TABE 11/12 to GED® CROSSWALK FOR MATHEMATICS

Resources have been aligned with both the Data Recognition Corporation (DRC) TABE 11/12 Blueprints and the GED® Testing Service (The GED® High Impact Indicators are in red font). Crosswalk was established with the use of the GED® Curriculum Blueprint and the GED® Testing Service Assessment Guide for Educators.

College and Career Readiness Standards for Adult Education mathematical domain references:

NBT: Number and Operations in Base Ten (K-5)	A.SSE: Algebra: Seeing Structure in Expressions
NS: The Number System (6-8)	A.APR: Algebra: Arithmetic with Polynomials and Rational Expressions
NF: Number and Operations-Fractions (3-5)	A.CED: Algebra: Creating Equations
RP: Ratios and Proportional Relationships (6-7)	A.REI: Algebra: Reasoning with Equations and Inequalities
OA: Operations and Algebraic Thinking (K-5)	F.IF: Functions: Interpreting Functions
EE: Expressions and Equations (6-8)	F.BF: Functions: Building Functions
F: Functions (8)	F.LE: Functions: Linear, Quadratic, and Exponential Models
G: Geometry (K-8)	G.CO: Geometry: Congruence
MD: Measurement and Data (K-5)	G.SRT: Geometry: Similarity, Right Triangles, and Trigonometry
SP: Statistics and Probability (6-8)	G.GMD: Geometry: Geometric Measurement and Dimension
N.RN: The Real Number System	G.MG: Geometry: Modeling with Geometry
N.Q: Number and Quantity	S.ID: Statistics and Probability: Interpreting Categorical and Quantitative Data

The citation at the end of each standard identifies the CCRS grade, domain, and standard number (or standard number and letter, where applicable). So, 6.NS.6a, for example, stands for Grade 6, Number System domain, Standard 6a, and 5.OA.2 stands for Grade 5, Operations and Algebraic Thinking domain, Standard 2.

Text that is presented in italics are additions that were not included in the original TABE 11/12 Blueprints but were incorporated into the TABE 11/12 Skills Crosswalk.

GED® High Impact Indicators are denoted in red text.

M	TABE 11/12 STANDARD & DESCRIPTION	TABE 11/12 EMPHASIS LEVEL	GED® PERFORMANCE LEVEL DESCRIPTOR	NEW SKILL DESCRIPTION
MEASUREMENT AND DATA (15%)	5.MD.1: Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	Medium		
	5.MD.2: Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.	Low		• Create line plots from given data sets and explain simple characteristics • Use line plots to solve simple addition and subtraction problems • Use line plots to solve multi-step addition, subtraction, multiplication, and division problems • Use visual representations of arithmetic operations to bridge the concrete to the abstract (e.g., number line diagrams, area models, etc.)
	5.MD.4: Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	Low		Extend the idea of using unit squares to find areas of rectangles to using unit cubes to find volumes of rectangular prisms
	4.MD.3: Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.	*Standard added to Skills Crosswalk*		*Find the missing side length of a rectangle given one side length and the area or perimeter*
	4.MD.5: Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: (5.MD.5.b)	Low		
	5.MD.5: Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. (5.MD.5.a, 5.MD.5.b, 5.MD.5.c)	Medium		• Find volumes of rectangular prisms by counting unit cubes and by multiplying the side lengths (using the volume formula) • Find the missing dimension of a rectangular prism when given the other dimensions and the volume
	4.MD.6: Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	Medium		• Extend the use of measuring tools to include measuring angles with protractors • Measure angles to the nearest degree using a protractor and create angles with given measures
	4.MD.7: Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.	Medium		Use properties of complementary and supplementary angles to find missing angle measures in diagrams

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NUMBERS AND OPERATIONS – FRACTIONS (20%)	4.NF.1: Explain why a fraction a/b is equivalent to a fraction (n x a)/(n x b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.	Low		Use multiple representations to create equivalent fractions, especially with denominators other than 1, 2, 3, 4, 6, and 8
	5.NF.2: Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.	Low		Solve simple, one-step, real-world problems involving addition or subtraction of fractions with different denominators or multiplication or division involving a unit fraction
	4.NF.3: Understand a fraction a/b with a > 1 as a sum of fractions 1/b. (4.NF.3.a, 4.NF.3.b, 4.NF.3.c, 4.NF.3.d)	Medium		• Compose and decompose fractions using addition and subtraction • Solve simple, one-step, real-world problems involving addition and subtraction of fractions with the same denominators
	5.NF.3: Interpret a fraction as division of the numerator by the denominator (a/b = a /b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?	Low		Express the division of two whole numbers as a fraction in a real-world context
	4.NF.4: Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. (4.NF.4.a, 4.NF.4.b, 4.NF.4.c)	Medium		Express repeated addition of unit fractions as multiplication expressions (e.g., 1/5 + 1/5 + 1/5 = 3 x 1/5 = 3/5)
	5.NF.4: Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.	Medium		
	5.NF.5: Interpret multiplication as scaling (resizing), by: (5.NF.5.b)	Low		
	5.NF.6: Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	Low		Solve simple, one-step, real-world problems involving addition or subtraction of fractions with different denominators or multiplication or division involving a unit fraction

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	4.NF.7: Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or	Medium		• Use visual representations to create models of decimals and connect these to fractions • Use visual representations to compare decimals to the hundredths place
	5.NF.7: Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. (5.NF.7.a, 5.NF.7.b, 5.NF.7.c)	Medium		• Solve simple, one-step, real-world problems involving addition or subtraction of fractions with different denominators or multiplication or division involving a unit fraction • Use visual representations to show division of a whole number by a unit fraction

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STATISTICS & PROBABILITY (5%)	6.SP.1: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. For example, How old am I? is not a statistical question, but How old are the students in my school? is a statistical question because one anticipates variability in students' ages.	Medium		
	6.SP.2: Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.	Low		
	6.SP.4: Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	Low		

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NUMBER AND OPERATIONS IN BASE TEN (15%)	4.NBT.1: Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that 700 /70 = 10 by applying concepts of place value and division.	Medium		
	4.NBT.3: Use place value understanding to round multi-digit whole numbers to any place.	Low		
	5.NBT.3: Read, write, and compare decimals to thousandths. (5.NBT.3.a, 5.NBT.3.b)	Medium		• Create and use multiple representations of multi-digit decimals based on place value • Compare the values of digits in multi-digit numbers and observing patterns • Compare decimals to the thousandths place • Create models of decimals and use decimal notation

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	4.NBT.4: Fluently add and subtract multi-digit whole numbers using the standard algorithm.	Low		Create and use multiple representations of addition and subtraction of multi-digit numbers, including those with more than three digits, based on place value and connect these representations to the standard algorithms (especially where regrouping is required)
	5.NBT.4: Use place value understanding to round decimals to any place.	Low		Round multi-digit numbers to the thousands and ten thousands places and examine the values of the digits in each place
	4.NBT.5: Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Low		
	5.NBT.5: Fluently multiply multi-digit whole numbers using the standard algorithm.	Low		Use various strategies to multiply two-, three-, and four-digit numbers by one-, two-, and three-digit numbers
	4.NBT.6: Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Low		Use various strategies to divide two-, three-, and four-digit numbers by one- and two-digit numbers
	5.NBT.7: Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	Low		• Use various strategies for adding numbers with up to four digits • Use various strategies for adding numbers, including decimals, with up to six digits • Investigate the relationship between skip counting and multiplication and division • Use various strategies to divide two-, three-, and four-digit numbers by one- and two-digit numbers

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OPERATIONS AND ALGEBRAIC THINKING (12%)	4.OA.1: Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 x 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.	Medium		Use expressions and equations to represent multiplicative relationships expressed in words
	5.OA.1: Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	Low		• Write and solve expressions and equations to represent real-world situations • Write and solve multi-step, real-world problems involving addition, subtraction, multiplication, division, and grouping symbols • Solve multi-step equations involving addition, subtraction, multiplication, division, and grouping symbols without context
	4.OA.2: Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.	Medium		Create, compare, and analyze multiple solution strategies and representations to investigate the relationship between the multiplication and division of whole numbers
	4.OA.3: Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	Low		• Solve multi-step, real-world problems involving addition, subtraction, multiplication, and/or division of whole numbers while using visual representations to show the process • Write and use two-step equations involving addition, subtraction, multiplication, division, and grouping symbols that represent real-world situations
	4.OA.4: Find all factor pairs for a whole number in the range 1 - 100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1 - 100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1 - 100 is prime or composite.	Low		Identify prime and composite numbers
	4.OA.5: Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule Add 3 and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.	Low		Create number patterns with addition rules to investigate how they relate to multiplication and division

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GEOMETRY (10%)	4.G.1: Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	Medium		• Recognize points, lines, line segments, angles, and parallel and perpendicular lines in polygons and in diagrams other than those of polygons • Recognize points, lines, line segments, and angles and their relationships to each other (e.g., a point lies on a line) when presented in polygons and diagrams • Recognize points, lines, line segments, angles, and parallel and perpendicular lines in the coordinate plane
	5.G.1: Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.5.G., x-axis and x-coordinate, y-axis and y-coordinate).	Low		• Draw polygons with vertices at whole number coordinates in the coordinate plane • Identify coordinates of points and plot points with whole number coordinates in the first quadrant of the coordinate plane • Name parts of ordered pairs and what they describe (e.g., x-coordinate, y-coordinate)
	5.G.3: Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.	Low		• Distinguish common and non-common attributes of pairs or groups of shapes • Distinguish common and non-common attributes of pairs or groups of shapes using pictures, diagrams, and words
	6.G.4: Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.	Low		Identify and create nets for given prisms and pyramids

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EXPRESSIONS AND EQUATIONS (15%)	6:EE.7: Solve real-world and mathematical problems by writing and solving equations of the form x + p = q and px = q for cases in which p, q and x are all nonnegative rational numbers.	Low		Use inverse operations to show steps in solving equations
	6.EE.8: Write an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form x > c or x < c have infinitely many solutions; represent solutions of such inequalities on number line diagrams.	Low		
	6.EE.9: Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.	Low		
	6.EE.2: Write, read, and evaluate expressions in which letters stand for numbers.(6.EE.2.a, 6.EE.2.b, 6.EE.2.c)	Low	**Q.4.c |** Compute the perimeter of a polygon. Given a geometric formula, compute the area of a polygon. Determine side lengths of the figure when given the perimeter or area. **Q.4.d |** Compute perimeter and area of 2-D composite geometric figures, which could include circles, given geometric formulas as needed. **Q.5.a |** When given geometric formulas, compute volume and surface area of regular prisms. Solve for side lengths or height, when given volume or surface area. **Q.5.b |** When given geometric formulas, compute volume and surface area of cylinders. Solve for height, radius, or diameter when given volume or surface area. **Q.5.c |** When given geometric formulas, compute volume and surface area of right prisms. Solve for side lengths or height, when given volume or surface area. **Q.5.d |** When given geometric formulas, compute volume and surface area of right pyramids and	• Write simple expressions and equations to represent real-world situations • Identify and name parts of expressions and equations (e.g., terms, coefficient, variable, etc.) • Solve one- and two-step equations involving addition, subtraction, multiplication, and/or division of whole numbers while using visual representations to show the process

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			cones. Solve for side lengths, height, radius, or diameter when given volume or surface area. **Q.5.e |** When given geometric formulas, compute volume and surface area of spheres. Solve for radius or diameter when given the surface area. **Q.5.f |** Compute surface area and volume of composite 3-D geometric figures, given geometric formulas as needed. **A.1.b |** Evaluate linear expressions by substituting integers for unknown quantities. **A.1.c |** Write linear expressions as part of word-to-symbol translations or to represent common settings. **A.1.e |** Evaluate polynomial expressions by substituting integers for unknown quantities. **A.1.g |** Write polynomial expressions as part of word-to-symbol translations or to represent common settings. **A.1.h |** Add, subtract, multiply and divide rational expressions. **A.1.j |** Write rational expressions as part of word-to-symbol translations or to represent common settings. Writing and solving linear equations.	
	6.EE.3: Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y.	Low	**A.1.i |** Evaluate rational expressions by substituting integers for unknown quantities.	
	6.EE.4: Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.	Low		
	6.EE.5: Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	Low		• Solve multi-step equations involving addition, subtraction, multiplication, and division of rational numbers • Use properties of addition and multiplication to justify steps in solving an equation • Write and solve multi-step equations using addition, subtraction, multiplication, division,

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				the distributive property, and exponents (squares and cubes) with rational numbers
	6.EE.6: Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	Low	**A.1.c |** Write linear expressions as part of word-to-symbol translations or to represent common settings. **A.1.g |** Write polynomial expressions as part of word-to-symbol translations or to represent common settings. **A.1.h |** Add, subtract, multiply and divide rational expressions. **A.1.j |** Write rational expressions as part of word-to-symbol translations or to represent common settings. Writing and solving linear equations. **A.2.c |** Write one-variable and multivariable linear equations to represent context. **A.3.d |** Write linear inequalities in one variable to represent context.	• Write and solve expressions and equations to represent verbal descriptions (e.g., the product of twice a number, n, and 6) and real-world situations • Write and solve expressions and equations involving the distributive property or combining like terms

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RATIOS & PROPORTIONAL RELATIONSHIPS (3%)	6.RP.2: Understand the concept of a unit rate a/b associated with a ratio a:b with b not equal to 0, and use rate language in the context of a ratio relationship. For example, this recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar. We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger.	Medium		

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THE NUMBER SYSTEM (5%)	6.NS.1: Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for (2/3) / (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) / (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) / (c/d) = ad/bc.) How much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/ square mi?	Low		
	6.NS.2: Fluently divide multi-digit numbers using the standard algorithm	Medium		
	6.NS.4: Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1 - 100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express 36 + 8 as 4 (9 + 2).	Low	**Q.1.b |** Apply number properties involving multiples and factors, such as using the least common multiple, greatest common factor, or distributive property to rewrite numeric expressions.	

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GEOMETRY (15%)	7.G.1: Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	Low	**Q.3.b |** Use scale factors to determine the magnitude of a size change. Convert between actual drawings and scale drawings.	Plot points and draw polygons with integer coordinates in the coordinate plane
	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.	Medium		Explore the effects of simple transformations (90 or 180 degree rotations, reflections, and translations) on common plane figures
	7.G.4: Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	Low	**Q.4.b |** Compute the area and circumference of circles. Determine the radius or diameter when given area or circumference.	Use the formulas for the area and circumference of circles to solve problems
	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.	Low		Explore the effects of simple series of transformations on common figures on and off the coordinate plane

	7.G.5: Use facts about supplementary, complementary, vertical, and adjacent angles in a multistep problem to write and solve simple equations for an unknown angle in a figure.	Low		Write and solve simple, single-step equations to find unknown angle measures in given diagrams
	7.G.6: 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.	Low	**Q.4.a |** Compute the area and perimeter of triangles and rectangles. Determine side lengths of triangles and rectangles when given area or perimeter. **Q.4.c |** Compute the perimeter of a polygon. Given a geometric formula, compute the area of a polygon. Determine side lengths of the figure when given the perimeter or area. **Q.4.d |** Compute perimeter and area of 2-D composite geometric figures, which could include circles, given geometric formulas as needed. **Q.5.a |** When given geometric formulas, compute volume and surface area of regular prisms. Solve for side lengths or height, when given volume or surface area. **Q.5.b |** When given geometric formulas, compute volume and surface area of cylinders. Solve for height, radius, or diameter when given volume or surface area. **Q.5.c |** When given geometric formulas, compute volume and surface area of right prisms. Solve for side lengths or height, when given volume or surface area. **Q.5.d |** When given geometric formulas, compute volume and surface area of right pyramids and cones. Solve for side lengths, height, radius, or diameter when given volume or surface area.	• Solve problems involving adding and subtracting areas of rectangles • Solve problems involving adding and subtracting areas of rectangles with fractional side lengths
	8.G.7: Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	Low	**Q.4.e |** Use the Pythagorean theorem to determine unknown side lengths in a right triangle.	Use Pythagorean theorem to find missing side lengths of right triangles both on and off the coordinate plane
	8.G.8: Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	Low		• Recognize and use right triangles drawn in the coordinate plane to solve problems • Recognize when to use (and use) the Pythagorean theorem to find the lengths of line segments on the coordinate plane

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EXPRESSIONS AND EQUATIONS (18%)	8.EE.1: Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, 3^2 x 3^-5 = 3^-3 = 1*-/3^3 = 1/27.	Low	**Q.1.c |** Apply rules of exponents in numerical expressions with rational exponents to write equivalent expressions with rational exponents.	
	7.EE.2: Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, a + 0.05a = 1.05a means that increase by 5% is the same as multiply by 1.05.	Low		
	8.EE.2: Use square root and cube root symbols to represent solutions to equations of the form x^2 = p and x^3 = p, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that sqrt(2) is irrational.	Medium	**Q.2.b |** Perform computations and write numerical expressions with squares and square roots of positive, rational numbers. **Q.2.c |** Perform computations and write numerical expressions with cubes and cube roots of rational numbers.	Solve equations involving square and cube roots of perfect squares and cubes
	7.EE.3: Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $250. If you want to place a towel bar 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 can be used as a check on the exact computation.	Low		Use properties of operations and exponents to justify steps in solving an equation
	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. For example, estimate the population of the United States as 3 x 10^8 and the population of the world as 7 x 10^9, and determine that the world population is more than 20 times larger.	Low		Express very large and very small numbers in scientific notation
	7.EE.4: Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. (7.EE.4a, 7.EE.4.b)	High	**A.2.a |** Solve one-variable linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms or equations with coefficients represented by letters. Includes solving routine first degree equations.	• Write or solve expressions and equations involving the distributive property and combining like terms • Write and solve linear equations and inequalities involving rational numbers in any form (e.g., fractions, decimals) and requiring

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			A.2.b | Solve real-world problems involving linear equations. **A.3.c |** Solve real-world problems involving inequalities.	the use of the distributive property and/or combining like terms Write linear equations to represent real-world situations Write linear equations involving rational numbers in any form (e.g., fractions, decimals) to represent real-world situations)
	8.EE.5: Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.	Low	**A.5.c |** Interpret unit rate as the slope in a proportional relationship. **A.7.a |** Compare two different proportional relationships represented in different ways. Examples include but are not limited to: compare a distance-time graph to a distance-time equation to determine which of two moving objects has a greater speed.	• Represent equations of lines by graphing them on the coordinate plane • Identify graphs of linear equations, including those represented by equations and word descriptions of real-world situations • Create graphs of linear equations, including those represented by equations and word descriptions of real-world situations, using appropriate axis labels and scales
	8.EE.8: Analyze and solve pairs of simultaneous linear equations. (8.EE.8.a, 8.EE.8.b, 8.EE.8.c)	Low		• Graph systems of linear equations and find the point of intersection to approximate the solution • Write and solve systems of equations to represent real-world situations

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RATIOS AND PROPORTIONAL RELATIONSHIPS (10%)	7.RP.1: Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For 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.	Low	**Q.3.a |** Compute unit rates. Examples include (but are not limited to): unit pricing, constant speed, people per square mile, BTUs per cubic foot. **Q.3.c |** Solve multi-step real-world arithmetic problems using ratios or proportions including those that require converting units of measure.	
	7.RP.2: Recognize and represent proportional relationships between quantities. (7.RP.2.a, 7.RP.2.b, 7.RP.2.c, 7.RP.2.d)	High	**Q.3.c |** Solve multi-step real-world arithmetic problems using ratios or proportions including those that require converting units of measure. **Q.6.a |** Represent, display, and interpret categorical data in bar graphs or circle graphs.	• Identify the constant of proportionality (or unit rate) associated with ratios of whole numbers • Identify the constant of proportionality (or unit rate) associates with ratios of whole numbers and fractions • Interpret the meaning of a point on the graph of a proportional relationship in context

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	6.RP.3: Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. (6.RP.3a, 6.RP.3.b, 6.RP.3.c, 6.RP.3.d)	Medium	**Q.3.a |** Compute unit rates. Examples include (but are not limited to): unit pricing, constant speed, people per square mile, BTUs per cubic foot. **Q.3.c |** Solve multi-step real-world arithmetic problems using ratios or proportions including those that require converting units of measure.	• Find missing values of tables with equivalent ratios • Find missing values in tables that represent proportional relationships in context • Use ratio language to describe a ration relationship between two quantities • Plot pairs of values from tables on a coordinate grid • Plot pairs of values from tables on a coordinate grid to present real-world, proportional relationships
	7.RP.3: Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.	Low	**Q.3.c |** Solve multi-step real-world arithmetic problems using ratios or proportions including those that require converting units of measure. **Q.3.d |** Solve two-step real-world arithmetic problems involving percentages. Examples include (but are not limited to): simple interest, tax, markups and markdowns, gratuities and commissions, percent increase or decrease.	Use proportional relationships to solve simple problems (e.g., gratuities, fees, tax, commissions, etc.)

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STATISTICS AND PROBABILITY (22%)	8.SP.1: Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	Low	**Q.6.c |** Represent and display data involving two variables in tables and the coordinate plane including scatter plots and graphs. Interpret two-variable data displayed in tables, scatter plots, and graphs. **Q.7.a |** Calculate the mean, median, mode and range. Calculate a missing data value, given the average and all the missing data values but one, as well as calculating the average, given the frequency counts of all the data values, and calculating a weighted average.	Describe patterns of association between two quantities represented in scatter plots of bivariate data (e.g, linear, increasing, outliers, clustering, etc.)
	7.SP.2: Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.	Low		

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	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.	Low		Create scatter plots for bivariate data sets and draw lines of best fit to model linear relationships between the variables
	8.SP.3: Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.	Low		
	7.SP.4: Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. For example, 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.	Medium		• Use measures of center and variability of given data sets, represented in multiple ways, to draw comparative inferences • Use measures of center and variability of given data sets to draw inferences
	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. For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?	Low		Create and use information presented in two-way tables to solve simple problems
	6.SP.5: Summarize numerical data sets in relation to their context, such as by: (6.RP.5.d) *6.SP.5c: Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.*	Low/*6.SP.5c standard was added to Skills Crosswalk*		*Find a measure of center and variability of a given data set (6.SP.5c)*
	7.SP.5: Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. 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.	Medium		Find the probability of a simple event

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	7:SP.7: Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. (7.SP.7.a, 7.SP.7.b)	Low	**Q.8.b |** Determine the probability of simple and compound events.	Use random data to approximate the probability of a chance event Use basic probability models to simulate events and generate random data (e.g., using spinners, rolling dice, flipping coins, etc.)
	7.SP.8: Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. (7.SP.8.a, 7.SP.8.b)	Medium	**Q.8.b |** Determine the probability of simple and compound events.	Use basic probability models to simulate compound events and generate random data Create multiple representations of sample spaces of compound events (e.g., lists, diagrams, simulation) and use them to find probabilities

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THE NUMBER SYSTEM (21%)	6.NS.5: Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.	Medium		• Represent real-world situations with rational numbers • Represent real-world situations with positive and negative integers
	6.NS.6: Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. (6.NS.6.a, 6.NS.6.b, 6.NS.6.c)	Medium	**Q.1.a |** Order fractions and decimals, including ordering on a number line. **A.5.a |** Locate points in the coordinate plane.	• Identify and create multiple representations of positive and negative integers and rational numbers • Identify and represent positive and negative integers on a number line • Solve one-step problems involving operations with positive and negative integers and represent the operations on a number line • Identify and represent rational numbers on a number line
	6.NS.7: Understand ordering and absolute value of rational numbers. (6.NS.7.a, 6.NS.7.b, 6.NS.7.c, 6.NS.7.d)	Medium	**Q.1.a |** Order fractions and decimals, including ordering on a number line. **Q.1.d |** Identify absolute value or a rational number as its distance from 0 on the number line and determine the distance between two rational numbers on the number line, including using the absolute value of their difference.	Identify and represent the absolute values and opposites of numbers on a number line

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	6.NS.8: Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	Low		• Represent polygons with vertices at given coordinates on a coordinate grid • Create polygons on the coordinate grid having specified characteristics (e.g., area, perimeter)
	7.NS.1: Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. (7.NS.1.a, 7.NS.1.b, 7.NS.1.c, 7.NS.1.d)	High	**Q.1.d |** Identify absolute value or a rational number as its distance from 0 on the number line and determine the distance between two rational numbers on the number line, including using the absolute value of their difference. **Q2.a |** Perform addition, subtraction, multiplication, and division on rational numbers.	
	7.NS.2: Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. (7.NS.2.a, 7.NS.2.b, 7.NS.2.c, 7.NS.2.d)	Medium	**Q2.a |** Perform addition, subtraction, multiplication, and division on rational numbers. **Q.2.d |** Determine when a numerical expression is undefined.	• Solve one-step problems, with and without context, involving operations with positive and negative integers • Solve multi-step problems involving positive rational numbers
	8.NS.2: Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., pi^2). For example, by truncating the decimal expansion of sqrt(2), show that sqrt(2) is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.	Low		Identify and represent approximations of irrational numbers on a number line

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FUNCTIONS (11%)	8.F.3: Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function A = s^2 giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.	Low	**A.5.e |** For a function that models a linear or nonlinear relationship between two quantities, interpret key features of graphs and tables in terms of quantities, and sketch graphs showing key features of graphs and tables in terms of quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior, and periodicity.	• Identify graphs of functions that are linear and nonlinear • Identify equations of functions that are linear and nonlinear

	8.F.4: Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	Medium	**A.5.b |** Determine the slope of a line from a graph, equation, or table.	• Create input-output tables to represent functions • Identify the rate of change of a linear function represented by a table • Identify and create the equation of a linear function represented by a table • Create and use graphs of linear functions to represent real-world situations • Create equations, tables, and graphs to represent linear functions with given rates of change
	8.F.5: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	High	**A.5.e |** For a function that models a linear or nonlinear relationship between two quantities, interpret key features of graphs and tables in terms of quantities, and sketch graphs showing key features of graphs and tables in terms of quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior, and periodicity.	• Identify and create examples and on-examples of functions • Identify simple characteristics of graphs of functions (e.g., increasing, linear, etc.) • Identify simple characteristics of different intervals of graphs of functions, with and without context

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GEOMETRY (15%)	G.CO.1: Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.	Low		Explore the effects of simple series of transformations on parts of figures (e.g., lines, points, angles, parallel lines, etc.) on and off the coordinate plane
	G.SRT.5: Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.	Medium		• Explore properties of similar figures and transformations that produce similar figures • Create and use ratios to find missing side lengths and angle measures of similar figures • Explore and create algebraic proofs of simple geometric theorems using coordinates • Prove and apply theorems involving similarity
	G.GMD.3: Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.	High		• Use the formulas for the area and circumference of circles to solve problems involving volumes of cylinders • Use the formulas for the area and circumference of circles to solve problems involving volume of cylinders and cones

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				• Investigate and explain volume formulas through informal arguments of circles, cylinders, pyramids, and cones
	G.MG.2: Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).	Medium	**Q.3.a |** Compute unit rates. Examples include (but are not limited to): unit pricing, constant speed, people per square mile, BTUs per cubic foot.	• Solve problems involving areas of two-dimensional figures, including modeling problems involving concepts of density based on area • Solve problems involving surface areas and volumes of three-dimensional figures, including modeling problems involving concepts of density based on volume

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NUMBERS AND QUANTITY (13%)	N.RN.2: Rewrite expressions involving radicals and rational exponents using the properties of exponents.	Medium	**Q.1.c |** Apply rules of exponents in numerical expressions with rational exponents to write equivalent expressions with rational exponents. **Q.2.b |** Perform computations and write numerical expressions with squares and square roots of positive, rational numbers. **Q.2.c |** Perform computations and write numerical expressions with cubes and cube roots of rational numbers.	• Simplify expressions involving operations with rational numbers • Simplify expressions involving integer exponents • Use properties of exponents to rewrite expressions involving radicals and rational exponents
	N.Q.1: Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays	High	**Q.2.e |** Solve one-step or multi-step arithmetic, real world problems involving the four operations with rational numbers, including those involving scientific notation. **Q.3.c |** Solve multi-step real-world arithmetic problems using ratios or proportions including those that require converting units of measure.	• Convert between measurement units appropriately while solving problems • Define appropriate quantities and parameters when solving problems using descriptive modeling • Determine appropriate scales and origins in graphs and data displays
	N.Q.3: Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	Low		Choose appropriate levels of accuracy for measurement limitations in given situations

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ALGEBRA (28%)	A.SSE.1a: Interpret parts of an expression, such as terms, factors, and coefficients.	Low		Identify parts of expressions (e.g., terms, coefficients, variables, etc.)
	A.SSE.2: Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.	Low	**A.1.f |** Factor polynomial expressions.	
	A.SSE.3a: Factor a quadratic expression to reveal the zeroes of the function it defines.	Low	**A.1.f |** Factor polynomial expressions.	Find the minimum or maximum and zeroes of a quadratic equation and explain the meaning in context
	A.APR.1: Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add subtract, and multiply polynomials.	Medium	**A.1.d |** Add, subtract, multiply polynomials, including multiplying two binomials, or divide factorable polynomials.	• Add and subtract polynomials of degree 3 or less • Add, subtract, multiply, and divide polynomials of degree 3 or less • Add, subtract, multiply, and divide polynomials of any degree
	A.CED.1: Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.	Low	**A.2.b |** Solve real-world problems involving linear equations. **A.2.c |** Write one-variable and multivariable linear equations to represent context. **A.3.d |** Write linear inequalities in one variable to represent context. **A.4.b |** Write one-variable quadratic equations to represent context.	
	A.CED.2: Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	Low	**A.2.b |** Solve real-world problems involving linear equations. **A.2.c |** Write one-variable and multivariable linear equations to represent context. **A.3.d |** Write linear inequalities in one variable to represent context. **A.5.d |** Graph two-variable linear equations. **A.6.a |** Write the equation of a line with a given slope through a given point. **A.6.b |** Write the equation of a line passing through two given distinct points.	• Identify an equation that shows a relationship between two variables given in a table or graph • Create equations that show a relationship between two variables given in a table or graph • Create quadratic equations that represent given real-world situations
	A.CED.3: Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.	Medium		• Identify systems of equations that represent given real-world situations • Create systems of equations that represent given real-world situations • Identify systems of inequalities that represent given real-world situations

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				• Create systems of inequalities that represent given real-world situations
	A.REI.1: Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	Low		
	A.REI.3: Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	Low	**A.2.a |** Solve one-variable linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms or equations with coefficients represented by letters. Includes solving routine first degree equations. **A.3.a |** Solve linear inequalities in one variable with rational number coefficients.	Use properties of operations, such as the distributive property and combining like terms, to find solutions of linear equations
	A.REI.4: Solve quadratic equations in one variable.	Low	**A.4.a |** Solve quadratic equations in one variable with rational coefficients and real solutions, using appropriate methods. (e.g. quadratic formula, completing the square, factoring, inspection).	• Solve quadratic equations by factoring • Solve quadratic equations using various methods (e.g., taking square roots, factoring, completing the square, quadratic formula, etc.) • Factor and solve quadratic equations with lead coefficients greater than 1
	A.REI.6: Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.	Medium	**A.2.d |** Solve a system of two simultaneous linear equations by graphing, substitution, or linear combination. Solve real-world problems leading to a system of linear equations. **A.3.b |** Identify or graph the solution to a one variable linear inequality on a number line.	• Determine whether a point (x, y) is a solution to a given system of equations • Solve a system of equations by graphing the equations and finding the point of intersection
	A.REI.10: Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).	High		• Graph systems of inequalities • Determine whether a point (x, y) is in the solution set of a given system of inequalities

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FUNCTIONS (28%)	F.IF.1: Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then f(x) denotes the output of f corresponding to the input x. The graph of f is the graph of the equation y = f(x).	Low	**A.7.b |** Represent or identify a function in a table or graph as having exactly one output (one element in the range) for each input (each element in the domain).	
	F.IF.2: Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context	Medium	**A.7.c |** Evaluate linear and quadratic functions for values in their domain when represented using function notation.	• Evaluate linear, quadratic, and exponential functions at given values with and without context • Use function notation and interpret statements that use function notation in context • Evaluate a linear function at a given value
	F.IF.4: For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. For example, for a quadratic function modeling a projectile in motion, interpret the intercepts and the vertex of the function in the context of the problem.	Medium		• *Write functions in different but equivalent forms and explain what each form "reveals" (e.g., factoring a quadratic function to reveal the zeroes)* • Identify the intercepts of graphs of linear functions • Identify key characteristics of graphs of functions (e.g., intercepts, minimum, maximum, etc.)
	F.IF.6: Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	Medium		• Find the average rate of change of a function over a given interval • Find the rate of change of a linear function
	F.IF.7: Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. (F.IF.7.a; F.IF.7.b; F.IF.7.c; F.IF.7.d; and F.IF.7.e)	High	**A.5.d |** Graph two-variable linear equations.	• Graph equations of linear functions given in various forms • *Write functions in different but equivalent forms and explain what each form "reveals" (e.g., factoring a quadratic function to reveal the zeros)*
	F.IF.8b: Use properties of exponents to interpret expressions for exponential functions. For example, identify percent rate of change in an exponential function and then classify it as representing exponential growth or decay.	Low		
	F.IF.9: Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.	Low	**A.7.d |** Compare properties of two linear or quadratic functions each represented in a different way (algebraically, numerically in tables, graphically or by verbal descriptions). Examples include but are not limited to: given a linear function represented by a table of values and a linear function represented by	• Compare properties of two functions (linear, quadratic, piecewise linear, absolute value, exponential) represented in the same way • Compare properties of two functions (linear, quadratic, piecewise linear, absolute value, exponential) represented in different ways

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			an algebraic expression, determine which function has the greater rate of change.	
	F.BF.1: Write a function that describes a relationship between two quantities.	Low		• Write the equation of a linear function represented by a table or a graph • Explore arithmetic and geometric sequences and relate them to linear and exponential functions
	F.LE.1a: Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.	*Standard added to Skills Crosswalk*		• *Determine whether a given scenario can be presented by a function with a constant rate of change* • *Determine whether graphs of functions are linear, quadratic, or exponential*
	F.LE.1c: Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.	Low		
	F.LE.5: Interpret the parameters in a linear or exponential function in terms of a context.	Low		• Use the equation or graph of a linear function to represent and solve real-world problems • Describe the meaning of terms of equations of functions in context

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STATISTICS & PROBABILITY (16%)	S.ID.1: Represent data with plots on the real number line (dot plots, histograms, and box plots).	Medium	**Q.6.b |** Represent, display, and interpret data involving one variable plots on the real number line including dot plots, histograms, and box plots.	• Identify and create multiple representations of data sets (e.g., tables, scatter plots, histograms, box plots, etc.) • Create multiple representations of data sets and describe key features (e.g., number of observations, patterns, overall shape, etc.)
	S.ID.3: Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).	Medium		• Create multiple representations of data sets and use them to describe comparative inferences about the centers, spreads, and overall shapes • Determine appropriate statistics to compare centers and spreads of data distributions (based on the shapes) • Interpret differences in the shapes, centers, and spreads of data sets in context
	S.ID.5: Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional	Medium		Use information presented in two-way tables to describe associations between variables and

A	TABE 11/12 STANDARD & DESCRIPTION	TABE 11/12 EMPHASIS LEVEL	GED® PERFORMANCE LEVEL DESCRIPTOR	NEW SKILL DESCRIPTION
	relative frequencies). Recognize possible associations and trends in the data.			to solve problems involving relative frequencies
	S.ID.7: Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.	Medium		Interpret the slope and intercepts of a linear model in context Use the equation of a linear model to solve basic problems in context Develop equations of linear models and use them to solve problems Develop equations of linear models, interpret the slope and intercepts in context, and analyze the fit of the model to the data Use scatter plots and equations of linear models to draw basic conclusions about data
	S.ID.9: Distinguish between correlation and causation.	Low		Distinguish between correlation and causation

GED® Assessment Targets Not Found on TABE 11/12 Blueprints

	CCR STANDARD & DESCRIPTION	TABE 11/12 EMPHASIS LEVEL	GED® PERFORMANCE LEVEL DESCRIPTOR	NEW SKILL DESCRIPTION
	8.G.9 | Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	Not on Blueprint	**Q.5.d |** When given geometric formulas, compute volume and surface area of right pyramids and cones. Solve for side lengths, height, radius, or diameter when given volume or surface area. **Q.5.e |** When given geometric formulas, compute volume and surface area of spheres. Solve for radius or diameter when given the surface area. **Q.5.f |** Compute surface area and volume of composite 3-D geometric figures, given geometric formulas as needed.	
	3.MD.3 | Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.	Not on Blueprint	**Q.6.a |** Represent, display, and interpret categorical data in bar graphs or circle graphs.	Use bar graphs with different scales to solve problems involving multiple categories
	S-MD.2 | Calculate the expected value of a random variable; interpret it as the mean of the probability distribution.	Not on Blueprint	**Q.7.a |** Calculate the mean, median, mode and range. Calculate a missing data value, given the average and all the missing data values but one, as well as calculating the average, given the frequency counts of all the data values, and calculating a weighted average.	
	HSS-CP.9 | Use permutations and combinations to compute probabilities of compound events and solve problems.	Not on Blueprint	**Q.8.a |** Use counting techniques to solve problems and determine combinations and permutations.	
	HSS-CP.1 | Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not").	Not on Blueprint	**Q.8.b |** Determine the probability of simple and compound events.	
	HSS-CP.2 | Understand that two events A and B are independent 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.	Not on Blueprint	**Q.8.b |** Determine the probability of simple and compound events.	
	7.EE.1 | Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	Not on Blueprint	**A.1.a |** Add, subtract, factor, multiply, and expand linear expressions with rational coefficients.	
	A-SSE.4 | Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. For example, calculate mortgage payments.	Not on Blueprint	**A.1.f |** Factor polynomial expressions.	

	8.EE.7 | Solve linear equations in one variable.	Not on Blueprint	**A.2.a |** Solve one-variable linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms or equations with coefficients represented by letters. Includes solving routine first degree equations.	
	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.	Not on Blueprint	**A.2.d |** Solve a system of two simultaneous linear equations by graphing, substitution, or linear combination. Solve real-world problems leading to a system of linear equations.	
	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.	Not on Blueprint	**A.3.b |** Identify or graph the solution to a one variable linear inequality on a number line.	
	F-IF.5 | Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.	Not on Blueprint	**A.5.e |** For a function that models a linear or nonlinear relationship between two quantities, interpret key features of graphs and tables in terms of quantities, and sketch graphs showing key features of graphs and tables in terms of quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior, and periodicity.	
	G-GPE.5 | Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point)	Not on Blueprint	**A.6.c |** Use slope to identify parallel and perpendicular lines and to solve geometric problems.	
	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.	Not on Blueprint	**A.7.b |** Represent or identify a function in a table or graph as having exactly one output (one element in the range) for each input (each element in the domain).	
	8.F.2 | Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.	Not on Blueprint	**A.7.d |** Compare properties of two linear or quadratic functions each represented in a different way (algebraically, numerically in tables, graphically or by verbal descriptions). Examples include but are not limited to: given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.	