HAZLETON AREA SCHOOL DISTRICT

GRADE 5

Math Curriculum

HAZLETON AREA SCHOOL DISTRICT
Mathematics Curriculum
Grade 5

Place Value				
Timeline 4 Weeks	**Topic**	**PA Standards**	**PA Eligible Content**	**Tier 2 & 3 Vocabulary**
	A. Whole Place Value	**Standard:** CC.2.1.5.B.1 Apply place-value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.	M05.A-T.1.1.1 Demonstrate an understanding that in a multi-digit number, a digit in one place represents 1/10 of what it represents in the place to its left. Example: Recognize that in the number 770, the 7 in the tens place is 1/10 the 7 in the hundreds place.	• Place Value Chart • Place Value • Digit • Period • Place
	B. Multiply and Divide Powers of 10	**Standard:** CC.2.1.5.B.1 Apply place-value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.	M05.A-T.1.1.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. Example 1: $4 \times 10^2 = 400$ Example 2: $0.05 \div 10^3 = 0.00005$	• Powers of Ten • Base • Exponent • Power • Squared • Cubed
	C. Read and write decimals to thousandths in word form and	**Standard:** CC.2.1.5.B.1 Apply place-value concepts to show an understanding of operations and rounding as they pertain	M05.A-T.1.1.3 Read and write decimals to thousandths using base-ten numerals, word form, and expanded form. Example: 347.392 = 300 + 40 + 7 + 0.3 + 0.09 + 0.002 = 3 X	• Standard Form • Expanded Form • Word Form • Decimal • Decimal Point • Tenth • Hundredth

	expanded form	to whole numbers and decimals.	100 + 4 X 10 + 7 X 1 + 3 X (0.1) + 9 X (0.01) + 2 X (0.001)	• Thousandth
	D. Compare and order whole numbers and decimals	**Standard:** CC.2.1.5.B.1 Apply place-value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.	M05.A-T.1.1.4 Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols.	• Equivalent Decimals • > Greater than • < Less than • = Equal to
	E. Round decimals	**Standard:** CC.2.1.5.B.1 Apply place-value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.	M05.A-T.1.1.5 Round decimals to any place (limit rounding to ones, tenths, hundredths, or thousandths place).	• Estimate • Round

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Operations with Whole Numbers and Decimals				
Timeline 9 Weeks	**Topic**	**PA Standards**	**PA Eligible Content**	**Tier 2 & 3 Vocabulary**
	A. Multiply multi-digit whole numbers	**Standard:** CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.	M05.A-T.2.1.1 Multiply multi-digit whole numbers (not to exceed 3-digit by 3-digit).	• Factor • Product
	B. Divide multi-digit whole numbers	**Standard:** CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.	M05.A-T.2.1.2 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.	• Dividend • Divisor • Quotient • Remainder • Partial Quotients
	C. Add decimals D. Subtract decimals E. Multiply decimals F. Divide decimals	**Standard:** CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.	M05.A-T.2.1.3 Add, subtract, multiply, and divide decimals to hundredths (no divisors with decimals).	• Inverse Operations • Sum • Difference • Estimate

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Order of Operations				
Timeline 2 Weeks	**Topic**	**PA Standards**	**PA Eligible Content**	**Tier 2 & 3 Vocabulary**
	A. Order of operations	**Standard:** CC.2.2.5.A.1 Interpret and evaluate numerical expressions using order of operations.	M05.B-O.1.1.1 Use multiple grouping symbols (parentheses, brackets, or braces) in numerical expressions, and evaluate expressions containing these symbols.	• Numerical Expression • Evaluate • Order of Operations • Parentheses ( ) • Brackets [ ] • Braces { }
	B. Write expressions	**Standard:** CC.2.2.5.A.1 Interpret and evaluate numerical expressions using order of operations.	M05.B-O.1.1.2 Write simple expressions that model calculations with numbers, and interpret numerical expressions without evaluating them. Example 1: Express the calculation "add 8 and 7, then multiply by 2" as 2 x (8 + 7). Example 2: Recognize that 3 x (18,932 + 921) is three times as large as 18,932 + 921, without having to calculate the indicated sum or product.	

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Analyze Patterns				
Timeline 1 Week	**Topic**	**PA Standards**	**PA Eligible Content**	**Tier 2 & 3 Vocabulary**
	A. Analyze patterns	**Standard:** CC.2.2.5.A.4 Analyze patterns and relationships using two rules.	M.05.B-O.2.1.1 Generate two numerical patterns using two given rules. Example: Given the rule "add 3" and the starting number 0 and given the rule "add 6" and the starting number 0, generate terms in the resulting sequences.	• Sequence • Term
	A. Analyze patterns	**Standard:** CC.2.2.5.A.4 Analyze patterns and relationships using two rules.	M05.B-O.2.1.2 Identify apparent relationships between corresponding terms of two patterns with the same starting numbers that follow different rules. Example: Given two patterns in which the first pattern follows the rule "add 8" and the second pattern follows the rule "add 2," observe that the terms in the first pattern are 4 times the size of the terms in the second pattern.	• Corresponding Term • Rule (of a Patttern)

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Number and Operations – Fractions

Timeline 6 Weeks	Topic	PA Standards	PA Eligible Content	Tier 2 & 3 Vocabulary
	CC. Interpret fraction meaning B. Add and subtract fractions with like and unlike denominators (including mixed numbers)	**Standard:** CC.2.1.5.C.1 Use the understanding of equivalency to add and subtract fractions.	M05.A-F.1.1.1 Add and subtract fractions (including mixed numbers) with unlike denominators. (May include multiple methods and representations.) Example: 2/3 + 5/4 = 8/12 + 15/12 = 23/12	• Numerator • Denominator • Fraction Mixed Number • Equivalent Fractions • Least Common Denominator (LCD) • Improper Fractions • Like Fractions • Unlike Fractions • Like Denominators
	C. Interpret the remainder as a fraction	**Standard:** CC.2.1.5.C.2 Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	M05.A-F.2.1.1 Solve word problems involving division of whole numbers leading to answers in the form of fractions (including mixed numbers).	• Fraction Bar
	D. Multiply fractions (including mixed numbers) E. Solve real-world problems using multiplication	**Standard:** CC.2.1.5.C.2 Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	M05.A-F.2.1.2 Multiply a fraction (including mixed numbers) by a fraction.	• Fraction Model

	F. Use multiplication as scaling	**Standard:** CC.2.1.5.C.2 Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	M05.A-F.2.1.3 Demonstrate an understanding of multiplication as scaling (resizing). Example 1: Comparing the size of a product to the size of one factor on the basis of the size of the other factor without performing the indicated multiplication. Example 2: Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number.	• Scaling
	G. Divide fractions and whole numbers H. Solve real-world problems using division	**Standard:** CC.2.1.5.C.2 Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	M05.A-F.2.1.4 Divide unit fractions by whole numbers and whole numbers by unit fractions.	• Unit Fraction • Reciprocal

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Converting Units				
Timeline 2 Weeks	**Topic**	**PA Standards**	**PA Eligible Content**	**Tier 2 & 3 Vocabulary**
	A. Convert like measurements	**Standard:** CC.2.4.5.A.1 Solve problems using conversions within a given measurement system.	M05.D-M.1.1.1 Convert between different-sized measurement units within a given measurement system. A table of equivalencies will be provided. Example: Convert 5 cm to meters.	• Customary System • Inch (in) • Foot (ft) • Length • Yard (yd) • Mile (mi) • Convert • Weight • Ounce (oz) • Pound (lb) • Ton (T) • Capacity • Fluid Ounce (fl oz) • Cup (c) • Pint (pt) • Quart (qt) • Gallon (gal) • Metric System • Centimeter (cm) • Millimeter (mm) • Meter (m) • Kilometer (km) • Mass • Data • Gram (g) • Milligram (mg) • Kilogram (Kg) • Liter (L) • Milliliter (mL)

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Represent and Interpret Data				
Timeline 1 Week	**Topic**	**PA Standards**	**PA Eligible Content**	**Tier 2 & 3 Vocabulary**
	A. Display data	**Standard:** CC.2.4.5.A.2 Represent and interpret data using appropriate scale.	M05.D-M.2.1.2 Display and interpret data shown in tallies, tables, charts, pictographs, bar graphs, and line graphs, and use a title, appropriate scale, and labels. A grid will be provided to display data on bar graphs or line graphs.	• Tally • Table • Chart • Pictograph • Line Graph • Bar Graph • Scale • Label • Box Plot • Interquartile Range • Histogram
	B. Create and interpret line plots	**Standard:** CC.2.4.5.A.4 Solve problems involving computation of fractions using information provided in a line plot.	M05.D-M.2.1.1 Solve problems involving computation of fractions by using information provided in line plots.	• Line Plot (Dot Plot) • Fair Share

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Geometry

Timeline 3 Weeks	Topic	PA Standards	PA Eligible Content	Tier 2 & 3 Vocabulary
	A. Classify two-dimensional figures by their properties	**Standard:** CC.2.3.5.A.2 Classify two-dimensional figures into categories based on an understanding of their properties.	M05.C-G.2.1.1 Classify two-dimensional figures in a hierarchy based on properties. *Example 1: All polygons have at least three sides, and pentagons are polygons, so all pentagons have at least three sides.* *Example 2: A rectangle is a parallelogram, which is a quadrilateral, which is a polygon; so, a rectangle can be classified as a parallelogram, as a quadrilateral, and as a polygon.*	• Polygon • Triangle -Equilateral -Isosceles -Scalene • Acute • Obtuse • Right • Quadrilateral • Rectangle • Square • Rhombus • Trapezoid • Parallelogram • Pentagon • Hexagon • Heptagon • Octagon • Nonagon • Decagon • Congruent Angles • Congruent Sides • Regular Polygon • Attribute • Venn diagram

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Coordinate Plane				
Timeline 1 Week	**Topics**	**PA Standards**	**PA Eligible Content**	**Tier 2 & 3 Vocabulary**
	A. Identify parts of the coordinate plane	**Standard:** CC.2.3.5.A.1 Graph points in the first quadrant on the coordinate plane and interpret these points when solving real world and mathematical problems.	M05.C-G.1.1.1 Identify parts of the coordinate plane (x-axis, y-axis, and the origin) and the ordered pair (x-coordinate and y-coordinate). Limit the coordinate plane to quadrant I.	• Coordinate Plane • Ordered Pair • Origin • x-axis • x-coordinate • y-axis • y-coordinate
	B. Graph and interpret real-world ordered pairs in the first quadrant	**Standard:** CC.2.3.5.A.1 Graph points in the first quadrant on the coordinate plane and interpret these points when solving real world and mathematical problems.	M05.C-G.1.1.2 Represent real-world and mathematical problems by plotting points in quadrant I of the coordinate plane and interpret coordinate values of points in the context of the situation.	

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Volume				
Timeline 1 Week	**Topic**	**PA Standards**	**PA Eligible Content**	**Tier 2 & 3 Vocabulary**
	A. Apply measurement formulas to calculate volume of rectangular prisms	**Standard:** CC.2.4.5.A.5 Apply concepts of volume to solve problems and relate volume to multiplication and to addition.	M.05.D-M.3.1.1 Apply the formulas V=l x w x h and V=B x h for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real-world and mathematical problems. Formulas will be provided.	• Volume • Unit Cube • Cubic Unit • Formula
	A. Apply measurement formulas to calculate volume of rectangular prisms	**Standard:** CC.2.4.5.A.5 Apply concepts of volume to solve problems and relate volume to multiplication and to addition.	M05.D-M.3.1.2 Find volumes of solid figures composed of two non-overlapping right rectangular prisms.	• Composite Solid • Figure