Grade 4 Mathematics
Prince William County Pacing Guide
2022-2023

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 the Standards of Learning have been taught prior to the SOL assessment, and that, as children move within the Division, their math instruction remains coherent. 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 4.** 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, 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 provide a deeper look at the curriculum as well as suggestions for learning experiences, assessments, and resources. These documents are available in Canvas and on the Mathematics SharePoint Website. More information about accessing SharePoint will be coming soon.

Classroom Routines should be an integral part of the development of mathematics understanding. Each day should include a brief (10-15 minutes), deliberate, and carefully planned time for review of key concepts and skills. It is not expected that all skills are addressed every day; each teacher should determine which skills and at what level may be appropriate on a given day. PowerPoints with three number sense routines for each week and daily spiral review questions have been provided. Number sense routines and spiral review routines are available in Canvas in each module.

Assessments are provided for each unit. Each unit includes an End of Unit Assessment on the standards covered in that unit. Reassessments by standard are available in Mastery Connect as well as pdf format in Canvas. In addition, VDOE Just in Time Quick Checks are available in Mastery Connect when applicable as well as pdf format in Canvas. All assessments are intended to be used to determine student growth and guide ongoing instruction. Assessment scoring guides are designed to meet the criteria in assessment Regulation 661-1.

Unit 1: Place Value August 22nd – September 1st (9 days)	
Focus Topics	**Standards of Learning**
Establish routines and procedures using the "First 10 Days of Math" document	
Read, write, and identify the place and value of each digit in a nine-digit whole number.	4.1a
Compare, and order whole numbers expressed through millions (nine-digits).	4.1b
Round whole numbers expressed through millions to the nearest thousand, ten thousand, and hundred thousand.	4.1c
Calculator permitted on all standards in Unit 1	
PWCS End-of-Unit Common Formative Assessment (Parts A and B): Place Value	**4.1abc**
Objectives completed	

Unit 2: Computation, Measurement, and PFA September 6th – October 28th (35 days)	
Focus Topics	**Standards of Learning**
Complete the "First 10 Days of Math"	
Computation & Estimation	
Demonstrate fluency with multiplication facts through 12 x 12, and the corresponding division facts. (***Note****: 3rd grade has representations through 10 x 10 and fluency with facts for 0, 1, 2, 5, and 10.)*	4.4a*
Estimate and determine sums, differences and products of whole numbers.	4.4b*
Estimate and determine quotients of whole numbers ~~with and~~ without remainders. • Apply strategies, including place value and the properties of multiplication and/or addition, to determine the quotient of two whole numbers, given a one-digit divisor and a two- or ~~three~~-digit dividend, ~~with and~~ without remainders. ***Note:*** *3-digit dividends will be addressed in Unit 4 and problems will include remainders.*	4.4c* EKS 4.4c*
Create and solve single-step and multistep practical problems involving addition, subtraction, and multiplication, and single-step practical problems involving division with whole numbers.	4.4d
Determine ~~common~~ factors and multiples, ~~including least common multiples and greatest common factor~~. ***Note****: <u>Common</u> factors and multiples, including LCM and GCF will be addressed in Unit 6 in context with fractions.*	4.5a
Patterns, Functions, and Algebra	
Identify, describe, create, and extend patterns found in ~~objects, pictures,~~ numbers, and tables. *(excluding fraction patterns)*	4.15
Recognize and demonstrate the meaning of equality.	4.16
Measurement	
Solve practical problems that involve determining perimeter and area in U.S. Customary and metric units.	4.7
Estimate, measure and solve practical problems involving length and describe the result in U.S. Customary and metric units - measuring to the nearest part of an inch ($\frac{1}{2}$. $\frac{1}{4}$, $\frac{1}{8}$).	4.8ad
**Items measuring these SOLs will be completed <u>without</u> the use of a calculator.*	
PWCS End-of-Unit Common Formative Assessment (Parts A and B): Computation, Measurement, and PFA	**4.4abcd, 4.5a, 4.7, 4.8ad, 4.15, 4.16**
Objectives completed	**4.4bd (+ and -), 4.7, 4.8ad**

Unit 3: Data Analysis November 1st – November 16th (10 days)	
Focus Topics	**Standards of Learning**
Collect, organize, and represent data in bar graphs and line graphs. Interpret data represented in bar graphs and line graphs. Compare two different representations of the same data (e.g., a set of data displayed on a chart and a bar graph, a chart and a line graph, or a pictograph and a bar graph).	4.14a 4.14b 4.14c
Calculator permitted on all standards in Unit 3	
PWCS End-of-Unit Common Formative Assessment (Parts A and B): **Data Analysis**	**4.14abc**
Objectives completed:	

Unit 4: Multiplication & Division, Measurement, PFA November 17th – January 20th (32 days)	
Focus Topics	**Standards of Learning**
Computation and Estimation Demonstrate fluency with multiplication facts through 12 x 12, and the corresponding division facts. Estimate and determine ~~sums, differences and~~ products of whole numbers. Estimate and determine quotients of whole numbers, with and without remainders. Create and solve single-step and multistep practical problems involving addition, subtraction, and multiplication, and single-step practical problems involving division with whole numbers.	4.4a* 4.4b* 4.4c* 4.4d
Patterns, Functions, and Algebra Identify, describe, create, and extend patterns found in ~~objects, pictures~~, numbers, and tables. *(limited to multiplication)* Recognize and demonstrate the meaning of equality.	4.15 4.16
Measurement Estimate, measure and solve practical problems involving weight/mass and describe the result in U.S. Customary and metric units (ounce, pound, gram, and kilogram). Given the equivalent measure of one unit, identify equivalent measures of length, weight/mass, and liquid volume between units within the U.S. Customary system. Solve practical problems that involve length, weight/mass, and liquid volume in U.S. Customary units. Solve practical problems involving elapsed time in hours and minutes within a 12-hour period. *(continue to teach this through ongoing spiral review)*	4.8b 4.8c 4.8d 4.9
**Items measuring these SOLs will be completed <u>without</u> the use of a calculator.*	
PWCS End-of-Unit Common Formative Assessment (Parts A and B): **Mid Unit & End of Unit** **Multiplication & Division, Measurement, PFA**	**4.4 abcd** **4.8 bcd** **4.9** **4.15** **4.16**
Objectives completed	**4.4 abcd** **4.8 bcd** **4.9** **4.16**

Unit 5: Geometry January 23rd – February 10th ($13\frac{1}{2}$ days)	
Focus Topics	**Standards of Learning**
Geometry Identify and describe points, lines, line segments, rays, and angles, including endpoints and vertices. Identify and describe intersecting, parallel, and perpendicular lines in plane and solid figures. Identify, describe, compare, and contrast plane and solid figures according to their characteristics (number of angles, vertices, edges, and the number and shape of faces), using concrete models and pictorial representations. Classify quadrilaterals as parallelograms, rectangles, squares, rhombi, and/or trapezoids.	 4.10a 4.10b 4.11 4.12
Patterns, Functions, and Algebra Identify, describe, create, and extend patterns found in objects, pictures, ~~numbers, and tables~~.	 4.15
Calculator permitted on all standards in Unit 5	
PWCS End-of-Unit Common Formative Assessment (Parts A and B): **Geometry**	**4.10ab** **4.11** **4.12** **4.15**
Objectives completed	**4.10ab** **4.11** **4.12**

Unit 6: Fractions and Probability February 13th – April 13th (37 days)	
Focus Topics	**Standards of Learning**
Fractions	
Compare and order fractions and mixed numbers with and without models.	4.2a*
Represent equivalent fractions through twelfths, using region/area models, set models, and measurement/length models.	4.2b*
Identify the division statement that represents a fraction, with models and in context.	4.2c
Determine common factors and multiples, including least common multiples and greatest common factor.	4.5a
Add and subtract fractions and mixed numbers, having like and unlike denominators.	4.5b*
Solve single-step practical problems involving addition and subtraction with fractions and mixed numbers and simplify the resulting fraction.	4.5c
Identify, describe, create, and extend patterns found in objects, pictures, numbers, and tables. • Solve practical problems that involve identifying, describing, and extending single-operation input and output rules, ~~limited to addition, subtraction, and multiplication of whole numbers and~~ addition and subtraction of fractions with like denominators of 12 or less.	4.15
Probability	
Determine the likelihood of an outcome of a simple event.	4.13a
Represent probability as a number between 0 and 1 inclusive.	4.13b
Create a model or practical problem to represent a given probability.	4.13c
**Items measuring these SOLs will be completed without the use of a calculator.*	
PWCS End-of-Unit Common Formative Assessment (Parts A and B): Fractions & Probability	**4.2abc 4.5abc 4.13abc 4.15**
Objectives completed	

Unit 7: Modeling and Computation of Decimals April 14th – May 5th (15 days)	
Focus Topics	**Standards of Learning**
Read, write, represent, and identify decimals expressed through thousandths using base-ten manipulatives, drawings, and numerical symbols.	4.3a
Round decimals expressed through thousandths to the nearest whole number.	4.3b
Compare and order decimals.	4.3c
Given a model, write the decimal and fraction equivalents.	4.3d*
Add and subtract decimals.	4.6a*
Solve single-step and multi-step practical problems involving addition and subtraction with decimals through thousandths.	4.6b
**Items measuring these SOLs will be completed <u>without</u> the use of a calculator.*	
PWCS Mid and End-of-Unit Common Formative Assessment (Parts A and B): Modeling and Computation of Decimals	**4.3abcd 4.6ab**
Objectives completed	

SOL Review and SOL Testing	
Focus Topics	**Standards of Learning**
All	All

Post SOL Topics and SOL Test Retakes	
Focus Topics	**Standards of Learning**
Math and/or science 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