Mathematics

Grade 5

PA Alternate Eligible Content

PA Reporting Category: M05.A-T Numbers and Operations in Base Ten

PA Core Standards:
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.

Assessment Anchor
M05.A-T.1 Understand the place-value system.

DESCRIPTOR	ELIGIBLE CONTENT	Alternate Eligible Content Code	ALTERNATE ELIGIBLE CONTENT
M05.A-T.1.1 Demonstrate understanding of place-value of whole numbers and decimals, and compare quantities or magnitudes of numbers.	**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.**	**M05AT1.1.1a**	**Identify place value in a 3-digit number using models**
	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: $0.05 \div 10^3 = 0.00005$	**M05AT1.1.2a**	**Identify a pattern and change in place value when a number up to 99 is multiplied by powers of 10**
	M05.A-T.1.1.3 Read and write decimals to thousandths using base-ten numerals, word form, and expanded form. Example: $347.392 = 300 + 40 + 7 + 0.3 + 0.09 + 0.002 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (0.1) + 9 \times (0.01) + 2 \times (0.001)$		
	M05.A-T.1.1.4 Compare two decimals to thousandths based on meanings of the digits in each place using >, =, and < symbols.	**M05AT1.1.4a**	**Compare two numbers up to the hundredths place**
	M05.A-T.1.1.5 Round decimals to any place (limit rounding to ones, tenths, hundredths, or thousandths place).	**M05AT1.1.5a**	**Round a decimal from the tenths place to the nearest whole number**

PA Reporting Category: M05.A-T Numbers and Operations in Base Ten

PA Core Standards:
CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.

Assessment Anchor
M05.A-T.2 Perform operations with multi-digit whole numbers and with decimals to hundredths.

DESCRIPTOR	ELIGIBLE CONTENT	Alternate Eligible Content Code	ALTERNATE ELIGIBLE CONTENT
M05.A-T.2.1 **Use whole numbers and decimals to compute accurately (straight computation or word problems).**	**M05.A-T.2.1.1** **Multiply multi-digit whole numbers (not to exceed three-digit by three-digit).**	**M05AT2.1.1a**	**Multiply single-digit whole numbers**
	M05.A-T.2.1.2 **Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.**	**M05AT2.1.2a**	**Illustrate the concept of division using fair and equal shares**
	M05.A-T.2.1.3 **Add, subtract, multiply, and divide decimals to hundredths (no divisors with decimals).**	**M05AT2.1.3a**	**Add or subtract decimals to the tenths place**

PA Reporting Category: M05.A-F Numbers and Operations—Fractions

PA Core Standards:
CC.2.1.5.C.1 Use the understanding of equivalency to add and subtract fractions.

Assessment Anchor
M05.A-F.1 Use equivalent fractions as a strategy to add and subtract fractions.

DESCRIPTOR	ELIGIBLE CONTENT	Alternate Eligible Content Code	ALTERNATE ELIGIBLE CONTENT
M05.A-F.1.1 **Solve addition and subtraction problems involving fractions (straight computation or word problems).**	**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**	**M05AF1.1.1a**	**Add or subtract proper fractions with common denominators to solve a real-world problem**

PA Reporting Category: M05.A-F Numbers and Operations—Fractions

PA Core Standards:
CC.2.1.5.C.2 Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

Assessment Anchor
M05.A-F.2 Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

DESCRIPTOR	ELIGIBLE CONTENT	Alternate Eligible Content Code	ALTERNATE ELIGIBLE CONTENT
M05.A-F.2.1 Solve multiplication and division problems involving fractions and whole numbers (straight computation or word problems).	**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).**		
	M05.A-F.2.1.2 Multiply a fraction (including mixed numbers) by a fraction.	**M05.AF.2.1.2.a**	**Multiply a fraction by a whole number less than 10**
	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.**		
	M05.A-F.2.1.4 Divide unit fractions by whole numbers and whole numbers by unit fractions.		

PA Reporting Category: M05.B-O Operations and Algebraic Thinking

PA Core Standards:
CC.2.2.5.A.1 Interpret and evaluate numerical expressions using order of operations.

Assessment Anchor
M05.B-O.1 Write and interpret numerical expressions.

DESCRIPTOR	ELIGIBLE CONTENT	Alternate Eligible Content Code	ALTERNATE ELIGIBLE CONTENT
M05.B-O.1.1 **Analyze and complete calculations by applying the 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.**		
	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 × (8 + 7).** **Example 2: Recognize that 3 × (18,932 + 921) is three times as large as 18,932 + 921 without having to calculate the indicated sum or product.**		

PA Reporting Category: M05.B-O Operations and Algebraic Thinking

PA Core Standards:
CC.2.2.5.A.4 Analyze patterns and relationships using two rules.

Assessment Anchor
M05.B-O.2 Analyze patterns and relationships.

DESCRIPTOR	ELIGIBLE CONTENT	Alternate Eligible Content Code	ALTERNATE ELIGIBLE CONTENT
M05.B-O.2.1 **Create, extend, and analyze patterns.**	**M05.B-O.2.1.1** **Generate two numerical patterns using two given rules.**	**M05BO2.1.1a**	**Identify and extend numeric patterns**
	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.	**M05BO2.1.1b**	**Generate a pattern that follows 1 or more rules provided**
	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.**		

PA Reporting Category: M05.C-G Geometry

PA Core Standards:
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.

Assessment Anchor
M05.C-G.1 Graph points on the coordinate plane to solve real-world and mathematical problems.

DESCRIPTOR	ELIGIBLE CONTENT	Alternate Eligible Content Code	ALTERNATE ELIGIBLE CONTENT
M05.C-G.1.1 Identify parts of a coordinate grid and describe or interpret points given an ordered pair.	**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.**	**M05CG1.1.1a**	**Identify an ordered pair (*x,y*) in quadrant I**
	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.	**M05CG1.1.2a**	**Graph an ordered pair (*x,y*) in quadrant I**

PA Reporting Category: M05.C-G Geometry

PA Core Standards:
CC.2.3.5.A.2 Classify two-dimensional figures into categories based on an understanding of their properties.

Assessment Anchor
M05.C-G.2 Classify two-dimensional figures into categories based on their properties.

DESCRIPTOR	ELIGIBLE CONTENT	Alternate Eligible Content Code	ALTERNATE ELIGIBLE CONTENT
M05.C-G.2.1 Use basic properties to classify two-dimensional figures.	**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.**	**M05CG2.1.1a**	**Identify a two-dimensional figure with specific attributes**

PA Reporting Category: M05.D-M Measurement and Data

PA Core Standards:
CC.2.4.5.A.1 Solve problems using conversions within a given measurement system.

Assessment Anchor
M05.D-M.1 Convert like measurement units within a given measurement system.

DESCRIPTOR	ELIGIBLE CONTENT	Alternate Eligible Content Code	ALTERNATE ELIGIBLE CONTENT
M05.D-M.1.1 Solve problems using simple conversions (may include multistep, real-world problems).	**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.**	**M05DM1.1.1a**	**Use a conversion table to identify equivalent standard measurements of length or mass**

PA Reporting Category: M05.D-M Measurement and Data

PA Core Standards:
CC.2.4.5.A.2 Represent and interpret data using appropriate scale.
CC.2.4.5.A.4 Solve problems involving computation of fractions using information provided in a line plot.

Assessment Anchor
M05.D-M.2 Represent and interpret data.

DESCRIPTOR	ELIGIBLE CONTENT	Alternate Eligible Content Code	ALTERNATE ELIGIBLE CONTENT
M05.D-M.2.1 **Organize, display, and answer questions based on data.**	**M05.D-M.2.1.1** **Solve problems involving computation of fractions by using information presented in line plots.**		
	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.**	**M05DM2.1.2a**	**Interpret one set of data given in 2 different displays**

PA Reporting Category: M05.D-M Measurement and Data

PA Core Standards:
CC.2.4.5.A.5 Apply concepts of volume to solve problems and relate volume to multiplication and to addition.

Assessment Anchor
M05.D-M.3 Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

DESCRIPTOR	ELIGIBLE CONTENT	Alternate Eligible Content Code	ALTERNATE ELIGIBLE CONTENT
M05.D-M.3.1 **Use, describe, and develop procedures to solve problems involving volume.**	**M05.D-M.3.1.1** **Apply the formulas v = l × w × h and v = b × 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.**		
	M05.D-M.3.1.2 **Find volumes of solid figures composed of two non-overlapping right rectangular prisms.**	**M05DM3.1.2a**	**Find volume by using filling or multiplication**