NSCAS Alternate Math Table of Specifications - Grade 5

MA 5.1	**NUMBER: Students will communicate number sense concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.**					
MA 5.1.1	**Numeric Relationships: Students will demonstrate, represent, and show relationships among whole numbers, fractions, and decimals within the base-ten number system.**	**Max DOK Level**	**DOK 1 Stage 1 Stage 2**	**DOK 1 Stage 3**	**DOK 2 Stage 4**	**Item Total**
MA 5.1.1.a	Determine multiple equivalent representations for whole numbers and decimals through the thousandths place using standard form, word form, and expanded notation. *Extended: Identify representations of whole numbers up to 200.*		0 — 2	0 — 1	0 — 1	0 — 4
MA 5.1.1.b	Compare whole numbers, fractions, mixed numbers, and decimals through the thousandths place and represent comparisons using symbols <,>, or =. *Extended: Compare and order whole numbers using symbols <, >, and = up to 200.*		0 — 2	0 — 1	0 — 1	0 — 4
MA 5.1.1.c	Round whole numbers and decimals to any given place. *Extended: Round whole numbers to the nearest tens place up to 200.*		0 — 2	0 — 1	0 — 1	0 — 4
MA 5.1.1.d	Recognize and generate equivalent forms of commonly used fractions, decimals, and percents (e.g., halves, thirds, fourths, fifths, and tenths). *Extended: Use models to identify equivalent fractions between thirds, fourths, halves, and one whole.*		0 — 2	0 — 1	0 — 1	0 — 4
MA 5.1.2	**Operations: Students will demonstrate the meaning of operations and compute accurately with whole numbers, fractions, and decimals.**	**Max DOK Level**	**DOK 1 Stage 1 Stage 2**	**DOK 1 Stage 3**	**DOK 2 Stage 4**	**Item Total**
MA 5.1.2.a	Multiply multi-digit whole numbers using the standard algorithm. *Extended: Multiply a two-digit number by a single-digit number.*		0 — 2	0 — 1	0 — 1	0 — 4

MA 5.1.2.b	Divide four-digit whole numbers by a two-digit divisor, with and without remainders using the standard algorithm. *Extended: Divide a two-digit whole number by a single-digit number with no remainder.*		0	—	2	0	—	1	0	—	1	0	—	4
MA 5.1.2.c	Multiply a whole number by a fraction or a fraction by a fraction using models and visual representations. *Extended: Multiply 1/3, 1/2, or 1/4 by 2, 3, and 4.*		0	—	2	0	—	1	0	—	1	0	—	4
MA 5.1.2.d	Divide a unit fraction by a whole number and a whole number by a unit fraction. *Extended: Divide a whole number by 1/3, 1/2, or 1/4 using a visual model (e.g., 3 divided by one-half).*		0	—	2	0	—	1	0	—	1	0	—	4
MA 5.1.2.h	Add and subtract fractions and mixed numbers with unlike denominators. *Extended: Add and subtract fractions with like denominators using a visual model without regrouping.*		0	—	2	0	—	1	0	—	1	0	—	4
MA 5.1.2.j	Multiply and divide by powers of 10. *Extended: Multiply a one-digit whole number by 100.*		0	—	2	0	—	1	0	—	1	0	—	4

MA 5.2	**ALGEBRA: Students will communicate algebraic concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.**					
MA 5.2.1	**Algebraic Relationships: Students will demonstrate, represent, and show relationships with expressions and equations.**	**Max DOK Level**	**DOK 1 Stage 1 Stage 2**	**DOK 1 Stage 3**	**DOK 2 Stage 4**	**Item Total**
MA 5.2.1.a	Form ordered pairs from a rule such as y=2x, and graph the ordered pairs on a coordinate plane. *Extended: Identify the location of the ordered pairs on a coordinate plane (1st quadrant).*		0 — 2	0 — 1	0 — 1	0 — 4
MA 5.2.2	**Algebraic Processes: Students will apply the operational properties when evaluating expressions and solving equations.**	**Max DOK Level**	**DOK 1 Stage 1 Stage 2**	**DOK 1 Stage 3**	**DOK 2 Stage 4**	**Item Total**
MA 5.2.2.a	Interpret and evaluate numerical or algebraic expressions using order of operations (excluding exponents). *Extended: Evaluate a numerical expression with addition or subtraction and multiplication, 1–5.*		0 — 2	0 — 1	0 — 1	0 — 4
MA 5.2.3	**Applications: Students will solve real-world problems involving equations with fractions and mixed numbers.**	**Max DOK Level**	**DOK 1 Stage 1 Stage 2**	**DOK 1 Stage 3**	**DOK 2 Stage 4**	**Item Total**
MA 5.2.3.a	Solve real-world problems involving addition and subtraction of fractions and mixed numbers with like and unlike denominators. *Extended: Solve real-world problems with addition or subtraction of fractions limited to like denominators without regrouping involving halves, thirds, and fourths.*		0 — 2	0 — 1	0 — 1	0 — 4

MA 5.3	**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 5.3.1	**Characteristics: Students will identify and describe geometric characteristics and create two- and three-dimensional shapes.**	**Max DOK Level**	**DOK 1 Stage 1 Stage 2**			**DOK 1 Stage 3**			**DOK 2 Stage 4**			**Item Total**		
MA 5.3.1.a	Identify three-dimensional figures including cubes, cones, pyramids, prisms, spheres, and cylinders. *Extended: Identify three-dimensional models limited to cube, cylinder, and cone.*		0	—	2	0	—	1	0	—	1	0	—	4
MA 5.3.1.b	Identify faces, edges, and vertices of rectangular prisms. *Extended: Identify the faces, edges, and vertices of a cube.*		0	—	2	0	—	1	0	—	1	0	—	4
MA 5.3.1.c	Justify the classification of two-dimensional figures based on their properties. *Extended: Sort triangles, rectangles, and squares by number of sides and/or angles.*		0	—	2	0	—	1	0	—	1	0	—	4
MA 5.3.2	**Coordinate Geometry: Students will determine location, orientation, and relationships on the coordinate plane.**	**Max DOK Level**	**DOK 1 Stage 1 Stage 2**			**DOK 1 Stage 3**			**DOK 2 Stage 4**			**Item Total**		
MA 5.3.2.b	Graph and name points in the first quadrant of the coordinate plane using ordered pairs of whole numbers. *Extended: Identify the x- or y-coordinate of whole-numbered points in quadrant I.*		0	—	2	0	—	1	0	—	1	0	—	4
MA 5.3.3	**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 5.3.3.b	Use concrete models to measure the volume of rectangular prisms in cubic units by counting cubic units. *Extended: Find the volume of a rectangular prism by counting unit cubes.*		0	—	2	0	—	1	0	—	1	0	—	4

MA 5.4	**DATA: Students will communicate data analysis/probability concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.**																						
MA 5.4.1	**Representations: Students will create displays that represent data.**																						
MA 5.4.2	**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 5.4.2.a	Use observations, surveys, and experiments to collect, represent, and interpret the data using tables (e.g., frequency charts) and bar graphs. *Extended: Interpret information in a bar graph using at least two data points.*				0	—	2			0	—	1		0	—	1		0	—	4			
MA 5.4.2.b	Formulate questions that can be addressed with data and make predictions about the data. *Extended: Solve a problem with addition or subtraction of whole numbers using information from a bar graph.*				0	—	2			0	—	1		0	—	1		0	—	4			
MA 5.4.3	**Probability: Students will interpret and apply concepts of probability.**																						