This document identifies bridging standards in the 2016 *Mathematics Standards of Learning.* Bridging standards allow for the identification of content that can be connected when planning instruction and promote deeper student understanding.

Bridge icon Bridging standards (indicated by bold text in the grade level column below) are ones that meet one or more of the following criteria:

* Functions as a bridge to which other content within the grade level/course is connected, either horizontally or vertically;
* Serves as prerequisite knowledge for content to be addressed in future grade levels/courses; or
* Possesses endurance beyond a single unit of instruction within a grade level/course.

The selection of content focus areas, potential connections, and the sequencing of content in this document serve as examples only and are intended to assist with curricular development.

| **Grade 3**  **Content Focus Areas** | **Prerequisite Knowledge**  **(Linked to JIT Quick Checks)**  **Grade 1** | **Prerequisite Knowledge**  **(Linked to JIT Quick Checks)**  **Grade 2** | **Grade 3**  **(Linked to Just in Time Mathematics Quick Checks)** | **.** | **Possible Grade 3 Connections Across Content Focus Areas** | **Possible Future Grade Level/Course Content Connections** |
| --- | --- | --- | --- | --- | --- | --- |
|  | [1.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24334/638085169581170000), [1.5a](https://www.doe.virginia.gov/home/showpublisheddocument/24358/638085189454830000), [1.5b](https://www.doe.virginia.gov/home/showpublisheddocument/24364/638085199487800000) | [2.1a](https://www.doe.virginia.gov/home/showpublisheddocument/24422/), [2.1b](https://www.doe.virginia.gov/home/showpublisheddocument/24426/) | [**3.1a**](https://www.doe.virginia.gov/home/showpublisheddocument/24558/) **Read, write, and identify the place and value of each digit in a six-digit whole number, with and without models** |  | Solving Problems with Addition/Subtraction | Decimal Place Value  (Grade 4) |
| **Using Place Value to Compare/Order Numbers** |  | [2.1a](https://www.doe.virginia.gov/home/showpublisheddocument/24422/), [2.1d](https://www.doe.virginia.gov/home/showpublisheddocument/24434/) | [**3.1b**](https://www.doe.virginia.gov/home/showpublisheddocument/24562/) **Round whole numbers, 9,999 or less, to the nearest ten, hundred, and thousand** |  | Solving Problems with Addition/Subtraction | Round Number through Millions (Grade 4) |
|  | [1.2b](https://www.doe.virginia.gov/home/showpublisheddocument/24336/638085170184000000), [1.2c](https://www.doe.virginia.gov/home/showpublisheddocument/24340/638085171384400000) | [2.1a](https://www.doe.virginia.gov/home/showpublisheddocument/24422/), [2.1c](https://www.doe.virginia.gov/home/showpublisheddocument/24430/) | [**3.1c**](https://www.doe.virginia.gov/home/showpublisheddocument/24566/) **Compare and order whole numbers, each 9,999 or less** |  | Interpret data | Compare/Order Numbers through Millions (Grade 4) |
|  | [1.6](https://www.doe.virginia.gov/home/showpublisheddocument/24366/638085199994530000), [1.7a](https://www.doe.virginia.gov/home/showpublisheddocument/24370/638085200824670000), [1.7b](https://www.doe.virginia.gov/home/showpublisheddocument/24374/638085201853170000) | [2.5a](https://www.doe.virginia.gov/home/showpublisheddocument/24470/), [2.5b](https://www.doe.virginia.gov/home/showpublisheddocument/24474/), [2.6a](https://www.doe.virginia.gov/home/showpublisheddocument/24478/), [2.6b](https://www.doe.virginia.gov/home/showpublisheddocument/24482/) | [**3.3a**](https://www.doe.virginia.gov/home/showpublisheddocument/24582/) **Estimate and determine the sum or difference of two whole numbers** |  | Round Whole Numbers | Compute with Larger Numbers and Decimals (Grade 4) |
| **Solving Addition/ Subtraction Problems with Whole Number** | [1.6](https://www.doe.virginia.gov/home/showpublisheddocument/24366/638085199994530000) | [2.5a](https://www.doe.virginia.gov/home/showpublisheddocument/24470/), [2.6a](https://www.doe.virginia.gov/home/showpublisheddocument/24478/), [2.6b](https://www.doe.virginia.gov/home/showpublisheddocument/24482/), [2.6c](https://www.doe.virginia.gov/home/showpublisheddocument/24486/) | [**3.3b**](https://www.doe.virginia.gov/home/showpublisheddocument/24586/) **Create and solve single-step and multistep practical problems involving sums or differences of two whole numbers, each 9,999 or less** |  | Organize/Interpret Data | Solve problems with Larger Numbers and Decimals (Grade 4) |
|  | [1.13](https://www.doe.virginia.gov/home/showpublisheddocument/24406/638085339767300000), [1.14](https://www.doe.virginia.gov/home/showpublisheddocument/24410/638085347514270000) | [2.16](https://www.doe.virginia.gov/home/showpublisheddocument/24540/) | [**3.16**](https://www.doe.virginia.gov/home/showpublisheddocument/24678/) **Identify, describe, create, and extend patterns found in objects, pictures, numbers and tables** |  | Compare/Order Numbers | Solve Practical Problems; Identify Rule  (Grade 4) |
|  | [1.15](https://www.doe.virginia.gov/home/showpublisheddocument/24414/638085348534230000) | [2.17](https://www.doe.virginia.gov/home/showpublisheddocument/24544/) | [**3.17**](https://www.doe.virginia.gov/home/showpublisheddocument/24682/) **Create equations to represent equivalent mathematical relationships** |  | Compare Numbers | Identify Expressions that are Equal and Not Equal (Grade 4) |
|  | [1.12a](https://www.doe.virginia.gov/home/showpublisheddocument/24400/638085336034670000) | [2.15a](https://www.doe.virginia.gov/home/showpublisheddocument/24532/) | [3.15a](https://www.doe.virginia.gov/home/showpublisheddocument/24670/) Collect, organize, and represent data in pictographs or bar graphs |  | Compare Numbers | Compare Data/ Representations  (Grade 4) |
| **Using Data to Describe My World** | [1.12b](https://www.doe.virginia.gov/home/showpublisheddocument/24402/) | [2.15b](https://www.doe.virginia.gov/home/showpublisheddocument/24536/) | [**3.15b**](https://www.doe.virginia.gov/home/showpublisheddocument/24674/) **Read and interpret data represented in pictographs and bar graphs** |  | Compare Numbers | Make Inferences; Compare Different Representations  (Grade 4) |
|  |  | [2.14](https://www.doe.virginia.gov/home/showpublisheddocument/24528/) | [3.14](https://www.doe.virginia.gov/home/showpublisheddocument/24666/) Investigate and describe the concept of probability as a measurement of chance and list possible outcomes for a single event |  |  | Determine Likelihood of a Simple Event; Represent Probability as a Number Between 0 and 1 (Grade 4) |
|  | [1.1d](https://www.doe.virginia.gov/home/showpublisheddocument/24328/638085163392470000) | [2.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24438/), [2.6b](https://www.doe.virginia.gov/home/showpublisheddocument/24482/) | [**3.4a**](https://www.doe.virginia.gov/home/showpublisheddocument/24596/) **Represent multiplication and division through 10 × 10, using a variety of approaches and models** |  | Equivalent relationships | Use Properties of Multiplication and Division  (Grade 4) |
| **Solving Problems using Multiplication** | [1.1d](https://www.doe.virginia.gov/home/showpublisheddocument/24328/638085163392470000), [1.6](https://www.doe.virginia.gov/home/showpublisheddocument/24366/) | [2.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24438/), [2.6c](https://www.doe.virginia.gov/home/showpublisheddocument/24486/) | [**3.4b**](https://www.doe.virginia.gov/home/showpublisheddocument/24602/) **Create and solve single-step practical problems that involve multiplication and division through 10 x 10** |  | Solve Problems with Addition/Subtraction | Solve Multi-step (12 x 12) Practical Problems  (Grade 4) |
|  | [1.1d](https://www.doe.virginia.gov/home/showpublisheddocument/24328/638085163392470000), [1.7a](https://www.doe.virginia.gov/home/showpublisheddocument/24370/638085200824670000), [1.7b](https://www.doe.virginia.gov/home/showpublisheddocument/24374/638085201853170000) | [2.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24438/) | [**3.4c**](https://www.doe.virginia.gov/home/showpublisheddocument/24604/) **Demonstrate fluency with multiplication facts of 0, 1, 2, 5, and 10** |  |  | Demonstrate Fluency with Facts (12 x12)  (Grade 4) |
|  | [1.6](https://www.doe.virginia.gov/home/showpublisheddocument/24366/) | [2.6a](https://www.doe.virginia.gov/home/showpublisheddocument/24478/), [2.6b](https://www.doe.virginia.gov/home/showpublisheddocument/24482/), [2.6c](https://www.doe.virginia.gov/home/showpublisheddocument/24486/) | [3.4d](https://www.doe.virginia.gov/home/showpublisheddocument/24608/) Solve single-step practical problems involving multiplication of whole numbers, where one factor is 99 or less and the second factor is 5 or less |  | Solve Problems with Addition/Subtraction | Solve Multiplication Problems with 2 digit by 2 digit Numbers (Grade 4) |
|  | [1.10](https://www.doe.virginia.gov/home/showpublisheddocument/24386/638085322176930000) | [2.8a](https://www.doe.virginia.gov/home/showpublisheddocument/24498/) | [**3.7a**](https://www.doe.virginia.gov/home/showpublisheddocument/24628/) **Estimate and measure length to the nearest inch, inch, foot, yard, centimeter, and meter** |  | Fraction Understanding | Measure Length to Nearest 1/4 and 1/8 Inch (Grade 4) |
|  | [1.10](https://www.doe.virginia.gov/home/showpublisheddocument/24386/638085322176930000) |  | [**3.7b**](https://www.doe.virginia.gov/home/showpublisheddocument/24632/) **Estimate and measure liquid volume in cups, pints, quarts, gallons, and liters** |  |  | Measure Liquid Volume (Grade 4) |
|  | [1.10](https://www.doe.virginia.gov/home/showpublisheddocument/24386/638085322176930000) | [2.8a](https://www.doe.virginia.gov/home/showpublisheddocument/24498/) | [3.8a](https://www.doe.virginia.gov/home/showpublisheddocument/24636/) Estimate and measure the distance around a polygon in order to determine its perimeter using U.S. Customary and metric units |  | Solve Problems with Addition/Subtraction | Determine Perimeter of Polygons with up to 10 Sides (Grade 4) |
| **Using Measurement to Describe My World** | [1.1d](https://www.doe.virginia.gov/home/showpublisheddocument/24328/638085163392470000) |  | [3.8b](https://www.doe.virginia.gov/home/showpublisheddocument/24640/) Estimate and count the number of square units needed to cover a given surface in order to determine its area |  | Solve Problems with Addition/Subtraction | Determine Area with/without Models  (Grade 4) |
|  | [1.1d](https://www.doe.virginia.gov/home/showpublisheddocument/24328/638085163392470000) | [2.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24438/), [2.11](https://www.doe.virginia.gov/home/showpublisheddocument/24512/) | [**3.10**](https://www.doe.virginia.gov/home/showpublisheddocument/24642/) **Read temperature to the nearest degree** |  |  |  |
|  | [1.9a](https://www.doe.virginia.gov/home/showpublisheddocument/24382/638085320571330000) | [2.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24438/), [2.9](https://www.doe.virginia.gov/home/showpublisheddocument/24550/) | [**3.9a**](https://www.doe.virginia.gov/home/showpublisheddocument/24688/) **Tell time to the nearest minute, using analog and digital clocks** |  |  | Decimal/Fraction Representations  (Grade 4) |
|  | [1.9a](https://www.doe.virginia.gov/home/showpublisheddocument/24382/638085320571330000) | [2.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24438/), [2.9](https://www.doe.virginia.gov/home/showpublisheddocument/24550/) | [3.9b](https://www.doe.virginia.gov/home/showpublisheddocument/24692/) Solve practical problems related to elapsed time in one-hour increments within a 12-hour period |  |  | Solve for Elapsed Time Within a 24-hour Period (Grade 4) |
|  | [1.9b](https://www.doe.virginia.gov/home/showpublisheddocument/24418/638085349355270000) | [2.10a](https://www.doe.virginia.gov/home/showpublisheddocument/24504/) | [3.9c](https://www.doe.virginia.gov/home/showpublisheddocument/24696/) Identify equivalent periods of time and solve practical problems related to equivalent periods of time |  |  |  |
|  | [1.1d](https://www.doe.virginia.gov/home/showpublisheddocument/24328/638085163392470000), [1.8](https://www.doe.virginia.gov/home/showpublisheddocument/24378/638085314955670000) | [2.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24438/), [2.7a](https://www.doe.virginia.gov/home/showpublisheddocument/24490/) | [**3.6a**](https://www.doe.virginia.gov/home/showpublisheddocument/24616/) **Determine the value of a collection of bills and coins whose total value is $5.00 or less** |  | Solve Problems with Addition/Subtraction | Decimal Understanding (Grade 4) |
| **Problem Solving Using Money** | [1.1d](https://www.doe.virginia.gov/home/showpublisheddocument/24328/638085163392470000), [1.8](https://www.doe.virginia.gov/home/showpublisheddocument/24378/638085314955670000) | [2.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24438/), [2.7a](https://www.doe.virginia.gov/home/showpublisheddocument/24490/) | [**3.6b**](https://www.doe.virginia.gov/home/showpublisheddocument/24620/) **Compare the value of two sets of coins or two sets of coins and bills** |  | Compare Whole Numbers | Decimal Understanding  (Grade 4) |
|  | [1.1d](https://www.doe.virginia.gov/home/showpublisheddocument/24328/638085163392470000), [1.8](https://www.doe.virginia.gov/home/showpublisheddocument/24378/638085314955670000) | [2.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24438/), [2.6b](https://www.doe.virginia.gov/home/showpublisheddocument/24482/), [2.7a](https://www.doe.virginia.gov/home/showpublisheddocument/24490/) | [**3.6c**](https://www.doe.virginia.gov/home/showpublisheddocument/24624/) **Make change from $5.00 or less** |  | Solve Problems with Addition/Subtraction | Decimal Computation  (Grade 4) |
|  | [1.4a](https://www.doe.virginia.gov/home/showpublisheddocument/24350/638085175704600000), [1.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24354/638085177053830000) | [2.4a](https://www.doe.virginia.gov/home/showpublisheddocument/24458/), [2.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24462/) | [**3.2a**](https://www.doe.virginia.gov/home/showpublisheddocument/24570/) **Name and write fractions and mixed numbers represented by a model** |  | Measure Length | Decimal Understanding  (Grade 4) |
| **Using Fractions to Describe Quantities** | [1.4a](https://www.doe.virginia.gov/home/showpublisheddocument/24350/638085175704600000), [1.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24354/638085177053830000) | [2.4a](https://www.doe.virginia.gov/home/showpublisheddocument/24458/), [2.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24462/) | [**3.2b**](https://www.doe.virginia.gov/home/showpublisheddocument/24576/) **Represent fractions and mixed numbers with models and symbols** |  |  | Decimal Understanding  (Grade 4) |
|  | [1.2b](https://www.doe.virginia.gov/home/showpublisheddocument/24336/638085170184000000), [1.2c](https://www.doe.virginia.gov/home/showpublisheddocument/24340/638085171384400000), [1.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24354/638085177053830000) | [2.4a](https://www.doe.virginia.gov/home/showpublisheddocument/24458/), [2.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24462/), [2.4c](https://www.doe.virginia.gov/home/showpublisheddocument/24466/) | [**3.2c**](https://www.doe.virginia.gov/home/showpublisheddocument/24578/) **Compare fractions having like and unlike denominators, using words and symbols (>, <, =, or ≠), with models** |  |  | Compare Additional Fractions  (Grade 4) |
|  | [1.4a](https://www.doe.virginia.gov/home/showpublisheddocument/24350/638085175704600000), [1.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24354/638085177053830000) | [2.4a](https://www.doe.virginia.gov/home/showpublisheddocument/24458/), [2.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24462/), [2.6c](https://www.doe.virginia.gov/home/showpublisheddocument/24486/) | [**3.5**](https://www.doe.virginia.gov/home/showpublisheddocument/24612/) **Solve practical problems that involve addition and subtraction with proper fractions having like denominators of 12 or less** |  |  | Solve Problems with Unlike Denominators  (Grade 4) |
| **Using Geometry to Describe My World** |  |  | [3.11](https://www.doe.virginia.gov/home/showpublisheddocument/24646/) Identify and draw representations of points, lines, line segments, rays, and angles |  |  | Identify Intersecting, Parallel, Perpendicular lines (Grade 4) |
|  | [1.11a](https://www.doe.virginia.gov/home/showpublisheddocument/24390/638085324415400000), [1.11b](https://www.doe.virginia.gov/home/showpublisheddocument/24394/638085330131170000) | [2.13](https://www.doe.virginia.gov/home/showpublisheddocument/24524/) | [3.12a](https://www.doe.virginia.gov/home/showpublisheddocument/24650/) Define polygon |  |  | Identify Characteristics of Plane and Solid Figures (Grade 4) |
| **Composing and Decomposing Using Polygons** | [1.11a](https://www.doe.virginia.gov/home/showpublisheddocument/24390/638085324415400000), [1.11b](https://www.doe.virginia.gov/home/showpublisheddocument/24394/638085330131170000) | [2.13](https://www.doe.virginia.gov/home/showpublisheddocument/24524/) | [3.12b](https://www.doe.virginia.gov/home/showpublisheddocument/24654/) Identify and name polygons with 10 or fewer sides |  |  | Identify Characteristics of Plane and Solid Figures (Grade 4) |
|  | [1.11a](https://www.doe.virginia.gov/home/showpublisheddocument/24390/638085324415400000), [1.11b](https://www.doe.virginia.gov/home/showpublisheddocument/24394/638085330131170000) | [2.13](https://www.doe.virginia.gov/home/showpublisheddocument/24524/) | [3.12c](https://www.doe.virginia.gov/home/showpublisheddocument/24658/) Combine and subdivide polygons with three or four sides and name the resulting polygon(s) |  |  | Combine, Subdivide, and Transform Polygons (Grade 5) |
|  | [1.11a](https://www.doe.virginia.gov/home/showpublisheddocument/24390/638085324415400000), [1.11b](https://www.doe.virginia.gov/home/showpublisheddocument/24394/638085330131170000) | [2.13](https://www.doe.virginia.gov/home/showpublisheddocument/24524/) | [3.13](https://www.doe.virginia.gov/home/showpublisheddocument/24662/) Identify and describe congruent and noncongruent figures |  |  | Combine, Subdivide, and Transform Polygons (Grade 5) |

NOTES: Once concepts have been introduced, many (i.e., place value, problem solving, and developing fluency with multiplication, etc.) will need to be revisited throughout the year.