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 5 Content Focus Areas** | **Prerequisite Knowledge (Linked to JIT  Quick Checks)**  **Grade 3** | **Prerequisite Knowledge (Linked to JIT  Quick Checks)**  **Grade 4** | **Grade 5**  **(Linked to Just in Time Mathematics Quick Checks)** | **-** | **Possible Grade 5**  **Connections Across**  **Content Focus Areas** | **Possible Future Grade Level/Course Content Connections** |
| --- | --- | --- | --- | --- | --- | --- |
|  | [3.3a](https://www.doe.virginia.gov/home/showpublisheddocument/24582/), [3.3b](https://www.doe.virginia.gov/home/showpublisheddocument/24586/), [3.4a](https://www.doe.virginia.gov/home/showpublisheddocument/24596/), [3.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24602/), [3.4c](https://www.doe.virginia.gov/home/showpublisheddocument/24604/), [3.4d](https://www.doe.virginia.gov/home/showpublisheddocument/24608/) | [4.4a](https://www.doe.virginia.gov/home/showpublisheddocument/24740/), [4.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24744/), [4.4c](https://www.doe.virginia.gov/home/showpublisheddocument/24748/), [4.4d](https://www.doe.virginia.gov/home/showpublisheddocument/24752/) | [**5.4**](https://www.doe.virginia.gov/home/showpublisheddocument/24870/) **Create and solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of whole numbers.** |  | Sum of Interior Angles | Practical Problems with Fractions and Decimals  (Grade 6) |
| **Applying Whole Number Characteristics and Operations** | [3.3a](https://www.doe.virginia.gov/home/showpublisheddocument/24582/), [3.4a](https://www.doe.virginia.gov/home/showpublisheddocument/24596/) | [4.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24744/), [4.4c](https://www.doe.virginia.gov/home/showpublisheddocument/24748/) | [**5.7**](https://www.doe.virginia.gov/home/showpublisheddocument/24890/) **Simplify whole number numerical expressions using the order of operations.** |  |  | Order of Operations  (Grade 6) |
|  |  | [4.5a](https://www.doe.virginia.gov/home/showpublisheddocument/24756/) | [5.3a](https://www.doe.virginia.gov/home/showpublisheddocument/24862/) Identify and describe the characteristics of prime and composite numbers |  | Fraction Addition and Subtraction |  |
|  |  |  | [5.3b](https://www.doe.virginia.gov/home/showpublisheddocument/24866/) Identify and describe the characteristics of even and odd numbers |  | Number Patterns |  |
|  | [3.1a](https://www.doe.virginia.gov/home/showpublisheddocument/24558/), [3.1b](https://www.doe.virginia.gov/home/showpublisheddocument/24562/) | [4.1c](https://www.doe.virginia.gov/home/showpublisheddocument/24708/), [4.3a](https://www.doe.virginia.gov/home/showpublisheddocument/24724/), [4.3b](https://www.doe.virginia.gov/home/showpublisheddocument/24728/) | [**5.1**](https://www.doe.virginia.gov/home/showpublisheddocument/24850/) **Given a decimal through thousandths, will round to the nearest whole number, tenth, or hundredth** |  |  | Practical Problems with Fractions and Decimals  (Grade 6) |
|  | [3.4a](https://www.doe.virginia.gov/home/showpublisheddocument/24596/), [3.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24602/), [3.4d](https://www.doe.virginia.gov/home/showpublisheddocument/24608/) | [4.6a](https://www.doe.virginia.gov/home/showpublisheddocument/24788/) | [**5.5a**](https://www.doe.virginia.gov/home/showpublisheddocument/24874/) **Estimate and determine the product and quotient of two numbers involving decimals** |  |  | Multistep Practical Problems with Decimals  (Grade 6) |
|  | [3.4a](https://www.doe.virginia.gov/home/showpublisheddocument/24596/), [3.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24602/), [3.4d](https://www.doe.virginia.gov/home/showpublisheddocument/24608/) | [4.6a](https://www.doe.virginia.gov/home/showpublisheddocument/24788/), [4.6b](https://www.doe.virginia.gov/home/showpublisheddocument/24792/) | [**5.5b**](https://www.doe.virginia.gov/home/showpublisheddocument/24878/) **Create and solve single-step and multistep practical problems involving addition, subtraction, and multiplication of decimals, and create and solve single-step practical problems involving division of decimals** |  | Measures of Center | Multistep Practical Problems with Decimals  (Grade 6) |
|  | [3.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24570/), [3.2b](https://www.doe.virginia.gov/home/showpublisheddocument/24576/) | [4.2b](https://www.doe.virginia.gov/home/showpublisheddocument/24716/), [4.2c](https://www.doe.virginia.gov/home/showpublisheddocument/24720/), [4.3a](https://www.doe.virginia.gov/home/showpublisheddocument/24724/), [4.3d](https://www.doe.virginia.gov/home/showpublisheddocument/24736/) | [**5.2a**](https://www.doe.virginia.gov/home/showpublisheddocument/24854/) **Represent and identify equivalencies among fractions and decimals, with and without models** |  |  | Fraction, Decimal, Percent Equivalency  (Grade 6) |
| **Using Fraction and Decimal Connections to Problem Solve** | [3.1c](https://www.doe.virginia.gov/home/showpublisheddocument/24566/), [3.2c](https://www.doe.virginia.gov/home/showpublisheddocument/24578/) | [4.1b](https://www.doe.virginia.gov/home/showpublisheddocument/24704/), [4.2a](https://www.doe.virginia.gov/home/showpublisheddocument/24712/), [4.2b](https://www.doe.virginia.gov/home/showpublisheddocument/24716/), [4.3c](https://www.doe.virginia.gov/home/showpublisheddocument/24732/), [4.3d](https://www.doe.virginia.gov/home/showpublisheddocument/24736/) | [**5.2b**](https://www.doe.virginia.gov/home/showpublisheddocument/24858/) **Compare and order fractions, mixed numbers, and/or decimals in a given set, from least to greatest and greatest to least** |  |  | Compare and Order Rational Numbers (Grade 6) |
|  | [3.5](https://www.doe.virginia.gov/home/showpublisheddocument/24612/) | [4.5a](https://www.doe.virginia.gov/home/showpublisheddocument/24756/), [4.5b](https://www.doe.virginia.gov/home/showpublisheddocument/24780/), [4.5c](https://www.doe.virginia.gov/home/showpublisheddocument/24786/) | [**5.6a**](https://www.doe.virginia.gov/home/showpublisheddocument/24882/) **Solve single-step and multistep practical problems involving addition and subtraction with fractions and mixed numbers** |  | Practical Problems with Whole Numbers | Practical Problems with Fractions  (Grade 6) |
|  | [3.5](https://www.doe.virginia.gov/home/showpublisheddocument/24612/) | [4.5a](https://www.doe.virginia.gov/home/showpublisheddocument/24756/), [4.5b](https://www.doe.virginia.gov/home/showpublisheddocument/24780/), [4.5c](https://www.doe.virginia.gov/home/showpublisheddocument/24786/) | [**5.6b**](https://www.doe.virginia.gov/home/showpublisheddocument/24886/) **Solve single-step practical problems involving multiplication of a whole number, limited to 12 or less, and a proper fraction, with models** |  | Practical Problems with Whole Numbers | Multiplying and Dividing Fractions  (Grade 6) |
|  | [3.14](https://www.doe.virginia.gov/home/showpublisheddocument/24666/) | [4.13a](https://www.doe.virginia.gov/home/showpublisheddocument/24776/), [4.13b](https://www.doe.virginia.gov/home/showpublisheddocument/24820/), [4.13c](https://www.doe.virginia.gov/home/showpublisheddocument/24824/) | [5.15](https://www.doe.virginia.gov/home/showpublisheddocument/24938/) Determine the probability of an outcome by constructing a sample space or using the Fundamental (Basic) Counting Principle |  |  | Experimental and Theoretical Probability  (Grade 7) |
| **Representing and Interpreting Data** | [3.15a](https://www.doe.virginia.gov/home/showpublisheddocument/24670/) | [4.14a](https://www.doe.virginia.gov/home/showpublisheddocument/24828/) | [5.16a](https://www.doe.virginia.gov/home/showpublisheddocument/24942/) Represent data in line plots and stem-and-leaf plots |  |  | Circle Graphs  (Grade 6) |
|  | [3.15b](https://www.doe.virginia.gov/home/showpublisheddocument/24674/) | [4.14b](https://www.doe.virginia.gov/home/showpublisheddocument/24832/) | [**5.16b**](https://www.doe.virginia.gov/home/showpublisheddocument/24946/) **Interpret data represented in line plots and stem-and-leaf plots** |  |  | Circle Graphs  (Grade 6) |
|  | [3.15b](https://www.doe.virginia.gov/home/showpublisheddocument/24674/) | [4.14b](https://www.doe.virginia.gov/home/showpublisheddocument/24832/) | [5.16c](https://www.doe.virginia.gov/home/showpublisheddocument/24950/) Compare data represented in a line plot with the same data represented in a stem-and-leaf plot |  | Compare and Order Fractions and Decimals | Circle Graphs  (Grade 6) |
|  |  |  | [**5.17a**](https://www.doe.virginia.gov/home/showpublisheddocument/24954/) **Describe mean, median, and mode as measures of center** |  |  | Balance Point and Measures of Center (Grade 6) |
|  | [3.4a](https://www.doe.virginia.gov/home/showpublisheddocument/24596/) | [4.4d](https://www.doe.virginia.gov/home/showpublisheddocument/24752/) | [5.17b](https://www.doe.virginia.gov/home/showpublisheddocument/24958/) Describe mean as fair share |  | Division of Whole Numbers | Balance Point and Measures of Center (Grade 6) |
|  | [3.3a](https://www.doe.virginia.gov/home/showpublisheddocument/24582/), [3.3b](https://www.doe.virginia.gov/home/showpublisheddocument/24586/) | [4.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24744/) | [5.17c](https://www.doe.virginia.gov/home/showpublisheddocument/24962/) Describe the range of a set of data as a measure of spread |  |  | Balance Point and Measures of Center (Grade 6) |
|  | [3.1c](https://www.doe.virginia.gov/home/showpublisheddocument/24566/), [3.3a](https://www.doe.virginia.gov/home/showpublisheddocument/24582/), [3.3b](https://www.doe.virginia.gov/home/showpublisheddocument/24586/), [3.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24602/) | [4.1b](https://www.doe.virginia.gov/home/showpublisheddocument/24704/), [4.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24744/), [4.4c](https://www.doe.virginia.gov/home/showpublisheddocument/24748/), [4.4d](https://www.doe.virginia.gov/home/showpublisheddocument/24752/) | [**5.17d**](https://www.doe.virginia.gov/home/showpublisheddocument/24966/) **Determine the mean, median, mode, and range of a set of data** |  | Practical Problems with Decimals | Balance Point and Measures of Center (Grade 6) |
|  | [3.3a](https://www.doe.virginia.gov/home/showpublisheddocument/24582/), [3.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24602/), [3.4d](https://www.doe.virginia.gov/home/showpublisheddocument/24608/), [3.5](https://www.doe.virginia.gov/home/showpublisheddocument/24612/), [3.16](https://www.doe.virginia.gov/home/showpublisheddocument/24678/) | [4.4b](https://www.doe.virginia.gov/home/showpublisheddocument/24744/), [4.5b](https://www.doe.virginia.gov/home/showpublisheddocument/24780/), [4.6a](https://www.doe.virginia.gov/home/showpublisheddocument/24788/), [4.15](https://www.doe.virginia.gov/home/showpublisheddocument/24840/) | [**5.18**](https://www.doe.virginia.gov/home/showpublisheddocument/24970/) **Identify, describe, create, express, and extend number patterns found in objects, pictures, numbers and tables** |  | Even and Odd Numbers | Patterns with Exponents and Perfect Squares  (Grade 6) |
|  |  |  | [**5.19a**](https://www.doe.virginia.gov/home/showpublisheddocument/24974/) **Investigate and describe the concept of variable** |  |  | Solving Equations  (Grade 6) |
| **Investigating Patterns, Expressions, and Equations** | [3.17](https://www.doe.virginia.gov/home/showpublisheddocument/24682/) | [4.16](https://www.doe.virginia.gov/home/showpublisheddocument/24844/) | [**5.19b**](https://www.doe.virginia.gov/home/showpublisheddocument/24978/) **Write an equation to represent a given mathematical relationship, using a variable** |  | Whole Number Operations | Solving Equations  (Grade 6) |
|  |  |  | [**5.19c**](https://www.doe.virginia.gov/home/showpublisheddocument/24982/) **Use an expression with a variable to represent a given verbal expression involving one operation** |  |  | Solving Equations  (Grade 6) |
|  | [3.17](https://www.doe.virginia.gov/home/showpublisheddocument/24682/) | [4.16](https://www.doe.virginia.gov/home/showpublisheddocument/24844/) | [**5.19d**](https://www.doe.virginia.gov/home/showpublisheddocument/24986/) **Create a problem situation based on a given equation, using a single variable and one operation** |  | Whole Number Operations | Solving Equations  (Grade 6) |
|  | [3.11](https://www.doe.virginia.gov/home/showpublisheddocument/24646/) | [4.10a](https://www.doe.virginia.gov/home/showpublisheddocument/24760/), [4.10b](https://www.doe.virginia.gov/home/showpublisheddocument/24764/) | [5.12](https://www.doe.virginia.gov/home/showpublisheddocument/24918/) Classify and measure right, acute, obtuse, and straight angles |  |  | Congruence of Segments, Angles, and Polygons  (Grade 6) |
|  | [3.12b](https://www.doe.virginia.gov/home/showpublisheddocument/24654/) |  | [5.13a](https://www.doe.virginia.gov/home/showpublisheddocument/24922/) Classify triangles as right, acute, or obtuse and equilateral, scalene, or isosceles |  |  | Congruence of Segments, Angles, and Polygons  (Grade 6) |
| **Investigating Two-Dimensional Geometry** |  |  | [5.13b](https://www.doe.virginia.gov/home/showpublisheddocument/24926/) Investigate the sum of the interior angles in a triangle and determine an unknown angle measure |  | Practical Problems with Whole Numbers | Congruence of Segments, Angles, and Polygons  (Grade 6) |
|  | [3.13](https://www.doe.virginia.gov/home/showpublisheddocument/24662/) |  | [5.14a](https://www.doe.virginia.gov/home/showpublisheddocument/24930/) Recognize and apply transformations, such as translation, reflection, and rotation |  |  | Translation and Reflections  (Grade 7) |
|  | [3.12a](https://www.doe.virginia.gov/home/showpublisheddocument/24650/), [3.12b](https://www.doe.virginia.gov/home/showpublisheddocument/24654/), [3.12c](https://www.doe.virginia.gov/home/showpublisheddocument/24658/) |  | [5.14b](https://www.doe.virginia.gov/home/showpublisheddocument/24934/) Investigate and describe the results of combining and subdividing polygons |  |  | Congruence of Segments, Angles, and Polygons  (Grade 6) |
|  |  |  | [5.10](https://www.doe.virginia.gov/home/showpublisheddocument/24910/) Identify and describe the diameter, radius, chord, and circumference of a circle |  |  | Circumference and Area of Circles  (Grade 6) |
|  | [3.8a](https://www.doe.virginia.gov/home/showpublisheddocument/24636/), [3.8b](https://www.doe.virginia.gov/home/showpublisheddocument/24640/) | [4.7](https://www.doe.virginia.gov/home/showpublisheddocument/24796/), [4.12](https://www.doe.virginia.gov/home/showpublisheddocument/24772/) | [**5.8a**](https://www.doe.virginia.gov/home/showpublisheddocument/24894/) **Solve practical problems that involve perimeter, area, and volume in standard units of measure** |  | Practical Problems with Whole Numbers | Perimeter, and Area  (Grade 6) |
| **Using Measurement to Describe My World** | [3.8a](https://www.doe.virginia.gov/home/showpublisheddocument/24636/), [3.8b](https://www.doe.virginia.gov/home/showpublisheddocument/24640/) | [4.7](https://www.doe.virginia.gov/home/showpublisheddocument/24796/), [4.12](https://www.doe.virginia.gov/home/showpublisheddocument/24772/) | [**5.8b**](https://www.doe.virginia.gov/home/showpublisheddocument/24898/) **Differentiate among perimeter, area, and volume and identify whether the application of the concept of perimeter, area, or volume is appropriate for a given situation** |  | Practical Problems with Whole Numbers | Perimeter, and Area  (Grade 6) |
|  | [3.7a](https://www.doe.virginia.gov/home/showpublisheddocument/24628/), [3.7b](https://www.doe.virginia.gov/home/showpublisheddocument/24632/) | [4.8a](https://www.doe.virginia.gov/home/showpublisheddocument/24800/), [4.8b](https://www.doe.virginia.gov/home/showpublisheddocument/24804/), [4.8c](https://www.doe.virginia.gov/home/showpublisheddocument/24808/) | [5.9a](https://www.doe.virginia.gov/home/showpublisheddocument/24902/) Given the equivalent measure of one unit, identify equivalent measurements within the metric system |  | Multiplying and Dividing Decimals |  |
|  | [3.7a](https://www.doe.virginia.gov/home/showpublisheddocument/24628/), [3.7b](https://www.doe.virginia.gov/home/showpublisheddocument/24632/) | [4.4d](https://www.doe.virginia.gov/home/showpublisheddocument/24752/), [4.8a](https://www.doe.virginia.gov/home/showpublisheddocument/24800/), [4.8b](https://www.doe.virginia.gov/home/showpublisheddocument/24804/) | [**5.9b**](https://www.doe.virginia.gov/home/showpublisheddocument/24906/) **Solve practical problems involving length, mass, and liquid volume using metric units** |  | Practical Problems with Decimals | Practical Problems with Decimals  (Grade 6) |
|  | [3.9a](https://www.doe.virginia.gov/home/showpublisheddocument/24688/), [3.9b](https://www.doe.virginia.gov/home/showpublisheddocument/24692/), [3.9c](https://www.doe.virginia.gov/home/showpublisheddocument/24696/) | [4.9](https://www.doe.virginia.gov/home/showpublisheddocument/24848/) | [5.11](https://www.doe.virginia.gov/home/showpublisheddocument/24914/) Solve practical problems related to elapsed time in hours and minutes within a 24-hour period |  |  |  |