STAAR EOC Tutorials for Texas are designed specifically for the Texas Essential Knowledge and Skills (TEKS) to prepare students for the State of Texas Assessment of Academic Readiness (STAAR)® end-of-course assessments. EOC Categories are at the heart of STAAR EOC Tutorial structure – bringing category-based learning to the student experience, and category-based performance and progress tracking to the teacher experience.

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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.

## 1. NUMBER SENSE

- **RATIONAL AND IRRATIONAL NUMBERS**
  - **1.8.2.A** *extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of real numbers;*

- **APPROXIMATING IRRATIONAL NUMBERS**
  - **1.8.2.D** *order a set of real numbers arising from mathematical and real-world contexts.*
  - **1.8.2.B** *approximate the value of an irrational number, including π and square roots of numbers less than 225, and locate that rational number approximation on a number line;*

- **SCIENTIFIC NOTATION**
  - **1.8.2.C** *convert between standard decimal notation and scientific notation; and*

## 2. FUNCTIONS AND SLOPE

- **SLOPE**
  - **2.8.4.A** *use similar right triangles to develop an understanding that slope, m, given as the rate comparing the change in y-values to the change in x-values, $(y_2 - y_1)/(x_2 - x_1)$, is the same for any two points $(x_1, y_1)$ and $(x_2, y_2)$ on the same line;*
  - **2.8.5.A** *represent linear proportional situations with tables, graphs, and equations in the form of $y = kx$;*

- **RELATIONS AND FUNCTIONS**
  - **2.8.5.G** *identify functions using sets of ordered pairs, tables, mappings, and graphs;*

## 3. PROPORTIONAL REASONING

- **IDENTIFYING PROPORTIONAL RELATIONSHIPS**
  - **2.8.5.F** *distinguish between proportional and non-proportional situations using tables, graphs, and equations in the form y = kx or y = mx + b, where b ≠ 0;*
  - **2.8.5.H** *identify examples of proportional and non-proportional functions that arise from mathematical and real-world problems; and*

- **MULTIPLE REPRESENTATIONS OF PROPORTIONS**
  - **2.8.5.A** *represent linear proportional situations with tables, graphs, and equations in the form of y = kx;*
  - **2.8.4.B** *graph proportional relationships, interpreting the unit rate as the slope of the line that models the relationship; and*
  - **2.8.5.E** *solve problems involving direct variation;*

- **COMPARING FUNCTIONS**
  - **2.8.4.C** *use data from a table or graph to determine the rate of change or slope and y-intercept in mathematical and real-world problems.*

## 4. LINEAR FUNCTIONS

- **SLOPE-INTERCEPT FORM**
  - **2.8.5.I** *write an equation in the form y = mx + b to model a linear relationship between two quantities using verbal, numerical, tabular, and graphical representations.*
  - **2.8.5.B** *represent linear non-proportional situations with tables, graphs, and equations in the form of y = mx + b, where b ≠ 0;*
  - **2.8.5.F** *distinguish between proportional and non-proportional situations using tables, graphs, and equations in the form y = kx or y = mx + b, where b ≠ 0;*

- **WRITING LINEAR FUNCTIONS**
  - **2.8.5.B** *represent linear non-proportional situations with tables, graphs, and equations in the form of y = mx + b, where b ≠ 0;*
  - **2.8.5.I** *write an equation in the form y = mx + b to model a linear relationship between two quantities using verbal, numerical, tabular, and graphical representations.*
  - **2.8.4.C** *use data from a table or graph to determine the rate of change or slope and y-intercept in mathematical and real-world problems.*

- **SOLVING SYSTEMS OF LINEAR EQUATIONS**
  - **2.8.9.A** *identify and verify the values of x and y that simultaneously satisfy two linear equations in the form y = mx + b from the intersections of the graphed equations.*

## 5. THE PYTHAGOREAN THEOREM

- **THE PYTHAGOREAN THEOREM**
  - **3.8.7.C** *use the Pythagorean Theorem and its converse to solve problems; and*
  - **3.8.6.C** *use models and diagrams to explain the Pythagorean theorem.*

- **THE CONVERSE OF THE PYTHAGOREAN THEOREM**
  - **3.8.7.D** *determine the distance between two points on a coordinate plane using the Pythagorean Theorem.*

## 6. GEOMETRY IN TWO AND THREE DIMENSIONS

- **AREA, VOLUME, AND SURFACE AREA**
  - **3.8.7.B** *use previous knowledge of surface area to make connections to the formulas for lateral and total surface area and determine solutions for problems involving rectangular prisms, triangular prisms, and cylinders;*

- **VOLUME OF CYLINDERS AND CONES**
  - **3.8.6.A** *describe the volume formula V = Bh of a cylinder in terms of its base area and its height; and*
  - **3.8.7.A** *solve problems involving the volume of cylinders, cones, and spheres;*

- **SPHERES**
  - **3.8.7.A** *solve problems involving the volume of cylinders, cones, and spheres;*

## 7. CONGRUENCE AND SIMILARITY TRANSFORMATIONS 1

- **BASICS OF TRANSFORMATIONS**
  - **3.8.10.A** *generalize the properties of orientation and congruence of rotations, reflections, translations, and dilations of two-dimensional shapes on a coordinate plane;*
  - **3.8.10.B** *differentiate between transformations that preserve congruence and those that do not;*

## 8. CONGRUENCE AND SIMILARITY TRANSFORMATIONS 2

- **TRANSFORMATIONS ON THE COORDINATE PLANE**
  - **3.8.10.B** *differentiate between transformations that preserve congruence and those that do not;*
  - **3.8.10.C** *explain the effect of translations, reflections over the x- or y-axis, and rotations limited to 90°, 180°, 270°, and 360° as applied to two-dimensional shapes on a coordinate plane using an algebraic representation; and*

- **SIMILARITY AND DILATIONS**
  - **3.8.3.A** *generalize that the ratio of corresponding sides of similar shapes are proportional, including a shape and its dilation;*
  - **3.8.3.B** *compare and contrast the attributes of a shape and its dilation(s) on a coordinate plane; and*
  - **3.8.10.A** *generalize the properties of orientation and congruence of rotations, reflections, translations, and dilations of two-dimensional shapes on a coordinate plane;*
  - **3.8.10.B** *differentiate between transformations that preserve congruence and those that do not;*
  - **3.8.3.C** *use an algebraic representation to explain the effect of a given positive rational scale factor applied to two-dimensional figures on a coordinate plane with the origin as the center of dilation.*

## 9. ANGLES AND ANGLE RELATIONSHIPS

- **PARALLEL LINES AND ANGLE RELATIONSHIPS**
  - **3.8.8.D** *use informal arguments to establish facts about the angle sum and exterior angle of triangles, the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.*

- **ANGLE RELATIONSHIPS IN TRIANGLES**
  - **3.8.8.D** *use informal arguments to establish facts about the angle sum and exterior angle of triangles, the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.*

## 10. STATISTICS

- **SCATTERPLOTS**
  - **4.8.5.C** *contrast bivariate sets of data that suggest a linear relationship with bivariate sets of data that do not suggest a linear relationship from a graphical representation; and*
  - **4.8.11.A** *construct a scatterplot and describe the observed data to address questions of association such as linear, non-linear, and no association between bivariate data; and*

- **LINEAR MODELS IN DATA**
  - **4.8.5.D** *use a trend line that approximates the linear relationship between bivariate sets of data to make predictions.*

- **USING STATISTICAL MEASURES TO COMPARE DATA SETS**
  - **4.8.11.B** *determine the mean absolute deviation and use this quantity as a measure of the average distance data are from the mean using a data set of no more than 10 data points.*

## 11. 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**