Pender County Schools – Common Core Mathematics Planning 3rd Grade

What do we expect our students to learn?

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Topic 1- Numeration Topic 2- Adding Whole Numbers Topic 3- Subtraction Number Sense Topic 4- Subtracting Whole Numbers to Solve Problems Topic 5- Multiplication Meanings and Facts* Topic 5 assessed only on questions with pictures and one-digit products within 100.	Topic 6- Multiplication Fact Strategies: Use Known Facts Topic 7- Division Meanings Topic 8- Division Facts Topic 10- Shapes Supplement Topic 5&6 with lessons from Topic 18 as needed. Supplement Topic 7&8 with lessons from Topic 19 as needed.	Topic 12- Understanding Fractions Topic 16- Perimeter & Area	Topic 14- Customary Measurement (inch, ½ inch, ¼ inch) Topic 15- Metric Measurement (mass & volume) Topic 17- Time

Instruction for 3OA8 should continue throughout the year with operations added as taught in the curriculum.
Topic 20 Data & Graphs integrated throughout the year

Common Core State Standards

Common Core State Standards need to be carefully reviewed each quarter. All lessons in the envision MATH curriculum do not need to be taught and some topics **must be supplemented** in order to meet the requirements of each standard.

3NBT1 Use place value understanding to round whole numbers to the nearest 10 or 100.(2-4, 2-8, 4-6) 3NBT2 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. (2-1, 2-6, 2-7, 2-8, 2-9, 2-10, 3-5, 4-1, 4-2, 4-3, 4-4, 4-5) enVisions: Common Core Supplemental Lesson 3rd Grade http://media.pearsoncmg.com/curriculum/math/envision2012/cc_support/G3/enVisionMATH_G3.html	3NBT3 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.(5-7, 18-1) 3OA4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = _ ÷ 3, 6 × 6 = ?* (5-2, 7-1, 7-3, 7-4, 7-5, 8-1, 8-2, 8-5, 9-1) 3OA9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *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.*	3NF3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. (12-5, 12-6) a) Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. (12-5, 12-6, 12-7) 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. (12-5, 12-6) c) Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *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.* 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	3MD1 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. (17-1, 17-2, 17-3, 17- 4, 17-6) 3MD2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).[1] 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.[2] (14-4, 14-5, 15-3, 15-4, CC-21) 3MD3Draw 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

	*(*2-1, 2-2, 5-2, 5-5, 5-6, 5-7, 5-8, 5-9, 6-5) 3OA1 .Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7.* (5-1, 5-2, 5-3, 5-4, 5-5, 6-5) 3OA5 Apply properties of operations as strategies to multiply and divide.[2] *Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.) (*5-1, 5-2, 5-4, 5-5, 6-2, 6-6, 18-4) 30A2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 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. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.* (7-1, 7-2, 7-3, 8-2) 3OA6 Understand division as an unknown-factor problem. *For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.* (7-5, 8-2, 8-3, 8-4) 30A3 Use multiplication and division within 100 to solve word problems in situations involving equal groups,	the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. 3MD8 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. (6-7, 16-1, 16-2, 16-3, 16-5) 3MD5 Recognize area as an attribute of plane figures and understand concepts of area measurement. (16-5) 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. (16-5) 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. (16-5) 3NF1 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*. (12-1, 12-2, 12-3) 3MD6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units). (16-5, 16-6) 3NF2 Understand a fraction as a number on the number line; represent fractions on a number line diagram. (12-7) 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	scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.* (2-10, 4-6 20-2, 20-3,20-4, 20-9) 3MD4Generate 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 (CC-29) 3OA8 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.[3] (2-8, 2-9, 2-10, 3-5, 4-3, 4-4, 4-6, 5-7, 5-10, 6-1, 6-2, 6-36-7, 19-6)

	arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.[1] (5-1, 5-2, 5-3, 5-4, 5-5, 5-6, 5-7, 5-8, 5-9,5-10, 6-1, 6-2, 6-3,6-4, 6-5, 6-6, 6-7, 7-1, 7-2, 7-3, 7-4, 7-5, 8-1, 8-2, 8-3, 8-4, 8-5, 8-6, 12-10) 3OA7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. (8-1, 8-2, 8-3, 8-4) 3G1 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 (10-5, 10-6, 10-7, 10- 8) 3G2 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.* (12-1)	*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. (12-4, 12—7) 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. (12-7) 3MD7 Relate area to the operations of multiplication and addition. (16-5, 16-6, 16-8) 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. (16-5) 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. (5-2, 16-5, 16-8,) c) Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths *a* and *b* + *c* is the sum of *a* × *b* and *a* × *c*. Use area models to represent the distributive property in mathematical reasoning. (6-1, 6-2, 6-3, 6-4) 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. (16-8)	

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Incorporating the 8 Mathematical Practices

Mathematical Practice 1: Make sense of problems and persevere in solving them
(Example Lessons 3-5, 3-10, 4-5, 5-7, 6-7, 6-9, 8-9, 14-6, 16-6)
Mathematical Practice 2: Reason abstractly and quantitatively
(Example Lessons 6-9, 7-2, 16-3)
Mathematical Practice 3: Construct viable arguments and critique the reasoning of others
(Example Lessons 2-6, 2-9, 3-9, 7-5, 8-3, 10-5, 11-1, 14-7)
Mathematical Practice 4: Model with mathematics
(Examples Lessons 2-1, 3-5, 6-7, 8-9,11-4, 13-1)
Mathematical Practice 5: Use appropriate tools strategically
(Example Lessons 3-2, 3-7, 5-1, 10-5,11-3)
Mathematical Practice 6: Attend to precision
(Example Lessons 1-5, 3-9, 4-5, 8-3, 12-2, 16-3)
Mathematical Practice 7: Look for and make use of structure
(Example Lessons 5-1, 8-4, 16-6, 14-6)
Mathematical Practice 8: Look for and express regularity in repeated reasoning
(Example Lessons 2-4, 3-4, 3-8, 5-2)

How will we know they've learned it?

Mandatory Assessments

- Universal Screening - AIMSWeb –M-COMP
- Benchmarking (BOY, MOY, EOY)
- Content Writing for Math: 3rd Grade Portfolio

Optional Assessments

- End of Topic School Based Grade Level Assessment (eg. enVisions Alternate Assessment, End of Topic Assessment,; teacher generated
- enVisions Alternate Assessment, End of Topic Assessment, EOG Math Test Prep; ClassScape; teacher generated
- DPI Resources

What will we do if they have already learned it?

Use of AIMSWeb benchmarking, enVisions Placement Assessment, and formative assessments

- enVisions Advanced planning and Enrichment Masters
- Math Superstars
- Flexible Grouping
- Project Based Learning
- Curriculum Compacting
- Specific Skill Enrichment

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What will we do if they haven't learned it?

Use of Universal Screening, Benchmarking, and other formative assessments

- enVisions Intervention planning and Re-teaching Masters
- Specific Skill Intervention (i.e. number games)
- PROGRESS MONITOR all Interventions
- Flexible Grouping
- PEP/SST

NC DPI Resources for the Common Core

http://maccss.ncdpi.wikispaces.net/Third+Grade