

# Berlin Brothersvalley School District

## Berlin Brothersvalley Elementary School

### Year at a Glance Curriculum

#### Math Department Math 4th Grade

#### **Course Description:**

In 4th grade mathematics, students examine math strategies and apply them to real-world situations. This includes multiplication and division, symmetry in nature, fractions, word problems, etc. This course also focuses on comprehending word problems. Throughout the course, word problems will be utilized to reinforce math concepts. Students will learn various new strategies for solving math problems, specifically with multiplication and division. By the end of the course, students will understand how to apply the math concepts that we learn in class to the world around them in preparation for life beyond the fourth grade. Please see below for a concise outline of the course.

| Units of Study   | Competencies  | Approximate Time Frame | Standards  |
|--|---|------------------------|--|
| Unit 1: Place Value and Multi-Digit Addition and Subtraction | Students will be able to identify place value and whole numbers, formulate numbers based on place value clues, solve place value concepts, compare values, examine and differentiate rounding strategies, demonstrate U.S. traditional addition and subtraction methods, convert measurements using the U.S. Customary system, identify the properties of points, lines, segments, and rays, classify properties of angles, triangles, and quadrilaterals, and develop formulas perimeters of rectangles.   | 4 weeks                | CC.2.1.4.B.1<br>CC.2.3.4.A.1<br>CC.2.3.4.A.2                 |
| Unit 2: Multiplication and Geometry                          | Students will be able to review rectangular rays, explain patterns in square numbers, develop formulas for areas of rectangles, examine factors and factor pairs of numbers up to 100, explain a whole number and its factors, classify numbers as either prime or composite, convert units of time, solve number stories involving time, create and interpret statements and questions for multiplicative comparison, classify triangles and quadrilaterals, examine symmetry in nature, and analyze different patterns using the "What's My Rule?" routine. | 4 weeks                | CC.2.2.4.A.2<br>CC.2.2.4.A.4<br>CC.2.3.4.A.3<br>CC.2.4.4.A.1 |
| Unit 3: Fractions and  | Students will be able to solve number stories   | 4 weeks                | CC.2.1.4.C.1   |

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|--|---|---------|------------------------------|
| Decimals   | involving equally shared quantities, develop and recognize equivalent fractions, utilize number lines to generate equivalent fractions, develop an “equivalent fractions rule”, compare and order fractions, examine the relationship between fractions and decimals, model decimals with base ten blocks, examine and write decimals to the hundredths place, distinguish tenths and hundredths of a meter, convert centimeters and millimeters, and compare decimals using greater than, less than, and equal to.   |         | CC.2.1.4.C.3                 |
| Unit 4: Multi-digit Multiplication<br>Extending Multiplication Facts | Students will be able to develop a rule for solving extended multiplication facts, formulate estimates and evaluate reasonable estimates, develop the partitioning rectangle strategy to solve multiplication problems, convert liters to milliliters, solve multiplication problems using partial products multiplication methods, use metric system conversions, analyze multi-step number stories with money, examine rectilinear figures, apply the area formula, analyze multi-step multiplication number stories, and solve multiplication problem using the lattice multiplication method. | 6 weeks | CC.2.1.4.B.2                 |
| Unit 5: Fraction and Mixed Numbers<br>Comparison and Measurement     | Students will be able to deconstruct fractions into sums of fractions, add fractions with like denominators, solve mixed numbers with same denominators, convert and add unlike fractions with tenths and hundredths, subtract fractions with like denominators, subtract mixed numbers with like denominators, construct line plots, record data on line plots using fractional units, connect the definition of a degree to measure angles, create symmetric figures, and analyze multi-step multiplication number stories.   | 4 weeks | CC.2.4.4.A.2<br>CC.2.4.4.A.4 |

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|---------------------------------------|--|---------|--------------|
| Unit 6: Division and Angles           | Students will be able to develop strategies for solving extending division facts, relate the formula for area to a rectangle with missing sides, solve division problems using multiples of a number, examine and apply partial quotients, convert U.S. customary units of weight, examine remainders using division, demonstrate the use of a half circle protractor to measure angles, demonstrate addition and subtraction methods to measure angles without the use of a protractor, analyze fraction and mixed number stories, and demonstrate and apply understanding of whole number multiplication to multiply fractions by whole numbers. | 6 weeks | CC.2.4.4.A.6 |
| Unit 7A: Division and Angles Part Two | Students will be able to analyze fraction and mixed number stories, multiply fractions by whole numbers, and convert U.S. customary liquid measures.   | 1 week  | CC.2.1.4.C.2 |
| Application and Review of Math Skills | Students will be able to apply and review 4th grade math skills.   | 7 weeks | CC.2.2.4.A.1 |

\*Please visit [pdesas.org](http://pdesas.org) for a complete list of standards taught in this course and for more information regarding PA State Standards for this course.

Revised 5/14/24