



Resources for Addressing Gaps in the 2025 High-Quality Instructional Materials (6-12)

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Purpose

The purpose of this document is to identify and list instructional resources that address gaps in the High-Quality Instructional Materials (HQIM) aligned to the **2025 South Carolina College- and Career-Ready (2025 SC CCR) Mathematics Standards**. These gaps represent standards or indicators that were either missing or not sufficiently addressed in at least one set of instructional materials.

Gaps were identified through a comprehensive review process that included feedback from **South Carolina educators, HQIM reviewers, publishing companies, and South Carolina Department of Education (SCDE) Mathematics Education Associates**.

The gaps are organized by **grade level or course** and aligned to specific **indicators**. For each identified gap, this document provides instructional resources intended to supplement existing materials and support strong, standard-aligned mathematics instruction.

This document is designed to be a **practical tool for planning and instructional decision-making** and will be updated as additional feedback and resources become available.

Disclaimer:

The resources listed are not an endorsement from the SCDE but as a readily accessible curated list to be used as a reference of the missing standards.

Sixth Grade

Indicator Number	Indicator	Resources
6.DPSR.1.1	Identify the sample size for a numerical set of data in mathematical and real-world situations.	Reasonable samples (video) Khan Academy Selecting a Sample-UnboundEd
6.MGSR.3.1	Plot ordered pairs in all four quadrants and identify points on a graph by writing ordered pairs.	How to Graph Ordered Pairs - YouTube
6.NR.2.3	Represent quantities with integers in real world situations and explain the meaning of zero.	Opposite Quantities and Zero Pairs Thinkport PBS Learning Media
6.NR.2.4	Identify and compare the opposite value and absolute value of positive and negative rational numbers.	Additive Inverse PBS Learning Media
6.PAFR.2.5	Write and solve one-step equations and inequalities with one variable involving positive rational numbers in mathematical and real-world situations.	Remove less than or equal to and only add less than or greater than (only in Savvas)
6.PAFR.2.9	Use one-step dimensional analysis to convert units within the metric or customary systems.	Ratios and measurement (video) Ratios Khan Academy One-step-dimensional-analysis-conversion-Know-it-all.org
6.PAFR.3.2	Identify the multiplicative inverse of a number and multiply multiplicative	Multiplicative Inverse-Math is Fun
6.PAFR.3.3	inverses to find their product is equal to 1.	MATH 6 : The opposite of a number Additive Inverse PBS Learning Media The Number Line: Rational Numbers and Football PBS Learning Media
6.PAFR.3.4	Identify the additive inverse of a number and add additive inverses to find their sum is equal to zero.	Commutative, Associative and Distributive Laws-Math is Fun Commutative and Associative Properties of Addition PBS Learning Media Equivalent Expressions with the Distributive Property PBS Learning Media Distributive Property with Variables PBS LearningMedia

Indicator Number	Indicator	Resources
6.PAFR.3.5	Apply the properties of operations to create equivalent algebraic expressions and justify the properties used. Limit properties to the Identity, Inverse, Commutative, Associative, and Distributive Properties.	<u>1.2 Integers OpenStax</u>
6.PAFR.3.6	Add, subtract, multiply, and divide integers in mathematical and real-world situations.	<u>6.PAFR.3.6 Khan Academy</u> <u>Milk & Cookies: Quotients of Fractions Knowitall.org</u>
6.PAFR.3.7	Add, subtract, multiply, and divide positive fractions, including mixed numbers in mathematical and real-world situations.	<u>6.PAFR.3.7-KhanAcademy</u> <u>Adding Decimals-Math is Fun</u> <u>Subtracting Decimals-Math is Fun</u> <u>Multiplying Decimals-Math is Fun</u> <u>Dividing Decimals-Math is Fun</u>

Seventh Grade

Indicator Number	Indicator	Resources
7.DPSR.2.1	Identify the sample space for a simple event.	Sample Space Definition-Math is Fun
7.MGSR.1.1	Identify the parts of a circle. Limit the parts to center, radius, diameter, and chord.	What is a circle?-Virtual Nerd Circumference-Virtual Nerd Circle-Math is Fun
7.MGSR.1.6	In mathematical and real-world situations, find the surface area of right prisms and right pyramids having triangular or quadrilateral bases.	Surface area of prisms and pyramids-Knowitall.org
7.MGSR.2.1	Determine the measure of the third angle given the measure of the other two angles of a triangle using the Triangle Sum Theorem.	Triangles Contain 180 Degrees-Math is Fun How Do You Find a Missing Angle in a Triangle?-Virtual Nerd
7.NR.1.1	Convert rational numbers into equivalent forms among fractions (including mixed numbers), decimals, and percentages. Exclude the conversion of repeating decimals to fractions.	What is a Terminating Decimal?-Virtual Nerd How Do You Turn a Terminating Decimal Into a Fraction?-Virtual Nerd
7.PAFR.3.1	Simplify numerical expressions that include integer exponents using the laws of exponents: the Product of Powers, Quotient of Powers, Power of a Power, Power of a Product, Power of a Quotient, Zero Power, and Negative Exponent.	Squares, cubes and their roots-Insta~Lesson

Eighth Grade

Indicator Number	Indicator	Resources
8.DPSR.1.4	For two data sets (numerical or graphical), compare and interpret the centers, spreads, and overlap of data to draw inferences about data in mathematical and real-world situations. Limit displays to double line graphs, back-to-back stem and-leaf plots, and double box plots.	Two Sided Stem and Leaf Plots Video-CK-12 Foundation Describing and Comparing Data Distributions-Census.gov
8.DPSR.2.1	Determine the sample space for a compound event.	How Do You Find the Probability of Independent Events?-Virtual Nerd
8.MGSR.2.1	Determine missing angle measurements created when parallel lines are cut by a transversal.	What are Vertical Angles?-Virtual Nerd Vertically Opposite Angles-Math is Fun 8.MGSR.2.1-KhanAcademy
8.MGSR.3.7	Describe the effect of a series of transformations, including dilations, translations, rotations, and reflections, on two-dimensional figures using coordinates on the coordinate plane.	How Do You Graph a Glide Reflection? Virtual Nerd Triangle Congruence-Illustrative Math 8.MGSR.3.7-KhanAcademy
8.PAFR.1.4	Describe the key features of given functions, including domain, range, intervals of increasing or decreasing, constant, discrete, continuous, and intercepts.	What is the Range of a Relation? Virtual Nerd How Do You Find the Domain and Range of a Relation? Virtual Nerd What is Domain? Virtual Nerd 8.PAFR.1.4-KhanAcademy
8.PAFR.2.1	Solve multi-step one-variable equations and inequalities with variables on both sides with rational coefficients.	How Do You Solve an Equation with Variables on Both Sides and Fractions? Virtual Nerd
8.PAFR.2.5	Given a table or a graph, identify the slope and the y-intercept of a line and write a linear equation to express that line.	How Do You Find the Y-Intercept of a Line If You Have Another Point and the Slope? Virtual Nerd 8.PAFR.2.5-KhanAcademy

Indicator Number	Indicator	Resources
8.PAFR.3.1	Analyze patterns of perfect squares and perfect cubes to evaluate square roots and cube roots. Limit to square roots less than or equal to 400 and cube roots less than or equal to 1,000.	What is a Square Root and a Perfect Square?-Mashup Math Grade 8: Mission 7: Exponents and Scientific Notation-Zearn (Exclude Scientific Notation) 8.PAFR.3.1-KhanAcademy

Algebra 2 with Probability

Indicator Number	Indicator	Resources
A2P.DPSR.1.2	Explain whether two events, A and B, are independent if and only if the probability of A and B occurring together is the product of their probabilities and use this characterization to determine if they are independent.	How Do You Find the Probability of Independent Events? Virtual Nerd A2P.DPSR.1.2-KhanAcademy Conditional Probability and Independence-KhanAcademy
A2P.DPSR.1.3	Determine whether the conditional probability of A given B as $P(A \text{ and } B)/P(B)$ and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B in mathematical and real-world situations.	What is Conditional Probability? Virtual Nerd A2P.DPSR.1.3-KhanAcademy
A2P.DPSR.1.4	Recognize and explain the concepts of conditional probability and independence.	How Do You Find Conditional Probability? Virtual Nerd A2P.DPSR.1.4-KhanAcademy
A2P.DPSR.2.1	Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A and interpret the answer in terms of the model.	A2P.DPSR.2.1-KhanAcademy
A2P.PAFR.6.2	Use linear programming to solve systems of equations and inequalities by addressing the constraints that arise in real-world situations.	Introduction to average rate of change (video) Khan Academy Worked example: average rate of change from graph (video) Khan Academy A2P.PAFR.6.2-KhanAcademy

Indicator Number	Indicator	Resources
A2P.PAFR.6.3	Use linear programming to solve systems of equations and inequalities by addressing the constraints that arise in real-world situations.	Linear Programming Illustration (1) – GeoGebra Linear Programming (Optimization) 2 Examples Minimize & Maximize Writing constraints-Illustrative Mathematics Growing Coffee-Illustrative Mathematics A2P.PAFR.6.3-KhanAcademy

Precalculus

Indicator Number	Indicator	Resources
PC.PAFR.3.1	Transform radical expressions as expressions with rational exponents and extend the properties of integer exponents to rational exponents.	Math083_Section_3.6_Rational_Exponents.pdf PC.PAFR.3.1-KhanAcademy Rational Exponents-Khan Academy Radicals and Rational Exponents-Khan Academy

Reasoning in Math

Indicator Number	Indicator	Resources
RM.DPSR.1.1	Formulate a statistical question and develop a statistical method to address questions/studies through exploration of the research cycle.	New supplemental resource available in MyLab Math for Blitzer: Thinking <i>Mathematically</i> Blitzer Thinking Mathematically SC supplement
RM.DPSR.1.2	Write and identify a null hypothesis and an alternative hypothesis, as well as what makes up an experimental study.	Blitzer Thinking Mathematically SC supplement
RM.DPSR.2.1	Compare and contrast categorical and quantitative data.	Blitzer Thinking Mathematically SC supplement
RM.DPSR.2.2	Identify the variable of interest, interpret a variety of graphical displays (particularly histograms and box plots), and estimate center, spread, shape, outliers, and unusual features.	Blitzer Thinking Mathematically SC supplement
RM.DPSR.2.3	Analyze histograms in depth, analyzing the effect of changing the bin size (also known as interval width).	Blitzer Thinking Mathematically SC supplement
RM.DPSR.3.2	Identify and explore various possible sources of statistical bias (such as response bias, nonresponse bias, and observer effect) and examine the effects of statistical bias on the generalizability of results.	Blitzer Thinking Mathematically SC supplement
RM.MGSR.1.1	Use matrices to organize information and identify matrices that can be used to describe geometric transformations.	Blitzer Thinking Mathematically SC supplement
RM.MGSR.1.2	Represent figures using matrices and explore ways of determining different transformations (translations, reflection, rotations, dilations, or combinations).	Blitzer Thinking Mathematically SC supplement
RM.NR.1.1	Use various numerical techniques when estimating and calculating very large and small values.	Blitzer Thinking Mathematically SC supplement
RM.NR.1.2	Apply proportional reasoning with aspect ratios.	Blitzer Thinking Mathematically SC supplement
RM.NR.1.3	Use weighted averages and sums.	Blitzer Thinking Mathematically SC supplement

Indicator Number	Indicator	Resources
RM.NR.1.4	Investigate and validate identification numbers.	<u>Blitzer Thinking Mathematically SC supplement</u>
RM.NR.3.1	Determine the monthly payment to retire a debt at a fixed rate.	<u>Blitzer Thinking Mathematically SC supplement</u>
RM.NR.3.2	Compare and contrast different credit card offers using minimum payments.	<u>Blitzer Thinking Mathematically SC supplement</u>
RM.PAFR.1.2	Analyze data that follow a linear pattern using recursively defined rules and compare those rules to explicit function rules.	<u>Blitzer Thinking Mathematically SC supplement</u>
RM.PAFR.2.1	Explore step and piecewise functions to make predictions and decisions about a variety of mathematical and real-world situations.	<u>Blitzer Thinking Mathematically SC supplement</u>

Applications and Modeling

Indicator Number	Indicator	Resources
AM.MGSR.3.4	Apply Heron’s Formula for finding the area of a triangular region.	Heron's Formula-Math is Fun Heron's formula (video) Khan Academy
AM.NR.1.1	Apply numerical reasoning to real-world situations involving percent increase and decrease.	Retirement planning-Next Gen Personal Finance Credit and Credit Card Lesson Plans-Money Instructor Teachers' Guide - Can You Afford To Retire Teacher Center FRONTLINE PBS
AM.PAFR.1.1	Use exponential functions to model change in a variety of financial situations.	MATH: Rule of 72 - Google Docs Stock Valuation - DCF Theory and Calculators-Money Chimp Financial Algebra-Next Gen Personal Finance Exponential Growth Functions-CK-12 Foundation
AM.PAFR.1.2	Compare the various means of paying for an automobile, including leasing, purchasing by cash, and purchasing by loan.	Buying a Car-Next Gen Personal Finance
AM.PAFR.1.3	Use sequences to represent simple and compound interest and depreciation.	Sequence-Mathspace
AM.PAFR.2.1	Apply variations to mathematical and real-world situations to describe troubleshooting in business and industrial applications.	Practical Math: Using Real-World Examples to Engage Students WIN Learning
AM.PAFR.2.2	Utilize mathematical skills for troubleshooting in business and industrial applications.	How to Design a Better Smartphone Case - Activity - Teach Engineering Dyeing to Design - Activity - Teach Engineering

Statistical Modeling

Indicator Number	Indicator	Resources
SM.DPSR.3.4	Differentiate between random selection and random assignment and identify their impact on generalizing.	Random sampling vs. random assignment-You Tube Random Selection Versus Random Assignment Lesson Plan for Grade 12 Free Math Lesson
SM.DPSR.3.6	Describe and comply with the ethical use of data.	Lesson Plan: Lesson 3: Ethical Data Collection - Code.org

Discrete Math

Indicator Number	Indicator	Resources
DM.DPSR.1.5	Determine power indexes for weighted voting systems.	Mathinsociety/2.6/WeightedVoting-opentextbookstore https://mathematics-democracy-institute.org/quantification-of-power/
DM.NR.2.1	Perform arithmetic operations using modular arithmetic properties.	Introduction to Modular Arithmetic Modular Arithmetic-Libretexts
DM.NR.2.2	Solve problems involving modular arithmetic in real-world situations.	Interactivate: Modular Arithmetic Interactivate: Clock Arithmetic and Cryptography Interactivate: Finding Remainders in Pascal's Triangle
DM.PAFR.2.1	Create mathematical induction proofs using the Principle of Mathematical Induction.	https://www.khanacademy.org/standards/SCCCR.Math/DM.PAFR/Inductive Proofs CK-12 Foundation
DM.PAFR.3.1	Manipulate matrices using addition, subtraction, multiplication, inverse, and power properties.	DM.PAFR.3.1-KhanAcademy
DM.PAFR.3.2	Write and evaluate matrices drawn from real-world situations.	Matrices: Unit Plan – GeoGebra The Arithmetic of Matrices-Open up Resources

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