

Berlin Brothersvalley School District
Berlin Brothersvalley Middle School
6th Grade Math Curriculum Framework
Third Nine Weeks

<u>Big Idea(s)</u>	<u>Concept(s)</u>	<u>Competencies</u>	<u>Essential Questions</u>
Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations. Patterns exhibit relationships that can be extended, described, and generalized. Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization.	Students will know: • Inequalities • Absolute Value • Mean Absolute Deviation • Distance between two points on a coordinate grid • Area of 2-dimensional figures • Surface Area of 3-dimensional figures using nets	Students will be able to: • Identify and graph inequalities • Solve using absolute value • Evaluate mean absolute deviation (m.a.d.) from given data • Use absolute value to calculate the distance between two points using ordered pairs • Evaluate the area of triangles and parallelograms • Evaluate the surface area of 3-dimensional figures	How is mathematics used to quantify, compare, represent and model numbers? How can the application of the attributes of geometric shapes support mathematical reasoning and problem solving? How are spatial relationships, including shape and dimension, used to draw, construct, model, and represent real situations or solve problems?
<u>Topic</u>	<u>Approx. # of weeks</u>	<u>PA Academic Standards</u>	<u>Assessment Anchors & Eligible Content</u>
Inequalities Graphing inequalities	3 weeks	CC.2.1.6.E.4 Apply and extend previous understandings of numbers to the system of rational numbers. CC.2.2.6.B.1 Apply and extend previous understandings of arithmetic to algebraic expressions.	M06.A-N.3.1.1 Represent quantities in real-world contexts using positive and negative numbers, explaining the meaning of 0 in each situation (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge). M06.A-N.3.1.2

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			Determine the opposite of a number and recognize that the opposite of the opposite of a number is the number itself (e.g., $-(-3) = 3$; 0 is its own opposite). M06.A-N.3.1.3 Locate and plot integers and other rational numbers on a horizontal or vertical number line; locate and plot pairs of integers and other rational numbers on a coordinate plane. M06.A-N.3.2.1 Write, interpret, and explain statements of order for rational numbers in real-world contexts. Example: Write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C. M06.A-N.3.2.2 Interpret the absolute value of a rational number as its distance from 0 on the number line and as a magnitude for a positive or negative quantity in a real-world situation. M06.A-N.3.2.3 Solve real-world and mathematical problems by plotting points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second
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			coordinate. M06.B-E.1.1.1 Write and evaluate numerical expressions involving whole-number exponents. M06.B-E.1.1.2 Write algebraic expressions from verbal descriptions. M06.B-E.1.1.3 Identify parts of an expression using mathematical terms (e.g., sum, term, product, factor, quotient, coefficient, quantity). M06.B-E.1.1.4 Evaluate expressions at specific values of their variables, including expressions that arise from formulas used in real-world problems. M06.B-E.1.1.5 Apply the properties of operations to generate equivalent expressions.
<u>Topic</u> Absolute Value	<u>Approx. # of weeks</u> 1 week	<u>PA Academic Standards</u> CC.2.1.6.E.4 Apply and extend previous understandings of numbers to the system of rational numbers.	<u>Assessment Anchors & Eligible Content</u> M06.A-N.3.2.1 Write, interpret, and explain statements of order for rational numbers in real-world contexts. Example: Write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C.

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			M06.A-N.3.2.2 Interpret the absolute value of a rational number as its distance from 0 on the number line and as a magnitude for a positive or negative quantity in a real-world situation. Example: For an account balance of – 30 dollars, write $-30 = 30$ to describe the size of the debt in dollars, and recognize that an account balance less than – 30 dollars represents a debt greater than 30 dollars. M06.A-N.3.2.3 Solve real-world and mathematical problems by plotting points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.
<u>Topic</u> Mean Absolute Deviation	<u>Approx. # of weeks</u> 1 week	<u>PA Academic Standards</u> CC.2.4.6.B.1 Demonstrate an understanding of statistical variability by displaying, analyzing, and summarizing distributions	<u>Assessment Anchors & Eligible Content</u> M06.D-S.1.1.2 Determine quantitative measures of center (e.g., median, mean, mode) and variability (e.g., range, interquartile range, mean absolute deviation). M06.D-S.1.1.3 Describe any overall pattern and any deviations from the overall pattern with reference to the context in which the data were gathered.

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Polygons on a grid	1 week	CC.2.1.6.E.4 Apply and extend previous understandings of numbers to the system of rational numbers. CC.2.3.6.A.1 Apply appropriate tools to solve real-world and mathematical problems involving area, surface area, and volume.	M06.A-N.3.2.2 Interpret the absolute value of a rational number as its distance from 0 on the number line and as a magnitude for a positive or negative quantity in a real-world situation. Example: For an account balance of – 30 dollars, write $-30 = 30$ to describe the size of the debt in dollars, and recognize that an account balance less than – 30 dollars represents a debt greater than 30 dollars. M06.A-N.3.2.3 Solve real-world and mathematical problems by plotting points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. M06.C-G.1.1.3 Determine the volume of right rectangular prisms with fractional edge lengths. Formulas will be provided. M06.C-G.1.1.4 Given coordinates for the vertices of a polygon in the plane, use the coordinates to find side lengths and area of the polygon (limited to triangles and special quadrilaterals). Formulas will be provided.

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Area of 2D Parallelograms and Triangles	1 week	CC.2.3.6.A.1 Apply appropriate tools to solve real-world and mathematical problems involving area, surface area, and volume.	M06.C-G.1.1.1 Determine the area of triangles and special quadrilaterals (i.e., square, rectangle, parallelogram, rhombus, and trapezoid). Formulas will be provided. M06.C-G.1.1.2 Determine the area of irregular or compound polygons. Example: Find the area of a room in the shape of an irregular polygon by composing and/or decomposing.
Nets of 3D Shapes Surface Area	2 weeks	CC.2.3.6.A.1 Apply appropriate tools to solve real-world and mathematical problems involving area, surface area, and volume.	M06.C-G.1.1.3 Determine the volume of right rectangular prisms with fractional edge lengths. Formulas will be provided. M06.C-G.1.1.5 Represent three-dimensional figures using nets made of rectangles and triangles. M06.C-G.1.1.6 Determine the surface area of triangular and rectangular prisms (including cubes). Formulas will be provided.

Standards Legend: Essential Important Supplementary

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