

SOL EOC Tutorials for Virginia are designed specifically for the Virginia Standards of Learning to prepare students for the Standards of Learning tests (SOL). EOC Categories are at the heart of SOL EOC Tutorial structure – bringing category-based learning to the student experience, and category-based performance and progress tracking to the teacher experience.

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.

Test-Taking Strategies for EOC Tutorials allow students to practice and apply learning approaches that will hone their test-taking skills and focus them for success on the day of their EOC test.

Unit 1: Ratios and Proportional Relationships

- **RATIOS**

- NS.6.1: Number and Number Sense The student will represent relationships between quantities using ratios, and will use appropriate notations, such as /, to , and :.
- 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.

- **IDENTIFYING PROPORTIONAL RELATIONSHIPS**

- PFA.6.12.c: Patterns, Functions, and Algebra The student will determine whether a proportional relationship exists between two quantities; and
- NS.6.1: Number and Number Sense The student will represent relationships between quantities using ratios, and will use appropriate notations, such as /, to , and :.
- **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.
 - PFA.6.12.a: Patterns, Functions, and Algebra The student will represent a proportional relationship between two quantities, including those arising from practical situations;
 - NS.6.1: Number and Number Sense The student will represent relationships between quantities using ratios, and will use appropriate notations, such as /, to , and :.

Unit 2: Solving Problems with Proportions

- **REPRESENTING PROPORTIONAL RELATIONSHIPS**
 - 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.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.
 - NS.6.1: Number and Number Sense The student will represent relationships between quantities using ratios, and will use appropriate notations, such as /, to , and :.
- **USING PROPORTIONS TO SOLVE PROBLEMS**
 - NS.6.2.a: Number and Number Sense The student will represent and determine equivalencies among fractions, mixed numbers, decimals, and percents; 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.6.13: 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 3: Operations with Fractions and Percents

- **SOLVING PERCENT PROBLEMS**

- NS.6.1: Number and Number Sense The student will represent relationships between quantities using ratios, and will use appropriate notations, such as /, to, and :.
- NS.6.2.a: Number and Number Sense The student will represent and determine equivalencies among fractions, mixed numbers, decimals, and percents; and
- 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
- **DIVIDING FRACTIONS**
 - CE.6.5.a: Computation and Estimation The student will multiply and divide fractions and mixed numbers;
 - NS.6.2.a: Number and Number Sense The student will represent and determine equivalencies among fractions, mixed numbers, decimals, and percents; and
 - 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**
 - NS.6.2.a: Number and Number Sense The student will represent and determine equivalencies among fractions, mixed numbers, decimals, and percents; and
 - 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
 - CE.6.5.a: Computation and Estimation The student will multiply and divide fractions and mixed numbers;

Unit 4: Decimal Operations

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

Unit 5: Signed Numbers

- **SIGNED NUMBERS**

- NS.6.3.a: Number and Number Sense The student will identify and represent integers;
- 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

- **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
- NS.6.3.a: Number and Number Sense The student will identify and represent integers;

- **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 6: Adding and Subtracting Rational Numbers

- **ADDING RATIONAL NUMBERS**

- CE.6.6.a: Computation and Estimation The student will add, subtract, multiply, and divide integers;
- CE.6.6.c: Computation and Estimation The student will simplify numerical expressions involving 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
- NS.6.3.c: Number and Number Sense The student will identify and describe absolute value of integers.

- **SUBTRACTING RATIONAL NUMBERS**

- CE.6.6.a: Computation and Estimation The student will add, subtract, multiply, and divide integers;
- CE.6.6.c: Computation and Estimation The student will simplify numerical expressions involving integers.
- NS.6.3.c: Number and Number Sense The student will identify and describe absolute value of 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

Unit 7: Multiplication and Division of Rational Numbers

- **MULTIPLYING RATIONAL NUMBERS**

- CE.6.6.a: Computation and Estimation The student will add, subtract, multiply, and divide integers;
- CE.6.6.c: Computation and Estimation The student will simplify numerical expressions involving integers.

- CE.6.6.b: Computation and Estimation The student will solve practical problems involving operations with integers; and
- 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
- CE.6.5.a: Computation and Estimation The student will multiply and divide fractions and mixed numbers;
- **DIVIDING RATIONAL NUMBERS**
 - CE.6.5.a: Computation and Estimation The student will multiply and divide fractions and mixed numbers;
 - 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.6.5.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
 - CE.6.6.c: Computation and Estimation The student will simplify numerical expressions involving integers.

Unit 8: Using Properties with Rational Numbers

- **USING PROPERTIES TO ADD AND SUBTRACT RATIONAL NUMBERS**
 - CE.6.6.a: Computation and Estimation The student will add, subtract, multiply, and divide integers;
 - CE.6.6.c: Computation and Estimation The student will simplify numerical expressions involving 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
- **USING PROPERTIES TO MULTIPLY AND DIVIDE RATIONAL NUMBERS**
 - CE.6.6.a: Computation and Estimation The student will add, subtract, multiply, and divide integers;
 - CE.6.6.c: Computation and Estimation The student will simplify numerical expressions involving 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
 - CE.6.6.b: Computation and Estimation The student will solve practical problems involving operations with integers; and

Unit 9: Working with Rational Numbers

- **USING OPERATIONS ON RATIONAL NUMBERS TO SOLVE PROBLEMS**

- CE.6.5.a: Computation and Estimation The student will multiply and divide fractions and mixed numbers;
- CE.6.6.c: Computation and Estimation The student will simplify numerical expressions involving 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
- CE.6.6.b: Computation and Estimation The student will solve practical problems involving operations with integers; and
- NS.6.2.a: Number and Number Sense The student will represent and determine equivalencies among fractions, mixed numbers, decimals, and percents; and

- **EXPONENTS**

- CE.6.6.c: Computation and Estimation The student will simplify numerical expressions involving integers.
- 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.c: Computation and Estimation The student will simplify numerical expressions involving integers.
- NS.6.4: Number and Number Sense The student will recognize and represent patterns with whole number exponents and perfect squares.

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: Solving Equations and Inequalities

- **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.
- **SOLVING INEQUALITIES**
 - 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.
 - PFA.6.14.a: Patterns, Functions, and Algebra The student will represent a practical situation with a linear inequality in one variable; and
- **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.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 12: Geometry and Transformations

- **CIRCLES**
 - MG.6.7.b: Measurement and Geometry The student will solve problems, including practical problems, involving circumference and area of a circle; and
 - MG.6.7.a: Measurement and Geometry The student will derive (π);
- **AREA**
 - MG.6.7.c: Measurement and Geometry The student will solve problems, including practical problems, involving area and perimeter of triangles and rectangles.
- **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 13: Measures of Center

- **MEASURES OF CENTER AND VARIABILITY**

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

Unit 14: Test-Taking Strategies

- **STUDY HABITS**
- **BEING PREPARED AND GETTING STARTED**
- **WORDING IN TEST QUESTIONS**
- **WORDING IN ANSWER CHOICES**
- **QUESTIONS WITH PASSAGES AND VISUAL DATA**
- **ESSAY AND SHORT ANSWER QUESTIONS**
- **WORD PROBLEMS**