# Nebraska State Assessment - Grade 8
# Math TOS Crosswalk

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| **MA 8.1** | **NUMBER: Students will communicate number sense concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.** | |
| **MA 8.1.1** | **Numeric Relationships: Students will demonstrate, represent, and show relationships among real numbers within the base-ten number system.** | **Legacy Standard** |
| **MA 8.1.1.a** | Determine subsets of numbers as natural, whole, integer, rational, irrational, or real, based on the definitions of these sets of numbers. | MA 8.1.1.d |
| **MA 8.1.1.b** | Represent numbers with positive and negative exponents and in scientific notation. | MA 8.1.1.c |
| **MA 8.1.1.c** | Describe the difference between a rational and irrational number. | NONE |
| **MA 8.1.1.d** | Approximate, compare, and order real numbers (both rational and irrational) and order real numbers both off and on the number line. | MA 8.1.1.b |
| **MA 8.1.2** | **Operations: Students will compute with exponents and roots.** | |
| **MA 8.1.2.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. | MA 8.1.3.c |
| **MA 8.1.2.b** | Simplify numerical expressions involving exponents and roots (e.g., 4^(-2) is the same as 1/16). | MA 12.1.3.b |
| **MA 8.1.2.c** | Simplify numerical expressions involving absolute value. | MA 8.1.3.b |
| **MA 8.1.2.d** | Multiply and divide numbers using scientific notation. | MA 12.1.3.c |
| **MA 8.1.2.e** | Estimate and check reasonableness of answers using appropriate strategies and tools. | MA 8.1.4.a |
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| **MA 8.2** | **ALGEBRA: Students will communicate algebraic concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.** | |
| **MA 8.2.1** | **Algebraic Relationships: Students will demonstrate, represent, and show relationships with expressions, equations, and inequalities.** | |
| **MA 8.2.1.a** | Create algebraic expressions, equations, and inequalities (e.g., two-step, one variable) from word phrases, tables, and pictures. | MA 8.3.1.b |
| **MA 8.2.1.b** | Determine and describe the rate of change for given situations through the use of tables and graphs. | MA 8.3.1.c |
| **MA 8.2.1.c** | Describe equations and linear graphs as having one solution, no solution, or infinitely many solutions. | NONE |
| **MA 8.2.1.d** | Graph proportional relationships and interpret the slope. | NONE |

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| **MA 8.2.2** | **Algebraic Processes: Students will apply the operational properties when evaluating expressions and solving expressions, equations, and inequalities.** | |
| **MA 8.2.2.a** | Solve multi-step equations involving rational numbers with the same variable appearing on both sides of the equal sign. | MA 8.3.3.c |
| **MA 8.2.2.b** | Solve two-step inequalities involving rational numbers and represent solutions on a number line. | MA 8.3.3.d |
| **MA 8.2.3** | **Applications: Students will solve real-world problems involving multi-step equations and multi-step inequalities.** | |
| **MA 8.2.3.a** | Describe and write equations from words, patterns, and tables. | MA 8.3.1.b |
| **MA 8.2.3.b** | Write a multi-step equation to represent real-world problems using rational numbers in any form. | MA 8.3.2.b |
| **MA 8.2.3.c** | Solve real-world multi-step problems involving rational numbers in any form. | NONE |
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| **MA 8.3** | **GEOMETRY: Students will communicate geometric concepts and measurement concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.** | |
| **MA 8.3.1** | **Characteristics: Students will identify and describe geometric characteristics of two- dimensional shapes.** | |
| **MA 8.3.1.a** | Determine and use the relationships of the interior angles of a triangle to solve for missing measures. | MA 8.2.1.e |
| **MA 8.3.1.b** | Identify and apply geometric properties of parallel lines cut by a transversal and the resulting corresponding, alternate interior, and alternate exterior angles to find missing measures. | MA 8.2.1.c |
| **MA 8.3.2** | **Coordinate Geometry: Students will determine location, orientation, and relationships on the coordinate plane.** | |
| **MA 8.3.2.a** | Perform and describe positions and orientation 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. | MA 8.2.3.a, MA8.2.3.b |
| **MA 8.3.2.b** | Find congruent two-dimensional figures and define congruence in terms of a series of transformations. | MA 8.2.1.b |
| **MA 8.3.2.c** | Find similar two-dimensional figures and define similarity in terms of a series of transformations. | MA 8.2.1.b |
| **MA 8.3.3** | **Measurement: Students will perform and compare measurements and apply formulas.** | |
| **MA 8.3.3.a** | Explain a model of the Pythagorean Theorem. | NONE |
| **MA 8.3.3.b** | Apply the Pythagorean Theorem to find side lengths of triangles and to solve real-world problems. | MA 8.2.5.c |
| **MA 8.3.3.c** | Find the distance between any two points on the coordinate plane using the Pythagorean Theorem. | MA 12.2.2.c |
| **MA 8.3.3.d** | Determine the volume of cones, cylinders, and spheres, and solve real-world problems using volumes. | MA 8.2.5.b |
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| **MA 8.4** | **DATA: Students will communicate data analysis/probability concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.** | |
| **MA 8.4.1** | **Representations: Students will create displays that represent data.** | |
| **MA 8.4.1.a** | Represent bivariate data (i.e. ordered pairs) using scatter plots. | MA 12.4.1.f |
| **MA 8.4.2** | **Analysis & Applications: Students will analyze data to address the situation.** | |
| **MA 8.4.2.a** | Solve problems and make predictions using an approximate line of best fit. | NONE |
| **MA 8.4.3** | **Probability: Students will interpret and apply concepts of probability.** | |