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.

This Tutorial is built to state standards.

## Unit 1: Conversions and Proportional Relationships

- **UNIT CONVERSIONS**
  - 7.GM.3.1: Solve problems that require the conversion of weights and capacities within the same measurement systems using appropriate units.
- **USING PROPORTIONS TO SOLVE PROBLEMS**
  - 7.A.2.2: Solve multi-step problems with proportional relationships (e.g., distance-time, percent increase or decrease, discounts, tips, unit pricing, mixtures and concentrations, similar figures, other mathematical situations).
  - 7.A.2.3: Use proportional reasoning to solve problems involving ratios.
- **REPRESENTING PROPORTIONAL RELATIONSHIPS**
  - 7.A.1.1: Identify a relationship between two varying quantities, x and y, as proportional if it can be expressed in the form y/x = k or y = kx; distinguish proportional relationships from non-proportional relationships.
  - 7.A.1.2: Recognize that the graph of a proportional relationship is a line through the origin and the coordinate (1, r), where r is the slope and the unit rate (constant of proportionality, k).
  - 7.A.2.1: Represent proportional relationships with tables, verbal descriptions, symbols, and graphs; translate from one representation to another. Determine and compare the unit rate (constant of


Copyright© Edmentum Inc. All Rights Reserved.

proportionality, slope, or rate of change) given any of these representations.

## Unit 2: Equivalent Values

- **EXPRESSING RATIONAL NUMBERS IN DECIMAL FORM**
  - 7.N.1.2: Recognize and generate equivalent representations of rational numbers, including equivalent fractions.
- **EQUIVALENT FRACTIONS**
  - 7.N.1.2: Recognize and generate equivalent representations of rational numbers, including equivalent fractions.

## Unit 3: Working with Rational Numbers 1

- **USING PROPERTIES TO ADD AND SUBTRACT RATIONAL NUMBERS**
  - 7.A.4.2: Evaluate numerical expressions using calculators and other technologies and justify solutions using order of operations and grouping symbols.
- **USING PROPERTIES TO MULTIPLY AND DIVIDE RATIONAL NUMBERS**
  - 7.A.4.1: Use properties of operations (associative, commutative, and distributive) to generate equivalent numerical and algebraic expressions containing rational numbers, grouping symbols, and whole-number exponents.
  - 7.A.4.2: Evaluate numerical expressions using calculators and other technologies and justify solutions using order of operations and grouping symbols.
- **USING OPERATIONS ON RATIONAL NUMBERS TO SOLVE PROBLEMS**
  - 7.N.2.5: Model and solve problems using rational numbers involving addition, subtraction, multiplication, division, and positive integer exponents.
  - 7.A.4.1: Use properties of operations (associative, commutative, and distributive) to generate equivalent numerical and algebraic expressions containing rational numbers, grouping symbols, and whole-number exponents.

## Unit 4: Working With Rational Numbers 2

- **MULTIPLYING RATIONAL NUMBERS**
  - 7.N.2.2: Illustrate multiplication and division of integers using a variety of representations.
  - 7.N.2.3: Multiply and divide integers in a variety of situations; use efficient and generalizable procedures, including standard algorithms.
- **DIVIDING RATIONAL NUMBERS**
  - 7.N.2.2: Illustrate multiplication and division of integers using a variety of representations.
  - 7.N.2.3: Multiply and divide integers in a variety of situations; use efficient and generalizable procedures, including standard algorithms.
- **SOLVING MULTI-STEP PROBLEMS WITH RATIONAL NUMBERS**


Copyright© Edmentum Inc. All Rights Reserved.

- 7.N.2.1: Estimate solutions to multiplication and division of integers in order to assess the reasonableness of results.
- 7.N.2.5: Model and solve problems using rational numbers involving addition, subtraction, multiplication, division, and positive integer exponents.
- 7.A.2.4: Use proportional reasoning to assess the reasonableness of solutions.

### Unit 5: Evaluating Expressions

- **PROPERTIES OF EXPONENTS**
  - 7.N.2.4: Raise rational numbers (integers, fractions, and decimals) to positive integer exponents.
- **EVALUATING EXPRESSIONS**
  - 7.N.2.5: Model and solve problems using rational numbers involving addition, subtraction, multiplication, division, and positive integer exponents.

### Unit 6: Comparing Numbers

- **INEQUALITIES AND COMPARISON**
  - 7.N.1.1: Compare and order rational numbers expressed in various forms using the symbols , , and =.
- **ABSOLUTE VALUE**
  - 7.N.1.3: Explain the relationship between the absolute value of a rational number and the distance of that number from zero on a number line. Use the symbol for absolute value. Apply the concept of absolute value to model and solve problems.

### Unit 7: Solving Equations and Inequalities

- **SOLUTIONS OF EQUATIONS AND INEQUALITIES**
  - 7.A.3.2: Represent, write, solve, and graph problems leading to linear inequalities with one variable in the form x + p q and x + p q, where p, and q are nonnegative rational numbers.
- **SOLVING TWO-STEP EQUATIONS**
  - 7.A.3.1: Write and solve problems leading to linear equations with one variable in the form px + q = r and p(x + q) = r, where p, q, and r are rational numbers.

### Unit 8: Area, Circumference, and Volume

- **AREA**
  - 7.GM.2.1: Develop and use the formula to determine the area of a trapezoid.
- **CIRCLES**
  - 7.GM.3.2: Demonstrate an understanding of the proportional relationship between the diameter and circumference of a circle and that the unit rate (constant of proportionality) is pi and can be approximated by rational numbers such as 22/7 and 3.14.
  - 7.GM.3.3: Calculate the circumference and area of circles to solve problems in various contexts, in terms of pi and using approximations for pi.
- **AREA, VOLUME, AND SURFACE AREA**


Copyright© Edmentum Inc. All Rights Reserved.

- 7.GM.1.1: Recognize that the surface area of a rectangular prism can be found by finding the area of each component of the net of that figure. Know that rectangular prisms of different dimensions can have the same surface area.
- 7.GM.1.2: Using a variety of tools and strategies, develop the concept that surface area of a rectangular prism can be found by wrapping the figure with same-sized square units without gaps or overlap. Use appropriate measurements (e.g., cm).
- 7.GM.1.3: Using a variety of tools and strategies, develop the concept that the volume of rectangular prisms can be found by counting the total number of same-sized unit cubes that fill a shape without gaps or overlaps. Use appropriate measurements (e.g., cm).
- 7.GM.2.2: Find the area and perimeter of composite figures.

## Unit 9: Scale Drawings and Transformations

- **SCALE DRAWINGS**
  - 7.GM.4.2: Apply proportions, ratios, and scale factors to solve problems involving scale drawings and to determine side lengths and areas of similar triangles and rectangles.
- **BASICS OF TRANSFORMATIONS**
  - 7.GM.4.3: Graph and describe translations (with directional and algebraic instructions), reflections across the x- and y-axes, and rotations in 90 increments about the origin of figures on a coordinate plane, and determine the coordinates of the vertices of a figure after a transformation.
- **SIMILARITY AND DILATIONS**
  - 7.GM.4.1: Describe the properties of similarity, compare geometric figures for similarity, and determine scale factors resulting from dilations.

## Unit 10: Collecting and Summarizing Data

- **COLLECTING DATA**
  - 7.D.1.1: Design simple experiments, collect data, and calculate measures of center (mean, median, and mode) and spread (range and interquartile range). Use these quantities to draw conclusions about the data collected and make predictions.
- **MEASURES OF CENTER AND VARIABILITY**
  - 7.D.1.1: Design simple experiments, collect data, and calculate measures of center (mean, median, and mode) and spread (range and interquartile range). Use these quantities to draw conclusions about the data collected and make predictions.
- **SUMMARIZING DATA USING MEASURES OF CENTER AND VARIABILITY**
  - 7.D.1.1: Design simple experiments, collect data, and calculate measures of center (mean, median, and mode) and spread (range and interquartile range). Use these quantities to draw conclusions about the data collected and make predictions.

## Unit 11: Displaying Data

- **DOT PLOTS AND HISTOGRAMS**


Copyright© Edmentum Inc. All Rights Reserved.

- 7.D.1.2: Use reasoning with proportions to display and interpret data in circle graphs (pie charts) and histograms.

- **BOX PLOTS**
  - 7.D.1.3: Use technology to create and analyze box plots.

## Unit 12: Probability

- **INTRODUCTION TO PROBABILITY**
  - 7.D.2.1: Determine the theoretical probability of an event using the ratio between the size of the event and the size of the sample space; represent probabilities as percents, fractions and decimals between 0 and 1.
  - 7.D.2.2: Calculate probability as a fraction of sample space or as a fraction of area. Express probabilities as percents, decimals, and fractions.
  - 7.D.2.3: Use proportional reasoning to draw conclusions about and predict relative frequencies of outcomes based on theoretical probabilities.
- **CALCULATING PROBABILITY**
  - 7.D.2.2: Calculate probability as a fraction of sample space or as a fraction of area. Express probabilities as percents, decimals, and fractions.
  - 7.D.2.3: Use proportional reasoning to draw conclusions about and predict relative frequencies of outcomes based on theoretical probabilities.


Copyright© Edmentum Inc. All Rights Reserved.