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

Grade: Kindergarten	Unit Description / Overview	Enduring Understandings - Students will understand that...	Essential Questions	Standards
K M1:Numbers to 10	Mathematics is the study of numbers, shapes, their quantities, and characteristics. By making observations about patterns and relationships, our students are empowered to think mathematically with a focus on developing reasoning and building mathematical communication. Students who view mathematics as thoughtful exploration can develop a habitual inclination to see mathematics as sensible, useful, and worthwhile, including a belief in diligence, and one's own efforts. A productive math disposition enhances our student's abilities to use mathematical skill in carrying out procedures flexibly, accurately, efficiently and appropriately. In this module, students will be able to independently use their learning to… explore, analyze, and observe their world, articulate their observations about numbers and the cardinalities of sets. The Counting and Cardinality standards are about understanding and using numbers. This domain provides the foundation for entry into Operations and Algebraic Thinking as well as Number and Base 10. Insights gleaned from this module lead students to use the Level 2 strategy of counting on rather than counting all, later in the year and on into Grade 1.	Groups of objects can be identified by a number name which represents their quantities. Relationships between numbers (each successive number name refers to a quantity that is one greater and that the number before is one less). Matching numbers with objects helps us answer how many questions about different configurations of objects, pictures, and drawings	How do you know (decide)? Can you prove it? How can we use number words to name a set of objects? How do we decide (how we are going)to count a group of objects? How can we explain our thinking?	K.CC.A.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0â20 (with 0 representing a count of no objects). K.CC.B.4.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. K.CC.B.4.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. K.CC.B.4.c Understand that each successive number name refers to a quantity that is one larger. Recognize the one more pattern of counting using objects. K.CC.B.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 1â20 count out that many objects. K.MD.B.3 Classify objects into given categories; count the numbers of objects in each category (up to and including 10) and sort the categories by count. K.OA.A.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). MP.2 Reason abstractly and quantitatively. 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.
K M2: Two-Dimensional and Three-Dimensional Shapes	In this module, students seek out flat and solid shapes in their world. Empowered by this lens, they begin to make connections between the wheel of a bicycle, the moon, and the top of an ice cream cone. Just as the number 4 allowed them to quantify 4 mountains and 4 mice as equal numbers (amounts), learning to identify flats and solids allows them to see the relationship of the simple to the complex.	Shapes can be described with increasing sophistication. Shapes are named by their attributes. There is a relationship between flat and solid shapes.	How can we describe (solid/flat) shapes? How can our descriptions help us find (triangles) and (Not triangles)? How are these (solid/flat) shapes the same? Different?	K.G.A.1 Describe objects in the environment using names of shapes and describe the relative positions of these objects using terms such as above below beside in front of behind and next to. K.G.A.2 Correctly name shapes regardless of their orientation or overall size. K.G.A.3 Identify shapes as two-dimensional (lying in a plane "flat") or three-dimensional ("solid"). K.G.B.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). K.MD.B.3 Classify objects into given categories; count the numbers of objects in each category (up to and including 10) and sort the categories by count. 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.

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

Grade: Kindergarten	Unit Description / Overview	Enduring Understandings - Students will understand that...	Essential Questions	Standards
K M3: Comparison of Length, Weight, Capacity, and Numbers to 10	In this module, students will compare and analyze length, weight, capacity, and numbers up to 10. The module supports students' understanding of amounts and their developing number sense.	We can use specific attributes to compare objects (or amounts). We can compare using precise language that describes exactly what we are measuring (eg. What does "bigger" mean exactly? Longer? Takes up more space? Heavier? More (counts) of the objects)?	How can one object compare to another? How does knowing attributes help us when we are measuring objects? Which attribute are you using to copare? How do you know (i.e. how does it "stand out") ?	K.CC.C.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 for groups with up to 10 objects e.g. by using matching and counting strategies. K.CC.C.7 Compare two numbers between 1 and 10 presented as written numerals. K.MD.A.1 Describe measurable attributes of objects such as length or weight. Describe several measurable attributes of a single object. K.MD.A.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. 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. MP.7 Look for and make use of structure.
K M4: Number Pairs, Addition and Subtraction to 10	In this module, students begin to harness their practiced counting abilities, use their knowledge of the value of numbers, and work with embedded numbers to reason about and solve addition and subtraction expressions and equations beginning with numbers to 5 and leading to numbers through 10.	A whole can be broken into two parts and how two parts can be joined to make a whole(in numbers to 10). The addition symbol and the referent of each number within the equation. The addition word problem types taught in kindergarten: add to with result unknown (A + B = ___), put together with total unknown (A + B = ___), and both addends unknown (C = ___ + ___) Subtraction at concrete levels (directly model); students acting out, crossing out objects in a set, and breaking and hiding parts, to more formal representations of decomposition recorded as or matched to equations (C – B = ___). Adding or subtracting zero does not change the original quantity.	Can our number bond show (represent) taking apart and putting together at the same time? Explain your thinking. How can you see ____ in two parts? What does the ___ tell us about? What do you notice about how the number bond is connected? How can you show taking away in your picture? What can you draw to help you find the mystery number? How can you show breaking off the part all at once? What do you notice in all these expressions? Equations? Would that work for other numbers?	K.OA.A.1 Represent addition and subtraction with objects fingers mental images drawings sounds (e.g. claps) acting out situations verbal explanations expressions or equations. K.OA.A.2 Solve addition and subtraction word problems and add and subtract within 10 e.g. by using objects or drawings to represent the problem. K.OA.A.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.A.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.A.5 Fluently add and subtract within 5 including zero. 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.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.

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

Grade: Kindergarten	Unit Description / Overview	Enduring Understandings - Students will understand that...	Essential Questions	Standards
K Fact Fluency	Students will be able to independently use their learning to… achieve fluency with all addition and subtraction facts within 5. Principles and Standards for School Mathematics states, "Computational fluency refers to having efficient and accurate methods for computing. Students exhibit computational fluency when they demonstrate flexibility in the computational methods they choose, understand and can explain these methods, and produce accurate answers efficiently. The computational methods that a student uses should be based on mathematical ideas that the student understands well, including number relationships" (p. 152). Mastery: "A child can give a quick response without resorting to non-efficient means, such as counting." Van de Walle & Lovin, 2006,p. 94	Relationships of 1 and 2more/less than numbers 1-5 Part Whole Relationships to 5 (conceptualizing numbers can be made up of 2 or more parts). Spatial Relationships (recognizing and conceptualizing dot card sets to 5 without counting) Benchmarks to 5 (using five frame) Meanings of the + (add to/put together) and – (take from/break apart) symbols Zero (represents no quantity)	How many do you see? How do you see the amount? "How can you see the amount in two parts?" How do you see the pattern? Will that pattern work with other numbers?	K.OA.A Understand addition as putting together and adding to and understand subtraction as taking apart and taking from. K.OA.A.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.A.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.A.5 Fluently add and subtract within 5 including zero. MP.2 Reason abstractly and quantitatively. 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.

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

Grade: Kindergarten	Unit Description / Overview	Enduring Understandings - Students will understand that...	Essential Questions	Standards
K M5: Numbers 10–20 and Counting to 100	Our students (K-5) work in the base-ten system is intertwined with their work on counting and cardinality, and with the meanings and properties of addition, subtraction, multiplication, and division. Work in the base-ten system relies on these meanings and properties, but also contributes to deepening students' understanding of them. In Kindergarten, teachers help children lay the foundation for understanding the base-ten system by drawing special attention to 10. Students will be able to independently use their learning to…to view the whole numbers 11- 19 as ten ones, and some more ones. They decompose 10 into pairs such as 1 + 9, 2 + 8, 3 + 7, and find the number that makes 10 when added to a given number such as 3 (see Module 4 for further information).	Teen numbers represent a whole amount of ten ones and some more ones Eleven and twelve are "special cases" of teen numbers "Teen" is interpreted as ten "Thir" and "fif" are interpreted as three and five When writing teen numbers the "1" in thirteen represents the "10 ones" part of the whole amount	How can we decide if a number is a teen number? Is (twelve) a teen number? What does the "1" mean in 13? How does the _____ (ten frame, say ten number word, place value card, Rekenrek, number bond) relate (match) to the way we write a teen number (numeral) ____?	K.CC.A.1 Count to 100 by ones and by tens. K.CC.A.2 Count forward beginning from a given number within the known sequence (instead of having to begin at one). K.CC.A.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0â20 (with 0 representing a count of no objects). K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. K.CC.B.4.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. K.CC.B.4.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. K.CC.B.4.c Understand that each successive number name refers to a quantity that is one larger. Recognize the one more pattern of counting using objects. K.CC.B.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 1â20 count out that many objects. K.NBT.A.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 (e.g. 18 = 10 + 8); understand that these numbers are composed of ten ones and one two three four five six seven eight or nine ones. MP.2 Reason abstractly and quantitatively. 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.
K M6: Analyzing, Comparing, and Composing Shapes	In this Module, students will further develop their spatial reasoning skills and begin laying the groundwork for an understanding of area through composition of geometric figures. As they build competence in combining and composing shapes, students build toward more complex pictures and designs. Students progress through stages as they build competence in combining shapes to form pictures: beginning with trial and error and gradually considering the systematic combination of components. Students complete tasks related to number, measurement, operations, and geometry. Composition and decomposition of geometric figures reinforce the idea that smaller units can combine to form larger units.	Shapes are built from(comprised of) attributes (components) Smaller units (shapes) can combine to form larger units. A systematic combination of components can be used to put together or take apart to compose/decompose new shapes.	How can we build a _____ (triangle, square, cube etc) ? (This question is meant to target the language development for identifying attributes) How can we create (compose) a new picture from these shapes?	K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. K.G.B.5 Model shapes in the world by building shapes from components (e.g. sticks and clay balls) and drawing shapes. K.G.B.6 Compose simple shapes to form larger shapes. MP.1 Make sense of problems and persevere in solving them. MP.4 Model with mathematics. MP.6 Attend to precision. MP.7 Look for and make use of structure.