

NSCAS Alternate Math Table of Specifications - Grade 7

MA 7.1	NUMBER: 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	Numeric Relationships: Students will demonstrate, represent, and show relationships among rational numbers within the base-ten number system.					
MA 7.1.2	Operations: Students will compute with rational numbers accurately.	Max DOK Level	DOK 1 Stage 1 Stage 2	DOK 1 Stage 3	DOK 2 Stage 4	Item Total
MA 7.1.2.a	Solve problems using proportions and ratios (e.g., cross products, percents, tables, equations, and graphs). <i>Extended: Given a fraction $\frac{1}{4}$, $\frac{1}{2}$, or $\frac{3}{4}$, write the corresponding percentage.</i>		0 – 2	0 – 1	0 – 1	0 – 4
MA 7.1.2.b	Add, subtract, multiply, and divide rational numbers (e.g., positive and negative fractions, decimals, and integers). <i>Extended: Add and subtract positive rational numbers with like denominators up to 10 without regrouping.</i>		0 – 2	0 – 1	0 – 1	0 – 4
MA 7.1.2.d	Use multiple strategies to add, subtract, multiply, and divide integers. <i>Extended: Add positive and negative integers (-10 to 10).</i>		0 – 2	0 – 1	0 – 1	0 – 4
MA 7.1.2.e	Estimate and check reasonableness of answers using appropriate strategies and tools. <i>Extended: Estimate addition and subtraction results to the nearest 10 up to 100.</i>		0 – 2	0 – 1	0 – 1	0 – 4

MA 7.2	ALGEBRA: Students will communicate algebraic concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.					
MA 7.2.1	Algebraic Relationships: Students will demonstrate, represent, and show relationships with expressions, equations, and inequalities.	Max DOK Level	DOK 1 Stage 1 Stage 2	DOK 1 Stage 3	DOK 2 Stage 4	Item Total
MA 7.2.1.a	Describe and create an inequality from words and pictures (e.g., one-step, one-variable). <i>Extended: Identify a solution to a given inequality.</i>		0 – 2	0 – 1	0 – 1	0 – 4
MA 7.2.1.b	Represent real-world situations with proportions. <i>Extended: Identify a ratio between two quantities using a model.</i>		0 – 2	0 – 1	0 – 1	0 – 4
MA 7.2.2	Algebraic Processes: Students will apply the operational properties when evaluating expressions, and solving equations and inequalities.	Max DOK Level	DOK 1 Stage 1 Stage 2	DOK 1 Stage 3	DOK 2 Stage 4	Item Total
MA 7.2.2.b	Use factoring and properties of operations to create equivalent algebraic expressions (e.g., $2x + 6 = 2(x + 3)$). <i>Extended: Identify equivalent expressions with one variable ($2n + 3n$ is the same as $5n$).</i>		0 – 2	0 – 1	0 – 1	0 – 4
MA 7.2.2.c	Given the value of the variable(s), evaluate algebraic expressions (including absolute value). <i>Extended: Given the positive integer value of the single variable, evaluate an addition or subtraction expression.</i>		0 – 2	0 – 1	0 – 1	0 – 4
MA 7.2.2.d	Solve two-step equations involving rational numbers which include the integers. <i>Extended: Solve a one-step equation using multiplication.</i>		0 – 2	0 – 1	0 – 1	0 – 4
MA 7.2.2.e	Solve one-step inequalities involving integers and rational numbers and represent solutions on a number line. <i>Extended: Identify a solution to an inequality involving multiplication using a number line (-10 to 10).</i>		0 – 2	0 – 1	0 – 1	0 – 4
MA 7.2.3	Applications: Students will solve real-world problems involving expressions, equations, and inequalities.	Max DOK Level	DOK 1 Stage 1 Stage 2	DOK 1 Stage 3	DOK 2 Stage 4	Item Total

MA 7.2.3.b	Write a two-step equation to represent real-world problems involving rational numbers in any form. <i>Extended: Identify a one-step linear equation containing a positive integer that represents a solution to a real-world problem.</i>		0 – 2	0 – 1	0 – 1	0 – 4
MA 7.2.3.c	Solve real-world problems with equations that involve rational numbers in any form. <i>Extended: Solve a one-step linear equation using a positive integer that represents a solution to a real-world problem.</i>		0 – 2	0 – 1	0 – 1	0 – 4
MA 7.2.3.d	Solve real-world problems with inequalities. <i>Extended: Identify an inequality that represents a solution to a real-world problem using a model.</i>		0 – 2	0 – 1	0 – 1	0 – 4
MA 7.2.3.e	Use proportional relationships to solve real-world problems, including percent problems, (e.g., % increase, % decrease, mark-up, tip, simple interest). <i>Extended: Identify the percent for a discount problem (10%, 25%, or 50%).</i>		0 – 2	0 – 1	0 – 1	0 – 4
MA 7.2.3.f	Solve real-world problems involving scale drawings using a proportional relationship. <i>Extended: Identify the measure of a scale drawing using the scale of 1/4, 1/3, or 1/2.</i>		0 – 2	0 – 1	0 – 1	0 – 4

MA 7.3	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 7.3.1	Characteristics: Students will identify and describe geometric characteristics of two-dimensional shapes.	Max DOK Level	DOK 1 Stage 1 Stage 2	DOK 1 Stage 3	DOK 2 Stage 4	Item Total
MA 7.3.1.a	Apply and use properties of adjacent, complementary, supplementary, and vertical angles to find missing angle measures. <i>Extended: Identify a pair of congruent angles in two intersecting lines.</i>		0 – 2	0 – 1	0 – 1	0 – 4
MA 7.3.2	Coordinate Geometry: Students will determine location, orientation, and relationships on the coordinate plane.					
MA 7.3.3	Measurement: Students will perform and compare measurements and apply formulas.	Max DOK Level	DOK 1 Stage 1 Stage 2	DOK 1 Stage 3	DOK 2 Stage 4	Item Total
MA 7.3.3.a	Solve real-world problems involving perimeter and area of composite shapes made from triangles, quadrilaterals and polygons. <i>Extended: Find the perimeter of two adjoining rectangles by counting unit lengths.</i>		0 – 2	0 – 1	0 – 1	0 – 4
MA 7.3.3.b	Solve real-world problems involving surface area and volume of composite shapes made from rectangular and triangular prisms. <i>Extended: Find the area of two adjoining rectangles by counting unit squares.</i>		0 – 2	0 – 1	0 – 1	0 – 4
MA 7.3.3.c	Determine the area and circumference of circles both on and off the coordinate plane. <i>Extended: Identify the center and radius of a circle.</i>		0 – 2	0 – 1	0 – 1	0 – 4

MA 7.4	DATA: Students will communicate data analysis/probability concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.					
MA 7.4.1	Representations: Students will create displays that represent data.	Max DOK Level	DOK 1 Stage 1 Stage 2	DOK 1 Stage 3	DOK 2 Stage 4	Item Total
MA 7.4.2	Analysis & Applications: Students will analyze data to address the situation.	Max DOK Level	DOK 1 Stage 1 Stage 2	DOK 1 Stage 3	DOK 2 Stage 4	Item Total
MA 7.4.2.a	Solve problems using information presented in circle graphs. <i>Extended: Solve problems with thirds and fourths of a circle using a circle graph.</i>		0 – 2	0 – 1	0 – 1	0 – 4
MA 7.4.3	Probability: Students will interpret and apply concepts of probability.	Max DOK Level	DOK 1 Stage 1 Stage 2	DOK 1 Stage 3	DOK 2 Stage 4	Item Total
MA 7.4.3.c	Find theoretical probabilities for independent events. <i>Extended: Identify the probability of an event as always, sometimes, or never.</i>		0 – 2	0 – 1	0 – 1	0 – 4