

MOSCOW SCHOOL DISTRICT
CURRICULUM GUIDE
Subject/Course: Math
Grade 10

Students are expected to know content and apply skills from previous grades.

Mathematical reasoning and problem solving processes should be incorporated throughout all mathematics standards. Students should use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models to communicate mathematical information and to explain mathematical reasoning and concepts.

Cognitive Level (CL) codes: <ul style="list-style-type: none"> ○ B: Memorize ○ C: Perform procedures ○ D: Demonstrate understanding ○ E: Conjecture, generalize, prove ○ F: Solve non-routine problems, make connections 	Calculator codes: <ul style="list-style-type: none"> ○ YES: calculator MUST be available in order for the student to demonstrate proficiency on this objective. ○ NO: student MUST NOT have a calculator while completing this item in order to assess this objective.
--	---

Standard 1: Number and Operation

Students in Grade 10 deepen their understanding of real numbers by applying properties of rational numbers and exponents and by identifying exact and approximate roots without simplification. Students use positive and negative numbers, absolute value, fractions, decimals, percentages, and scientific notation. Students use the proper order of operations and perform operations with rational numbers. Students apply number sense to everyday situations and judge reasonableness of answers.

<i>Goal – The student will:</i>	<i>Objectives (to be reached by the end of tenth grade)</i>	<i>Samples of Applications</i>	<i>Curriculum Materials (including technological resources)</i>	<i>Key Vocabulary for Standard 1 (italics represent words new to this grade level)</i>
Goal 1.1: Understand and use numbers.	<ul style="list-style-type: none"> • 10.M.1.1.1 Apply properties of rational numbers. (347.01.b) CL: C Calc: YES Content Limit: Properties include: addition and multiplication (inverse, commutative, associative, identity, distributive, and transitive) and the zero property of multiplication. Items will assess understanding of the properties and not the vocabulary. Items may be set in either real-world or mathematical contexts. <ul style="list-style-type: none"> • 10.M.1.1.2 Use positive and negative numbers, absolute value, fractions, decimals, percentages, and scientific notation, 		<ul style="list-style-type: none"> • Glencoe Geometry 	<ul style="list-style-type: none"> • absolute value • base • billionth • commission • <i>compound</i> • computation • cube • cubed • decimal • decrease • degree • discount • <i>error</i> • evaluate • expanded form • expanded notation • exponent • exponential form • factor • formula

	<p>including application in real world situations. (347.01.a)</p> <p>CL: C Calc: YES Content Limit: Items involving exponents and roots limited to squares, cubes, and square roots. This limit does not apply to numbers written in scientific notation.</p> <ul style="list-style-type: none"> • 10.M.1.1.3 Apply properties of exponents. (347.01.c) <p>CL: C Calc: YES Content Limit: Logarithms will not be assessed. Exponents should be integers, both positive and negative. Properties include: power of a power, multiplication of powers with the same base, dividing powers with the same base, and a number to the zero power.</p> <ul style="list-style-type: none"> • 10.M.1.1.4 Identify exact and approximate roots without simplification. <p>CL: C Calc: YES Content Limit: Perfect and non-perfect square roots limited to those whose exact or approximate root can be found through the use of perfect squares through 15^2. Perfect and non-perfect cube roots limited to those whose exact or approximate root can be found through the use of perfect cubes through 5^3.</p> <ul style="list-style-type: none"> • 10.M.1.1.5 Solve problems using number theory concepts (factors, multiples, primes). (347.01.d) <p>CL: C</p>			<ul style="list-style-type: none"> • fraction • gain • Greatest Common Factor (GCF) • increase • infinite • <i>interest</i> • irrational numbers • least common denominator • Least Common Multiple (LCM) • loss • lowest terms • millionth • multiple • natural number • negative number • opposite • order of operations • <i>percentage</i> • pi (π) • positive number • prime • profit • <i>radical</i> • rational number • real number • reasonable • reciprocal • repeating decimal • <i>root</i> • rounding • sales tax • scientific notation • sequence • simplify • standard form
--	--	--	--	--

	<p>Calc: YES Content Limit: Identify prime numbers less than 100. Identify GCF and LCM. With the exception of numbers less than 100 that have no prime factors other than 2, 3, or 5, prime factorization of numbers factored in exponential form must be used when identifying GCF and LCM. Items may be set in either real-world or mathematical contexts.</p> <ul style="list-style-type: none"> • 10.M.1.1.6 Use appropriate vocabulary. <p>Content Limit: Assessed in the classroom, not on the ISAT.</p>			
<p>Goal 1.2: Perform computations accurately.</p>	<ul style="list-style-type: none"> • 10.M.1.2.1 Use the order of operations and perform operations with rational numbers. (347.02.a) <p>CL: C Calc: NO Content Limit: Fraction denominators limited to 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 16, 18, 20, 24, 25, 36, 50, and 100. No more than four fractions. Decimals to thousandths place (division to hundredths place), percents greater than 0, integers to thousands place, powers as squares through 15^2 or cubes through 5^3, square roots of perfect squares through 225, and scientific notation. Working with integers, fractions, decimals, square roots, and exponents may be required within the same item.</p>			
<p>Goal 1.3: Estimate and judge reasonableness of results.</p>	<ul style="list-style-type: none"> • 10.M.1.3.1 Apply number sense to everyday situations and judge reasonableness of results. (347.03.a) <p>Content Limit: Assessed in the classroom, not on the</p>			

	<p>ISAT.</p> <ul style="list-style-type: none"> 10.M.1.3.2 Identify that error accumulates in a computation when there is rounding. (349.05.b) <p>Content Limit: Assessed in the classroom, not on the ISAT.</p>			
--	---	--	--	--

Standard 2: Concepts and Principles of Measurement

Students in Grade 10, given relative formulas, determine length, distance, area, surface area, capacity, and weight, with appropriate unit labels. Students formulate and use proportions, ratios, and scaling. Students apply concepts of rates and direct and indirect measurements. Students evaluate given measurement formulas for two- and three- dimensional objects.

<i>Goal – The student will:</i>	<i>Objectives (to be reached by the end of tenth grade)</i>	<i>Samples of Applications</i>	<i>Curriculum Materials (including technological resources)</i>	<i>Key Vocabulary for Standard 2 (italics represent words new to this grade level)</i>
<p>Goal 2.1: Understand and use U.S. customary and metric measurements.</p>	<ul style="list-style-type: none"> 10.M.2.1.1 Given the formulas, find the circumference, perimeter, or area of triangles, circles, and quadrilaterals, the volume of spheres, non-oblique prisms, cylinders, and cones, and the surface area of spheres, non-oblique prisms, cylinders, and right square-based pyramids. (349.01.a) <p>CL: C Calc: YES Content Limit: Items may be set in either real-world or mathematical contexts. Graphics should be used in most of these items. Graphics should be drawn to scale. Give all measurements needed in the problem / diagram (e.g., a student should not have to use the Pythagorean theorem to find a missing side and then use that answer to find the perimeter or area). Give exact or rounded answers for figures requiring pi (π).</p>		<ul style="list-style-type: none"> Glencoe Geometry 	<ul style="list-style-type: none"> area capacity Celsius centi- change circle circumference <i>comparable unit</i> <i>cone</i> conversion <i>cubic unit</i> customary cylinder diagram diameter dimensional analysis <i>direct measurement</i> distance <i>equivalent unit</i> <i>error</i> estimation Fahrenheit formula height <i>indirect measurement</i> kilo- length <i>liter</i>

• measurement

	<ul style="list-style-type: none"> • 10.M.2.1.2 Solve problems involving circumference, perimeter, or area of triangles, circles, and rectangles. <p>CL: C Calc: YES Content Limit: Items may be set in either real-world or mathematical contexts. Graphics should be used in most of these items. Pi (π) may be left in the answer.</p>			<ul style="list-style-type: none"> • <i>meter</i> • metric • midpoint • milli- • <i>non-oblique prism</i> • <i>oblique prism</i> • parallelogram • per • perimeter • pi (π) • <i>precision</i> • proportion • quadrilateral • radius • rate • ratio • rectangle • rectangular prism • <i>right square-based pyramid</i> • scale (map) • <i>scale factors</i> • semi- • <i>slope</i> • <i>sphere</i> • square • <i>square unit</i> • surface area • temperature • time • triangle • unit • unit rate • volume • weight • width
<p>Goal 2.2: Apply the concepts of rates, ratios, and proportions.</p>	<ul style="list-style-type: none"> • 10.M.2.2.1 Use rates, ratios, proportions, map scales, and scale factors (one- and two-dimensional) in problem-solving situations. (349.03.a) <p>CL: C Calc: YES Content Limit: Formulas and conversion facts may be given in an item (e.g., 1 mile = 5,280 feet). Items may include converting between square units. Conversions must be within one system. Items may include similar figures and scale drawings. Items may be set in either real-world or mathematical contexts. Graphics should be used in some of these items, as appropriate.</p> <ul style="list-style-type: none"> • 10.M.2.2.2 Apply concepts of rates and direct and indirect measurements. <p>Content Limit: Assessed in the classroom, not on the ISAT.</p> <ul style="list-style-type: none"> • 10.M.2.2.3 Construct equivalent units, comparable units, and conversions. (349.02.a) <p>CL: C, D Calc: YES Content Limit: Items will</p>			

	<p>not require students to convert from U.S. to metric or metric to U.S. All items should be set in a real-world context.</p>			
<p>Goal 2.3: Apply dimensional analysis.</p>	<ul style="list-style-type: none"> 10.M.2.3.1 Use customary and metric units and their relationship to one another and to real world applications involving length, area, capacity, weight, time, and temperature. (349.04.a) <p>CL: C, D Calc: YES Content Limit: Terms that may be used: area, Celsius, centimeter, cubic unit, degree, Fahrenheit, foot/feet, gallon, gram, inch, kilogram, kiloliter, kilometer, liter, meter, mile, milligram, milliliter, ounce, pint, pound, precision, quart, rate, slope, square unit, surface area, volume, and yard. Items will not require students to convert from U.S. to metric or metric to U.S. All items should be set in a real-world context.</p>			
<p>Goal 2.4: Apply appropriate techniques and tools to determine measurements.</p>	<ul style="list-style-type: none"> 10.M.2.4.1 Determine and use appropriate units. (349.01.a) Content Limit: Items may ask students to use rates to determine a measured outcome (e.g., rate \times time = distance or miles/hour \times hours = miles). 10.M.2.4.2 Approximate error in measurement situations. Content Limit: Assessed in the classroom, not on the ISAT. 			

Standard 3: Concepts and Language of Algebra and Functions

Students in Grade 10 use appropriate procedures for manipulating and simplifying algebraic expressions involving variables, integers, rational numbers, and for solving multi-step, first-degree equations and inequalities. Students understand the concept and applications of functions and mathematical models. Given graphs, charts, ordered pairs, mappings, or equations, students determine whether a relation is a function. Students evaluate functions written in functional notation and, given a function, students identify domain and range.

<i>Goal – The student will:</i>	<i>Objectives (to be reached by the end of tenth grade)</i>	<i>Samples of Applications</i>	<i>Curriculum Materials (including technological resources)</i>	<i>Key Vocabulary for Standard 3 (italics represent words new to this grade level)</i>
Goal 3.1: Use algebraic symbolism as a tool to represent mathematical relationships.	<ul style="list-style-type: none"> • 10.M.3.1.1 Represent mathematical relationships using variables, expressions, linear equations and inequalities. (350.01.a) CL: D Calc: YES Content Limit: Given a description in words, students represents relationship using mathematical symbols that may involve rational numbers, whole number powers (square whole numbers less than or equal to 15^2 or cubes less than or equal to 5^3), and square and cube roots. Terms that may be used: algebra, algebraic, cube, cube root, equation, expression, function, inequality, interval, power, relationship, square, square root, unknown, and variable.		<ul style="list-style-type: none"> • Glencoe Geometry 	<ul style="list-style-type: none"> • algebra • algebraic equation • algebraic expression • associative property • change • <i>chart</i> • <i>coefficient</i> • commutative property • <i>constant</i> • <i>cube</i> • <i>cube root</i> • data • dependent • distributive property • equation • expression • factor • <i>first-degree equation</i> • <i>formula</i> • function • <i>functional notation</i> • graph • graphical representation • greater than • identity property • independent • inequality • input • <i>integer</i> • inverse operation • inverse property
Goal 3.2: Evaluate algebraic expressions.	<ul style="list-style-type: none"> • 10.M.3.2.1 Use appropriate procedures for manipulating and simplifying algebraic expressions involving variables, integers, and rational numbers. (350.02.a) CL: C Calc: YES Content Limit: Items may include application of order of operations with up to three grouping symbols. Terms that may be used: expression,			

	<p>formula, function, relationship, solve, unknown, value, and variable. Evaluating an expression or a formula may involve squares or cubes and/or applying the distributive property. Terms that may not be used: quadratic, setup.</p>			<ul style="list-style-type: none"> • <i>interval</i> • less than • linear equation • linear function • <i>linear system of equations</i> • <i>mapping</i> • mathematical model • mathematical relationship • negative relationship • <i>non-linear equation</i> • not equal • notation • numeric expression • order or operations • <i>ordered pair</i> • positive relationship • <i>power</i> • properties • <i>quadratic</i> • quantity • rational number • relation • relationship • rule • sequence • <i>series</i> • <i>setup</i> • simplify • solution • solve • <i>square</i> • <i>square root</i> • substitution • substitution property • symbol • table • unknown • value • variable • zero property
<p>Goal 3.3: Solve algebraic equations and inequalities.</p>	<ul style="list-style-type: none"> • 10.M.3.3.1 Use appropriate procedures to solve multi-step, first-degree equations and inequalities; such as $3(2x - 5) = 5x + 7$ or $3(2x - 5) > 5x + 7$. (350.03.a) <p>CL: C Calc: YES Content Limit: Items may include \geq and \leq, but not \neq. Solving an inequality should not involve multiplying or dividing by a negative number.</p> <ul style="list-style-type: none"> • 10.M.3.3.2 Differentiate between linear and non-linear equations and graphs. <p>CL: D, E Calc: YES Content Limit: Limit non-linear equations and graphs to second-degree. Items that involve parabolas should include interpreting graphics only.</p>			
<p>Goal 3.4: Solve simple linear systems of equations.</p>	<ul style="list-style-type: none"> • 10.M.3.4.1 Use appropriate procedures to solve linear systems of equations involving two variables; such as $x + y = 7$ and $2x + 3y = 21$. (350.04.a) <p>CL: C Calc: YES Content Limit: Systems must have only one solution, that solution being an integer solution.</p>			
<p>Goal 3.5: Understand the concept of functions.</p>	<ul style="list-style-type: none"> • 10.M.3.5.1 Given graphs, charts, ordered pairs, mappings, or equations, determine whether a relation is a 			

	<p>function.</p> <p>Content Limit: Assessed in the classroom, not on the ISAT.</p> <ul style="list-style-type: none"> • 10.M.3.5.2 Evaluate functions written in functional notation. <p>Content Limit: Assessed in the classroom, not on the ISAT.</p> <ul style="list-style-type: none"> • 10.M.3.5.3 Given a function, identify domain and range. <p>Content Limit: Assessed in the classroom, not on the ISAT.</p>			
<p>Goal 3.6: Apply functions to a variety of problems.</p>	<ul style="list-style-type: none"> • 10.M.3.6.1 Model and solve real-world phenomena using multi-step, first degree, single variable equations and inequalities, linear equations, and two-variable linear systems of equations. (353.01.a) <p>CL: C, D Calc: YES Content Limit: Matrices, sequences, series, and recursive relations will not be assessed. Items should be set in a real-world context. Items should use methods that are graphical and/or algebraic. Graphics should be used in some of these items, as appropriate.</p> <ul style="list-style-type: none"> • 10.M.3.6.2 Use graphs and sequences to represent and solve problems. (347.02.b) <p>CL: C, D Calc: YES Content Limit: Items that require the solving of equations and/or inequalities should be linear in nature. Items that do not require solving equations and/or inequalities may be nonlinear, but should include interpreting</p>			

	<p>graphics only. Items involving graphs using discrete data, such as bar graphs or scatter plots, should contain no more than 15 data points. Items should be set in a real-world context. Items should use methods that are graphical and/or algebraic. Graphics should be used in some of these items, as appropriate. Terms that may not be used: algebraic sequence and geometric sequence. Matrices, sequences, series, and recursive relations will not be assessed. Three-dimensional figures in a coordinate system will not be assessed.</p>			
--	--	--	--	--

Standard 4: Concepts and Principles of Geometry

Students in Grade 10 recognize congruency and similarity of two-dimensional figures. Students identify and use similarity as it relates to size variations in two- and three- dimensional objects. Given the Pythagorean Theorem, students calculate missing side lengths of right triangles without simplifying radicals. Students represent linear relationships using tables, graphs, and mathematical symbols. Students interpret attributes of linear relationships such as slope, rate of change, and intercepts. Students use logic to make and evaluate mathematical arguments.

<i>Goal – The student will:</i>	<i>Objectives (to be reached by the end of tenth grade)</i>	<i>Samples of Applications</i>	<i>Curriculum Materials (including technological resources)</i>	<i>Key Vocabulary for Standard 4 (italics represent words new to this grade level)</i>
<p>Goal 4.1: Apply concepts of size, shape, and spatial relationships.</p>	<ul style="list-style-type: none"> 10.M.4.1.1 Recognize and apply congruency and similarity of two-dimensional figures. (351.01.a) <p>CL: C, E Calc: YES Content Limit: Items assessing the concept of similarity and congruency should focus on the conditions that cause figures to be similar or congruent. This includes the concept that angles opposite congruent sides of an isosceles triangle are congruent, but does not include formal proofs for ASA, SS, or SAS.</p>		<ul style="list-style-type: none"> Glencoe Geometry 	<ul style="list-style-type: none"> acute adjacent angle approximate <i>arc</i> area <i>axes</i> base capacity <i>Cartesian Coordinate System</i> <i>central angle</i> circle circle graph (pie chart) <i>circumference</i> complementary cone

	<ul style="list-style-type: none"> • 10.M.4.1.2 Recognize and use similarity as it relates to size variations in two- and three-dimensional objects. (351.01.b) <p>CL: C, E Calc: YES Content Limit: Terms that may be used: two-dimensional figure, three-dimensional figure, acute, angle, arc, base, circle, circumference, cone, congruent angles, corresponding angles, cube, cylinder, diagonal, diameter, dimensions, edge, equilateral, face, figure, hexagon, hypotenuse, intersect, isosceles, line, line segment, midpoint, obtuse, octagon, parallel, parallelogram, pentagon, perpendicular, Pythagorean theorem, plane, point, polygon, prism, pyramid, quadrilateral, radius/radii, rectangle, rhombus, right angle, right triangle, side, square, trapezoid, triangle, figure, and vertex/vertices.</p>			<ul style="list-style-type: none"> • congruent • <i>corresponding angles</i> • <i>corresponding sides</i> • cube • cylinder • diagonal • <i>diameter</i> • <i>dimensional (two-and three-)</i> • <i>dimensions</i> • <i>edge</i> • <i>equation</i> • equilateral • face • figure • geometry • geometric • <i>graph</i> • <i>grid</i> • hexagon • hypotenuse • horizontal • <i>informal trend line</i> • <i>intercepts</i> • intersecting • isosceles • legs of right triangle • line • line segment • <i>linear relationship</i> • <i>logic</i> • <i>mathematical argument</i> • <i>mathematical symbol</i> • <i>midpoint</i> • <i>negative correlation</i> • obtuse • octagon • <i>ordered pair</i> • origin • parallel • parallelogram • pentagon
<p>Goal 4.2: Apply the geometry of right triangles.</p>	<ul style="list-style-type: none"> • 10.M.4.2.1 Given the Pythagorean Theorem, calculate missing side lengths of right triangles without simplifying radicals. (351.02.c) <p>CL: C Calc: YES Content Limit: Radicals should be simplified where possible. Answers can be left in non-simplified radical format or rounded for items with answers that are not exact. Appropriate approximate language should be used in the item.</p>			
<p>Goal 4.3: Apply graphing in two dimensions.</p>	<ul style="list-style-type: none"> • 10.M.4.3.1 Identify attributes of the Cartesian Coordinate System, such as quadrants, origin, and axes. (351.03.a) 			

	<p>CL: B Calc: YES Content Limit: All four quadrants of the Cartesian plane may be used with the use of Roman numerals to identify the four specific quadrants. Terms that may be used: angle, axis/axes, coordinate, grid, horizontal, intersect, ordered pair, origin, parallel, perpendicular, plot, point, quadrant, vertical, x-axis, and y-axis.</p> <ul style="list-style-type: none"> • 10.M.4.3.2 Graph scatter plots and identify informal trend lines (e.g., eyeball fit lines) <p>CL: C, D Calc: YES Content Limit: Grids will have origin and scales labeled. Graphing scatter plots with ordered pairs may involve rational numbers, but should have no more than 15 data points.</p> <ul style="list-style-type: none"> • 10.M.4.3.3 Identify positive and negative correlations. <p>Content Limit: Assessed in the classroom, not on the ISAT.</p>		<ul style="list-style-type: none"> • perimeter • perpendicular • plane • plane figure • <i>plot</i> • point • point of origin • polygon • polyhedra • <i>positive correlation</i> • prism • pyramid • <i>Pythagorean Theorem</i> • quadrant • quadrilateral • <i>radius/radii</i> • <i>rate of change</i> • ray • rectangle • rectangular prism • reflection • regular • rhombus • right angle • right triangle • rotation • scalene • scale drawing • scaling • <i>scatter plot</i> • <i>sector</i> • side • similar • <i>size variation</i> • <i>slant height</i> • <i>slope</i> • spatial relationship • sphere • square • straight angle • supplementary • surface area • symmetrical • symmetry • <i>table</i> • three dimensional
<p>Goal 4.4: Represent and graph linear relationships.</p>	<ul style="list-style-type: none"> • 10.M.4.4.1 Create graphs and equations for linear relationships. <p>Content Limit: Assessed in the classroom, not on the ISAT.</p> <ul style="list-style-type: none"> • 10.M.4.4.2 Represent linear relationships using tables, graphs, and mathematical symbols. <p>CL: D Calc: YES Content Limit: Items involving graphs using discrete data, such as bar graphs or scatter plots, should contain no more</p>		

	<p>than 15 data points. Representation using ‘mathematical symbols’ includes equations.</p> <ul style="list-style-type: none"> • 10.M.4.4.3 Interpret attributes of linear relationships such as slope, rate of change, and intercepts. <p>CL: C, D Calc: YES Content Limit: Items should be set in a real-world context. Relationships to be interpreted may be presented in a linear equation or graphical format. Slopes may be positive or negative.</p>			<ul style="list-style-type: none"> • translation • trapezoid • triangle • two dimensional • vertex/vertices • vertical • volume • <i>x-axis</i> • <i>y-axis</i> •
<p>Goal 4.5: Use reasoning skills.</p>	<ul style="list-style-type: none"> • 10.M.4.5.1 Use logic to make and evaluate mathematical arguments. (348.02.b) <p>CL: E Calc: YES Content Limit: Stimulus may include tables, charts, graphs, text, maps, diagrams, pictorial representations, two- and three- dimensional figures, statistics, data, or other mathematical information.</p>			

Standard 5: Data Analysis, Probability, and Statistics

Students in Grade 10 read, interpret, and use tables, charts, and graphs, including scatter plots, multiple broken line graphs, and box-and-whisker plots. Students interpret and use basic statistical concepts including mean, median, mode, range, and distribution of data, including outliers. Students make predictions and draw conclusions based on statistical measures and students make predictions based on randomness, chance, equally likely events, and probability. Students find probabilities based on dependent, independent, and compound events and students make predictions based on randomness, chance, equally likely events, and probability.

<i>Goal – The student will:</i>	<i>Objectives (to be reached by the end of tenth grade)</i>	<i>Samples of Applications</i>	<i>Curriculum Materials (including technological resources)</i>	<i>Key Vocabulary for Standard 5 (italics represent words new to this grade level)</i>
Goal 5.1: Represent data with a variety of formats.	<ul style="list-style-type: none"> 10.M.5.1.1 Analyze and interpret tables, charts, and graphs, including scatter plots, multiple broken line graphs, and box-and-whisker plots. (352.01.a) <p>CL: D, E Calc: YES Content Limit: Items should be set in a real-world context. Items should contain no more than 30 organized data points. Displays of data within the stem should be complete and correct.</p>		<ul style="list-style-type: none"> Glencoe Geometry 	<ul style="list-style-type: none"> average bar graph <i>box-and-whisker plot</i> broken line graph certain <i>chance</i> chart circle graph clusters <i>compound event</i> <i>conclusion</i> data <i>decision</i> <i>dependent event</i> display distribution of data <i>equally likely event</i> equally likely outcome event experiment experimental probability frequency frequency table gaps graph <i>graphical model</i> high probability histogram impossible <i>increment</i>
Goal 5.2: Collect, organize, and display data.	<ul style="list-style-type: none"> 10.M.5.2.1 Collect, organize, and display data in tables, charts, and graphs. (352.02.a) 			
Goal 5.3: Apply simple statistical measurements.	<ul style="list-style-type: none"> 10.M.5.3.1 Interpret and use basic statistical concepts, including mean, median, mode, range, and distribution of data, including outliers. (352.03.a) <p>CL: C, D Calc: YES Content Limit: Items should use the terms mean, median, mode, range, but should not provide or require a definition of the terms. Items should only have one mode. Items may have an even or odd number of data points. Items containing raw, unorganized data points should have a maximum of</p>			

	<p>30 single-digit data points or a maximum of 15 data points with more than one digit. Measures of standard deviation and variance should not be assessed.</p> <ul style="list-style-type: none"> • 10.M.5.3.2 Make predictions and draw conclusions based on statistical measures. (352.05.a) <p>CL: D, E Calc: YES Content Limit: Items may be set in a real-world or mathematics context.</p>			<ul style="list-style-type: none"> • <i>independent event</i> • interpretation • <i>interval</i> • line graph • line plot • low probability • median • mean • mode • outcome • <i>outliers</i> • pictograph • pie graph • population • prediction • probability • <i>quartile</i> • random • <i>randomness</i> • range • sample • scatter plot • <i>simple event</i> • simulation • statistical experiment • <i>statistical measure</i> • statistics • stem-and-leaf plot • survey • table • tally mark • theoretical probability
<p>Goal 5.4: Understand basic concepts of probability.</p>	<ul style="list-style-type: none"> • 10.M.5.4.1 Find probabilities based on dependent, independent, and compound events. CL: C Calc: YES Content Limit: Items should not assess dependent, compound events. Independent compound events should contain no more than two simple events, such as those involving coins, spinners, dice, and cards. • 10.M.5.4.2 Contrast experimental and theoretical probability. (352.04.a) CL: D, E Calc: YES Content Limit: Answer options will consist of listing both the theoretical and experimental probabilities. 			
<p>Goal 5.5: Make predictions or decisions based on data.</p>	<ul style="list-style-type: none"> • 10.M.5.5.1 Make predictions based on randomness, chance, equally likely events, and probability. (352.04.c) CL: E Calc: YES Content Limit: Predictions should not be based on dependent-compound 			

	<p>events. Items may be set in a real-world or mathematics context.</p> <ul style="list-style-type: none"> • 10.M.5.5.2 Use appropriate tools / technology to conduct simulations and employ graphical models to make predictions or decisions based on data. (352.05.a) Content Limit: Assessed in the classroom, not on the ISAT. • 10.M.5.5.3 Design, conduct, and interpret results of statistical experiments. (352.05.b) Content Limit: Assessed in the classroom, not on the ISAT. 			
--	--	--	--	--