## Abington Heights School District Grade 5 Mathematics Curriculum



In Fifth 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
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Review Date:


## Abington Heights Math Framework

| Stakeholders | Actions |
| :---: | :---: |
| Students | $\star$ Engage in mathematical discussions, share their ideas openly, be inquisitive, seek to understand and learn more about mathematical concepts, and try their best daily. <br> $\star$ Exhibit creativity and curiosity in problem solving individually and collaboratively. <br> $\star$ Persevere in engaging and challenging daily mathematical practice. <br> $\star$ Come prepared to learn every day. |
| Teachers | $\star$ Create a safe and collaborative classroom environment where students feel vested in a shared vision for mathematical excellence. <br> $\star$ Develop high quality instruction that meets the needs of all learners through differentiation. <br> $\star$ Use a variety of 21st century methodologies to advance learning. <br> $\star$ Partner with parents and guardians to support student success. <br> $\star$ Establish a collaborative community within the building and amongst grade levels to ensure a cohesive level of instruction. |
| Building Leaders | $\star$ Deeply understand the needs of teachers, students, the instructional materials being used, programs being implemented, and the expectations for state-level assessment scores <br> - Knowledgeable about program and grade level standards <br> - Ensure consistent and equal access to high-quality instructional materials and resources, building. Be partners with teachers, students and families: <br> - Provide guidance and support to the mathematical community. <br> - Understand needs of teachers, students and families. <br> Trust the educators to make professional decisions based on program, student, and district needs. |
| Central Admin | $\star$ 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 <br> $\star$ Deeply understand the needs of teachers, students, the instructional materials being used, programs being implemented, and the expectations for state-level assessment scores <br> - Have a common metric for mathematical excellence. <br> - Ensure consistent and equal access to high-quality instructional materials and resources, district. <br> - Re-examine best practices/curriculum routinely ( 6 years). <br> $\star$ Support a culture of collaboration between the other stakeholder groups to maintain the standard of excellence of the Abington Heights <br> $\star$ Trust the educators to make professional decisions based on program, student, and district needs. |
| Parents/ Community | $\star$ Be a strong support system and contribute by building a positive math community for students. <br> $\star$ Encourage a positive math mindset. <br> $\star$ Have conversations with their children about school and ask what they are learning about in school. <br> $\star$ 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. <br> $\star$ Trust the educators to make professional decisions based on program, student, and district needs. |
| School Board | Provide the fiscal resources to support: <br> - Highly qualified professionals for mathematics <br> - High-quality instructional materials <br> - Effective and efficient math interventions for remediation <br> - Professional development for math content and instructional practices <br> Trust the educators to make professional decisions based on program, student, and district needs. |

## Abington Heights Grade 5 Mathematics Curriculum

| PA Core Standards | PA Eligible Content | Everyday Mathematics Grade 5 Lessons |
| :---: | :---: | :---: |
| Numbers and Operations in Base Ten |  |  |
| 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. | Mo5.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. <br> Mo5.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: $4 \times$ $102=400$ Example 2: $0.05 \div 103=0.00005$ <br> Mo5.A-T.1.1.3 Read and write decimals to thousandths using base-ten numerals, word form, and expanded form. Example: $347.392=300+40+$ $7+0.3+0.09+0.002=3 \times 100+4 \times 10+7 \times 1+3$ $\times(0.1)+9 \times(0.01)+2 \times(0.001)$ <br> Mo5.A-T.1.1.4 Compare two decimals to thousandths based on meanings of the digits in each place using $>,=$, and < symbols. <br> Mo5.A-T.1.1.5 Round decimals to any place (limit rounding to ones, tenths, hundredths, or thousandths place). | $\begin{aligned} & \text { 1-1, 2-1, 2-2, 2-3, 2-9, 2-10, 4-1, } \\ & 4-2,4-3,4-4,4-5,4-11,4-12,4-13, \\ & 6-1,6-2,6-3,6-9,6-10,6-12,6-13, \\ & 8-5,8-7,8-8,8-11,8-12 \end{aligned}$ |
| CC.2.1.5.B. 2 Extend an understanding of operations with whole numbers to perform operations including decimals. | Mo5.A-T.2.1.1 Multiply multi-digit whole numbers (not to exceed three-digit by three-digit). <br> Mo5.A-T.2.1.2 Find whole-number quotients of | $\begin{aligned} & 2-4,2-5,2-6,2-7,2-8,2-9,2-10, \\ & 2-11,2-12,2-13,3-3,3-5,4-11, \\ & 4-12,4-13,4-14,6-5,6-8,6-9, \\ & 6-10,6-11,6-12,6-13,8-1,8-5,8-6, \end{aligned}$ |


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|  | whole numbers with up to four-digit dividends and two-digit divisors. <br> Mo5.A-T.2.1.3 Add, subtract, multiply, and divide decimals to hundredths (no divisors with decimals). | 8-7, 8-8, 8-9, 8-10 |
| Numbers and Operations - Fractions |  |  |
| CC.2.1.5.C. 1 Use the understanding of equivalency to add and subtract fractions. | Mo5.A-F.1.1.1 Add and subtract fractions (including mixed numbers) with unlike denominators. (May include multiple methods and representations.) Example: $2 / 3+5 / 4=8 / 12+15 / 12=23 / 12$ | $\begin{aligned} & 3-4,3-6,3-7,3-9,3-10,3-11,3-12 \\ & 5-1,5-2,5-3,5-4,6-4,6-5,7-1,7-9 \\ & 8-2 \end{aligned}$ |
| CC.2.1.5.C. 2 Apply and extend previous understandings of multiplication and division to multiply and divide fractions. | Mo5.A-F.2.1.1 Solve word problems involving division of whole numbers leading to answers in the form of fractions (including mixed numbers). <br> Mo5.A-F.2.1.2 Multiply a fraction (including mixed numbers) by a fraction. <br> Mo5.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. <br> Mo5.A-F.2.1.4 Divide unit fractions by whole numbers and whole numbers by unit fractions. | $\begin{aligned} & 1-2,1-3,1-4,3-1,3-2,3-3,3-4,3-5, \\ & 3-8,3-12,3-13,3-14,4-8,5-5,5-6, \\ & 5-7,5-8,5-9,5-10,5-11,5-12,5-13, \\ & 5-14,6-8,6-12,7-1,7-2,7-3,7-4, \\ & 7-9,8-1,8-2,8-3 \end{aligned}$ |
| Operations and Algebraic Thinking |  |  |


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| CC.2.2.5.A.1 Interpret and evaluate numerical expressions using order of operations | Mo5.B-O.1.1.1 Use multiple grouping symbols (parentheses, brackets, or braces) in numerical expressions and evaluate expressions containing these symbols. <br> Mo5.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 $2 \times(8+7)$. Example 2: Recognize that $3 \times$ $(18,932+921)$ is three times as large as $18,932+921$ without having to calculate the indicated sum or product. | $\begin{aligned} & 1-1,1-11,1-12,2-6,2-7,3-11,6-2, \\ & 6-2,6-8,6-13,7-1 \end{aligned}$ |
| CC.2.2.5.A.4 Analyze patterns and relationships using two rules. | Mo5.B-O.2.1.1 Generate two numerical patterns using two given rules. Example: Given the rule "add 3 " and the starting number o and given the rule "add 6 " and the starting number o, generate terms in the resulting sequences. <br> Mo5.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. | 4-9, 7-10, 7-11, 7-12, 7-13, 8-9 |
| Geometry |  |  |
| 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. | Mo5.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. <br> Mo5.C-G.1.1.2 Represent real-world and | $\begin{aligned} & 4-6,4-7,4-8,4-9,4-10,7-10,7-11, \\ & 7-12,7-13,8-10,8-11,8-12 \end{aligned}$ |


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|  | mathematical problems by plotting points in quadrant I of the coordinate plane and interpret coordinate values of points in the context of the situation. |  |
| CC.2.3.5.A. 2 Classify two-dimensional figures into categories based on an understanding of their properties. | Mo5.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. | 1-1, 7-5, 7-6, 7-7, 7-8 |
| Measurement and Data |  |  |
| CC.2.4.5.A. 1 Solve problems using conversions within a given measurement system. | Mo5.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. | $\begin{aligned} & 1-1,1-3,1-10,1-11,2-6,6-3,6-4 \\ & 7-11,8-1,8-5,8-6,8-7,8-8,8-9 \\ & 8-10 \end{aligned}$ |
| CC.2.4.5.A. 2 Represent and interpret data using appropriate scale. | Mo5.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. | Intentionally blank. |
| CC.2.4.5.A.4 Solve problems involving computation of fractions using information provided in a line plot. | Mo5.D-M.2.1.1 Solve problems involving computation of fractions by using information presented in line plots. | 6-4, 6-5, 6-13, 7-9 |
| CC.2.4.5.A. 5 Apply concepts of volume to solve problems and relate volume to multiplication and to addition. | Mo5.D-M.3.1.1 Apply the formulas $\mathrm{V}=\mathrm{l} \times \mathrm{w} \times \mathrm{h}$ and $\mathrm{V}=\mathrm{B} \times \mathrm{h}$ 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. | $\begin{aligned} & 1-5,1-6,1-7,1-8,1-9,1-10,1-11, \\ & 1-12,6-6,6-7,8-3,8-4 \end{aligned}$ |


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|  | Mo5.D-M.3.1.2 Find volumes of solid figures <br> composed of two non-overlapping right rectangular <br> prisms. |  |

## Portrait of an Abington Heights 5th Grade Mathematician

By the end of 5th Grade, students will:

| Numbers \& Operations in Base Ten | Numbers \& Operations Fractions | Operations and Algebraic Thinking | Geometry | Measurement and Data |
| :---: | :---: | :---: | :---: | :---: |
| Fluently multiply multi-digit whole numbers (not to exceed 3-digit by 3-digit) <br> Find whole number quotients of whole numbers with up to four-digit dividends and two-digit divisors Read, write, and compare decimals to the thousandths Add, subtract, multiply, and divide decimals to the hundredths (no divisors with decimals) <br> Use place value understanding to round decimals to thousandths | Add, subtract, multiply, and divide fractions with unlike denominators, including mixed numbers <br> Solve problems involving fractions and the four operations, and use benchmark fractions and number sense to assess the reasonableness of answers | Write and evaluate simple expressions using parentheses, brackets, or braces Analyze and explain multiple patterns and relationships (ex. Rules of coordinate pairs; placement of decimal point when multiplying or dividing by a power of 10 ) | $\square$ Graph points on the coordinate plane to solve real-world and mathematical problems (only in Quadrant I) Classify two-dimensional figures into categories based on their properties | Make conversions within a measurement system (ex. 4 cm to 0.04 m ) <br> Represent and interpret data on bar or line graphs <br> Use operations on fractions to solve problems with information presented in line plots Apply the formulas $V=l \times w \times h$ and $V=B \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths Find volumes of solid figures composed of two non-overlapping right rectangular prisms |

## Notes:

