

Abington Heights School District Grade 3 Mathematics Curriculum



In Third Grade, students develop their numeracy skills through the following areas of study:

1. Numbers and Operations in Base Ten
2. Numbers and Operations - Fractions
3. Operations and Algebraic Thinking
4. Geometry
5. Measurement and Data

Board Approval Date: 5/3/2023

Adoption: 2023 - 2024 SY

Review Date:

A dark blue banner with white text and graphics. On the left, the quadratic formula is written in a handwritten style: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$. In the center, the text "AH MATHEMATICS" is written in a large, serif font. Below it, the motto "Where collaborative problem solving and perseverance lead to excellence" is written in a smaller, sans-serif font. On the right side of the banner is the Abington Heights School District crest.

Abington Heights Math Framework

Stakeholders	Actions
Students	<ul style="list-style-type: none"> ★ Engage in mathematical discussions, share their ideas openly, be inquisitive, seek to understand and learn more about mathematical concepts, and try their best daily. ★ Exhibit creativity and curiosity in problem solving individually and collaboratively. ★ Persevere in engaging and challenging daily mathematical practice. ★ Come prepared to learn every day.
Teachers	<ul style="list-style-type: none"> ★ Create a safe and collaborative classroom environment where students feel vested in a shared vision for mathematical excellence. ★ Develop high quality instruction that meets the needs of all learners through differentiation. ★ Use a variety of 21st century methodologies to advance learning. ★ Partner with parents and guardians to support student success. ★ Establish a collaborative community within the building and amongst grade levels to ensure a cohesive level of instruction.
Building Leaders	<ul style="list-style-type: none"> ★ Deeply understand the needs of teachers, students, the instructional materials being used, programs being implemented, and the expectations for state-level assessment scores <ul style="list-style-type: none"> ○ Knowledgeable about program and grade level standards ○ Ensure consistent and equal access to high-quality instructional materials and resources, building. ★ Be partners with teachers, students and families: <ul style="list-style-type: none"> ○ Provide guidance and support to the mathematical community. ○ Understand needs of teachers, students and families. ★ Trust the educators to make professional decisions based on program, student, and district needs.
Central Admin	<ul style="list-style-type: none"> ★ Effectively communicate to the school board and community specific areas of need and how to support teachers and building leaders in a quest for mathematical excellence ★ Deeply understand the needs of teachers, students, the instructional materials being used, programs being implemented, and the expectations for state-level assessment scores <ul style="list-style-type: none"> ○ Have a common metric for mathematical excellence. ○ Ensure consistent and equal access to high-quality instructional materials and resources, district. ○ Re-examine best practices/curriculum routinely (6 years). ★ Support a culture of collaboration between the other stakeholder groups to maintain the standard of excellence of the Abington Heights ★ Trust the educators to make professional decisions based on program, student, and district needs.
Parents/Community	<ul style="list-style-type: none"> ★ Be a strong support system and contribute by building a positive math community for students. ★ Encourage a positive math mindset. ★ Have conversations with their children about school and ask what they are learning about in school. ★ Be open, receptive to the district's ideas about student learning and reach out to teachers/school to learn more about how they can support. ★ Trust the educators to make professional decisions based on program, student, and district needs.
School Board	<ul style="list-style-type: none"> ★ Provide the fiscal resources to support: <ul style="list-style-type: none"> ○ Highly qualified professionals for mathematics ○ High-quality instructional materials ○ Effective and efficient math interventions for remediation ○ Professional development for math content and instructional practices ★ Trust the educators to make professional decisions based on program, student, and district needs.

Abington Heights Grade 3 Mathematics Curriculum

PA Core Standards	PA Eligible Content	Everyday Mathematics Grade 3 Lessons
Numbers and Operations in Base Ten		
CC.2.1.3.B.1 Apply place-value understanding and properties of operations to perform multi-digit arithmetic.	<p>MO3.A-T.1.1.1 Round two- and three-digit whole numbers to the nearest ten or hundred, respectively.</p> <p>MO3.A-T.1.1.2 Add two- and three-digit whole numbers (limit sums from 100 through 1,000) and/or subtract two- and three-digit numbers from three-digit whole numbers.</p> <p>MO3.A-T.1.1.3 Multiply one-digit whole numbers by two-digit multiples of 10 (from 10 through 90).</p> <p>MO3.A-T.1.1.4 Order a set of whole numbers from least to greatest or greatest to least (up through 9,999, and limit sets to no more than four numbers).</p>	<p>1-1, 1-2, 1-3, 1-4, 1-10, 2-1, 2-2, 2-3, 2-4, 2-5, 2-11, 3-1, 3-2, 3-3, 3-4, 3-5, 3-6, 3-8, 3-13, 5-7, 6-1, 6-8, 6-10, 6-11, 7-2, 7-3, 8-2, 8-3, 9-2, 9-3, 9-5, 9-6</p>
Numbers and Operations - Fractions		
CC.2.1.3.C.1 Explore and develop an understanding of fractions as numbers.	<p>MO3.A-F.1.1.1 Demonstrate that when a whole or set is partitioned into y equal parts, the fraction $1/y$ represents 1 part of the whole and/or the fraction x/y represents x equal parts of the whole (limit denominators to 2, 3, 4, 6, and 8; limit numerators to whole numbers less than the denominator; and no simplification necessary).</p> <p>MO3.A-F.1.1.2 Represent fractions on a number line (limit denominators to 2, 3, 4, 6, and 8; limit numerators to whole numbers less than the denominator; and no simplification necessary).</p> <p>MO3.A-F.1.1.3 Recognize and generate simple equivalent fractions (limit the denominators to 1, 2, 3, 4, 6, and 8 and limit numerators to whole numbers less than the denominator). Example 1: $1/2 = 2/4$ Example 2: $4/6 = 2/3$</p>	<p>1-12, 2-9, 2-12, 4-3, 5-1, 5-2, 5-3, 7-2, 7-4, 7-5, 7-6, 7-7, 7-8, 7-9, 7-10, 7-11, 7-12, 8-1, 8-6, 8-7</p>

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	<p>MO3.A-F.1.1.4 Express whole numbers as fractions, and/or generate fractions that are equivalent to whole numbers (limit denominators to 1, 2, 3, 4, 6, and 8). Example 1: Express 3 in the form $3 = 3/1$. Example 2: Recognize that $6/1 = 6$.</p> <p>MO3.A-F.1.1.5 Compare two fractions with the same denominator (limit denominators to 1, 2, 3, 4, 6, and 8), using the symbols $>$, $=$, or $<$, and/or justify the conclusions</p>	
Operations and Algebraic Thinking		
<p>CC.2.2.3.A.1 Represent and solve problems involving multiplication and division.</p>	<p>MO3.B-O.1.1.1 Interpret and/or describe products of whole numbers (up to and including 10×10). Example 1: Interpret 35 as the total number of objects in 5 groups, each containing 7 objects. Example 2: Describe a context in which a total number of objects can be expressed as 5×7.</p> <p>MO3.B-O.1.1.2 Interpret and/or describe whole-number quotients of whole numbers (limit dividends through 50 and limit divisors and quotients through 10). Example 1: Interpret $48 \div 8$ as the number of objects in each share when 48 objects are partitioned equally into 8 shares, or as a number of shares when 48 objects are partitioned into equal shares of 8 objects each. Example 2: Describe a context in which a number of shares or a number of groups can be expressed as $48 \div 8$.</p> <p>MO3.B-O.1.2.1 Use multiplication (up to and including 10×10) and/or division (limit dividends through 50 and limit divisors and quotients through 10) to solve word problems in situations involving equal groups, arrays, and/or measurement quantities.</p> <p>MO3.B-O.1.2.2 Determine the unknown whole number in a multiplication (up to and including 10×10) or division (limit dividends through 50 and limit divisors and quotients</p>	<p>1-8, 1-9, 1-10, 1-12, 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 3-1, 3-9, 3-10, 3-11, 3-12, 5-4, 5-5, 5-6, 5-8, 5-10, 5-11, 6-4, 6-6, 6-7, 7-2, 7-3, 7-12, 8-2, 8-3, 8-4, 8-5, 8-6, 9-1, 9-2, 9-3, 9-5, 9-6</p>

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	through 10) equation relating three whole numbers. Example: Determine the unknown number that makes an equation true.	
CC.2.2.3.A.2 Understand properties of multiplication and the relationship between multiplication and division.	<p>Mo3.B-O.2.1.1 Apply the commutative property of multiplication (not identification or definition of the property).</p> <p>Mo3.B-O.2.1.2 Apply the associative property of multiplication (not identification or definition of the property).</p> <p>Mo3.B-O.2.2.1 Interpret and/or model division as a multiplication equation with an unknown factor. Example: Find $32 \div 8$ by solving $8 \times ? = 32$</p>	1-9, 1-10, 2-6, 3-10, 3-11, 3-12, 5-4, 5-5, 5-6, 5-8, 5-9, 5-11, 6-3, 6-6, 6-7, 8-2, 8-3, 8-5, 8-7, 9-2, 9-3, 9-5
CC.2.2.3.A.3 Demonstrate multiplication and division fluency.	<i>Intentionally blank.</i>	1-8, 1-10, 2-4, 2-5, 2-6, 2-7, 2-9, 2-10, 2-11, 3-1, 3-9, 3-10, 3-11, 3-12, 3-13, 4-12, 5-4, 5-5, 5-6, 5-7, 5-8, 5-9, 5-11, 6-2, 6-3, 6-4, 6-6, 6-7, 6-8, 6-10, 6-11, 7-2, 7-3, 8-2, 8-3, 8-5, 8-6, 9-1, 9-2, 9-3, 9-5, 9-6
<p>CC.2.2.3.A.4 Solve problems involving the four operations, and identify and explain patterns in arithmetic.</p> <p>CC.2.2.3.A.4 Solve problems involving the four operations, and identify and explain patterns in arithmetic.</p>	<p>Mo3.B-O.3.1.1 Solve two-step word problems using the four operations (expressions are not explicitly stated). Limit to problems with whole numbers and having whole-number answers.</p> <p>Mo3.B-O.3.1.2 Represent two-step word problems using equations with a symbol standing for the unknown quantity. Limit to problems with whole numbers and having whole-number answers.</p> <p>Mo3.B-O.3.1.3 Assess the reasonableness of answers. Limit</p>	2-2, 2-3, 2-4, 2-5, 2-6, 3-2, 3-3, 3-4, 3-5, 3-6, 3-10, 4-12, 5-4, 5-5, 5-6, 5-7, 5-9, 5-10, 6-1, 6-7, 6-8, 6-9, 6-10, 6-11, 7-2, 9-3, 9-5

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	<p>problems posed with whole numbers and having whole-number answers.</p> <p>Mo3.B-O.3.1.4 Solve two-step equations using order of operations (equation is explicitly stated with no grouping symbols).</p> <p>Mo3.B-O.3.1.5 Identify arithmetic patterns (including patterns in the addition table or multiplication table) and/or explain them using properties of operations. Example 1: Observe that 4 times a number is always even. Example 2: Explain why 6 times a number can be decomposed into three equal addends.</p> <p>Mo3.B-O.3.1.6 Create or match a story to a given combination of symbols (+, −, ×, ÷, <, >, and =) and numbers.</p> <p>Mo3.B-O.3.1.7 Identify the missing symbol (+, −, ×, ÷, <, >, and =) that makes a number sentence true.</p>	
Geometry		
<p>CC.2.3.3.A.1 Identify, compare, and classify shapes and their attributes.</p>	<p>Mo3.C-G.1.1.1 Explain that shapes in different categories may share attributes and that the shared attributes can define a larger category. Example 1: A rhombus and a rectangle are both quadrilaterals since they both have exactly four sides. Example 2: A triangle and a pentagon are both polygons since they are both multi-sided plane figures.</p> <p>Mo3.C-G.1.1.2 Recognize rhombi, rectangles, and squares as examples of quadrilaterals and/or draw examples of quadrilaterals that do not belong to any of these subcategories.</p>	<p>1-3, 4-4, 4-5, 4-6, 6-5, 8-8, 9-4</p>

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CC.2.3.3.A.2 Use the understanding of fractions to partition shapes into parts with equal areas and express the area of each part as a unit fraction of the whole.	MO3.C-G.1.1.3 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. Example 1: Partition a shape into 4 parts with equal areas. Example 2: Describe the area of each of 8 equal parts as $\frac{1}{8}$ of the area of the shape.	1-12, 2-9, 3-7, 5-1, 7-4, 7-10, 7-11, 8-7, 9-4
Measurement and Data		
CC.2.4.3.A.1 Solve problems involving measurement and estimation of temperature, liquid volume, mass, and length.	MO3.D-M.1.2.1 Measure and estimate liquid volumes and masses of objects using standard units (cups [c], pints [pt], quarts [qt], gallons [gal], ounces [oz.], and pounds [lb]) and metric units (liters [l], grams [g], and kilograms [kg]). MO3.D-M.1.2.2 Add, subtract, multiply, and divide to solve one-step word problems involving masses or liquid volumes that are given in the same units. MO3.D-M.1.2.3 Use a ruler to measure lengths to the nearest quarter inch or centimeter.	1-12, 1-13, 2-12, 4-3, 7-1, 7-2, 7-3, 9-2, 9-3, 9-4
CC.2.4.3.A.2 Tell and write time to the nearest minute and solve problems by calculating time intervals.	MO3.D-M.1.1.1 Tell, show, and/or write time (analog) to the nearest minute. MO3.D-M.1.1.2 Calculate elapsed time to the minute in a given situation (total elapsed time limited to 60 minutes or less).	1-3, 1-5, 1-6, 1-11, 7-3, 9-4, 9-7
CC.2.4.3.A.3 Solve problems and make change involving money using a combination of coins and bills.	MO3.D-M.1.3.1 Compare total values of combinations of coins (penny, nickel, dime, and quarter) and/or dollar bills less than \$5.00. MO3.D-M.1.3.2 Make change for an amount up to \$5.00 with no more than \$2.00 change given (penny, nickel, dime, quarter, and dollar). MO3.D-M.1.3.3 Round amounts of money to the nearest dollar.	<i>Intentionally blank.</i>

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<p>CC.2.4.3.A.4 Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs.</p>	<p>MO3.D-M.2.1.1 Complete a scaled pictograph and a scaled bar graph to represent a data set with several categories (scales limited to 1, 2, 5, and 10).</p> <p>MO3.D-M.2.1.2 Solve one- and two-step problems using information to interpret data presented in scaled pictographs and scaled bar graphs (scales limited to 1, 2, 5, and 10). Example 1: (One-step) “Which category is the largest?” Example 2: (Two-step) “How many more are in category A than in category B?”</p> <p>MO3.D-M.2.1.3 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Display the data by making a line plot, where the horizontal scale is marked in appropriate units—whole numbers, halves, or quarters.</p> <p>MO3.D-M.2.1.4 Translate information from one type of display to another. Limit to pictographs, tally charts, bar graphs, and tables. Example: Convert a tally chart to a bar graph</p>	<p>1-3, 1-7, 3-7, 3-8, 4-1, 4-2, 4-3, 4-6, 4-7, 6-5, 8-1, 9-7</p>
<p>CC.2.4.3.A.5 Determine the area of a rectangle and apply the concept to multiplication and to addition.</p>	<p>MO3.D-M.3.1.1 Measure areas by counting unit squares (square cm, square m, square in., square ft, and non-standard square units).</p> <p>MO3.D-M.3.1.2 Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.</p>	<p>2-12, 3-7, 4-7, 4-8, 4-9, 4-10, 4-11, 4-12, 5-1, 5-5, 5-6, 5-11, 8-7, 9-5</p>
<p>CC.2.4.3.A.6 Solve problems involving perimeters of polygons and distinguish between linear and area measures.</p>	<p>MO3.D-M.4.1.1 Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, exhibiting rectangles with the same perimeter and</p>	<p>2-12, 3-7, 4-3, 4-6, 4-7, 4-8, 4-9, 4-10, 4-11, 4-12, 5-1, 6-5</p>

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	different areas, and exhibiting rectangles with the same area and different perimeters. Use the same units throughout the problem.	

Portrait of an Abington Heights 3rd Grade Mathematician



By the end of 3rd Grade, students will:

Numbers & Operations in Base Ten	Numbers & Operations - Fractions	Operations and Algebraic Thinking	Geometry	Measurement and Data
<ul style="list-style-type: none"> <input type="checkbox"/> Use place value to round two- and three-digit numbers to the nearest 10 or 100 <input type="checkbox"/> Fluently add and subtract within 1,000 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction <input type="checkbox"/> Multiply one-digit whole numbers by multiples of 10 in the range of 10-90 using strategies based on place value and properties of operations (ex. 4×80, 5×60) <input type="checkbox"/> Order a set of (up to 4) numbers from least to greatest or greatest to least (up through 9,999) 	<ul style="list-style-type: none"> <input type="checkbox"/> Develop understanding of fractions (whole divided into equal parts) <input type="checkbox"/> Identify and represent fractions on a number line <input type="checkbox"/> Explore equivalent fractions ($\frac{1}{2} = \frac{2}{4}$) <input type="checkbox"/> Explore whole number, fraction relationship ($4 = \frac{4}{1}$) <input type="checkbox"/> Compare fractions with like denominators using $<$, $>$, $=$ and reason with fraction models 	<ul style="list-style-type: none"> <input type="checkbox"/> Use multiplication and division within 100 to solve word problems involving equal groups, arrays, and measurement quantities <input type="checkbox"/> Determine the unknown number of a multiplication or division equation (ex. $4 \times ? = 12$) <input type="checkbox"/> Apply the commutative property of multiplication (If $4 \times 3 = 12$, then $3 \times 4 = 12$) <input type="checkbox"/> Apply the associative property of multiplication ($2 \times 3 \times 4$ is the same as 2×12) <input type="checkbox"/> Fluently multiply and divide within 100 <input type="checkbox"/> Know all multiplication facts up to 9x9 from memory <input type="checkbox"/> Solve two-step word problems using the four operations 	<ul style="list-style-type: none"> <input type="checkbox"/> Understand that shapes in different categories (ex. rhombuses, rectangles, and others) may share attributes and that shared attributes can define a larger category (ex. quadrilaterals) <input type="checkbox"/> Partition shapes into parts with equal areas and connect with knowledge of fractions 	<ul style="list-style-type: none"> <input type="checkbox"/> Tell and write time to the nearest minute <input type="checkbox"/> Solve word problems involving elapsed time <input type="checkbox"/> Measure and estimate liquid volumes and masses of objects using standard & metric units <input type="checkbox"/> Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units <input type="checkbox"/> Measure to the nearest $\frac{1}{2}$, $\frac{1}{4}$ inch or nearest cm <input type="checkbox"/> Compare total value of coins and bills (up to \$5) <input type="checkbox"/> Make change for amount up to \$5.00 with no more than \$2.00 change given <input type="checkbox"/> Round amounts of money to nearest dollar <input type="checkbox"/> Draw scaled picture graph and bar graph and solve one-step and two-step problems related to graphs <input type="checkbox"/> Explore area (relate to multiplication & division) <input type="checkbox"/> Identify perimeter of polygons and find unknown side length

Notes: