NSCAS NEBRASKA STUDENT-CENTERED ASSESSMENT SYSTEM

Summative Assessment
Mathematics Grade 8 Range Achievement Level Descriptors

What are Range Achievement Level Descriptors?

Range Achievement Level Descriptors (ALDs) demonstrate how skills described in the Nebraska College and Career Ready Standards for Mathematics likely change and become more sophisticated as ability and performance increases. The ALDs also describe the evidence needed to help infer where a student is along the range. This range is defined by Nebraska using three levels:

- Developing – not yet demonstrating proficiency
- On Track – demonstrating proficiency
- Advanced– demonstrating advanced proficiency

The ALDs help show the within-standard reasoning complexity that increases in sophistication as the achievement levels increase. Such skill advancement is often related to increases in content difficulty, increases in reasoning complexity, and a reduction in the supports required for students to demonstrate what they know within a task or item.

The Range ALDs provide a way to communicate a progression that is visible and usable to all stakeholders, while also providing a foundation for a robust bank of assessment items that meets the needs of all Nebraska students.

How were the Nebraska's Mathematics Range ALDs updated for the new standards?

Draft Range ALDs for the new standards were created and reviewed by panels comprised of Nebraska educators during Spring of 2023. The updated ALDs were shared with NDE and their feedback was applied.

How will Nebraska's ELA Range ALDs change in relation to the new standards?

The updated ALDs were revised to reflect the new standards. The updated ALDs will be taken to the 2023 Item Writing Workshop where they will be used to help facilitate item writing. Feedback will be recorded at the upcoming Item Writing Workshop from Nebraska educators based on their use of the ALDs for writing items and at the upcoming standard setting from panelists. This feedback will then be used to update the ALDs. The updated ALDs will be shared with NDE to obtain their final recommendations.

NSCAS Mathematics
Grade 8 Range ALDs

Indicator	Developing learners do not yet demonstrate proficiency in the knowledge and skills necessary at this grade level, as specified in the assessed Nebraska College and Career Ready Standards. A developing learner…	On Track learners demonstrate proficiency in the knowledge and skills necessary at this grade level, as specified in the assessed Nebraska College and Career Ready Standards. An on-track learner…	Advanced Benchmark learners demonstrate advanced proficiency in the knowledge and skills necessary at this grade level, as specified in the assessed Nebraska Advanced Standards. An advanced learner…
NUMBER: Students will solve problems and reason with number concepts using multiple representations, make connections within math and across disciplines, and communicate their ideas.			
8.N.1 Numeric Relationships: Students will demonstrate, represent, and show relationships among real numbers within the base-ten number system.			
8.N.1.a Determine subsets of numbers as natural, whole, integer, rational, irrational, or real based on the definitions of these sets of numbers.	Classifies real numbers as rational or irrational. DOK: 2 Max DOK: 2	Classifies real numbers into subsets of rational numbers (e.g., classifies -40/10 as an integer). DOK: 2 Max DOK: 2	Analyzes the classification of real numbers (e.g., explains why a number classified as a natural number is also an integer). DOK: 3 Classifies multiple numbers into subsets of the number system. May include a reference to imaginary/not real numbers. Does not require knowledge of the sqrt(-1) as i. DOK: 2 Max DOK: 3
8.N.1.b Represent numbers with positive and negative exponents and in scientific notation.	Represents integers with positive whole number exponents. DOK: 1 Max DOK: 1	Uses positive exponents to represent a negative rational number (e.g., -8 = $(-2)^3$). DOK: 1 Uses negative exponents to represent a rational number (e.g., -1/9 = -3^-2 or -(3^-2)). DOK: 1 Uses positive exponents to represent a positive fraction or decimal (e.g., $1/4 = (1/2)^2$). DOK: 1 Determines the number represented by scientific notation with positive or negative exponents. DOK: 1 Determines scientific notation for a number. DOK: 1 Max DOK: 1	Analyzes the representation of numbers written in exponential form or scientific notation (e.g., explains why the scientific notation for values between 0 and 1 use negative exponents). DOK: 3 Compares and/or orders numbers in scientific notation. DOK: 2 Max DOK: 3
8.N.1.c Describe the difference between a rational and irrational number.	Assessed at the local level		
8.N.1.d Approximate, compare, and order real numbers, both rational and irrational, and locate them on the number line.	Orders any number of rational numbers on or off a number line. At least two of the numbers must be in the following categories: negative integer, decimal, absolute value (e.g., includes at least one negative integer and one decimal or at least two decimal numbers) DOK: 2 Compares any rational numbers using symbols (e.g., < or >). The rational numbers must include two of the following: negative integer, decimal, absolute value. DOK: 2 Approximates the value of an irrational square root of a number less than 100 by placing it on a number line or between given rational numbers. DOK.: 2 (Refer to 6.N.1.e for comparing and ordering only rational numbers and for comparing and ordering only integers and absolute value.) Max DOK: 2	Orders three or more real numbers on or off a number line. The real numbers must include at least one irrational square root or all are negative fractions and/or negative decimals. DOK: 2 Compares two real numbers using comparison symbols (e.g., < or >). The real numbers must include at least one irrational square root. DOK: 2 Approximates the value of an irrational square root of a number greater than 100 by placing it on a number line or between given rational numbers. DOK: 2 Approximates the value of an irrational cube root of a number less than 125 by placing it on a number line or between given rational numbers. DOK: 2 Max DOK: 2	Approximates the value of an irrational cube root of a number greater than 125 by placing it on a number line or between given rational numbers. DOK: 2 Orders a set of three or more real numbers on or off a number line. The real numbers must include at least one irrational cube root of a number less than 125. DOK: 2 Analyzes comparisons or ordering of real numbers. The real numbers must include an irrational square root or cube root. DOK: 3 Ex: Given the placement of values on a number line, justify their placement or explain a better placement for the given values. Max DOK: 3
8.N.2 Operations: Students will compute with exponents and roots.			

8.N.2.a Evaluate the square roots of perfect squares less than or equal to 400 and cube roots of perfect cubes less than or equal to 125.	Evaluates square roots of perfect squares at or below 144. DOK: 1 Evaluates the square and cube roots of 0 and 1. DOK: 1 Evaluates the cube root of 8. DOK: 1 Max DOK: 1	Evaluates the square roots of perfect squares with values from 169 to 400. DOK: 1 Evaluates the cube roots of 27, 64, and 125. DOK: 1 Max DOK: 1	Evaluates the cube root of -1, -8, -27, -64, and -125. DOK: 1 Analyzes the evaluation of perfect squares less than or equal to 400 and cube roots of perfect cubes from -125 to 125 (e.g., explains why it is not possible to take square roots of negative numbers but it is possible to take cube roots of negative numbers). DOK: 3 Max DOK: 3
8.N.2.b Simplify numerical expressions involving integer exponents, square roots, and cube roots (e.g., 4^-2 is the same as 1/16).	Simplifies and evaluates numerical expressions involving integers and positive integer exponents (e.g., $(-3)^3 = -27$). DOK: 1 Simplifies and evaluates numerical expressions involving non-negative fractions or decimals containing positive integer exponents (e.g., $(1/3^2)=1/9$). DOK: 1 Simplifies and evaluates numerical expressions involving rational numbers with an exponent of 0. (e.g., (-1/3)^0 = 1) DOK: 1 (Refer to 6.N.2.c for evaluating a numerical expression with an exponent that represents a non-negative whole number.) Max DOK: 1	Simplifies and evaluates numerical expressions involving negative rational numbers and positive integer exponents (e.g., $(-1/3)^2 = 1/9$). DOK: 1 Simplifies and evaluates numerical expressions involving rational numbers containing negative integer exponents (e.g., (-1/3)^-3 = -27). DOK: 1 Simplifies and evaluates numerical expressions involving fractions or decimals with square or cube roots. May include also evaluating positive or negative integer exponents. Square and cube roots limited to those in 8.N.2.a (e.g., (1/sqrt9)^-3 = (1/3)^-3 = 27). DOK: 1 Simplifies and evaluates numerical expressions involving a combination of square or cube roots and integer exponents. Square and cube roots limited to those in 8.N.2.a (e.g., $\text{sqrt}(5^2 - 4^2)$). DOK: 1 Max DOK: 1	Simplifies and evaluates numerical expressions involving exponents of 1/2 or 1/3 for perfect squares or cubes respectively. Limited to those in 8.N.2.a. DOK: 1 Analyzes the simplification of numerical expressions involving exponents and roots (e.g., explains why (1/3)^-3 does not equal -27.) DOK: 3 Max DOK: 3
8.N.2.c Evaluate numerical expressions involving absolute value.	Determines the absolute value of a positive or negative number. DOK: 1 (Refer to 6.N2.c for evaluating numerical expressions involving absolute value and whole number exponents.) Max DOK: 1	Simplifies multi-step numerical expressions with absolute values, at least one being the absolute value of a negative number. Includes operations with rational numbers or positive integer exponents. These expressions are more than two-step and evaluating absolute value of a number is considered a step. DOK: 2 Simplifies two-step or multi-step numerical expressions involving absolute value of a positive number (e.g., |17-5|+3). DOK: 1 Simplifies two-step numerical expressions involving rational numbers and the absolute value of a negative number. Evaluating absolute value of a number is considered a step (no exponents). DOK: 1 Max DOK: 2	Analyzes the simplification of numerical expressions involving absolute value. DOK: 3 Ex: Given an expression, determine what changes could be made so that it is equivalent to another expression. Ex: Given an expression and a simplification process determine what errors were made. Max DOK: 3
8.N.2.d Multiply and divide numbers using scientific notation.	Assessed at the local level		
ALGEBRA: Students will solve problems and reason with algebra using multiple representations, make connections within math and across disciplines, and communicate their ideas.			
8.A.1 Algebraic Processes: Students will apply the operational properties when evaluating expressions and solving equations.			

8.A.1.a Describe single variable equations as having one solution, no solution, or infinitely many solutions.	Determines the number of solutions for one-variable equations involving rational numbers when the form ax+b= c, ax+b=ax+c, or ax+b=cx+d. DOK: 1 Max DOK: 1	Determines the number of solutions for one-variable equations involving rational numbers when the form is beyond ax+b= c, ax+b=ax+c, or ax+b=cx+d. DOK: 2 Max DOK: 2	Determines or creates one-variable equations with a given number of solutions. DOK: 2 Explains or justifies the number of solutions for an equation in one variable. DOK: 2 Determines the missing values given the number of solutions. DOK: 2 Ex: Fill in the blank so that the expression 3x + 42 = 3(x + __) has many solutions. Max DOK: 2
8.A.1.b Solve multi-step equations involving rational numbers with the same variable appearing on both sides of the equation.	Solves two-step equations involving rational numbers with the same variable appearing on both sides of the equal sign and each side of the equal sign already simplified (e.g., 3x+2 = 5x). DOK: 1 Determines or shows steps for solving two-step equations involving rational numbers with the same variable appearing on both sides of the equal sign. DOK: 2 Max DOK: 2	Solves multi-step equations involving rational numbers with the same variable appearing on both sides of the equal sign (e.g., 3x+2 = 5x-12). DOK: 2 Max DOK: 2	Analyzes or justifies solutions to multi-step equations (using three or more steps) involving rational numbers with the same variable appearing on both sides of the equal sign. DOK: 2 Max DOK: 2
8.A.1.c Solve equations of the form $x^2 = k(k \leq 400)$ and $x^3 = k(k \leq 125)$, where k is a positive rational number, using square root and cube root symbols.	Evaluates square roots of perfect square rational numbers with numerators an denominators between 0 to 400. DOK: 1 Evaluates cube roots of perfect cube rational numbers with numerators an denominators between 0 and 125. DOK: 1 Max DOK: 1	Solves equations of the form $x^2 = p$ where p is a perfect square rational number from 0 to 400. Includes requiring ± as part of the solution. DOK: 1 Solves equations of the form and $x^3 = p$, where p is a perfect cube rational number from 0 to 125. DOK: 1 Solves equations of the form $x^2 = p$ where p is a positive rational number and the solution requires the use of the square root symbol. Does not need to simplify the radical. Includes requiring ± as part of the solution. DOK: 1 Solves equations of the form $x^3 = p$ where p is a positive rational number and the solution requires the use of the cube root symbol. Does not need to simplify the radical (e.g., What value of x makes $x^3 = 2$ true?). DOK: 1 Identifies an exponential equation give the square root or cube root of a number in both mathematical and real world situations (e.g., Which equation has √2 as a solution?). DOK: 1 Max DOK: 1	Writes an exponential equation that results in the given square root or cube root of a number in both mathematical and authentic situations (e.g., Write an equation for which -√3 is a solution.). Square roots are from 0 to 400, and cube roots are from 0 to 125. DOK: 1 Solves and/or identifies equations that would result in irrational numbers and can approximate the value DOK: 2 Max DOK: 2
8.A.2 Applications: Students will solve authentic problems involving multi-step equations.			
8.A.2.a Write multi-step single variable equations from words, tables, and authentic situations.	Determines what the unknown variable represents in a given multi-step equation based on the context. DOK: 1 Max DOK: 1	Determines multi-step single variable equations to represent words, tables, and authentic situations when simplifying the equation is not required. DOK: 2 Max DOK: 2	Determines multi-step single variable equations to represent words, tables, and authentic situations when simplifying the equation is required. DOK: 2 Ex: Writes x + (2x + 4) = 20 (three-step equation) to represent the problem and simplifies to 3x + 4 = 20. Justifies or explains whether a given multi-step single variable equation models words, tables, and authentic situations. DOK: 3 Justifies or explains the equation used to model words, tables, and authentic situations. DOK: 3 Creates or detemines an authentic situation that reprsents a given equation. DOK: 2 Max DOK: 3

8.A.2.b Determine and describe the rate of change for given situations through the use of tables and graphs.	Determines if rates are constant or non-constant from graphs (may include context). DOK: 1 Determines if rates are constant or non-constant from tables (may include context). DOK:2 Max DOK: 2	Determines or describes constant rates of change from tables when the rate of change is a value other than 1, the independent variable in the table has intervals other than 1, or both (may include context). DOK: 2 Determines or describes rates of change from graphs of non-proportional relationships (may include context). DOK: 2 Compares rates of change given in tables and/or graphs (may include context). DOK: 2 Completes partially filled table of values that has a constant rate of change. DOK: 2 Max DOK: 2	Justifies why situations would or would not have constant rates of change. DOK: 2 Determines or describes non-constant rates of change from tables and/or graphs (may include context). DOK: 2 Max DOK: 2
8.A.2.c Graph proportional relationships and interpret the rate of change.	Determines if relationships are or are not proportional from graphs. DOK: 1 Max DOK: 1	Determines, describes, or creates graphs from proportional relationships (may include context). DOK: 2 Interprets the meaning of the slope of proportional relationships from graphs (may include context). DOK: 2 Max DOK: 2	Explains or justifies the determination, description, creation or interpretation of proportional relationships from graphs (may include context). DOK: 3 Max DOK: 3
GEOMETRY: Students will solve problems and reason with geometry using multiple representations, make connections within math and across disciplines, and communicate their ideas.			
8.G.1 Attributes: Students will apply properties of angle relationships in triangles and with lines to determine angle measures.			
8.G.1.a Determine and use the relationships of the interior angles of a triangle to solve for missing measures.	Determines a single missing angle measure in a triangle when the other interior angle measurements are given numerically or as a right angle, with a diagram. DOK: 1 Max DOK: 1	Determines a single missing angle measure in a triangle when the other interior angle measurements are given numerically or as a right angle, without a diagram. DOK: 1 Determines the missing angle measures of a triangle when the angle measurements are given as algebraic expressions. DOK: 2 Determines the value of one or more variables when the interior angle measurements of a triangle are given as algebraic expressions. DOK: 2 Max DOK: 2	Determines the missing angle measure of a triangle when given angle characteristics of the triangle (e.g., determine the missing angles in an isosceles triangle when given the non-congruent angle). DOK: 2 Max DOK: 2
8.G.1.b Identify and apply geometric properties of parallel lines cut by a transversal and the resulting corresponding, same side interior, alternate interior, and alternate exterior angles to find missing measures.	Identifies corresponding, alternate interior, same side interior, and alternate exterior angles based on a diagram without angle measures given. DOK: 1 Determines missing angle measures from two parallel lines cut by a single transversal when angle measurements are given numerically. DOK: 1 Max DOK: 1	Determines missing angle measures from parallel lines cut by a transversal when three or more parallel lines and/or two or more transversals are involved. DOK: 2 Determines missing angle measures from parallel lines cut by a transversal when angle measurements are given as algebraic expressions. DOK: 2 Max DOK: 2	Explains or justifies the relationships of angles formed by parallel lines cut by a transversal. DOK: 2 Determines missing interior or exterior angles of figures with at least one pair of parallel sides by applying geometric properties of parallel lines cut by a transversal (e.g., Use properties of parallel lines to determine the missing interior base angle of a trapezoid when given the corresponding angle.). DOK: 2 Max DOK: 2
8.G.2 Coordinate Geometry: Students will determine location, orientation, and relationships on the coordinate plane.			

8.G.2.a Perform and describe positions and orientations of shapes under single transformations including rotations in multiples of 90 degrees about the origin, translations, reflections, and dilations on and off the coordinate plane.	Determines the general type of transformation performed based on the image and pre-image (e.g., The shape was translated to the left. The shape was rotated. The shape was reflected.). DOK: 1 Max DOK: 1	Determines the general location and/or image after a transformation with or without a visual (e.g., The image is in quadrant 3.). DOK: 1 Determines the degree of clockwise or counter-clockwise rotations about the origin in 90 degree increments given an image and pre-image. DOK: 1 Determines the specific transformation performed based on the image and pre-image (e.g., 4 units left, 3 units up). DOK: 1 Determines the coordinates of a shape translated in vertical and/or horizontal directions on the coordinate plane with or without a visual. DOK: 2 Determines the coordinates of a shape reflected across the x-axis or y-axis with or without a visual. DOK: 2 Determines the coordinates of a shape dilated about the origin on the coordinate plane with or without a visual. DOK: 2 Creates a dilated image on a coordinate plane when given the original image or coordinates. DOK: 2 Max DOK: 2	Determines changes to position or orientation of objects as they undergo transformations with or without a visual (e.g., translated four units to the right). DOK: 2 Determines the coordinates of shapes rotated clockwise or counter-clockwise in 90 degree increments about the origin with or without a visual. DOK: 2 Max DOK: 2
8.G.2.b Determine if two-dimensional figures are congruent or similar.	Identifies the difference between congruence and similarity. DOK: 1 Max DOK: 1	Determines congruence or similarity among multiple figures with all side measures shown on the figures. DOK: 1 Determines missing values of a shape given that is congruent or similar to another shape. DOK: 1 Max DOK: 1	Determines congruence or similarity of two or more figures when shown multiple figures and not all required side lengths are labeled. Side lengths can be determined based on information given or from the diagram. DOK: 2 Explains why two figures are or are not similar or congruent by using domain specific vocabulary (e.g., proportional, equal, corresponding sides/angles) given a diagram of both shapes. DOK: 2 Determines missing values of a congruent or similar figures given algebraic representations (limit expression to angles for similiar figures). DOK: 2 Max DOK: 2
8.G.2.c Perform and describe positions and orientations of shapes under a sequence of transformations on and off the coordinate plane.	Determines the general type of a series of transformations performed based on the image and pre-image (e.g., The shape was translated to the left then rotated). DOK: 1 Max DOK: 1	Determines the general location and/or image after a series of transformations with or without a visual (e.g., The image is in quadrant 3.). DOK: 1 Determines the specific series of transformations performed based on the image and pre-image (e.g., 4 units left, 3 units up). DOK: 1 Max DOK: 1	Determines changes to position or orientation of objects as they undergo a series of transformations with or without a visual (e.g., translated four units to the right, then translated four units to the left changes position but preserves orientation). DOK: 2 Max DOK: 2
8.G.3 Measurement: Students will reason with formulas and context to determine and compare length, area, and volume.			
8.G.3.a Explain a model of the Pythagorean Theorem.	Assessed at the local level		

8.G.3.b Apply the Pythagorean Theorem to find side lengths of triangles and to solve authentic problems.	Determines the length of one side of a right triangle when given the lengths of the other two sides with a diagram and all sides lengths are rational numbers. DOK: 2 Identifies the legs and hypotenuse of right triangles. DOK: 1 Max DOK: 2	Determines the length of one side of a right triangle when given the lengths of the other two sides with a diagram and the missing side length is an irrational number. DOK: 2 Determines the length of one side of a right triangle when given the lengths of the other two sides without a diagram. DOK: 2 Determines whether three lengths represent a right triangle. DOK: 2 Solves authentic problems that require application of the Pythagorean Theorem when two of the three lengths of a right triangle are directly given, with or without a diagram. DOK: 2 Max DOK: 2	Solves authentic problems that require application of the Pythagorean Theorem when at most one side length is directly given. Other side lengths can be extrapolated from given information to then apply the Pythagorean Theorem. DOK: 2 Analyses and explains why three lengths do or do not represent a right triangle. DOK: 2 Max DOK: 2
8.G.3.c Find the distance between any two points on the coordinate plane using the Pythagorean Theorem.	Uses the Pythagorean Theorem to determine the shortest distance between the vertices on the hypotenuse when the right triangle used for determining the distance is provided on the coordinate plane (may include context). DOK: 2 Max DOK: 2	Determines the shortest distance between any two given ordered pairs using the Pythagorean Theorem on or off the coordinate plane (may include context). DOK: 2 Max DOK: 2	Uses the Pythagorean Theorem to determine a point that is a specified distance at a diagonal to a given point (may include context). DOK: 2 Ex: When given the point (1,2) and a distance of 5 units, determine the point (4, 6) or any other diagonal point 5 units from (1,2). Compares distances among multiple points, on or off the coordinate plane. DOK: 2 Max DOK: 2
8.G.3.d Determine the volume of cones, cylinders, and spheres and solve authentic problems using volumes.	Determines the volume of cones, cylinders, and spheres when given the radius and height or diameter and height in problems without a context. DOK: 1 Max DOK: 1	Determines an unknown dimension of a cone or cylinder when given the volume and another dimension (may include context). DOK: 2 Determines the radius or diameter of a sphere when given the volume (may include context). DOK: 2 Determines the volume of cones, cylinders, and spheres when one or more steps are required to determine one or more of the dimensions (may include context). Calculating the radius from the diameter does not count toward the number of steps. DOK: 2 Determines which dimensions result in the desired volume when given the volume of a cone, cylinder, or sphere (may include context). DOK: 2 Compares the volumes of cones, cylinders, and spheres when given the dimensions of the shapes (may include context). DOK: 2 Solves authentic problems using volumes of cones, cylinders, or spheres. DOK: 2 Determines the volume of a cone given a cylinder with the same radius and height (vice versa). DOK: 2 Max DOK: 2	Explains or justifies how a authentic problem corresponds to the volume of a given object, including modeling a shape with a geometric object. DOK: 3 Explains or justifies reasoning about a method for solving a authentic problem using volumes. DOK: 3 Determines the volumes of composite figures involving cones, cylinders, and/or spheres (may include context). DOK: 2 Solves authentic problems using volumes of composite figures involving cones, cylinders, and/or spheres. DOK: 2 Max DOK: 3
DATA: Students will solve problems and reason with data/probability using multiple representations, make connections within math and across disciplines, and communicate their ideas.			
8.D.1 Data Collection & Statistical Methods: Students will formulate statistical investigative questions, collect data, and organize data. No additional indicator(s) at this level.			

8.D.2 Analyze Data and Interpret Results: Students will represent and analyze the data and interpret the results.			
8.D.2.a Represent and interpret bivariate data (e.g., ordered pairs) using scatter plots.	Identifies the scatter plot that represents specific data (may include context). DOK: 1 Identifies the scatter plot that follows a stated trend (may include context). DOK: 2 Ex: Which scatter plot shows the y-values increasing as the x-values also increase? Max DOK: 2	Creates a scatter plot of given data, including determining the appropriate scale, labels, and which information belongs on the x- or y-axis when appropriate (may include context). DOK: 2 Interprets information from a scatter plot within a context. DOK: 2 Max DOK: 2	Determines the scatter plot or characteristics appropriate to represent a given scenario based on information other than that which could be represented as ordered pairs. (e.g., based on rate of change of data) DOK: 3 Explains why a scatter plot fits a given authentic scenario or description of data (or trend). The scenario does not include providing ordered pairs in any format. DOK: 3 Max DOK: 3
8.D.2.b Describe patterns such as positive or negative association, linear or nonlinear association, clustering, and outliers when bivariate data is represented on a coordinate plane.	Identifies scatter plots that represent specific data based on patterns such as positive or negative association, linear or nonlinear association, clustering, and outliers. DOK: 1 Max DOK: 1	Determines the pattern of data represented in a scatter plot as positive or negative associations. DOK: 1 Determines when scatter plots are representing data that has no relationship. DOK: 1 Determines clustering, outliers, linear, or non linear relationships from scatter plots. DOK: 1 Max DOK: 1	Explains why patterns of data represented in a scatter plot has positive, negative, or no associations. DOK: 2 Max DOK: 2
8.D.2.c Draw an informal line of best fit based on the closeness of the data points to the line.	Identifies which straight line drawn on a scatter plot best represents the data. DOK: 1 Includes use of the term "line of best fit." Max DOK: 1	Places a straight line on a scatter plot that closely fits the points. DOK: 2 Describes how well one line fits the data in a scatter plot based on the closeness of the data points to the line. DOK: 2 Includes use of the term "line of best fit." Max DOK: 2	Evaluates and explains why one line better fits the data than another.DOK: 2 Includes use of the term "line of best fit." Max DOK: 2
8.D.2.d Use a linear model to make predictions and interpret the rate of change and y-intercept in context.	Makes a prediction for a given value when given the graph of the line of best fit and its equation. DOK: 1 Solves problems about what the slope or intercept means as part of the line of best fit when given the graph of the line of best fit and its equation. DOK: 2 Max DOK: 2	Makes a prediction for a given x-value (or corresponding value based on the context) with: the line of best fit graphed but an equation of the line not given or the equation of the line of best fit given but the line is not graphed. DOK: 2 Solves problems about what the slope or intercept would mean as part of the line of best fit with: the line of best fit graphed but an equation not given or the equation of the line of best fit given but the line is not graphed. DOK: 2 Max DOK: 2	Makes a prediction for a given y-value (or corresponding value based on the context) with: the line of best fit graphed but an equation of the line not given or the equation of the line of best fit given but the line is not graphed. or the line of best fit is not graphed and the equation of the line of best fit is not given. DOK: 2 Evaluates or critiques predictions that are based on the trend of the data in a scatter plot with: the line of best fit graphed but an equation of the line not given or the equation of the line of best fit given but the line is not graphed or the line of best fit is not graphed and the equation of the line of best fit is not given. DOK: 3 Max DOK: 3
8.D.3 Probability: Students will interpret and apply concepts of probability. No additional indicator(s) at this level.			