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Grade 7: PA Academic Eligible Content and PA Common Core Crosswalk

Alignment of Eligible Content: More than Just Content

The crosswalk below is designed to show the alignment between the PA Academic Standard Eligible Content and the PA Common Core Eligible Content. While content is in many cases similar, the **key message is that PA Common Core focused instruction is more rigorous and will prepare students for upcoming PSSAs and future PA Common Core aligned PSSAs.**

The defining element of the PA Common Core Standards is one of rigor. Barbara Blackburn elaborates on the concept of rigor when she states: "True rigor is creating an environment in which each student is expected to learn at high levels, each student is supported so he or she can learn at high levels, and each student demonstrates learning at high levels.[1]"

Focus on PA Common Core

As instruction segues from the PA Academic Standards to the PA Common Core Standards, it is important to understand the need to prepare students for the current and upcoming PA CC-aligned PSSAs and to consider not only the content but the degree of rigor embraced by the new standards. Instructional time should focus on four critical areas: (1) developing understanding of and applying proportional relationships; (2) developing understanding of operations with rational numbers and working with expressions and linear equations; (3) solving problems involving scale drawings and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface area, and volume; and (4) drawing inferences about populations based on samples.

PA Common Core – Raising the Bar

Educators will note that the items developed to measure the new Assessment Anchors and Eligible Content (Common Core aligned AA/EC) will differ from the current PSSA items in both rigor and difficulty. This will be a direct result of the rigor of the new Assessment Anchors and Eligible Content where the average Depth of Knowledge (DOK) will be higher than the DOK of the existing PSSA Assessment Anchors and Eligible Content. As a result, educators should see items written at the higher cognitive levels (e.g., level 2 and level 3). However, that does not mean that a DOK level 1 item will not be found on the transitioned PSSA. For example, an item measuring math fluency is typically written at DOK level 1. For reading, there may be a vocabulary AA/EC that allows for an item to be written at DOK 1. Regardless of the increased rigor of the items measuring the new Assessment Anchors and Eligible Content (Common Core aligned AA/EC), educators will also perceive the difficulty of the assessment to have increased.

Eye on the Standards

It is important to remember that while Assessment Anchors and Eligible Content provide the blueprint for the PSSA assessments, they are a reflection only of what can be assessed in large scale testing and do not reflect all of classroom instruction.

[1] Barbara Blackburn, *Rigor and the Common Core State Standards*, mailto:http://www.educationworld.com/a_admin/rigor-and-common-core-state-standards.shtml (January 2013)

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PA Academic Standards Eligible Content ----------	PA Common Core Standards Eligible Content ----------	Comment
M7.A Numbers and Operations	**M07.A-N The Number System** **M07.A-R Ratios and Proportional Relationships**	
M7.A.1.1.1 Convert between fractions, decimals and/or percent's (e.g., 20% = 0.2 = 1/5) (terminating decimals only).	**M07.A-N.1.1.1** Apply properties of operations to add and subtract rational numbers, including real-world contexts.	PACCS goes beyond fractions
M7.A.1.2.1 Compare and/or order integers, mixed numbers, fractions and decimals (fractions and decimals may be mixed – no more than 5 numbers in a set to be ordered).	Intentionally Blank	Not specifically addressed in PACCS Eligible Content
M7.A.1.2.2 Locate/identify decimals, fractions, mixed numbers and/or integers on a number line (a mix of these number forms may be on the same number line).	**M07.A-N.1.1.2** Represent addition and subtraction on a horizontal or vertical number line.	PACCS extends to addition and subtraction
M7.A.2.1.1 Use the order of operations to simplify numerical expressions (may use parentheses, brackets, +, -, x, □, squares up to 102 and cubes up to 43; whole numbers only).	**M07.A-N.1.1.1** Apply properties of operations to add and subtract rational numbers, including real-world contexts. **M07.A-N.1.1.3** Apply properties of operations to multiply and divide rational numbers, including real-world contexts; demonstrate that the decimal form of a rational number terminates or eventually repeats.	PACCS focuses on rational numbers, their operations and using in real world situations
M7.A.2.2.1 Write ratios to compare quantities (e.g., ratio of boys to girls).	**M07.A-R.1.1.1** Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. Example: If a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2 / 1/4 miles per hour, equivalently 2 miles per hour. **M07.A-R.1.1.4** Represent proportional relationships by equations. Example: If total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn.	PACCS extends to computing ratios and into expressions
M7.A.2.2.2 Solve for a variable in a given proportion.	**M07.A-R.1.1.2** Determine whether two quantities are proportionally related (e.g., by testing for equivalent ratios in a table, or graphing on a coordinate plane and observing	PACCS extends properties to the coordinate plane

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	whether the graph is a straight line through the origin). **M07.A-R.1.1.5** Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.	
M7.A.2.2.3 Use proportions to determine if two quantities are equivalent (e.g., similar figures, prices of different sized items, etc.).	**M07.A-R.1.1.2** Determine whether two quantities are proportionally related (e.g., by testing for equivalent ratios in a table, or graphing on a coordinate plane and observing whether the graph is a straight line through the origin).	PACCS also graphs on a coordinate plane
M7.A.2.2.4 Calculate and/or apply unit rates or unit prices (terminating decimals through the hundredth place only).	**M07.A-R.1.1.3** Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. **M07.A-R.1.1.6** Use proportional relationships to solve multi-step ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease.	PACCS also graphs on a coordinate plane
M7.A.2.2.5 Select and/or use ratios or proportions to solve problems.	**M07.A-R.1.1.1** Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. Example: If a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2 / 1/4 miles per hour, equivalently 2 miles per hour. **M07.A-R.1.1.4** Represent proportional relationships by equations. Example: If total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn. **M07.A-R.1.1.6** Use proportional relationships to solve multi-step ratio and percent problems.	PACCS details types of problems

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	Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease.	
M7.A.2.2.6 Use proportions to find the missing length of a side in similar figures.	**M07.A-R.1.1.2** Determine whether two quantities are proportionally related (e.g., by testing for equivalent ratios in a table, or graphing on a coordinate plane and observing whether the graph is a straight line through the origin). **M07.A-R.1.1.3** Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. **M07.A-R.1.1.5** Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.	PACCS addresses properties within a coordinate plane
M7.A.3.1.1 Estimate answers to problems involving whole numbers, decimals, fractions or mixed numbers.	Intentionally Blank	Not specifically addressed in PACCS Eligible Content.
M7.A.3.2.1 Solve problems involving operations (+, -, x, ÷) of whole numbers, decimals, fractions, or mixed numbers (straight computation or word problems).	**M07.A-N.1.1.3** Apply properties of operations to multiply and divide rational numbers, including real-world contexts; demonstrate that the decimal form of a rational number terminates or eventually repeats.	PACCS extends beyond straight computation problems
M7.A.3.2.2 Solve problems involving addition and subtraction of integers.	**M07.A-N.1.1.1** Apply properties of operations to add and subtract rational numbers, including real-world contexts.	PACCS incudes rational numbers
M7.B Measurement	**M07.C-G Geometry**	
M7.B.1.1.1 Add, subtract, or convert measurements, using only the units below, with and without regrouping (e.g., 4ft – 2ft 5in = 1ft 7in). Answer should be converted to the largest whole unit (e.g., 37oz = 2 Lb. 5oz or 39 in = 1 yd. 3 in. Conversion chart provided on the reference sheet. • In, ft., yd. • Fl oz., cup, pint, quart, gallon, oz., lb. • sec, min, hours, days	Intentionally Blank	Not specifically addressed in PACCS Eligible Content

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PA Academic Standards Eligible Content ----------	PA Common Core Standards Eligible Content ----------	Comment
• metric units including milli, centi and kilo (m, g or L)		
M7.B.2.1.1 Develop and/or use strategies to find the perimeter and/or area of compound figures (compound figures should only include quadrilaterals and triangles). Area formulas provided on the reference sheet.	**M07.C-G.2.2.1** Find the area and circumference of a circle. Solve problems involving area and circumference of a circle(s). Formulas will be provided. **M07.C-G.2.2.2** Solve real-world and mathematical problems involving area, volume, and surface area of two and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. Formulas will be provided	PAVVS extends to circles and three-dimensional objects
M7.B.2.1.2 Find the circumference and/or area of circles (formulas provided on the reference sheet).	**M07.C-G.2.2.1** Find the area and circumference of a circle. Solve problems involving area and circumference of a circle(s). Formulas will be provided.	PACCS addresses area
M7.B.2.1.3 Find the area of triangles and/or all types of parallelograms (formulas provided on the reference sheet).	Intentionally Blank	Not specifically addressed in PACCS Eligible Content
M7.B.2.2.1 Interpret and/or apply scales shown on maps, blueprints, models, etc.	Intentionally Blank	Not specifically addressed in PACCS Eligible Content
M7.B.2.2.2 Determine and/or apply an appropriate scale for reduction or enlargement.	Intentionally Blank	Not specifically addressed in PACCS Eligible Content
M7.C Geometry	**M07.C-G Geometry**	
M7.C.1.1.1 Identify, describe and/or define diameter, radius, chord and/or circumference in circles.	**M07.C-G.2.2.1** Find the area and circumference of a circle. Solve problems involving area and circumference of a circle(s). Formulas will be provided.	PACCS addresses area
M7.C.1.1.2 Solve problems involving the relationship between the radius and diameter of the same circle.	**M07.C-G.1.1.1** Solve problems involving scale drawings of geometric figures, including finding length and area. **M07.C-G.2.2.1** Find the area and circumference of a circle. Solve problems involving area and circumference of a circle(s). Formulas will be provided.	PACCS extends beyond radius and circumference of a circle
M7.C.1.1.3 Identify parallel, perpendicular and/or skew line segments within three-dimensional figures.	**M07.C-G.2.1.2** Identify and use properties of angles formed when two parallel lines are cut by a transversal (e.g., angles may include alternate	PACCS includes three-dimensional figures

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	interior, alternate exterior, vertical, corresponding). **M07.C-G.1.1.4** Describe the two-dimensional figures that result from slicing three-dimensional figures. Example: Describe plane sections of right rectangular prisms and right rectangular pyramids	
M7.C.1.2.1 Identify and/or use polygons that is similar and/or congruent, given either measurements or tic and angle marks.	**M07.C-G.2.1.1** Identify and use properties of supplementary, complementary, and adjacent angles in a multistep problem to write and solve simple equations for an unknown angle in a figure. **M07.C-G.1.1.3** Use and apply the triangle inequality theorem.	PACCS extends further into the properties of polygons
M7.C.1.2.2 Identify corresponding sides and/or angles of congruent or similar polygons.	**M07.C-G.1.1.2** Identify or describe the properties of all types of triangles based on angle and side measure.	PACCS also describes properties
M7.C.3.1.1 Plot and/or identify ordered pairs on a coordinate plane (all four quadrants).	Intentionally Blank	Not specifically addressed in PACCS Eligible Content
M7.C.3.1.2 Identify Quadrants I, II, III, IV, the x- & y-axes and the origin on a coordinate plane.	Intentionally Blank	Not specifically addressed in PACCS Eligible Content
M7.D Algebraic Concepts	**M07.B-E Expressions and Equations**	
M7.D.1.1.1 Describe, extend or find a missing element of a pattern (show 3 repetitions of the pattern) • fractions or decimals - may use only one operation from +, - or x • whole numbers – may use only one operation from +, -, x, □ or squares	**M07.B-E.1.1.1** Apply properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients. Example 1: The expression 1/2 • (x + 6) is equivalent to 1/2 • x + 3. Example 2: The expression 5.3 – y + 4.2 is equivalent to 9.5 – y (or –y + 9.5). Example 3: The expression 4w – 10 is equivalent to 2(2w – 5).	PACCS does not include simplify algebraic expressions PACCS examples focus more on real life situations PACCS includes graphing the solution set for inequalities focus on 2-step equations and inequalities
M7.D.2.1.1 Select and/or use appropriate strategies to solve one-step equations (no negative numbers).	**M07.B-E.2.1.1** Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate. Example: If a woman making $25 an hour gets a	PACCS extends beyond one-step equations

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	10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50 (or 1.1 × $25 = $27.50). **M07.B-E.2.2.2** Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and are specific rational numbers, and graph the solution set of the inequality. Example: A salesperson is paid $50 per week plus $3 per sale. This week she wants her pay to be at least $100. Write an inequality for the number of sales the salesperson needs to make, and describe the solutions.	
M7.D.2.1.2 Use substitution of one and/or two variables to simplify expressions (whole numbers only – use order of operations).	**M07.B-E.2.2.1** Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and are specific rational numbers. Example: The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?	PACCs examples focus more on real life situations PACCS includes graphing the solution set for inequalities focus on 2-step equations and inequalities
M7.D.2.2.1 Identify expressions, equations or inequalities that model mathematical situations (using whole numbers or decimals, no more than two operations and one variable).	**M07.B-E.2.2.2** Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and are specific rational numbers, and graph the solution set of the inequality. Example: A salesperson is paid $50 per week plus $3 per sale. This week she wants her pay to be at least $100. Write an inequality for the number of sales the salesperson needs to make, and describe the solutions.	PACCS extends into inequalities
M7.D.3.1.1 Solve problems involving a constant rate of change (e.g., word problems, graphs or data tables).	Intentionally Blank	Not specifically addressed in PACCS Eligible Content
M7.D.3.1.2 Describe and/or use the relationship of data displayed on a rate of change graph (e.g., how does the x-axis data relate to the y-axis data).	Intentionally Blank	Not specifically addressed in PACCS Eligible Content
Intentionally Blank	**M07.B-E.2.3.1** Determine the reasonableness of an answer(s), or interpret the solution(s) in the context of the problem. Example: If you want to place a towel bar that is 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate	Not specifically addressed in PA Academic Standards Eligible Content. In transitioning to PACCS, these specific statements will be assessed and should be explicitly addressed.

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	can be used as a check on the exact computation.	
M7.E Data Analysis and Probability	**M07.D-S Statistics and Probability**	
M7.E.1.1.1 Analyze data and/or answer questions pertaining to data represented in histograms, double bar graphs, multiple line graphs or stem-and-leaf plots.	**M07.D-S.1.1.1** Determine whether a sample is a random sample given a real-world situation. **M07.D-S.1.1.2** Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Example 1: Estimate the mean word length in a book by randomly sampling words from the book. Example 2: Predict the winner of a school election based on randomly sampled survey data.	PACCS provides more detail of sample
M7.E.2.1.1 Identify/calculate the mean (average), median, mode or range of a set of data.	**M07.D-S.1.1.2** Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Example 1: Estimate the mean word length in a book by randomly sampling words from the book. Example 2: Predict the winner of a school election based on randomly sampled survey data.	PACCS also focuses on estimation
M7.E.2.1.2 Decide/choose which measure of central tendency (mean, median, mode or range) would be most appropriate for a given situation.	**M07.D-S.2.1.1** Compare two numerical data distributions using measures of center and variability. Example 1: The mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team. This difference is equal to approximately twice the variability (mean absolute deviation) on either team. On a line plot, note the difference between the two distributions of heights. Example 2: Decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth grade science book.	PACCS extends into comparison of measures of center
M7.E.3.1.1 Find the theoretical probability of a simple and/or compound event (answer written as a fraction in lowest	**M07.D-S.3.2.1** Determine the probability of a chance event given relative frequency. Predict the approximate relative frequency given the	PACCS also asks for predictions and using organizers

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terms – any compound events should be independent).	probability. Example: When rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times. **M07.D-S.3.2.3** Find probabilities of independent compound events using organized lists, tables, tree diagrams, and simulation.	
M7.E.3.1.2 Find the theoretical probability of an event not occurring (e.g., what is the probability of not rolling a 1 on a number cube).	**M07.D-S.3.2.2** Find the probability of a simple event, including the probability of a simple event not occurring. Example: What is the probability of not rolling a 1 on a number cube?	Similar eligible content
M7.E.3.1.3 Use data displayed in charts, graphs or tallies to find experimental probability.	**M07.D-S.3.2.3** Find probabilities of independent compound events using organized lists, tables, tree diagrams, and simulation. Example 2: Predict the winner of a school election based on randomly sampled survey data.	PACCS extends to compound events
M7.E.4.1.1 Formulate predictions and/or draw conclusions based on data displays (bar graphs, circle graphs or line graphs) or probability.	**M07.D-S.3.1.1** Predict or determine whether some outcomes are certain, more likely, less likely, equally likely, or impossible (i.e., a probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event).	PACCS extends beyond data displays