Mathematics
Assessment Anchors
and Eligible Content

Aligned to Pennsylvania Common Core Standards

Grade 5

Pennsylvania System of School Assessment

The Assessment Anchors, as defined by the Eligible Content, are organized into cohesive blueprints, each structured with a common labeling system that can be read like an outline. This framework is organized first by Reporting Category, then by Assessment Anchor, followed by Anchor Descriptor, and then finally, at the greatest level of detail, by an Eligible Content statement. The common format of this outline is followed across the PSSA.

Here is a description of each level in the labeling system for the PSSA:

Reporting Category

The Assessment Anchors are organized into four classifications, as listed below.

- A = Numbers and Operations
- B = Algebraic Concepts
- C = Geometry
- D = Data Analysis and Probability

These four classifications are used throughout the grade levels. In addition to these classifications, there are five Reporting Categories for each grade level. The first letter of each Reporting Category represents the classification; the second letter represents the Domain as stated in the Common Core State Standards for Mathematics. Listed below are the Reporting Categories for Grade 5.

- A-T = Number and Operations in Base Ten
- A-F = Number and Operations – Fractions
- B-O = Operations and Algebraic Thinking
- C-G = Geometry
- D-M = Measurement and Data

The title of each Reporting Category is consistent with the title of the corresponding Domain in the Common Core State Standards for Mathematics. The Reporting Category title appears at the top of each page.

Assessment Anchor

The Assessment Anchor appears in the shaded bar across the top of each Assessment Anchor table. The Assessment Anchors represent categories of subject matter (skills and concepts) that anchor the content of the PSSA. Each Assessment Anchor is part of a Reporting Category and has one or more Anchor Descriptors unified under and aligned to it.

Anchor Descriptor

Below each Assessment Anchor is one or more specific Anchor Descriptors. The Anchor Descriptor adds a level of specificity to the content covered by the Assessment Anchor. Each Anchor Descriptor is part of an Assessment Anchor and has one or more Eligible Content unified under and aligned to it.

Eligible Content

The column to the right of the Anchor Descriptor contains the Eligible Content statements. The Eligible Content is the most specific description of the skills and concepts assessed on the PSSA. This level is considered the assessment limit and helps educators identify the range of the content covered on the PSSA.

Reference

In the space below each Assessment Anchor table is a code representing one or more Common Core State Standards for Mathematics that correlate to the Eligible Content statements.

M05.A-T Number and Operations in Base Ten

Reporting Category

ASSESSMENT ANCHOR	
M05.A-T.1	**Understand the place value system.**

DESCRIPTOR		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.
		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: $0.05 \div 10^3 = 0.00005$
		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.
		M05.A-T.1.1.5	Round decimals to any place (limit rounding to ones, tenths, hundredths, or thousandths place).

Reference:

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 Number and Operations in Base Ten

Reporting Category

ASSESSMENT ANCHOR			
M05.A-T.2	**Perform operations with multi-digit whole numbers and with decimals to hundredths.**		
DESCRIPTOR		**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 3-digit by 3-digit).
		M05.A-T.2.1.2	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.
		M05.A-T.2.1.3	Add, subtract, multiply, and divide decimals to hundredths (no divisors with decimals).

Reference:

CC.2.1.5.B.2

Extend an understanding of operations with whole numbers to perform operations including decimals.

M05.A-F Number and Operations – Fractions

Reporting Category

ASSESSMENT ANCHOR	
M05.A-F.1	**Use equivalent fractions as a strategy to add and subtract fractions.**

DESCRIPTOR		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

Reference:

CC.2.1.5.C.1

Use the understanding of equivalency to add and subtract fractions.

M05.A-F Number and Operations – Fractions

ASSESSMENT ANCHOR	
M05.A-F.2	**Apply and extend previous understandings of multiplication and division to multiply and divide fractions.**

DESCRIPTOR		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.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.

Reference:

CC.2.1.5.C.2

Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

ASSESSMENT ANCHOR	
M05.B-O.1	**Write and interpret numerical expressions.**

DESCRIPTOR		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.

Reference:

CC.2.2.5.A.1

Interpret and evaluate numerical expressions using order of operations.

M05.B-O Operations and Algebraic Thinking

ASSESSMENT ANCHOR	
M05.B-O.2	**Analyze patterns and relationships.**

DESCRIPTOR		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.
			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.
		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.

Reference:

CC.2.2.5.A.4

Analyze patterns and relationships using two rules.

M05.C-G Geometry Reporting Category

ASSESSMENT ANCHOR	
M05.C-G.1	**Graph points on the coordinate plane to solve real-world and mathematical problems.**

DESCRIPTOR		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.
		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.

Reference:

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 Geometry

Reporting Category

ASSESSMENT ANCHOR	
M05.C-G.2	**Classify two-dimensional figures into categories based on their properties.**

DESCRIPTOR		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 3 sides, and pentagons are polygons, so all pentagons have at least 3 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.

Reference:

CC.2.3.5.A.2

Classify two-dimensional figures into categories based on an understanding of their properties.

M05.D-M Measurement and Data

ASSESSMENT ANCHOR	
M05.D-M.1	**Convert like measurement units within a given measurement system.**

DESCRIPTOR	ELIGIBLE CONTENT
M05.D-M.1.1 Solve problems using simple conversions (may include multi-step, real-world problems).	**M05.D-M.1.1.1** Convert among different-sized measurement units within a given measurement system. **A table of equivalencies will be provided.** *Example:* Convert 5 cm to meters.

Reference:

CC.2.4.5.A.1

Solve problems using conversions within a given measurement system.

M05.D-M Measurement and Data

ASSESSMENT ANCHOR	
M05.D-M.2	**Represent and interpret data.**

DESCRIPTOR		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.

Reference:

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.3	**Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.**

DESCRIPTOR		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 $V = l \times w \times h$ and $V = B \times h$ 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.

Reference:

CC.2.4.5.A.5

Apply concepts of volume to solve problems and relate volume to multiplication and to addition.