I CAN Learn®
EDUCATION SYSTEMS

NEBRASKA

# Grade 8 Correlation to Mathematics Standards

| | Mathematics Curriculum Framework | I CAN Learn® Lesson # | I CAN Learn® Lesson Title |
|---|---|---|---|
| | **NUMBER SENSE** | | |
| MA 8.1.1.a | Compare and order real numbers | HA1-015 | Graphing Real Numbers Using a Number Line |
| | | HA1-025 | Comparing and Ordering Real Numbers |
| MA 8.1.1.b | Demonstrate relative position of real numbers on the number line (e.g., square root of 2 is left of 1.5) | MPA-065 | Estimating Square Roots |
| | | HA1-015 | Graphing Real Numbers Using a Number Line |
| MA 8.1.1.c | Represent small numbers using scientific notation | MPA-021 | Converting Between Standard and Scientific Notation |
| | | HA1-235 | Applying Scientific Notation |
| MA 8.1.1.d | Classify numbers as natural, whole, integer, rational, irrational, or real | MPA-124 | Classifying Numbers in the Real Number System |
| MA 8.1.2.a | Use drawings, words, and symbols to explain the meaning of addition, subtraction, multiplication, and division of integers. | MPA-047 | Adding Integers with Like Signs |
| | | MPA-048 | Adding Integers with Unlike Signs |
| | | MPA-050 | Subtracting Integers with Unlike Signs |
| | | MPA-051 | Multiplying Integers with Like and Unlike Signs |
| | | MPA-052 | Dividing Integers with Like and Unlike Signs |
| | | MPA-053 | Adding, Subtracting, Multiplying, and Dividing Integers |
| MA 8.1.2.b | Use words and symbols to explain the zero property of multiplication (e.g., if ab = 0 then a or b or both must be zero) | MPA-051 | Multiplying Integers with Like and Unlike Signs |
| | | MPA-002 | Adding, Subtracting, Multiplying, and Dividing Whole Numbers |
| MA 8.1.2.c | Use words and symbols to explain why division by zero is undefined | MPA-052 | Dividing Integers with Like and Unlike Signs |
| MA 8.1.3.a | Compute accurately with rational numbers | MPA-047 | Adding Integers with Like Signs |
| | | MPA-048 | Adding Integers with Unlike Signs |
| | | MPA-050 | Subtracting Integers with Unlike Signs |
| | | MPA-051 | Multiplying Integers with Like and Unlike Signs |
| | | MPA-052 | Dividing Integers with Like and Unlike Signs |
| | | MPA-053 | Adding, Subtracting, Multiplying, and Dividing Integers |
| | | MPA-034 | Adding and Subtracting Fractions |
| | | MPA-035 | Adding and Subtracting Mixed Numbers with Unlike Denominators |
| | | MPA-123 | Modeling Multiplication and Division of Fractions |
| | | MPA-036 | Multiplying Fractions and Mixed Numbers and Simplifying |
| | | MPA-037 | Dividing Fractions and Mixed Numbers and Simplifying |
| | | MPA-018 | Adding and Subtracting Decimals |
| | | MPA-122 | Modeling Multiplication and Division of Decimals |
| | | MPA-019 | Multiplying Decimals |
| | | MPA-020 | Multiplying Decimals by Powers of Ten |
| | | MPA-119 | Dividing Decimals |
| MA 8.1.3.b | Evaluate expressions involving absolute value of integers | HA1-030 | Using Opposites and Absolute Values |
| MA 8.1.3.c | Calculate squares of integers, the square roots of perfect squares, and the square roots of whole numbers using technology | MPA-013 | Using Powers and Exponents in Expressions |

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| | | MPA-064 | Finding Square Roots |
| | | MPA-065 | Estimating Square Roots |
| MA 8.1.3.d | Select, apply, and explain the method of computation when problem solving using rational numbers (e.g., models, mental computation, paper-pencil, technology, divisibility rules) | MPA-006 | Determining Reasonableness of Answers and Appropriate Method of Computation |
| | | MPA-003 | Using Four-Step Plan for Problem Solving |
| | | MPA-024 | Using Divisibility Rules |
| | | MPA-116 | Solving Real-Life Problems by Using Guess-and-Check and Working Backwards |
| | | MPA-125 | Formulating a Possible Problem Situation Given an Equation |
| | | MPA-118 | Modeling Algebraic Expressions and Equations Using Algebra Tiles |
| MA 8.1.3.e | Solve problems involving ratios and proportions (e.g., | MPA-078 | Expressing Ratios as Fractions and Determining Equivalency |
| | | MPA-079 | Unit rates |
| | | MPA-080 | Solving Proportions |
| | | MPA-110 | Solving Problems Using Proportions, Scale Drawings, Models, and Maps |
| MA 8.1.4.a | Use estimation methods to check the reasonableness of solutions for problems involving rational numbers | MPA-023 | Rounding Quotients Involving Decimals |
| | | MPA-006 | Determining Reasonableness of Answers and Appropriate Method of Computation |
| | | MPA-033 | Estimating Computations with Fractions and Mixed Numbers |
| | **GEOMETRY AND MEASUREMENT** | | |
| MA 8.2.1.a | Identify and describe similarity of three-dimensional objects | MPA-111 | Comparing Perimeters, Areas, and Volumes of Similar Geometric Figures and Solids |
| MA 8.2.1.b | Compare and contrast relationships between similar and congruent objects | MPA-121 | Identifying Similar and Congruent Polygons Using Proportions |
| MA 8.2.1.c | Identify geometric properties of parallel lines cut by a transversal and related angles (e.g., perpendicular and parallel lines with transversals) and angles (e.g., corresponding, alternate interior, alternate exterior) | MPA-105 | Determining the Measure of Angles Made by Parallel Lines and a Transversal |
| MA 8.2.1.d | Identify pairs of angles (e.g., adjacent, complementary, supplementary, vertical) | MPA-057 | Identifying and Applying Supplementary and Complementary Angles |
| | | MPA-056 | Classifying Angles |
| MA 8.2.1.e | Examine the relationships of the interior angles of a triangle (e.g., the sum of the angles is 180 degrees) | MPA-059 | Properties of Triangles and Quadrilaterals |
| MA 8.2.2.a | Use coordinate geometry to represent and examine the properties of rectangles and squares using horizontal and vertical segments | MPA-160 | Plotting Polygons and Finding the Area |
| MA 8.2.3.a | Identify the similarity of dilated shapes | MPA-120 | Applying Dilations in the Coordinate Plane |
| MA 8.2.3.b | Perform and describe positions and sizes of shapes under dilations (e.g., scale factor, ratios) | MPA-120 | Applying Dilations in the Coordinate Plane |
| MA 8.2.4.a | Draw geometric objects with specified properties (e.g., parallel sides, number of sides, angle measures, number of faces) | MPA-072 | Identifying 3-D Figures |
| | | MPA-106 | Identifying a Solid Figure From a Net |
| | | MPA-107 | Constructing Three-Dimensional Figures and Examining Their Dimensions |
| MA 8.2.5.a | Use strategies to find the perimeter and area of complex shapes | MPA-055 | Finding the Perimeter of a Figure |
| | | MPA-068 | Finding the Area of Irregular Figures |
| MA 8.2.5.b | Determine surface area and volume of three-dimensional objects (e.g., rectangular prisms, cylinders) | MPA-073 | Finding the Surface Area of Rectangular Prisms |
| | | MPA-074 | Finding the Surface Area of Cylinders |
| | | MPA-075 | Finding the Volume of Rectangular Prisms |
| | | MPA-076 | Finding the Volume of Cylinders |
| | | MPA-115 | Finding the Volumes of Prisms, Cylinders, Pyramids, and Cones Using Models |
| MA 8.2.5.c | Apply the Pythagorean theorem to find missing lengths in right triangles and to solve problems | MPA-066 | Solving Problems Using the Pythagorean Theorem |
| MA 8.2.5.d | Use scale factors to find missing lengths in similar shapes | MPA-121 | Identifying Similar and Congruent Polygons Using Proportions |
| MA 8.2.5.e | Convert between metric and standard units of measurement, given conversion factors (e.g., meters to yards) | MPA-063 | Converting Units Between Metric and Customary System |
| | | MPA-155 | Comparing and Converting Rates |

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| | **ALGEBRA** | | |
| MA 8.3.1.a | Represent and analyze a variety of patterns with tables, graphs, words, and algebraic equations | MPA-104 | Recognizing Patterns |
| | | MPA-270 | Generating Algebraic Expressions from Patterns of Models |
| MA 8.3.1.b | Describe relationships using algebraic expressions, equations, and inequalities (e.g., two-step, one variable) | MPA-100 | Solving Two-Step Equations with Positive Coefficients |
| | | MPA-165 | Solving Two-Step Equations with Negative Coefficients |
| | | MPA-101 | Solving Two-Step Equations by Combining Like Terms |
| | | MPA-170 | Solving Equations Using the Distributive Property |
| | | MPA-175 | Solving Equations with Variables on Both Sides |
| | | MPA-109 | Solving and Graphing Linear Inequalities on a Number Line |
| | | MPA-118 | Modeling Algebraic Expressions and Equations Using Algebra Tiles |
| MA 8.3.1.c | Identify constant slope from tables and graphs | MPA-135 | Determining the Slope of a Line |
| | | MPA-140 | Examining Linear Equations in Slope-Intercept Form |
| | | MPA-142 | Solving Problems With Linear Functions and Direct Variation |
| MA 8.3.2.a | Model contextualized problems using various representations (e.g., two-step/one variable equations) | MPA-125 | Formulating a Possible Problem Situation Given an Equation |
| | | MPA-142 | Solving Problems With Linear Functions and Direct Variation |
| MA 8.3.2.b | Represent a variety of quantitative relationships using algebraic expressions and two-step/one variable equations | MPA-100 | Solving Two-Step Equations with Positive Coefficients |
| | | MPA-165 | Solving Two-Step Equations with Negative Coefficients |
| | | MPA-101 | Solving Two-Step Equations by Combining Like Terms |
| | | MPA-170 | Solving Equations Using the Distributive Property |
| | | MPA-175 | Solving Equations with Variables on Both Sides |
| | | MPA-109 | Solving and Graphing Linear Inequalities on a Number Line |
| | | MPA-118 | Modeling Algebraic Expressions and Equations Using Algebra Tiles |
| | | MPA-125 | Formulating a Possible Problem Situation Given an Equation |
| | | HA1-079 | Using a Concrete Model to Simplify Algebraic Expressions |
| | | HA1-124 | Using a Concrete Model to Solve One- and Two-Step Equations |
| MA 8.3.3.a | Explain the multiplicative inverse (e.g., 4 * ¼= 1) | MPA-037 | Dividing Fractions and Mixed Numbers and Simplifying |
| MA 8.3.3.b | Evaluate numerical expressions containing whole number exponents (e.g., if x = 4, then $(x + 3)^2 + 5x = ?$) | MPA-014 | Evaluating Expressions for Given Variables |
| | | HA1-060 | Evaluating Numerical Expressions Using the Order of Operations |
| | | HA1-005 | Evaluating Algebraic Expressions |
| | | HA1-065 | Evaluating Expressions Containing Exponents |
| MA 8.3.3.c | Solve multi-step equations involving rational numbers | MPA-101 | Solving Two-Step Equations by Combining Like Terms |
| | | MPA-170 | Solving Equations Using the Distributive Property |
| | | MPA-175 | Solving Equations with Variables on Both Sides |
| MA 8.3.3.d | Solve two-step inequalities involving rational numbers | MPA-109 | Solving and Graphing Linear Inequalities on a Number Line |
| | | HA1-100 | Finding Solution Sets of Open Sentences from Given Replacement Sets |
| | | HA1-105 | Translating Word Statements into Inequalities |
| | | HA1-180 | Graphing Equations and Inequalities on the Number Line |
| | | HA1-185 | Solving Inequalities Using the Addition and Subtraction Properties |
| | | HA1-190 | Solving Inequalities Using the Multiplication and Division Properties |
| | | HA1-195 | Solving Inequalities Using More Than One Property |
| MA 8.3.3.e | Identify and explain the properties used in solving two-step inequalities and multi-step equations | HA1-180 | Graphing Equations and Inequalities on the Number Line |
| | | HA1-185 | Solving Inequalities Using the Addition and Subtraction Properties |
| | | HA1-190 | Solving Inequalities Using the Multiplication and Division Properties |
| | | HA1-195 | Solving Inequalities Using More Than One Property |
| | | MPA-101 | Solving Two-Step Equations by Combining Like Terms |
| | | MPA-170 | Solving Equations Using the Distributive Property |
| | | MPA-175 | Solving Equations with Variables on Both Sides |

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| | | HA1-144 | Using a Concrete Model to Solve Equations with Variables on Both Sides |
| | **DATA ANALYSIS AND PROBABILITY** | | |
| MA 8.4.1.a | Represent data using circle graphs and box plots with and without the use of technology | MPA-092 | Reading and Interpreting Bar, Line, and Circle Graphs |
| | | MPA-097 | Constructing Box-and-Whisker Plots |
| MA 8.4.1.b | Compare characteristics between sets of data or within a given set of data | MPA-098 | Making Predictions from Graphs and Choosing the Correct Graph |
| MA 8.4.1.c | Find, interpret, and compare measures of central tendency (mean, median, mode) and the quartiles for sets of data | HA1-540 | Finding the Mean, Median, and Mode from Data and Frequency Distribution Tables |
| | | HA1-541 | Analyzing Data Using the Measures of Central Tendency and the Range |
| | | MPA-097 | Constructing Box-and-Whisker Plots |
| MA 8.4.1.d | Select the most appropriate unit of central tendency for sets of data | HA1-541 | Analyzing Data Using the Measures of Central Tendency and the Range |
| MA 8.4.1.e | Identify misrepresentation and misinterpretation of data represented in circle graphs and box plots | MPA-099 | Recognizing Misleading Statistics and Graphs |
| MA 8.4.2.a | Evaluate predictions to formulate new questions and plan new studies | HA1-877 | Drawing Inferences and Making Predictions from Tables and Graphs |
| | | MPA-098 | Making Predictions from Graphs and Choosing the Correct Graph |
| MA 8.4.2.b | Compare and contrast two sets of data to make inferences | MPA-840 | Interpreting Data |
| | | HA1-877 | Drawing Inferences and Making Predictions from Tables and Graphs |
| MA 8.4.3.a | Identify complementary events and calculate their probabilities | HA1-560 | Determining Probability of an Event and Complementary Event from a Random Experiment |
| MA 8.4.3.b | Compute probabilities for independent compound events | HA1-565 | Solving Problems Involving Independent, Dependent, and Mutually Exclusive and Inclusive Events |
| | | MPA-113 | Finding the Probability of Compound Events Through Experimentation |

MM1-Fundamentals of Mathematics
MPA- Pre-Algebra
HA1-Algebra 1
Note: Standards were taken from the Grade 8 Nebraska Mathematics Content Standards K-12 document adopted by the Nebraska State Board of Education on 10/08/09.