

Nebraska State Accountability - Mathematics (NeSA-M) Table of Specifications

Grade 8

NUMBER SENSE

Gr8 Number System	Highest DOK Level Tested	DOK 1	DOK 2	DOK 3	Item Total
MA 8.1.1 Students will represent and show relationships among real numbers.					
<i>MA 8.1.1.a Compare and order real numbers</i>	2	0	1-2	0	1-2
<i>MA 8.1.1.b Demonstrate relative position of real numbers on the number line</i>	Assessed at the local level				
<i>MA 8.1.1.c Represent small numbers using scientific notation</i>	2	0-1	1-2	0	1-3
<i>MA 8.1.1.d Classify numbers as natural, whole, integer, rational, irrational, or real</i>	1	1-2	0	0	1-2
Gr8 Operations	Highest DOK Level Tested	DOK 1	DOK 2	DOK 3	Item Total
MA 8.1.2 Students will demonstrate the meaning of arithmetic operations with integers.					
<i>MA 8.1.2.a Use drawings, words, and symbols to explain the meaning of addition, subtraction, multiplication, and division of integers</i>	Assessed at the local level				
<i>MA 8.1.2.b Use words and symbols to explain the zero property of multiplication</i>	Assessed at the local level				
<i>MA 8.1.2.c Use words and symbols to explain why division by zero is undefined</i>	Assessed at the local level				
Gr8 Computation	Highest DOK Level Tested	DOK 1	DOK 2	DOK 3	Item Total
MA 8.1.3 Students will compute fluently and accurately using appropriate strategies and tools.					
<i>MA 8.1.3.a Compute accurately with rational numbers</i>	1	2-4	0	0	2-4
<i>MA 8.1.3.b Evaluate expressions involving absolute value of integers</i>	1	1-3	0	0	1-3
<i>MA 8.1.3.c Calculate squares of integers, the square roots of perfect squares, and the square roots of whole numbers using technology</i>	Assessed at the local level				

<i>MA 8.1.3.d Select, apply, and explain the method of computation when problem solving using rational numbers</i>	2	0-1	2-3	0	2-4
<i>MA 8.1.3.e Solve problems involving ratios and proportions</i>	2	0-1	2-3	0	2-4
Gr8 Estimation	Highest DOK Level Tested	DOK 1	DOK 2	DOK 3	Item Total
MA 8.1.4 Students will estimate and check reasonableness of answers using appropriate strategies and tools.					
<i>MA 8.1.4.a Use estimation methods to check the reasonableness of solutions for problems involving rational numbers</i>	2	0-1	1-2	0	1-3
GEOMETRIC/MEASUREMENT CONCEPTS					
Gr8 Characteristics	Highest DOK Level Tested	DOK 1	DOK 2	DOK 3	Item Total
MA 8.2.1 Students will describe, compare, and contrast characteristics, properties, and relationships of geometric shapes and objects.					
<i>MA 8.2.1.a Identify and describe similarity of three- dimensional objects</i>	Assessed at the local level				
<i>MA 8.2.1.b Compare and contrast relationships between similar and congruent objects</i>	Assessed at the local level				
<i>MA 8.2.1.c Identify geometric properties of parallel lines cut by a transversal and related angles</i>	1	2-4	0	0	2-4
<i>MA 8.2.1.d Identify pairs of angles</i>	1	2-4	0	0	2-4
<i>MA 8.2.1.e Examine the relationships of the interior angles of a triangle</i>	2	0-1	1-2	0	1-3
Gr8 Coordinate Geometry	Highest DOK Level Tested	DOK 1	DOK 2	DOK 3	Item Total
MA 8.2.2 Students will specify locations and describe spatial relationships using coordinate geometry.					
<i>MA 8.2.2.a Use coordinate geometry to represent and examine the properties of rectangles and squares using horizontal and vertical segments</i>	2	0-1	1-2	0	1-3
Gr8 Transformations	Highest DOK Level Tested	DOK 1	DOK 2	DOK 3	Item Total
MA 8.2.3 Students will perform transformations and use them to analyze the orientation and size of geometric shapes.					

MA 8.2.3.a Identify the similarity of dilated shapes	Assessed at the local level				
MA 8.2.3.b Perform and describe positions and sizes of shapes under dilations	Assessed at the local level				
Gr8 Spatial Modeling	Highest DOK Level Tested	DOK 1	DOK 2	DOK 3	Item Total
MA 8.2.4 Students will use visualization, spatial reasoning, and geometric modeling to solve problems.					
MA 8.2.4.a Draw geometric objects with specified properties	Assessed at the local level				
Gr8 Measurement	Highest DOK Level Tested	DOK 1	DOK 2	DOK 3	Item Total
MA 8.2.5 Students will select and apply appropriate procedures, tools, and formulas to determine measurements.					
MA 8.2.5.a Use strategies to find the perimeter and area of complex shapes	Assessed at the local level				
MA 8.2.5.b Determine surface area and volume of three- dimensional objects	Assessed at the local level				
MA 8.2.5.c Apply the Pythagorean theorem to find missing lengths in right triangles and to solve problems	2	0-1	2-3	0	2-4
MA 8.2.5.d Use scale factors to find missing lengths in similar shapes	1	1-3	0	0	1-3
MA 8.2.5.e Convert between metric and standard units of measurement, given conversion factors	Assessed at the local level				
ALGEBRAIC CONCEPTS					
Gr8 Relationships	Highest DOK Level Tested	DOK 1	DOK 2	DOK 3	Item Total
MA 8.3.1 Students will represent and analyze relationships using algebraic symbols.					
MA 8.3.1.a Represent and analyze a variety of patterns with tables, graphs, words, and algebraic equations	Assessed at the local level				
MA 8.3.1.b Describe relationships using algebraic expressions, equations, and inequalities	2	0-1	2-4	0	2-5
MA 8.3.1.c Identify constant slope from tables and graphs	Assessed at the local level				
Gr8 Modeling in Context	Highest DOK Level Tested	DOK 1	DOK 2	DOK 3	Item Total

MA 8.3.2 Students will create, use, and interpret models of quantitative relationships.					
<i>MA 8.3.2.a Model contextualized problems using various representations</i>	3	0	2-3	1-2	3-5
<i>MA 8.3.2.b Represent a variety of quantitative relationships using algebraic expressions and two- step/one-step variable equations</i>	Assessed at the local level				
Gr8 Procedures	Highest DOK Level Tested	DOK 1	DOK 2	DOK 3	Item Total
MA 8.3.3 Students will apply properties to solve equations and inequalities.					
<i>MA 8.3.3.a Explain the multiplicative inverse</i>	Assessed at the local level				
<i>MA 8.3.3.b Evaluate numerical expressions containing whole number exponents</i>	2	1-3	1-2	0	2-5
<i>MA 8.3.3.c Solve multi-step equations involving rational numbers</i>	2	0-1	2-4	0	2-5
<i>MA 8.3.3.d Solve two-step inequalities involving rational numbers</i>	2	0-1	2-4	0	2-5
<i>MA 8.3.3.e Identify and explain the properties used in solving two-step inequalities and multi-step equations</i>	Assessed at the local level				
DATA ANALYSIS/PROBABILITY CONCEPTS					
Gr8 Display and Analysis	Highest DOK Level Tested	DOK 1	DOK 2	DOK 3	Item Total
MA 8.4.1 Students will formulate questions that can be addressed with data, and then organize, display, and analyze the relevant data to answer their questions.					
<i>MA 8.4.1.a Represent data using circle graphs and box plots with and without the use of technology</i>	Assessed at the local level				
<i>MA 8.4.1.b Compare characteristics between sets of data or within a given set of data</i>	3	0	1-2	1-2	2-4
<i>MA 8.4.1.c Find, interpret, and compare measures of central tendency (mean, median, and mode) and the quartiles for sets of data</i>	Assessed at the local level				
<i>MA 8.4.1.d Select the most appropriate unit of central tendency for sets of data</i>	2	0-1	1-2	0	1-3
<i>MA 8.4.1.e Identify misrepresentation and misinterpretation of data represented in circle graphs and box plots</i>	2	0-1	1-2	0	1-3
Gr8 Predictions and Inferences	Highest DOK Level Tested	DOK 1	DOK 2	DOK 3	Item Total

MA 8.4.2 Students will evaluate predictions and make inferences based on data.					
<i>MA 8.4.2.a Evaluate predictions to formulate new questions and plan new studies</i>	Assessed at the local level				
<i>MA 8.4.2.b Compare and contrast two sets of data to make inferences</i>	Assessed at the local level				
Gr8 Probability	Highest DOK Level Tested	DOK 1	DOK 2	DOK 3	Item Total
MA 8.4.3 Students will apply and interpret basic concepts of probability.					
<i>MA 8.4.3.a Identify complementary events and calculate their probabilities</i>	2	0-1	1-2	0	1-3
<i>MA 8.4.3.b Compute probabilities for independent compound events</i>	2	0-1	1-2	0	1-3