



MATH PRIORITY AND SUPPORTING STANDARDS INSTRUCTIONAL SHIFTS 2020-21
GRADE 8

List of Priority Standards as Shown on Report Card		Notes on Supporting Standards		Priority Instructional Content
Functions				
		8.F.1	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output supports 8.F.5.	No special considerations for curricula well aligned to the domain of Functions, as detailed in the clusters and standards within the domain. Time spent on instruction and practice should NOT be reduced.
		8.F.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically, in tables, or by verbal descriptions) supports 8.F.4.	
8.F.3	Interprets equations in slope-intercept form.			
		8.MP.4	Model with mathematics supports 8.F.3.	
8.F.4	Creates functions to model linear relationships.			
		8.MP.4	Model with mathematics supports 8.F.4.	
		8.MP.7	Look for and make use of structure supports 8.F.4.	
8.F.5	Uses functions to describe relationships between two quantities.			
		8.MP.8	Look for and express regularity in repeated reasoning supports 8.F.5.	



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The Number System				
		8.NS.1	Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion, which repeats eventually into a rational number supports standard 8.NS.2.	Integrate irrational numbers with students' work on square roots and the Pythagorean Theorem.
8.NS.2	Uses rational approximations of irrational numbers.			
Expressions and Equations				
		8.EE.1	Know and apply the properties of integer exponents to generate equivalent numerical expressions supports standard 8.EE.2.	No special considerations for curricula well aligned to the work of integer exponents, as detailed by the standard. Time spent on instruction and practice should NOT be reduced. (Note: 8.EE.1 not identified as a priority standard.) Eliminate lessons and problems about cube roots. Eliminate lessons and practice dedicated to calculating with scientific notation, but include examples of numbers expressed in scientific notation in lessons about integer exponents, as examples of how integer exponents are applicable outside of mathematics classes.
8.EE.2	Uses and evaluate square roots and cube roots.			
		8.EE.3	Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other supports standard 8.EE.4.	
8.EE.4	Performs operations with numbers expressed in scientific notation.			



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		8.MP.6	Attend to precision supports standard 8.EE.4.	<p>No special considerations for curricula well aligned to the work of understanding the connections between proportional relationships, lines, and linear equations, as detailed by the cluster. Time spent on instruction and practice should NOT be reduced.</p> <p>Incorporate grade 7 work on rewriting expressions and solving algebraic equations to support students in analyzing and solving one-variable linear equations.</p> <p>Emphasize the correspondences among: (1) a solution to a pair of simultaneous two-variable equations, (2) a point of intersection of the corresponding lines, and (3) the real-world context for which the equations were created. Limit the amount of required student practice in solving systems algebraically.</p>
8.EE.5	Graphs proportional relationships.			
		8.EE.6	Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b supports standard 8.EE.8.	
		8.EE.7	Solve linear equations in one variable. a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers). b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms supports standard 8.EE.8.	



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8.EE.8	Analyzes and solves pairs of simultaneous linear equations.			
Geometry				
		8.G.1	Verify experimentally the properties of rotations, reflections, and translations: a. Lines are taken to lines, and line segments to line segments of the same length. b. Angles are taken to angles of the same measure. c. Parallel lines are taken to parallel lines supports standard 8.G.3.	Combine lessons to address key concepts in congruence and combine lessons to address key concepts in similarity of two-dimensional figures in order to reduce the amount of time on this topic.
		8.G.2	Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them supports standards 8.G.3.	
8.G.3	Describes the effect of dilations, translations, rotations, and reflections.			



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		8.G.4	Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them supports standard 8.G.3.	<p>No special considerations for curricula well aligned to applying the Pythagorean Theorem to solve real-world and mathematical problems. Time spent on instruction and practice should NOT be reduced.</p> <p>Eliminate lessons and problems dedicated to applying the Pythagorean Theorem to find the distance between two points in a coordinate system.</p> <p>Eliminate lessons and problems that require students to develop and/or explain a proof of the Pythagorean Theorem. Lessons should present a proof of the theorem to students.</p> <p>Eliminate lessons about the converse of the Pythagorean Theorem.</p> <p>Combine lessons to address key concepts with volume, with an emphasis on cylinders, in order to reduce the amount of time on this topic.</p>
8.G.5	Justifies facts about angle relationships.			
		8.MP.3	Construct viable arguments and critique the reasoning of others supports standard 8.G.5.	
		8.G.6	Explain a proof of the Pythagorean Theorem and its converse supports standard 8.G.7 and 8.G.8.	
8.G.7	Applies the Pythagorean Theorem to determine unknown side lengths.			
8.G.8	Applies the Pythagorean Theorem to find distances.			
8.G.9	Solves problems using the formulas for the volumes of cones, cylinders, and spheres.			
		8.MP.1	Make sense of problems and persevere in solving them supports standard 8.G.9.	



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Statistics and Probability				
8.SP.1	Constructs and interprets scatter plots.			Combine lessons to address key statistical concepts in order to reduce the amount of time on this topic. Limit the amount of required student practice. Emphasize using linear functions to model association in bivariate measurement data that suggest a linear association, using the functions to answer questions about the data.
		8.SP.2	Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line supports standard 8.SP.1.	
8.SP.3	Uses the equation of a linear model to solve problems.			
		8.MP.4	Model with mathematics supports standard 8.SP.3.	
		8.SP.4	Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables supports standard 8.SP.3.	