number	How does (two hundred) relate to our units called hundred? What does the 4 in (the numeral) 400 mean? What patterns do you notice? How can we (reliably) compare two three-digit numbers?	2.NBT.A.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: 2.NBT.A.2 Count within 1000; skip-count by 5s 10s and 100s. Identify patterns in skip counting starting at any number. 2.NBT.A.3 Read and write numbers to 1000 using base-ten numerals number names and expanded form. 2.NBT.A.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. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.

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M4: Addition and Subtraction Within 200 with Word Problems to 100	Module 4 is devoted to three major areas of work. The first two are building fluency in two-digit addition and subtraction within 100 (2.NBT.5) and applying that fluency to one- and two-step word problems of varying types within 100 (2.OA.1). Students' increasing fluency with calculations within 100 allows for word problems to transition from being mere contexts for calculation into opportunities for students to see and analyze the relationships between quantities. Daily Application Problems and specific lessons in Topics A, C, and F provide students with guided and independent practice as they solve a variety of problem types, including more complex comparison problems. Note that most two-step problems involve single-digit addends and do not involve the most difficult comparison problem types.[1] The third major area of work is developing students' conceptual understanding of addition and subtraction of multi-digit numbers within 200 (2.NBT.7, 2.NBT.9) as a foundation for work with addition and subtraction within 1,000 in Module 5.	Place value is important to help us solve problems with larger numbers.	How does understanding place value help us solve mathematical problems more quickly and efficiently? How can patterns in place value help to solve problems involving larger numbers?	2.NBT.B.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.B.6 Add up to four two-digit numbers using strategies based on place value and properties of operations. 2.NBT.B.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.B.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.B.9 Explain why addition and subtraction strategies work using place value and the properties of operations. 2.OA.A.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. MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.6 Attend to precision.
M5: Addition and Subtraction Within 1,000 with Word Problems to 100	In Module 5, students build upon their mastery of renaming place value units and extend their work with conceptual understanding of the addition and subtraction algorithms to numbers within 1,000, always with the option of modeling with materials or drawings. Throughout the module, students continue to focus on strengthening and deepening conceptual understanding and fluency.	Sums can be represented as lengths on a number line diagram of addition. Three and four two -digit numbers can be grouped and added in any order. Adding or subtracting hundreds or tens is simil ar to adding or subtracting single -digit numbers. One ten can be regrouped for 10 ones. One hundred can be regrouped for ten tens. The inverse relationship between addition and subtraction can be used to check subtraction. Mental strategies can help us add/subtract multi digit numbers efficiently.	What is the most efficient way to add/subtract multi-digit numbers? How can multi-digit numbers be added/subtracted using place value? How can multi-digit numbers be added/subtracted using a number line? How can we using "counting on" to subtract? How can we efficiently add/subtract using mental strategies?	2.NBT.B.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.B.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.B.9 Explain why addition and subtraction strategies work using place value and the properties of operations. MP.3 Construct viable arguments and critique the reasoning of others. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.

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M6: Foundations of Multiplication and Division	Module 6 lays the conceptual foundation for multiplication and division in Grade 3 and for the idea that numbers other than 1, 10, and 100 can serve as units.	There are similarities between skip counting and repeated addition Repeatedly adding the same quantity, using a grouping picture or forming a rectangular array is strategies for representing repeated addition equations. Arrays are a way of representing both repeated addition and skip counting. Arrays should be identified in rows and then columns. An even number can be decomposed into two equal addends. Double addition facts assist in recognizing even numbers.	How are arrays and repeated addition related? How can rectangular arrays help us with repeated addition? How can we model repeated addition on the number line? How can we a model repeated addition equation with an array? How does skip counting help us solve repeated addition problems? What is an array? How can a rectangle be partitioned into equal rows or columns? What are some efficient strategies for counting unit squares in an array? How are odd and even number lines identified on the number line? How do I determine if a number is odd or even? What strategies can I use to tell if a number is odd or even? What is odd? What is even?	2.G.A.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them. 2.OA.C.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.C.4 Use addition to find the total number of objects arranged in rectangular arrays with up to five rows and up to five columns; write an equation to express the total as a sum of equal addends. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.

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M7:Problem Solving with Length, Money, and Data	Module 7 presents an opportunity for students to practice addition and subtraction strategies within 100 and problem-solving skills as they learn to work with various types of units within the contexts of length, money, and data. Students represent categorical and measurement data using picture graphs, bar graphs, and line plots. They revisit measuring and estimating length from Module 2 but now use both metric and customary units.	Measurement is the process of assigning a number (i.e., of length units) to an amount of an attribute (i.e., length of a pencil). "One" on the ruler represents the amount of space (or distance) from the beginning of the ruler to the hash mark. Measuring units must be of equal size. An object can be measured using different standard measurement tools including rulers, yardsticks, meter sticks and measuring tapes. Measurements can be compared and estimated. Bar graphs have 2 axis (horizontal and vertical) which represent a count scale and labeling of categories.	Why is accuracy important when measuring items in our daily lives? How can estimating a measurement help us solve problems? In what ways can comparing measurements help us make good decisions when planning projects? How do(does) the axis in bar graphs help us interpret the information about our categories?	2.MD.A.1 Measure the length of an object by selecting and using appropriate tools such as rulers yardsticks meter sticks and measuring tapes. 2.MD.A.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.A.3 Estimate lengths using units of inches feet centimeters and meters. 2.MD.A.4 Measure to determine how much longer one object is than another expressing the length difference in terms of a standard length unit. 2.MD.B.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.B.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. 2.MD.C.8 Solve word problems involving dollar bills quarters dimes nickels and pennies (up to $10) using $ and ¢ symbols appropriately and whole dollar amounts. 2.MD.D.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 using bar graphs. 2.MD.D.9 Generate measurement data by measuring lengths of several objects to the nearest whole unit or by making repeated measurements of the same object. Organize and record the data on a line plot (dot plot) where the horizontal scale is marked off in whole-number units. 2.NBT.B.5 Fluently add and subtract within 100 using strategies based on place value properties of operations and/or the relationship between addition and subtraction. MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision.
M8: Time, Shapes, and Fractions as Equal Parts of Shapes	In Module 8, the final module of the year, students extend their understanding of part–whole relationships through the lens of geometry. As students compose and decompose shapes, they begin to develop an understanding of unit fractions as equal parts of a whole.	Our world is full of shapes. Shapes can be many different sizes and described in many ways. Shapes can be divided into equal shares.	How can the same attributes produce different shapes? How can rectangles be constructed? How do we know we have equal shares? How many ways can we make equal shares for the same shape?	2.G.A.1 Recognize and draw shapes having specified attributes such as a given number of angles or a given number of equal faces. Identify triangles squares rectangles rhombuses trapezoids pentagons hexagons and cubes. 2.G.A.3 Partition circles and rectangles into two three or four equal shares describe the shares using the words halves thirds half of a third of 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. 2.MD.C.7 Tell and write time from analog and digital clocks to the nearest five minutes using a.m. and p.m. 2.MD.C.7.a Know the relationships of time including seconds in a minute minutes in an hour hours in a day days in a week; days in a month and a year and approximate number of weeks in a month and weeks in a year. MP.1 Make sense of problems and persevere in solving them. MP.3 Construct viable arguments and critique the reasoning of others. MP.6 Attend to precision. MP.7 Look for and make use of structure.