**Nebraska Mathematics Standards Overview**

**NUMBER SENSE STANDARD:** Students will communicate number sense concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.

**GEOMETRIC/MEASUREMENT STANDARD**: Students will communicate geometric concepts and measurement concepts using multiple representations to reason, solve problems and make connections within mathematics and across disciplines.

**ALGEBRAIC STANDARD:** Students will communicate algebraic concepts using multiple representations to reason, solve problems and make connections within mathematics and across disciplines.

**DATA ANALYSIS/PROBABILITY STANDARD:** Students will communicate data analysis/probability concepts using multiple representations to reason, solve problems and make connections within mathematics and across disciplines.

**Nebraska Mathematics Standards Concepts**

**K-12 Comprehensive Data Analysis/Probability Standard:**

**Students will communicate data analysis/probability concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.**

 **Display and Analysis**

 **Predictions and Inferences**

 **Probability**

**K-12 Comprehensive Algebraic Standard:**

**Students will communicate algebraic concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.**

 **Relationships**

 **Modeling in Context**

 **Procedures**

**K-12 Comprehensive Geometric/Measurement Standard:**

**Students will communicate geometric concepts and measurement concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.**

 **Characteristics**

 **Coordinate Geometry**

 **Transformations**

 **Spatial Modeling**

 **Measurement**

**K-12 Comprehensive Number Sense Standard:**

**Students will communicate number sense concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.**

 **Number System**

 **Operations**

 **Computation**

 **Estimation**

**Nebraska Mathematics Standards**

**Grade 7**

**MA 7.1 Students will communicate number sense concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.**

**MA 7.1.1 Number System: Students will represent and show relationships among rational numbers.**

MA 7.1.1.a Show equivalence among fractions, decimals, and percents. 8-18-2014

MA 7.1.1.b Compare and order rational numbers (e.g., fractions, decimals, percents) 8-20-2014

MA 7.1.1.c Represent large numbers using scientific notation 8-25-2014

MA 7.1.1.d Classify numbers as natural, whole, integer, or rational 9- 15-2014

MA 7.1.1.e Find least common multiple 9- 3-2014

and greatest common divisor given two numbers 9- 8-2014

**MA 7.1.2 Operations: Students will demonstrate the meaning of arithmetic operations with positive fractions, decimals, and integers.**

MA 7.1.2.a Use drawings, words, and symbols to explain the meaning of multiplication and division of fractions (e.g., 2/3 x 6 as two-thirds of six, or 6 x 2/3 as 6 groups of two-thirds, or 6 ÷ 2/3 as how many two-thirds there are in six.)

10-4-2014

MA 7.1.2.b Use drawings, words, and symbols to explain the meaning of multiplication and division of decimals

9-29-2014

MA 7.1.2.c Use drawings, words, and symbols to explain the addition and subtraction of integers

9-22-2014

**MA 7.1.3 Computation: Students will compute fluently and accurately using appropriate strategies and tools.**

MA 7.1.3.a Compute accurately with integers

10-6-2014

MA 7.1.3.b Select, apply, and explain the method of computation when problem solving using integers and positive rational numbers (e.g., models, mental computation, paper-pencil, technology, divisibility rules)

MA 7.1.3.c Solve problems involving percent of numbers (e.g., percent of, % increase, % decrease)

10-4-2014

**MA 7.1.4 Estimation: Students will estimate and check reasonableness of answers using appropriate strategies and tools.**

MA 7.1.4.a Use estimation methods to check the reasonableness of solutions for problems involving integers and positive rational numbers 10-13-2014

**MA 7.2 Students will communicate geometric concepts and measurement concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.**

**MA 7.2.1 Characteristics: Students will describe, compare, and contrast characteristics, properties, and relationships of geometric shapes and objects.**

MA 7.2.1.a Identify and describe similarity of two-dimensional shapes using side and angle measurements

10-15-2014

MA 7.2.1.b Name line, line segment, ray, and angle (e.g., $\overleftrightarrow{AB} , \vec{PR}<LMN$) 10-20-2014

**MA 7.2.2 Coordinate Geometry: Students will specify locations and describe relationships using coordinate geometry.**

MA 7.2.2.a Plot the location of an ordered pair in the coordinate plane 10-31-2014

MA 7.2.2.b Identify the quadrant of a given point in the coordinate plane 10-31-2014

MA 7.2.2.c Find the distance between points along horizontal and vertical lines of a coordinate plane (e.g., what is the distance between (0, 3) and (0, 9))

**MA 7.2.3 Transformations: Students will use transformations and symmetry to analyze geometric shapes.**

MA 7.2.3.a Identify lines of symmetry for a reflection

MA 7.2.3.b Perform and describe positions and orientation of shapes under a single transformation (e.g., translation, rotation, reflection) on a coordinate plane

**MA 7.2.4 Spatial Modeling: Students will use visualization to create geometric models in solving problems.**

MA 7.2.4.a Identify the shapes that make up the three-dimensional object

MA 7.2.4.b Create two-dimensional representations of three-dimensional objects to visualize and solve problems (e.g., perspective drawing of surface area)

MA 7.2.4.c Draw angles to given degree 10-17-2014

**MA 7.2.5 Measurement: Students will select and apply appropriate procedures, tools, and formulas to determine measurements.**

MA 7.2.5.a Measure angles to the nearest degree 10-17-2014

MA 7.2.5.b Determine the area of trapezoids and circles, and the circumference of circles

MA 7.2.5.c Recognize the inverse relationship between the size of a unit and the number of units used when measuring

**MA 7.3 Students will communicate algebraic concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.**

**MA 7.3.1 Relationships: Students will represent and analyze relationships using algebraic symbols.**

MA 7.3.1.a Describe and create algebraic expressions from words, tables, and graphs

MA 7.3.1.b Use a variable to describe a situation with an inequality (e.g., one-step, one variable)

MA 7.3.1.c Recognize and generate equivalent forms of simple algebraic expressions

**MA 7.3.2 Modeling in Context: Students will create, use, and interpret models of quantitative relationships.**

MA 7.3.2.a Model contextualized problems using various representations (e.g., one-step/variable expressions, one-step/variable equations)

MA 7.3.2.b Represent a variety of quantitative relationships using algebraic expressions and one-step equations

**MA 7.3.3 Procedures: Students will apply properties to solve equations and inequalities.**

MA 7.3.3.a Explain additive inverse of addition (e.g., 7 + -7 = 0)

MA 7.3.3.b Use symbolic representation of the distributive property (e.g., 2(x + 3) = 2x + 6)

MA 7.3.3.c Given the value of the variable(s), evaluate algebraic expressions with respect to order of operations

MA 7.3.3.d Solve two-step equations involving integers and positive rational numbers

MA 7.3.3.e Solve one-step inequalities involving positive rational numbers

MA 7.3.3.f Identify and explain the properties used in solving two-step equations (e.g., addition, subtraction, multiplication and division)

**MA 7.4 Students will communicate data analysis/probability concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.**

**MA 7.4.1 Display and Analysis: Students will formulate questions that can be addressed with data and then organize, display, and analyze the relevant data to answer their questions.**

MA 7.4.1.a Analyze data sets and interpret their graphical representations

MA 7.4.1.b Find and interpret mean, median, mode, and range for sets of data

MA 7.4.1.c Explain the difference between a population and a sample

MA 7.4.1.d List biases that may be created by various data collection processes

MA 7.4.1.e Formulate a question about a characteristic within one population that can be answered by simulation or a survey

**MA 7.4.2 Predictions and Inferences: Students will evaluate predictions and make inferences based on data.**

MA 7.4.2.a Determine if data collected from a sample can be used to make predictions about a population

**MA 7.4.3 Probability: Students will apply and interpret basic concepts of probability.**

MA 7.4.3.a Find the probability of independent compound events (e.g., tree diagram, organized list)

MA 7.4.3.b Compare and contrast theoretical and experimental probabilities