

NSCAS Alternate Math Table of Specifications - Grade 3

| MA 3.1 | NUMBER: Students will communicate number sense concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines. | | | | | |
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| MA 3.1.1 | Numeric Relationships: Students will demonstrate, represent, and show relationships among whole numbers and simple fractions 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 3.1.1.a | Read, write and demonstrate multiple equivalent representations for numbers up to 100,000 using objects, visual representations, including standard form, word form, expanded form, and expanded notation. <i>Extended: Read, write, and demonstrate whole numbers up to 20 that are equivalent representations including visual models, standard form, and word form.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.1.1.b | Compare whole numbers through the hundred thousands and represent the comparisons using the symbols $>$, $<$ or $=$. <i>Extended: Compare and order whole numbers, 1-20.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.1.1.c | Round a whole number to the tens or hundreds place, using place value understanding or a visual representation. <i>Extended: Identify a number closer to a given number on a number line, 1-20.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.1.1.d | Represent and understand a fraction as a number on a number line. <i>Extended: Represent halves and wholes on a number line.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.1.1.e | Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. <i>Extended: Given a model, represent a whole number (1–3) as a fraction with a denominator of 2, 3, or 4.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.1.1.g | Find parts of a whole and parts of a set using visual representations. <i>Extended: Identify parts of a set as one-half, one-fourth, or the whole of the set, limited to four objects.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |

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| MA 3.1.1.i | Compare and order fractions having the same numerators or denominators using visual representations, comparison symbols, and verbal reasoning. <i>Extended: Use a model to compare unit fractions one-half, one-third, and one-fourth.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.1.2 | Operations: Students will demonstrate the meaning of multiplication and division with whole numbers and compute accurately. | Max DOK Level | DOK 1 Stage 1 Stage 2 | DOK 1 Stage 3 | DOK 2 Stage 4 | Item Total |
| MA 3.1.2.a | Add and subtract within 1,000 with or without regrouping. <i>Extended: Add and subtract, through 20 without regrouping.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.1.2.c | Use drawings, words, arrays, symbols, repeated addition, equal groups, and number lines to explain the meaning of multiplication. <i>Extended: Use a model to show multiplication as repeat addition with a product no greater than 20.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.1.2.e | Multiply one digit whole numbers by multiples of 10 in the range of 10 to 90. <i>Extended: Multiply one and two by ten, twenty, and thirty up to 60.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.1.2.f | Use objects, drawings, arrays, words and symbols to explain the relationship between multiplication and division (e.g., if $3 \times 4 = 12$ then $12 \div 3 = 4$). <i>Extended: Count the number of twos in four, six, and eight and the number of threes in six and nine, using a model.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |

| MA 3.2 | ALGEBRA: Students will communicate algebraic concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines. | | | | | |
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| MA 3.2.1 | 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 3.2.1.a | Identify arithmetic patterns (including patterns in the addition or multiplication tables) using properties of operations. <i>Extended: Identify the next term in numeric and non-numeric AB patterns.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.2.1.b | Interpret a multiplication equation as equal groups (e.g., interpret 4×6 as the total number of objects in four groups of six objects each). Represent verbal statements of equal groups as multiplication equations. <i>Extended: Identify a multiplication equation as representing equal groups up to 20.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.2.2 | Algebraic Processes: Student will apply the operational properties when multiplying and dividing. | Max DOK Level | DOK 1 Stage 1 Stage 2 | DOK 1 Stage 3 | DOK 2 Stage 4 | Item Total |
| MA 3.2.2.b | Solve one-step whole number equations involving addition, subtraction, multiplication, or division, including the use of a letter to represent the unknown quantity. <i>Extended: Solve a one-step equation for sums and differences 0–9.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.2.3 | Applications: Students will solve real-world problems involving equations with whole numbers. | Max DOK Level | DOK 1 Stage 1 Stage 2 | DOK 1 Stage 3 | DOK 2 Stage 4 | Item Total |
| MA 3.2.3.a | Solve real-world problems involving two-step equations (involving two operations) involving whole numbers using addition and subtraction. <i>Extended: Solve a one-step real-world problem using addition or subtraction 0–9.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.2.3.b | Write an equation (e.g., one operation, one variable) to represent real-world problems involving whole numbers. <i>Extended: Identify a one-step equation that represents a real-world problem with a variable limited to addition or subtraction with sums and differences 0–9.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |

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| MA 3.3 | 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 3.3.1 | 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 3.3.1.a | Identify the number of sides, angles, and vertices of two-dimensional shapes. <i>Extended: Identify the number of sides or angles in a regular polygon.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.3.1.b | Sort quadrilaterals into categories (e.g., rhombuses, squares, and rectangles). <i>Extended: Identify two-dimensional shapes, circles, triangles, rectangles, or squares from a collection of circles, rectangles, and squares.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.3.1.c | Draw lines to separate two-dimensional figures into equal areas, and express the area of each part as a unit fraction of the whole. <i>Extended: Identify a line that separates a symmetric two-dimensional shape into halves.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.3.2 | Coordinate Geometry: Students will determine location, orientation, and relationships on the coordinate plane. | | | | | |
| MA 3.3.3 | 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 3.3.3.a | Find the perimeter of polygons given the side lengths, and find an unknown side length. <i>Extended: Find the perimeter of a rectangle given the side lengths and a figure.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.3.3.b | Tell and write time to the minute using both analog and digital clocks. <i>Extended: Tell time to the hour.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.3.3.c | Solve real-world problems involving addition and subtraction of time intervals and find elapsed time. <i>Extended: Add whole numbers of hours to find elapsed time.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |

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| MA 3.3.3.e | Estimate and measure length to the nearest half inch, quarter inch, and centimeter. <i>Extended: Measure length to the nearest inch using a model of an object.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.3.3.g | Find the area of a rectangle with whole-number side lengths by modeling with unit squares, and show that the area is the same as would be found by multiplying the side lengths. <i>Extended: Find the area of a square by counting whole number unit squares.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.3.3.h | Identify and draw rectangles with the same perimeter and different areas or with the same area and different perimeters. <i>Extended: Identify congruent non-square rectangles.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |

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| MA 3.4 | DATA: Students will communicate data analysis/probability concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines. | | | | | |
| MA 3.4.1 | 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 3.4.1.a | Create scaled pictographs and scaled bar graphs to represent a data set—including data collected through observations, surveys, and experiments—with several categories. <i>Extended: Identify a characteristic of a bar graph or a pictograph. (e.g., quantities, comparisons)</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.4.1.b | Represent data using line plots where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. <i>Extended: Identify the scale of a bar graph and/or the key of a pictograph.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.4.2 | 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 3.4.2.a | Solve problems and make simple statements about quantity differences (e.g., how many more and how many less) using information represented in pictographs and bar graphs. <i>Extended: Solve a problem using a bar graph or a pictograph.</i> | | 0 – 2 | 0 – 1 | 0 – 1 | 0 – 4 |
| MA 3.4.3 | Probability: Students will interpret and apply concepts of probability. | | | | | |