BRIDGES IN MATHEMATICS

Bridges Second Edition

CORRELATIONS

Mathematics Standards of Learning for Virginia Public Schools

GRADE 3

3 Number & Number Sense

Standard	Descriptor	Citations
3.NS.1 The student will use place value understanding to read, write, and determine the place and value of each digit in a whole number, up to six digits, with and without models. The student will:		
3.NS.1.a	Read and write six-digit whole numbers in standard form, expanded form, and word form.	**Bridges in Mathematics** Teachers Guide: Unit 3: M3–S2, pp. 8–12 **Number Corner** Teachers Guide: September: pp. 38–41
3.NS.1.b	Apply patterns within the base 10 system to determine and communicate, orally and in written form, the place and value of each digit in a six-digit whole number (e.g., in 165,724, the 5 represents 5 thousands and its value is 5,000).	**Bridges in Mathematics** Teachers Guide: Unit 3: M3–S2, pp. 8–12
3.NS.1.c	Compose, decompose, and represent numbers up to 9,999 in multiple ways, according to place value (e.g., 256 can be 1 hundred, 14 tens, 16 ones, but also 25 tens, 6 ones), with and without models.	**Bridges in Mathematics** Teachers Guide: Unit 3: M3–S3, pp. 8–12 **Number Corner** Teachers Guide: September: pp. 38–41; pp. 42

Standard	Descriptor	Citations
3.NS.2 The student will demonstrate an understanding of the base 10 system to compare and order whole numbers up to 9,999. The student will:		
3.NS.2.a	Compare two whole numbers, each 9,999 or less, using symbols (>, <, =, ≠) and/or words (greater than, less than, equal to, not equal to), with and without models.	**Bridges in Mathematics** Teachers Guide: Unit 3: M3–S2, pp. 11
3.NS.2.b	Order up to three whole numbers, each 9,999 or less, represented with and without models, from least to greatest and greatest to least.	This standard is beyond the scope of the program.

Standard	Descriptor	Citations
3.NS.3 The student will use mathematical reasoning and justification to represent and compare fractions (proper and improper) and mixed numbers with denominators of 2, 3, 4, 5, 6, 8, and 10), including those in context. The student will:		
	3.NS.3.a Represent, name, and write a given fraction (proper or improper) or mixed number with denominators of 2, 3, 4, 5, 6, 8, and 10 using:	
3.NS.3.a.i	region/area models (e.g., pie pieces, pattern blocks, geoboards);	**Bridges in Mathematics** Teachers Guide: Unit 4: M3–S1, pp. 4–6; M3–S2, pp. 10–11; M3–S3, pp. 16–19 Unit 6: M4–S2, pp. 10–12 Unit 7: M4–S2, pp. 12–14
3.NS.3.a.ii	length models (e.g., paper fraction strips, fraction bars, rods, number lines); and	**Bridges in Mathematics** Teachers Guide: Unit 4: M3–S2, pp. 12–13; M3–S4, pp. 24–27; M3–S5, pp. 30–32; Unit 7: M4–S1, pp. 4–6 **Number Corner** Teachers Guide: January: pp. 28–30 February: p. 31
3.NS.3.a.iii	set models (e.g., chips, counters, cubes).	**Bridges in Mathematics** Teachers Guide: Unit 7: M3–S2, pp. 14–18; M3–S3, pp. 20–22
3.NS.3.b	Identify a fraction represented by a model as the sum of unit fractions.	**Bridges in Mathematics** Teachers Guide: Unit 4: M3–S2, pp. 10–11; M3–S3, pp. 16–19; M3–S4, pp. 27 Unit 7: M3–S1, pp. 6–9; M3–S2, pp. 12–14; M3–S3, pp. 20–22 **Number Corner** Teachers Guide: November: pp. 15–16 January: pp. 28–30

Standard	Descriptor	Citations
3.NS.3 The student will use mathematical reasoning and justification to represent and compare fractions (proper and improper) and mixed numbers with denominators of 2, 3, 4, 5, 6, 8, and 10), including those in context. The student will:		
3.NS.3.c	Use a model of a fraction greater than one to count the fractional parts to name and write it as an improper fraction and as a mixed number (e.g., 1/4, 2/4, 3/4, 4/4, 5/4 = 1 1/4).	**Number Corner** Teachers Guide: November: pp. 17–18; 18–19 February: pp. 19–20; p. 32 March: pp. 28–30 May: pp. 34–36; 36–38; 38–39
3.NS.3.d	Compose and decompose fractions (proper and improper) with denominators of 2, 3, 4, 5, 6, 8, and 10 in multiple ways (e.g., 7/4 = 4/4 + 3/4 or 4/6 = 3/6 + 1/6 = 2/6 + 2/6) with models.	**Bridges in Mathematics** Teachers Guide: Unit 4: M3–S5, pp. 32–33 Unit 6: M4–S2, pp. 11 Unit 7: M3–S5, pp. 30–32 **Number Corner** Teachers Guide: April: pp. 32–33; pp. 34–35; pp. 35–36 May: pp. 34–36; 37–39
3.NS.3.e	Compare a fraction, less than or equal to one, to the benchmarks of 0, 1/2, and 1 using area/region models, length models, and without models.	**Bridges in Mathematics** Teachers Guide: Unit 4: M3 –S4, pp. 25–28; M3–S5, pp. 30–32 **Number Corner** Teachers Guide: January: pp. 28–30

Standard	Descriptor	Citations
3.NS.3 The student will use mathematical reasoning and justification to represent and compare fractions (proper and improper) and mixed numbers with denominators of 2, 3, 4, 5, 6, 8, and 10), including those in context. The student will:		
3.NS.3.f	Compare two fractions (proper or improper) and/or mixed numbers with like numerators of 2, 3, 4, 5, 6, 8, and 10 (e.g., 2/3 > 2/8) using words (*greater than, less than, equal to*) and/or symbols (>, <, =), using area/ region models, length models, and without models.	**Bridges in Mathematics** Teachers Guide: Unit 1: M1–S3, pp. 17–20; M2–S1, pp. 3–10; S3, pp. 19–24; M3–S2, pp. 9–15; S3, pp. 17–25; S4, pp. 27–33; M4–S3, pp. 11–16; S4, pp. 1 Unit 4: M3–S2, pp. 11–13; M3–S3, pp. 19–20; M3–S5, pp. 30–32 Unit 7: M3–S1, pp. 7–9; M4–S2, pp. 13 **Number Corner** Teachers Guide: January: pp. 30–31; p. 32 February: p. 30; p. 31
3.NS.3.g	Compare two fractions (proper or improper) and/or mixed numbers with like denominators of 2, 3, 4, 5, 6, 8, and 10 (e.g., 3/6 < 4/6) using words (greater than, less than, equal to) and/or symbols (>, <, =), using area/ region models, length models, and without models.	**Bridges in Mathematics** Teachers Guide: Unit 4: M3–S3, pp. 19–20 Unit 7: M3–S1, pp. 7–9; M4–S2, pp. 13 **Number Corner** Teachers Guide: January: pp. 30–31; p. 32 February: p. 30; p. 31
3.NS.3.h	Represent equivalent fractions with denominators of 2, 3, 4, 5, 6, 8, or 10, using region/ area models and length models.	**Bridges in Mathematics** Teachers Guide: Unit 6: M4–S2, pp. 10–12; M4–S3, pp. 16–18 Unit 7: M3–S4, pp. 24–27; M3–S5, pp. 30–33; M4–S1, pp. 4–7; M4–S2, pp. 12–14; M4–S3, pp. 17–19 **Number Corner** Teachers Guide: February: pp. 17–19

Standard	Descriptor	Citations
3.NS.4 The student will solve problems, including those in context, that involve counting, comparing, representing, and making change for money amounts up to $5.00. The student will:		
3.NS.4.a	Determine the value of a collection of bills and coins whose total is $5.00 or less.	This standard is beyond the scope of the program.
3.NS.4.b	Construct a set of bills and coins to total a given amount of money whose value is $5.00 or less.	This standard is beyond the scope of the program.
3.NS.4.c	Compare the values of two sets of coins or two sets of bills and coins, up to $5.00, with words (greater than, less than, equal to) and/or symbols (>, <, =) using concrete or pictorial models.	This standard is beyond the scope of the program.
3.NS.4.d	Solve contextual problems to make change from $5.00 or less by using counting on or counting back strategies with concrete or pictorial models.	This standard is beyond the scope of the program.

3 Computation & Estimation

Standard	Descriptor	Citations
3.CE.1 The student will estimate, represent, solve, and justify solutions to single-step and multistep problems, including those in context, using addition and subtraction with whole numbers where addends and minuends do not exceed 1,000. The student will:		
3.CE.1.a	Determine and justify whether an estimate or an exact answer is appropriate when solving single-step and multistep contextual problems involving addition and subtraction, where addends and minuends do not exceed 1,000.	**Bridges in Mathematics** Teachers Guide: Unit 3: M3–S3, pp. 14–16; M3–S4, pp. 18–21
3.CE.1.b	Apply strategies (e.g., rounding to the nearest 10 or 100, using compatible numbers, using other number relationships) to estimate a solution for single-step or multistep addition or subtraction problems, including those in context, where addends or minuends do not exceed 1,000.	**Bridges in Mathematics** Teachers Guide: Unit 3: M1–S3, pp. 16; M2–S3, pp. 20; M2–S4, pp. 24–27; M3–S4, pp 18–19 **Number Corner** Teachers Guide: January: pp. 36–38

Standard	Descriptor	Citations
3.CE.1 The student will estimate, represent, solve, and justify solutions to single-step and multistep problems, including those in context, using addition and subtraction with whole numbers where addends and minuends do not exceed 1,000. The student will:		
3.CE.1.c	Apply strategies (e.g., place value, properties of addition, other number relationships) and algorithms, including the standard algorithm, to determine the sum or difference of two whole numbers where addends and minuends do not exceed 1,000.	**Bridges in Mathematics** Teachers Guide: Unit 3: M1–S5, pp. 26–29; M2–S1, pp. 5–8; M2–S4, pp. 24–27; M3–S4, pp 19–21; M4–S1, pp. 4–8; M4–S2, pp. 10–13; M4–S3, pp. 16–20; M4–S4, pp. 22–26
3.CE.1.d	Identify and use the appropriate symbol to distinguish between expressions that are equal and expressions that are not equal (e.g., 256 – 13 = 220 + 23; 457 + 100 ≠ 557 + 100).	This standard is beyond the scope of the program.
3.CE.1.e	Represent, solve, and justify solutions to single-step and multistep contextual problems involving addition and subtraction with whole numbers where addends and minuends do not exceed 1,000.	**Bridges in Mathematics** Teachers Guide: Unit 1: M4–S5, pp. 24–25 Unit 3: M1–S5, pp. 26–27; M2–S1, pp. 5–8; M3–S4, pp. 18–21; M4–S1, pp. 4–8; M4 –S3, pp. 16–20 **Number Corner** Teachers Guide: January: pp. 34–39

Standard	Descriptor	Citations
3.CE.2 The student will recall with automaticity multiplication and division facts through 10 × 10; and represent, solve, and justify solutions to single-step contextual problems using multiplication and division with whole numbers. The student will:		
3.CE.2.a	Represent multiplication and division of whole numbers through 10 × 10, including in a contextual situation, using a variety of approaches and models (e.g., repeated addition/ subtraction, equal-sized groups/sharing, arrays, equal jumps on a number line, using multiples to skip count).	**Bridges in Mathematics** Teachers Guide: Unit 2: M1–S3, pp. 18–20; M1–S5, pp. 29–33; M2–S2, pp. 8–15; M2–S3, pp. 18–23; M2–S4, pp. 26–31; M2–S5, pp. 34–37 Unit 5: M1–S2, pp. 8– 12; M1–S3, pp. 15–19
3.CE.2.b	Use inverse relationships to write the related facts connected to a given model for multiplication and division of whole numbers through 10 × 10.	**Bridges in Mathematics** Teachers Guide: Unit 5: M1–S2, pp. 10–11; M1–S3, pp. 15–19; M1–S4, pp. 22–25; M1–S5, pp. 28–30; M2–S1, pp. 4–6; M2–S3, pp. 14–16; M3–S4, pp. 21–23
3.CE.2.c	Apply strategies (e.g., place value, the properties of multiplication and/or addition) when multiplying and dividing whole numbers.	**Bridges in Mathematics** Teachers Guide: Unit 2: M3–S2, pp. 14–16; M3–S3, pp. 18–19; M3–S4, pp. 22–24 Unit 5: M1–S4, pp. 22–26; M2–S1, pp. 4–6; M2–S3, pp. 14–16; M3–S3, pp. 14–17 Unit 7: M1–S3, pp. 14–18

Standard	Descriptor	Citations
3.CE.2 The student will recall with automaticity multiplication and division facts through 10 × 10; and represent, solve, and justify solutions to single-step contextual problems using multiplication and division with whole numbers. The student will:		
3.CE.2.d	Demonstrate fluency with multiplication facts through 10 × 10 by applying reasoning strategies (e.g., doubling, add-a-group, subtract-a-group, near squares, and inverse relationships).	**Bridges in Mathematics** Teachers Guide: Unit 2: M3–S1, pp. 5–6; M3–S3, pp. 18–20; M3–S4, pp. 23–25 Unit 5: M2–S3, pp.14–16; M2–S4, pp. 18–20 Unit 7: M1–S2, pp. 8–10; M1–S3, pp. 13–18; M1–S4, pp. 19–24
3.CE.2.e	Represent, solve, and justify solutions to single-step contextual problems that involve multiplication and division of whole numbers through 10 × 10.	**Bridges in Mathematics** Teachers Guide: Unit 2: M1–S5, pp. 29–34; M2–S3, pp. 21–23; M2–S4, pp. 28–31; M2–S5, pp. 36–39; M3–S3, pp. 18–19 Unit 5: M1–S3, pp. 23–26; M2–S3, pp. 14–16; M3–S1, pp. 4–7
3.CE.2.f	Recall with automaticity the multiplication facts through 10 × 10 and the corresponding division facts.	**Bridges in Mathematics** Teachers Guide: Unit 5: M2–S3, pp. 14–16; M3–S4, pp. 21–23 Unit 7: M1–S2, pp. 8–10; M1–S3, pp. 13–18; M1–S4, pp. 19–24; M2–S3, pp. 18–22; M2–S5, pp. 29–33 **Number Corner** Teachers Guide: April: pp. 22–26

Standard	Descriptor	Citations
3.CE.2 The student will recall with automaticity multiplication and division facts through 10 × 10; and represent, solve, and justify solutions to single-step contextual problems using multiplication and division with whole numbers. The student will:		
3.CE.2.g	Create an equation to represent the mathematical relationship between equivalent expressions using multiplication and/or division facts through 10 × 10 (e.g., 4 × 3 = 14 – 2, 35 ÷ 5 = 1 × 7).	**Bridges in Mathematics** Teachers Guide: Unit 2: M2–S2, pp. 14; M2–S4, pp. 26–27; M3–S4, pp. 22–23 Unit 5: M2–S4, pp. 18–20 Unit 7: M1–S3, pp. 14–16 **Number Corner** Teachers Guide: December: pp. 34–35; pp. 36–38

3 Measurement & Geometry

Standard	Descriptor	Citations
3.MG.1 The student will reason mathematically using standard units (U.S. Customary and metric) with appropriate tools to estimate and measure objects by length, weight/mass, and liquid volume to the nearest half or whole unit. The student will:		
3.MG.1.a	Justify whether an estimate or an exact measurement is needed for a contextual situation and choose an appropriate unit.	**Bridges in Mathematics** Teachers Guide: Unit 4: M4–S2, pp. 9–10
3.MG.1.b	Estimate and measure:	
3.MG.1.b.i	length of an object to the nearest U.S. Customary unit (half inch, inch, foot, yard) and metric unit (centimeter, meter);	**Bridges in Mathematics** Teachers Guide: Unit 1: M3–S1, pp. 5–7 Unit 4: M2–S2, pp. 8–10; M4–S1, pp. 5–6; M4–S2, pp. 9–11 Unit 8: M1–S4, pp. 21; M2–S3, pp. 17–19; M3–S5, pp. 27–29
3.MG.1.b.ii	weight/mass of an object to the nearest U.S. Customary unit (pound) and metric unit (kilogram); and	**Bridges in Mathematics** Teachers Guide: Unit 4: M1–S4, pp. 20– 22; M1–S5, pp. 26–28; M1–S6, pp. 32–35; M2–S2, pp. 8–10 Unit 8: M1–S4, pp. 21–23; M3–S2, pp. 12–13; M3–S3, pp. 16–17 **Number Corner** Teachers Guide: December: pp.17–20; pp. 21–22
3.MG.1.b.iii	liquid volume to the nearest U.S. Customary unit (cup, pint, quart, gallon) and metric unit (liter).	**Bridges in Mathematics** Teachers Guide: Unit 4: M1–S4, pp. 23–24; M2–S1, pp. 4–6; M2–S2, pp. 8–10; M4–S4, pp. 17–19 Unit 8: M2–S2, pp. 9–13; M4–S2, pp. 5–7 **Number Corner** Teachers Guide: October: pp. 23–24; pp. 25–26

Standard	Descriptor	Citations
3.MG.1 The student will reason mathematically using standard units (U.S. Customary and metric) with appropriate tools to estimate and measure objects by length, weight/mass, and liquid volume to the nearest half or whole unit. The student will:		
3.MG.1.c	Compare estimates of length, weight/mass, or liquid volume with the actual measurements.	**Bridges in Mathematics** Teachers Guide: Unit 4: M1–S6, pp. 32–25; M2–S2, pp. 8–10 Unit 8: M3–S3, pp. 16–17; M3–S5, 27 **Number Corner** Teachers Guide: October: p. 26 December: pp. 21–22

Standard	Descriptor	Citations
3.MG.2 The student will reason mathematically using standard units (U.S. Customary and metric) with appropriate tools to estimate and measure objects by length, weight/mass, and liquid volume to the nearest half or whole unit. The student will:		
	3.MG.1.a Solve problems, including those in context, involving area:	
3.MG.2.a.i	describe and give examples of area as a measurement in contextual situations; and	**Bridges in Mathematics** Teachers Guide: Unit 5: M4–S2, pp. 10–11; M4–S3, pp. 14–16; M4–S5, pp. 24 Unit 6: M3–S2, pp. 10–12; M3–S3, pp. 16–19; M4–S3, pp. 16–18 **Number Corner** Teachers Guide: March: pp. 15–21
3.MG.2.a.ii	estimate and determine the area of a given surface by counting the number of square units, describe the measurement (using the number and unit) and justify the measurement.	**Bridges in Mathematics** Teachers Guide: Unit 2: M2–S5, pp. 36–39 Unit 5: M4–S1, pp. 4–6; M4–S2, pp. 10–11; M4–S3, pp. 14–16; M4–S4, pp. 18–21 Unit 6: M3–S2, pp. 10–12; M3–S3, pp. 16–19; M4–S3, pp. 16–18

Standard	Descriptor	Citations
3.MG.2 The student will reason mathematically using standard units (U.S. Customary and metric) with appropriate tools to estimate and measure objects by length, weight/mass, and liquid volume to the nearest half or whole unit. The student will:		
	3.MG.1.b Solve problems, including those in context, involving perimeter:	
3.MG.2.b.i	describe and give examples of perimeter as a measurement in contextual situations;	**Bridges in Mathematics** Teachers Guide: Unit 6: M3–S1, pp. 4–7; M3–S2, pp. 10–12; M3–S3, pp. 16–19; M3–S4, pp. 22–24 Unit 8: M2–S1, pp. 4–7; M3–S4 **Number Corner** Teachers Guide: February: pp. 9–10 March: pp. 15–21
3.MG.2.b.ii	estimate and measure the distance around a polygon (with no more than six sides) to determine the perimeter and justify the measurement; and	**Bridges in Mathematics** Teachers Guide: Unit 6: M3–S1, pp. 4–7; M3–S2, pp. 10–12; M3–S3, pp. 16–19; M3–S4, pp. 22–24 **Number Corner** Teachers Guide: February: pp. 9–10 March: pp. 15–21
3.MG.2.b.iii	given the lengths of all sides of a polygon (with no more than six sides), determine its perimeter and justify the measurement.	**Bridges in Mathematics** Teachers Guide: Unit 6: M3–S1, pp. 4–7; M3–S3, pp. 16–19; M3–S4, pp. 22–24; M3–S5, pp. 26–27 **Number Corner** Teachers Guide: March: pp. 15–21

Standard	Descriptor	Citations
3.MG.3 The student will demonstrate an understanding of the concept of time to the nearest minute and solve single-step contextual problems involving elapsed time in one-hour increments within a 12-hour period. The student will:		
3.MG.3.a	Tell and write time to the nearest minute, using analog and digital clocks.	**Bridges in Mathematics** Teachers Guide: Unit 4: M1–S2, pp. 8–11; M2–S3, pp. 13–15 Unit 8: M2–S1, pp. 4–7; M3–S2, pp. 12–13 **Number Corner** Teachers Guide: January: pp. 16–21 March: pp. 9–10
3.MG.3.b	Match a written time (e.g., 4:38, 7:09, 12:51) to the time shown on analog and digital clocks to the nearest minute.	**Bridges in Mathematics** Teachers Guide: Unit 4: M1–S2, pp. 8–9 **Number Corner** Teachers Guide: January: pp. 16–17 March: pp. 8–10

Standard	Descriptor	Citations
3.MG.3 The student will demonstrate an understanding of the concept of time to the nearest minute and solve single-step contextual problems involving elapsed time in one-hour increments within a 12-hour period. The student will:		
	3.MG.3.c Solve single-step contextual problems involving elapsed time in one-hour increments, within a 12-hour period (within a.m. or within p.m.) when given:	
3.MG.3.c.i	the starting time and the ending time, determine the amount of time that has elapsed;	**Bridges in Mathematics** Teachers Guide: Unit 4: M1–S3, pp. 15–18 Unit 8: M2–S1, pp. 4–7 **Number Corner** Teachers Guide: January: pp. 18–22 March: pp. 8–10
3.MG.3.c.ii	the starting time and amount of elapsed time in one-hour increments, determine the ending time; or	**Bridges in Mathematics** Teachers Guide: Unit 4: M1–S3, pp. 15–18 **Number Corner** Teachers Guide: March: pp. 8–10
3.MG.3.c.iii	the ending time and the amount of elapsed time in one-hour increments, determine the starting time.	This standard is beyond the scope of the program.

Standard	Descriptor	Citations
3.MG.4 The student will identify, describe, classify, compare, combine, and subdivide polygons. The student will:		
3.MG.4.a	Describe a polygon as a closed plane figure composed of at least three line segments that do not cross.	**Bridges in Mathematics** Teachers Guide: Unit 6: M1–S2, pp. 8–9; M1–S2, pp. 12–13; M1–S5, pp. 21–23; M2–S1, pp. 4
3.MG.4.b	Classify figures as polygons or not polygons and justify reasoning.	**Bridges in Mathematics** Teachers Guide: Unit 6: M1–S2, pp. 12–13; M1–S5, pp. 21–23; M2–S1, pp. 4
3.MG.4.c	Identify and describe triangles, quadrilaterals, pentagons, hexagons, and octagons in various orientations, with and without contexts.	**Bridges in Mathematics** Teachers Guide: Unit 6: M1–S2, pp. 12–13; M1–S3, pp. 16–18; M1–S5, pp. 21–23; M2–S1, pp. 4–8; M2–S2, pp. 10–12; M2–S3, pp. 14–16; M2–S4, pp. 22–24; M2–S5, pp. 26–28
3.MG.4.d	Identify and name examples of polygons (triangles, quadrilaterals, pentagons, hexagons, octagons) in the environment.	**Bridges in Mathematics** Teacher Guides: Unit 8: M2–S5, pp. 26–28

Standard	Descriptor	Citations
3.MG.4 The student will identify, describe, classify, compare, combine, and subdivide polygons. The student will:		
3.MG.4.e	Classify and compare polygons (triangles, quadrilaterals, pentagons, hexagons, octagons).	**Bridges in Mathematics** Teachers Guide: Unit 6: M1–S2, pp. 12–13; M1–S3, pp. 16–18; M1–S5, pp. 21–23; M2–S1, pp. 4–8; M2–S2, pp. 10–12; M2–S3, pp. 14–16; M2–S4, pp. 22–24; M2–S5, pp. 26–28
3.MG.4.f	Combine no more than three polygons, where each has three or four sides, and name the resulting polygon (triangles, quadrilaterals, pentagons, hexagons, octagons).	**Bridges in Mathematics** Teachers Guide: Unit 4: M3–S3, pp. 16–18 Unit 6: M1–S5, pp. 21–23; M1–S5, pp. 24 Unit 8: M2–S5, pp. 26–28
3.MG.4.g	Subdivide a three-sided or four-sided polygon into no more than three parts and name the resulting polygons.	**Bridges in Mathematics** Teachers Guide: Unit 4: M3–S3, pp. 16–18 Unit 6: M1–S4, pp. 16–18; M1–S5, pp. 21–23 Unit 8: M2–S2, pp. 13; M2–S5, pp. 26–28

3 Probability & Statistics

Standard	Descriptor	Citations
3.PS.1 The student will apply the data cycle (formulate questions; collect or acquire data; organize and represent data; and analyze data and communicate results) with a focus on pictographs and bar graphs. The student will:		
3.PS.1.a	Formulate questions that require the collection or acquisition of data.	**Bridges in Mathematics** Teachers Guide: Unit 8: M1–S4, pp. 16–18; M1–S4, pp. 22–24; M1–S5, pp. 26–27 **Number Corner** Teachers Guide: September: pp. 22–23
3.PS.1.b	Determine the data needed to answer a formulated question and collect or acquire existing data (limited to 30 or fewer data points for no more than eight categories) using various methods (e.g., polls, observations, tallies).	**Bridges in Mathematics** Teachers Guide: Unit 2: M4–S1, pp. 4–5 Unit 8: M1–S4, pp. 22–24; M1–S5, pp. 26–29 **Number Corner** Teachers Guide: September: pp. 23–25
3.PS.1.c	Organize and represent a data set using pictographs that include an appropriate title, labeled axes, and key. Each pictograph symbol should represent 1, 2, 5 or 10 data points.	**Bridges in Mathematics** Teachers Guide: Unit 1: M1–S2, pp. 10–11 Unit 2: M3–S5, pp. 28–30; M4–S1, pp. 4–5 Unit 8: M2–S4, pp. 22–23 **Number Corner** Teachers Guide: September: pp. 26–28

Standard	Descriptor	Citations
3.PS.1 The student will apply the data cycle (formulate questions; collect or acquire data; organize and represent data; and analyze data and communicate results) with a focus on pictographs and bar graphs. The student will:		
3.PS.1.d	Organize and represent a data set using bar graphs with a title and labeled axes, with and without the use of technology tools. Determine and use an appropriate scale (increments limited to multiples of 1, 2, 5 or 10).	**Bridges in Mathematics** Teachers Guide: Unit 2: M3–S5, pp. 30–31; M4–S1, pp. 5–6; M4–S2, pp. 8–10 Unit 8: M1–S5, pp. 29–31; M2–S4, pp. 23–24; M4–S4, pp. 14–15 **Number Corner** Teachers Guide: September: pp. 18–21 February: pp. 38 May: pp. 19–20

Standard	Descriptor	Citations
3.PS.1 The student will apply the data cycle (formulate questions; collect or acquire data; organize and represent data; and analyze data and communicate results) with a focus on pictographs and bar graphs. The student will:		
	3.PS.1.e Analyze data represented in pictographs and bar graphs, and communicate results orally and in writing:	
3.PS.1.e.i	describe the categories of data and the data as a whole (e.g., data were collected on preferred ways to cook or prepare eggs - scrambled, fried, hard boiled, and egg salad);	**Bridges in Mathematics** Teachers Guide: Unit 2: M4–S1, pp. 4; M4–S2, pp. 8 **Number Corner** Teachers Guide: February: pp. 34–35
3.PS.1.e.ii	identify parts of the data that have special characteristics, including categories with the greatest, the least, or the same (e.g., most students prefer scrambled eggs);	**Bridges in Mathematics** Teachers Guide: Unit 1: M1–S2, pp. 13–15 Unit 2: M3–S5, pp. 29–30; M4–S1, pp. 4–5; M4–S2, pp. 8–10 Unit 8: M2–S4, pp. 23–24 **Number Corner** Teachers Guide: February: pp. 34–35; pp. 36–37 May: pp. 19–20
3.PS.1.e.iii	make inferences about data represented in pictographs and bar graphs;	**Bridges in Mathematics** Teachers Guide: Unit 2: M4–S2, pp. 10 Unit 8: M4–S4, pp. 14–15 **Number Corner** Teachers Guide: February: pp. 36–37

Standard	Descriptor	Citations
3.PS.1 The student will apply the data cycle (formulate questions; collect or acquire data; organize and represent data; and analyze data and communicate results) with a focus on pictographs and bar graphs. The student will:		
	3.PS.1.e Analyze data represented in pictographs and bar graphs, and communicate results orally and in writing:	
3.PS.1.e.iv	use characteristics of the data to draw conclusions about the data and make predictions based on the data (e.g., it is unlikely that a third grader would like hard boiled eggs); and	**Bridges in Mathematics** Teachers Guide: Unit 1: M1–Í2, pp. 15 Unit 8: M3–S5, pp. 28–29; M3–S6, pp. 32–34; M4–S4, pp. 14–15 **Number Corner** Teachers Guide: February: pp. 36–37 May: pp. 19–20; 21–24
3.PS.1.e.v	solve one- and two-step addition and subtraction problems using data from pictographs and bar graphs.	**Bridges in Mathematics** Teachers Guide: Unit 2: M4–S2, pp. 10–11; M4–S3, p. 14 \ Unit 8: M2–S4, pp. 23–24 **Number Corner** Teachers Guide: February: pp. 36–37

3 Patterns, Functions & Algebra

Standard	Descriptor	Citations
3.PFA.1 The student will identify, describe, extend, and create increasing and decreasing patterns (limited to addition and subtraction of whole numbers), including those in context, using various representations. The student will:		
3.PFA.1.a	Identify and describe increasing and decreasing patterns using various representations (e.g., objects, pictures, numbers, number lines).	**Bridges in Mathematics** Teachers Guide: Unit 1: M1–S3, pp. 17–20; M1–S4, pp. 21–26; M2–S1, pp. 3–10; M2–S2, pp. 11–15 Unit 2: M3–S2, pp. 13–16; M3–S3, pp. 18–20; M3–S4, pp. 22–25 **Number Corner** Teachers Guide: September: pp. 8–10
3.PFA.1.b	Analyze an increasing or decreasing pattern and generalize the change to extend the pattern or identify missing terms using various representations.	**Bridges in Mathematics** Teachers Guide: Unit 1: M1–S4, pp. 27–28; M1–S5, pp. 30–34; M2–S1, pp. 3–10; M2–S2, pp. 11–15 Unit 2: M1–S3, pp. 18–20; M3–S2, pp. 13–16; M3–S3, pp. 18–20 **Number Corner** Teachers Guide: September: pp. 10–12
3.PFA.1.c	Solve contextual problems that involve identifying, describing, and extending patterns.	**Bridges in Mathematics** Teachers Guide: Unit 2: M1–S3, pp. 18–20; M3–S1, pp. 4–9; M3–S2, pp. 14–16 **Number Corner** Teachers Guide: October: pp. 8–15

Standard	Descriptor	Citations
3.PFA.1 The student will identify, describe, extend, and create increasing and decreasing patterns (limited to addition and subtraction of whole numbers), including those in context, using various representations. The student will:		
3.PFA.1.d	Create increasing and decreasing patterns using objects, pictures, numbers, and number lines.	**Bridges in Mathematics** Teachers Guide: Unit 2: M2–S1, pp. 4–5; M2–S2, pp. 12–15; M3–S1, pp. 4–9; M3–S2, pp. 13–16 Unit 5: M1–S2, pp. 8–12 Unit 7: M1–S5, pp. 26–28 **Number Corner** Teachers Guide: January: pp. 24–26 February: pp. 23–26 March: pp. 23–25
3.PFA.1.e	Investigate and explain the connection between two different representations of the same increasing or decreasing pattern.	**Bridges in Mathematics** Teachers Guide: Unit 2: M3–S3, pp. 18–20 Unit 8: M2–S1, pp. 4–6