Grade 3 Mathematics
Prince William County Pacing Guide
2019-2020

Teacher focus groups have assigned a given number of days to each unit based on their experiences and knowledge of the curriculum. It is critical that teachers stay as close as possible to the pacing guidelines to ensure that all of the Standards of Learning have been taught prior to the SOL Test, and that, as children move within the Division, their math instruction remains consistent. Ongoing review should occur throughout the year.

Prince William County Regulation 602-1 describes the organization of the instructional day. Mathematics is allotted 75 minutes in grade 3. This should include an uninterrupted 60-minute block of time for the lesson and an additional 15-minute block to be used for classroom routines, number talks, ten-minute math, and/or other selected review activities. These types of activities are a critical element of mathematics instruction that provide essential practice and maintenance of key concepts and skills.

Teachers may find the full wording of the objectives, along with the essential knowledge and skills to be learned, in the Unit Guides. The Unit guides were created by the Teacher Focus Groups and also provide suggestions for learning experiences, assessments, and resources. These documents are available on the Mathematics Staff Communities page for each grade level.

Classroom Routines and On-Going Spiral Review	
Focus Topics	**Standards of Learning**
Teachers are expected to provide 10-15 minutes of spiral review each day. Topics should focus on areas that have previously been taught, but may need continued reinforcement or practice. Teachers may choose to use the spiral review interactive whiteboard files that are available for each unit on the Math Staff Communities page. **The following SOLs will be taught and practiced throughout the year and will be tested in the units noted:**	
Read Celsius and Fahrenheit temperatures to the nearest degree. (Unit 7)	3.10
Tell time to the nearest minute using analog and digital clocks. (Unit 7)	3.9a
Identify, describe, create, and extend patterns found in objects, numbers, pictures, and tables. (Units 1, 8, and 9)	3.16

August 26 – September 27 (23 days) Unit 1: Place Value, Addition and Subtraction 1	
Focus Topics	**Standards of Learning**
Read, write and identify the place and value of each digit through ten-thousands (**5-digit numbers**), with and without models. • Represent numbers up to 9,999 in multiple ways, according to place value (e.g., 256 can be 1 hundred, 14 tens, and 16 ones, but also 25 tens and 6 ones), with and without models.	3.1a (partial) EKS 3.1A
Round whole numbers, 9,999 or less, to the nearest ten, hundred, and thousand. EKS: Solve problems using rounding of numbers.	3.1b EKS 3.1b
Compare and order up to three whole numbers, each 9,999 or less.	3.1c
Recognize and use the relationship between addition and subtraction to solve single-step practical problems, with whole numbers to 20.	2.5a (2nd grade review)
Estimate and determine the sum or difference of two whole numbers 9,999 or less. (**sums and differences of two numbers each 999 or less in this unit**)	3.3a (partial)
Create and solve single-step and multistep practical problems involving sums or differences of two whole numbers, each 9,999 or less. **(999 in this unit)** • Apply strategies, including place value and the properties of addition, to add two whole numbers with sums to [999]. • Apply strategies, including place value and the properties of addition, to subtract two whole numbers, each [999] or less. • Use inverse relationships between addition and subtraction facts to solve practical problems	3.3b (partial EKS 3.3a (partial)
Create equations to represent equivalent mathematical relationships. • Identify and use the appropriate symbol to distinguish between expressions that are equal and expressions that are not equal (e.g., 256 - 13 = 220 + 23; 143 + 17 = 140 + 20; and 457 + 100 ≠ 557 +100).	3.17
Determine the value of a collection of bills and coins whose total value is $5.00 or less.	3.6a
Compare the value of two sets of coins or two sets of coins and bills whose total value is $5.00 or less.	3.6b
Make change from $5.00 or less.	3.6c
Identify, describe, create, and extend patterns found in objects, pictures, numbers, and tables. Note: Focus is on repeating and growing number patterns. In this unit, growing patterns will involve addition and subtraction rules only	3.16 (partial)
PWCS End-of-Unit Common Formative Assessment (Parts A and B): Place Value, Addition and Subtraction 1 Includes extending numerical patterns	**3.1a (partial), 3.3 (partial), 3.6abc 3.16 (partial), 3.17 (partial)**
Objectives completed:	***3.1b, 3.1c, 3.6abc***

Revised based on recommendations of Grade 3 Teacher Focus Group   *July 11, 2019*

September 30 – October 25 (19 days) Unit 2: Multiplication and Division 1	
Focus Topics	**Standards of Learning**
Represent multiplication and division through 10 x 10, using a variety of approaches and models. **(with 0, 1, 2, 4, 5, and 10 facts only)** • Represent multiplication using a variety of approaches and models (e.g., repeated addition, equal-sized groups, arrays, equal jumps on a number line, skip counting). • Represent division using a variety of approaches and models (e.g., repeated subtraction, equal sharing, equal groups).	3.4a (partial) EKS 3.4a
Create and solve single-step practical problems that involve multiplication and division through 10 x 10. **(with 2, 4, 5, and 10 facts only)** • Recognize and use the inverse relationship between multiplication and division to solve practical problems.	3.4b (partial) EKS 3.4b
Demonstrate fluency with multiplication facts of 0, 1, 2, 5, and 10. • Note: Demonstrating fluency of the rest of the facts through 12 x 12 is now in grade 4.	3.4c
Create equations to represent equivalent mathematical relationships. • Identify and use the appropriate symbol to distinguish between expressions that are equal and expressions that are not equal (eg., 3 x 4 = 6 x 2, 2 x 4 = 6 +2)	3.17
PWCS End-of-Unit Common Formative Assessment (Parts A and B): Multiplication and Division 1	**3.4abc, 3.17**
Objectives completed	**3.4c**

October 28 – November 19 (15 days) Unit 3: Data Analysis and Probability	
Focus Topics	**Standards of Learning**
Investigate and describe the concept of probability as a measurement of chance and list possible outcomes for a single event. • List all possible outcomes for a single event (e.g., heads and tails are the two possible outcomes of flipping a coin). Limit the number of outcomes to 12 or fewer. • Describe the degree of likelihood of an outcome occurring using terms such as *impossible*, *unlikely*, *equally likely, likely*, and *certain*.	3.14
Collect, organize, and represent data in pictographs or bar graphs.	3.15a
Read and interpret data represented in pictographs and bar graphs. **Note:** Performance Task should be given mid-unit.	3.15b
PWCS End-of-Unit Common Formative Assessment (Parts A and B): Data Analysis and Probability **Objectives completed:**	**3.14, 3.15ab**

November 20 – December 20 (20 days) Unit 4: Multiplication and Division 2	
Focus Topics	**Standards of Learning**
Represent multiplication and division through 10 x 10, using a variety of approaches and models.(**3, 6, 7, 8, 9 facts only)** • Represent multiplication using a variety of approaches and models (e.g., repeated addition, equal-sized groups, arrays, equal jumps on a number line, skip counting). • Represent division using a variety of approaches and models (e.g., repeated subtraction, equal sharing, equal groups).	3.4a EKS 3.4a
Create and solve single-step practical problems that involve multiplication and division through 10 x 10 (**3, 6, 7, 8, 9)** • Recognize and use the inverse relationship between multiplication and division to solve practical problems.	3.4b EKS 3.4b
Demonstrate fluency with multiplication facts of **0, 1, 2, 5, 10.** • Note: Demonstrating fluency of the rest of the facts through 12 x 12 is now in grade 4.	3.4c
Solve single-step practical problems involving multiplication of whole numbers, where one factor is 99 or less and the second factor is 5 or less. • Apply strategies, including place value and the properties of multiplication and/or addition when multiplying and dividing whole numbers.	3.4d EKS 3.4abcd
Create equations to represent equivalent mathematical relationships. • Identify and use the appropriate symbol to distinguish between expressions that are equal and expressions that are not equal (e.g.,256 13 = 220 + 23; 143 + 17 = 140 + 20; and 457 + 100 ≠).	3.17
PWCS End-of-Unit Common Formative Assessment (Parts A and B): Multiplication and Division 2	
Objectives completed	**3.4abcd, 3.17**

January 6 – February 7 (23 days) Unit 5: Fractions	
Focus Topics	**Standards of Learning**
Name and write fractions and mixed numbers represented by a model. • Name and write fractions (proper and improper) and mixed numbers with denominators of 12 or less in symbols.	3.2a EKS 3.2a
Represent fractions and mixed numbers with models and symbols. • Represent a given fraction (proper or improper) and mixed numbers, using concrete or pictorial set, area/region, length/measurement models and symbols.	3.2b EKS 3.2b
• Identify a fraction represented by a model as the sum of unit fractions.	EKS 3.2b
• Using a model of a fraction greater than one, count the fractional parts to name and write it as an improper fraction and as a mixed number (e.g., $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{4}{4}, \frac{5}{4} = 1\frac{1}{4}$, or $2\frac{1}{3} = \frac{7}{3}$).	EKS 3.2b
Compare fractions having like and unlike denominators using words and symbols (>, <, =, or ≠), with models. • Compare a model of a fraction, less than or equal to one, to the benchmarks of 0, $\frac{1}{2}$, and 1.	3.2c EKS 3.2c
• Solve practical problems that involve addition and subtraction with proper fractions having like denominators of 12 or less, using concrete and pictorial models representing area/regions (e.g., circles, squares, and rectangles), length/measurements (e.g., fraction bars and strips), and sets (e.g., counters).	3.5
Create equations to represent equivalent mathematical relationships. • Identify and use the appropriate symbol to distinguish between expressions that are equal and expressions that are not equal (e.g., 256 - 13 = 220 + 23; 143 + 17 = 140 + 20; and 457 + 100 ≠ 557 +100).	3.17
PWCS End-of-Unit Common Formative Assessment (Parts A and B): Fractions	**3.2abc, 3.5, 3.17**
Objectives completed	

February 10 – February 21 (9 days) Unit 6: Practical Problems with Whole Numbers	
Focus Topics	**Standards of Learning**
Estimate and determine the sum or difference of two whole numbers, each 9,999 or less. • Determine whether an estimate or an exact answer is an appropriate solution for practical addition and subtraction problems involving single-step and multistep problems. • Estimate the sum of two whole numbers with sums to 9,999. • Estimate the difference of two whole numbers, each 9,999 or less.	3.3a EKS 3.3a
Create and solve single-step and multistep practical problems involving sums or differences of two whole numbers, each 9,999 or less. • Apply strategies, including place value and the properties of addition, to add two whole numbers with sums to 9,999. • Apply strategies, including place value and the properties of addition, to subtract two whole numbers, each 9,999 or less.	3.3ab EKS 3.3b
Create and solve single-step practical problems that involve multiplication and division through 10 x 10. • Recognize and use the inverse relationship between multiplication and division to solve practical problems.	3.4b EKS 3.4b
Solve single-step practical problems involving multiplication of whole numbers, where one factor is 99 or less and the second factor is 5 or less. • Apply strategies, including place value and the properties of multiplication and/or addition when multiplying and dividing whole numbers.	3.4d EKS 3.4d
PWCS End-of-Unit Common Formative Assessment **(Parts A and B):**	**3.3ab, 3.4bd**
Objectives completed	

February 24 – March 13 (15 days) Unit 7: Measurement	
Focus Topics	**Standards of Learning**
Estimate and use U.S. Customary and metric units to measure length to the nearest $\frac{1}{2}$ inch, inch, foot, yard, centimeter, and meter.	3. 7a
Estimate and measure the distance around a polygon in with no more than six sides order to determine its perimeter using U.S. Customary and metric units	3.8a
Estimate and count the number of square units needed to cover a given surface in order to determine its area.	3.8b
Estimate and use U.S. Customary and metric units **to** measure liquid volume in cups, pints, quarts, gallons, and liters.	3.7b
Tell time to the nearest minute, using analog and digital clocks. • Match a written time (e.g., 4:38, 7:09, 12:51) to the time shown on analog and digital clocks to the nearest minute.	3.9a EKS 3.9a
Solve practical problems related to elapsed time in one-hour increments within a 12-hour period.	3.9b
• Solve practical problems related to elapsed time in one-hour increments, within a 12-hour period (within a.m. or within p.m.): – when given the beginning time and the ending time, determine the time that has elapsed; – when given the beginning time and amount of elapsed time in one-hour increments, determine the ending time; or – when given the ending time and the elapsed time in one-hour increments, determine the beginning time.	EKS3.9b
Identify equivalent periods of time, and solve practical problems related to equivalent periods of time. • Identify the number of minutes in an hour and hours in a day. • Identify equivalent relationships observed in a calendar, including the approximate number of days in a given month (about 30), the number of days in a week, the number of days in a year (about 365 $\frac{1}{4}$), and the number of months in a year. • Solve practical problems related to equivalent periods of time to include: approximate days in five or fewer months; days in five or fewer weeks; months in five or fewer years; minutes in five or fewer hours; and hours in five or fewer days.	3.9c EKS 3.9c
Read Celsius and Fahrenheit temperatures to the nearest degree.	3.10
Note: Telling time and reading temperature are tested in this unit. These objectives should have been taught through the Classroom Routines. Because of this, minimal time is provided for direct instruction in these topics.	3.9a, 3.10
PWCS End-of-Unit Common Formative Assessment (Parts A and B): Measurement	**3.7ab, 3.8ab, 3.9abc, 3.10**
Objectives completed	**3.7b, 3.9abc, 3.10**

March 16 – April 1 (12 days) Unit 8: Geometry	
Focus Topics	**Standards of Learning**
Identify and draw representations of points, lines, line segments, rays, and angles. • Describe endpoints and vertices as they relate to lines, line segments, rays, and angles.	3.11
Define polygon.	3.12a
Identify and name polygons with 10 or fewer sides in various orientations.	3.12b
Combine and subdivide no more than three polygons with three or four sides and name the resulting polygon(s). • Subdivide a three-sided or four-sided polygon into no more than three parts and name the resulting polygon(s).	3.12c EKS 3.12c
Identify and describe congruent and noncongruent plane figures.	3.13
Identify, describe, create, and extend patterns found in objects, pictures, numbers, and tables. **Note** The focus in this unit will be on repeating and growing geometric figure patterns.	3.16 (partial)
PWCS End-of-Unit Common Formative Assessment (Parts A and B): Geometry	**3.11, 3.12abc, 3.13, 3.16**
Objectives completed	

April 2 – Mat 1 (16 days) Unit 9: Place Value, Addition, and Subtraction 2	
Focus Topics	**Standards of Learning**
Read, write, and identify the place and value of each digit in a six-digit whole number, with and without models.	3.1a
• Represent numbers up to 9,999 in multiple ways, according to place value (e.g., 256 can be 1 hundred, 14 tens, and 16 ones, but also 25 tens and 6 ones), with and without models.	EKS 3.1a
Round whole numbers, 9,999 or less, to the nearest ten, hundred, and thousand. Solve problems using rounding of numbers.	3.1b
Compare and order whole numbers, each 9,999 or less.	3.1c
Estimate and determine the sum or difference of two whole numbers, each 9,999 or less.	3.3a
Create and solve single-step and multistep practical problems involving sums or differences of two whole numbers, each 9,999 or less.	3.3b
• Apply strategies, including place value and the properties of addition, to add two whole numbers with sums to 9,999.	EKS 3.3ab
• Apply strategies, including place value and the properties of addition, to subtract two whole numbers, each 9,999 or less.	EKS 3.3ab
Determine the value of a collection of bills and coins whose total value is $5.00 or less.	3.6a
Compare the value of two sets of coins or two sets of coins and bills.	3.6b
Make change from $5.00 or less.	3.6c
Identify, describe, create, and extend repeating and growing patterns found in objects, pictures, numbers, and tables.	3.16 (mastery expected)
• Identify a missing term in a pattern (e.g., 4, 6,□ , 10, 12, 14). • Extend or identify missing parts in repeating and growing patterns using objects, pictures, numbers, and tables. • Solve problems that involve the application of input and output rules limited to addition and subtraction of whole numbers. • When given the rule, determine the missing values in a list or table. (Rules will be limited to addition and subtraction of whole numbers.)	EKS 3.16
Create equations to represent equivalent mathematical relationships. • Identify and use the appropriate symbol to distinguish between expressions that are equal and expressions that are not equal (e.g., 256 - 13 = 220 + 23; 143 + 17 = 140 + 20; and 457 + 100 ≠ 557 +100).	3.17
PWCS End-of-Unit Common Formative Assessment (Parts A and B): Place Value, Addition and Subtraction 2 **Objectives completed**	**3.1abc, 3.3ab, 3.6abc, 3.16, 3.17**

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May 4 – 15 (10 days)
SOL Review and Testing

May 18 – June 12 (15 days)	
Post SOL Topics and SOL Test Retakes	
Focus Topics	**Standards of Learning**
Math topics should be taught based on teacher's judgment regarding what students need most in preparation for 5th grade. Suggestions will be provided in the unit guide.	TBD by teacher