

Tutorials are designed specifically for the Virginia Standards of Learning to prepare students for the Standards of Learning tests.

Math Tutorials offer targeted instruction, practice and review designed to develop computational fluency, deepen conceptual understanding, and apply mathematical practices. They automatically identify and address learning gaps down to elementary-level content, using adaptive remediation to bring students to grade-level no matter where they start. Students engage with the content in an interactive, feedback-rich environment as they progress through standards-aligned modules. By constantly honing the ability to apply their knowledge in abstract and real world scenarios, students build the depth of knowledge and higher order skills required to demonstrate their mastery when put to the test.

In each module, the Learn It and Try It make complex ideas accessible to students through focused content, modeled logic and process, multi-modal representations, and personalized feedback as students reason through increasingly challenging problems. The Review It offers a high impact summary of key concepts and relates those concepts to students' lives. The Test It assesses students' mastery of the module's concepts, providing granular performance data to students and teachers after each attempt. To help students focus on the content most relevant to them, unit-level pretests and posttests can quickly identify where students are strong and where they're still learning.

Unit 1: Ratios and Percent

- **RATIOS**

- NS.6.1: Number and Number Sense The student will represent relationships between quantities using ratios, and will use appropriate notations, such as a/b , a to b , and $a:b$.
- MG.6.8.b: Measurement and Geometry The student will identify the coordinates of a point and graph ordered pairs in a coordinate plane.

- **SOLVING PERCENT PROBLEMS**

- NS.6.2.a: Number and Number Sense The student will represent and determine equivalencies among fractions, mixed numbers, decimals, and percents; and

Unit 2: Proportional Relationships

- **IDENTIFYING PROPORTIONAL RELATIONSHIPS**

- PFA.6.12.c: Patterns, Functions, and Algebra The student will determine whether a proportional relationship exists between two quantities; and
- PFA.6.12.a: Patterns, Functions, and Algebra The student will represent a proportional relationship between two quantities, including those arising from practical situations;

- PFA.6.12.d: Patterns, Functions, and Algebra The student will make connections between and among representations of a proportional relationship between two quantities using verbal descriptions, ratio tables, and graphs.
- **ANALYZING PROPORTIONAL RELATIONSHIPS**
- PFA.6.12.b: Patterns, Functions, and Algebra The student will determine the unit rate of a proportional relationship and use it to find a missing value in a ratio table;
- PFA.6.12.d: Patterns, Functions, and Algebra The student will make connections between and among representations of a proportional relationship between two quantities using verbal descriptions, ratio tables, and graphs.

Unit 3: Solving Problems with Proportions

- **REPRESENTING PROPORTIONAL RELATIONSHIPS**
- PFA.6.12.c: Patterns, Functions, and Algebra The student will determine whether a proportional relationship exists between two quantities; and
- PFA.6.12.d: Patterns, Functions, and Algebra The student will make connections between and among representations of a proportional relationship between two quantities using verbal descriptions, ratio tables, and graphs.
- PFA.6.12.a: Patterns, Functions, and Algebra The student will represent a proportional relationship between two quantities, including those arising from practical situations;
- **USING PROPORTIONS TO SOLVE PROBLEMS**
- PFA.6.12.a: Patterns, Functions, and Algebra The student will represent a proportional relationship between two quantities, including those arising from practical situations;

Unit 4: Rational and Irrational Numbers

- **RATIONAL AND IRRATIONAL NUMBERS**
- NS.6.2.a: Number and Number Sense The student will represent and determine equivalencies among fractions, mixed numbers, decimals, and percents; and
- **APPROXIMATING IRRATIONAL NUMBERS**
- NS.6.2.b: Number and Number Sense The student will compare and order positive rational numbers.

Unit 5: Operations with Fractions

- **DIVIDING FRACTIONS**
- CE.6.5.a: Computation and Estimation The student will multiply and divide fractions and mixed numbers;
- CE.6.5.b: Computation and Estimation The student will solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of fractions and mixed numbers; and
- **SOLVING PROBLEMS BY DIVIDING FRACTIONS**

- CE.6.5.a: Computation and Estimation The student will multiply and divide fractions and mixed numbers;
- CE.6.5.b: Computation and Estimation The student will solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of fractions and mixed numbers; and

Unit 6: Decimal Operations

• DECIMAL OPERATIONS

- CE.6.5.c: Computation and Estimation The student will solve multistep practical problems involving addition, subtraction, multiplication, and division of decimals.
- NS.6.2.a: Number and Number Sense The student will represent and determine equivalencies among fractions, mixed numbers, decimals, and percents; and

• EXPRESSING RATIONAL NUMBERS IN DECIMAL FORM

- NS.6.2.a: Number and Number Sense The student will represent and determine equivalencies among fractions, mixed numbers, decimals, and percents; and
- NS.6.2.b: Number and Number Sense The student will compare and order positive rational numbers.

Unit 7: Adding and Subtracting Rational Numbers

• ADDING RATIONAL NUMBERS

- NS.6.3.c: Number and Number Sense The student will identify and describe absolute value of integers.
- CE.6.6.a: Computation and Estimation The student will add, subtract, multiply, and divide integers;
- CE.6.5.b: Computation and Estimation The student will solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of fractions and mixed numbers; and

• SUBTRACTING RATIONAL NUMBERS

- CE.6.5.b: Computation and Estimation The student will solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of fractions and mixed numbers; and

Unit 8: Using Properties with Rational Numbers

• USING PROPERTIES TO ADD AND SUBTRACT RATIONAL NUMBERS

- CE.6.5.b: Computation and Estimation The student will solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of fractions and mixed numbers; and

• USING PROPERTIES TO MULTIPLY AND DIVIDE RATIONAL NUMBERS

- CE.6.6.a: Computation and Estimation The student will add, subtract, multiply, and divide integers;

Unit 9: Signed Numbers

• SIGNED NUMBERS

- CE.6.6.b: Computation and Estimation The student will solve practical problems involving operations with integers; and
- NS.6.2.b: Number and Number Sense The student will compare and order positive rational numbers.
- NS.6.3.c: Number and Number Sense The student will identify and describe absolute value of integers.
- NS.6.3.a: Number and Number Sense The student will identify and represent integers;
- NS.6.3.b: Number and Number Sense The student will compare and order integers; and
- **INEQUALITIES AND COMPARISON**
 - NS.6.2.b: Number and Number Sense The student will compare and order positive rational numbers.
 - NS.6.3.b: Number and Number Sense The student will compare and order integers; and
- **ABSOLUTE VALUE**
 - NS.6.3.c: Number and Number Sense The student will identify and describe absolute value of integers.
 - NS.6.3.b: Number and Number Sense The student will compare and order integers; and

Unit 10: The Coordinate Plane

- **PLOTTING POINTS IN THE COORDINATE PLANE**
 - MG.6.8.a: Measurement and Geometry The student will identify the components of the coordinate plane; and
 - MG.6.8.b: Measurement and Geometry The student will identify the coordinates of a point and graph ordered pairs in a coordinate plane.
- **QUADRANTS AND AXES**
 - MG.6.8.a: Measurement and Geometry The student will identify the components of the coordinate plane; and
 - MG.6.8.b: Measurement and Geometry The student will identify the coordinates of a point and graph ordered pairs in a coordinate plane.

Unit 11: Numerical and Algebraic Expressions

- **EXPONENTS**
 - NS.6.4: Number and Number Sense The student will recognize and represent patterns with whole number exponents and perfect squares.
- **EVALUATING EXPRESSIONS**
 - CE.6.6.a: Computation and Estimation The student will add, subtract, multiply, and divide integers;
 - CE.6.6.b: Computation and Estimation The student will solve practical problems involving operations with integers; and
 - CE.6.6.c: Computation and Estimation The student will simplify numerical expressions involving integers.
- **EQUIVALENT EXPRESSIONS**

- CE.6.6.a: Computation and Estimation The student will add, subtract, multiply, and divide integers;
- CE.6.6.b: Computation and Estimation The student will solve practical problems involving operations with integers; and

Unit 12: Solving Equations

• SOLVING ADDITION EQUATIONS

- PFA.6.13: Patterns, Functions, and Algebra The student will solve one-step linear equations in one variable, including practical problems that require the solution of a one-step linear equation in one variable.

• SOLVING MULTIPLICATION EQUATIONS

- PFA.6.13: Patterns, Functions, and Algebra The student will solve one-step linear equations in one variable, including practical problems that require the solution of a one-step linear equation in one variable.

Unit 13: Solving Inequalities

• SOLVING INEQUALITIES

- PFA.6.14.a: Patterns, Functions, and Algebra The student will represent a practical situation with a linear inequality in one variable; and
- PFA.6.14.b: Patterns, Functions, and Algebra The student will solve one-step linear inequalities in one variable, involving addition or subtraction, and graph the solution on a number line.

• SOLUTIONS OF EQUATIONS AND INEQUALITIES

- PFA.6.13: Patterns, Functions, and Algebra The student will solve one-step linear equations in one variable, including practical problems that require the solution of a one-step linear equation in one variable.
- PFA.6.14.a: Patterns, Functions, and Algebra The student will represent a practical situation with a linear inequality in one variable; and
- PFA.6.14.b: Patterns, Functions, and Algebra The student will solve one-step linear inequalities in one variable, involving addition or subtraction, and graph the solution on a number line.

Unit 14: Geometry

• CIRCLES

- MG.6.7.a: Measurement and Geometry The student will derive (π);
- MG.6.7.b: Measurement and Geometry The student will solve problems, including practical problems, involving circumference and area of a circle; and

• AREA

- MG.6.7.c: Measurement and Geometry The student will solve problems, including practical problems, involving area and perimeter of triangles and rectangles.

Unit 15: Transformations

- **BASICS OF TRANSFORMATIONS**

- MG.6.9: Measurement and Geometry The student will determine congruence of segments, angles, and polygons.

- **TRANSFORMATIONS AND CONGRUENCE**

- MG.6.9: Measurement and Geometry The student will determine congruence of segments, angles, and polygons.

Unit 16: Measures of Center

- **MEASURES OF CENTER AND VARIABILITY**

- PS.6.11.a: Probability and Statistics The student will represent the mean of a data set graphically as the balance point; and

- **DOT PLOTS AND HISTOGRAMS**

- PS.6.11.a: Probability and Statistics The student will represent the mean of a data set graphically as the balance point; and

Unit 17: Summarizing Data Sets

- **SUMMARIZING DATA USING MEASURES OF CENTER AND VARIABILITY**

- PS.6.11.a: Probability and Statistics The student will represent the mean of a data set graphically as the balance point; and

- **CHOOSING APPROPRIATE MEASURES TO SUMMARIZE DATA SETS**

- PS.6.11.a: Probability and Statistics The student will represent the mean of a data set graphically as the balance point; and