

South Carolina Tutorials are designed specifically for the South Carolina College and Career Readiness Standards and the South Carolina Academic Standards to prepare students for the South Carolina End-of-Course Examination Program (EOCEP), ACT Aspire, and the South Carolina Palmetto Assessment of State Standards (SCPASS).

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.

1. POINTS, LINES, AND ANGLES

- **POINTS, RAYS, LINE SEGMENTS, LINES, AND FIGURES**
 - **CC.2.3.HS.A.14** Apply geometric concepts to model and solve real world problems.

- **PARALLEL AND PERPENDICULAR LINES**
 - **CC.2.3.HS.A.11** Apply coordinate geometry to prove simple geometric theorems algebraically.

- **PARALLEL LINES AND ANGLE RELATIONSHIPS**
 - **CC.2.3.HS.A.14** Apply geometric concepts to model and solve real world problems.

- **PERPENDICULAR BISECTOR AND ANGLE BISECTOR THEOREMS**
 - **CC.2.3.HS.A.3** Verify and apply geometric theorems as they relate to geometric figures.
 - **CC.2.3.HS.A.14** Apply geometric concepts to model and solve real world problems.

2. COORDINATE GEOMETRY

- **LENGTH AND THE DISTANCE FORMULA**
 - **CC.2.3.HS.A.14** Apply geometric concepts to model and solve real world problems.

- **MIDPOINT FORMULA ON THE COORDINATE PLANE**
 - **CC.2.3.HS.A.14** Apply geometric concepts to model and solve real world problems.

- **CONJECTURES IN COORDINATE GEOMETRY**
 - **CC.2.3.HS.A.11** Apply coordinate geometry to prove simple geometric theorems algebraically.
 - **CC.2.3.HS.A.8** Apply geometric theorems to verify properties of circles.

3. PERIMETER, AREA, AND TRANSFORMATIONS ON THE COORDINATE PLANE

- **PERIMETER ON THE COORDINATE PLANE**

- **CC.2.3.HS.A.11** Apply coordinate geometry to prove simple geometric theorems algebraically.

- **AREA ON THE COORDINATE PLANE**

- **CC.2.3.HS.A.11** Apply coordinate geometry to prove simple geometric theorems algebraically.

- **T TRANSFORMATIONS ON THE COORDINATE PLANE**

- **CC.2.3.HS.A.1** Use geometric figures and their properties to represent transformations in the plane.
- **CC.2.3.HS.A.2** Apply rigid transformations to determine and explain congruence.
- **CC.2.3.HS.A.5** Create justifications based on transformations to establish similarity of plane figures.

- **DILATIONS, TRANSLATIONS, ROTATIONS, AND REFLECTIONS**

- **CC.2.3.HS.A.1** Use geometric figures and their properties to represent transformations in the plane.
- **CC.2.3.HS.A.2** Apply rigid transformations to determine and explain congruence.
- **CC.2.3.HS.A.5** Create justifications based on transformations to establish similarity of plane figures.

4. CONGRUENCE AND SIMILARITY

- **TRIANGLES AND CONGRUENCE TRANSFORMATIONS**

- **CC.2.3.HS.A.2** Apply rigid transformations to determine and explain congruence.

- **TRIANGLES AND SIMILARITY TRANSFORMATIONS**

- **CC.2.3.HS.A.5** Create justifications based on transformations to establish similarity of plane figures.
- **CC.2.3.HS.A.6** Verify and apply theorems involving similarity as they relate to plane figures.
- **CC.2.3.HS.A.3** Verify and apply geometric theorems as they relate to geometric figures.

- **CONGRUENCE OF OTHER POLYGONS**

- **CC.2.3.HS.A.2** Apply rigid transformations to determine and explain congruence.
- **CC.2.3.HS.A.1** Use geometric figures and their properties to represent transformations in the plane.

- **SIMILARITY OF OTHER POLYGONS**

- **CC.2.3.HS.A.6** Verify and apply theorems involving similarity as they relate to plane figures.
- **CC.2.3.HS.A.5** Create justifications based on transformations to establish similarity of plane figures.

5. TRIANGLES

- **TRIANGLE ANGLE THEOREMS**

- **CC.2.3.HS.A.3** Verify and apply geometric theorems as they relate to geometric figures.
- **CC.2.3.HS.A.14** Apply geometric concepts to model and solve real world problems.
- **CC.2.3.HS.A.5** Create justifications based on transformations to establish similarity of plane figures.

- **TRIANGLE BISECTORS**

- **CC.2.3.HS.A.3** Verify and apply geometric theorems as they relate to geometric figures.

- **MEDIANS AND ALTITUDES OF TRIANGLES**

- **CC.2.3.HS.A.3** Verify and apply geometric theorems as they relate to geometric figures.

6. QUADRILATERALS AND CONSTRUCTIONS

• PARALLELOGRAMS AND RECTANGLES

- **CC.2.3.HS.A.3** Verify and apply geometric theorems as they relate to geometric figures.

• SQUARES AND RHOMBI

- **CC.2.3.HS.A.3** Verify and apply geometric theorems as they relate to geometric figures.

• CONSTRUCTIONS

- **CC.2.3.HS.A.4** Apply the concept of congruence to create geometric constructions.

7. TRIANGLES AND TRIGONOMETRY

• PYTHAGOREAN THEOREM

- **CC.2.3.HS.A.3** Verify and apply geometric theorems as they relate to geometric figures.
- **CC.2.3.HS.A.5** Create justifications based on transformations to establish similarity of plane figures.

• TRIGONOMETRIC RATIOS

- **CC.2.2.HS.C.9** Prove the Pythagorean identity and use it to calculate trigonometric ratios.
- **CC.2.3.HS.A.7** Apply trigonometric ratios to solve problems involving right triangles.
- **CC.2.2.HS.C.8** Choose trigonometric functions to model periodic phenomena and describe the properties of the graphs.

• LAWS OF SINE AND COSINE

- **CC.2.2.HS.C.9** Prove the Pythagorean identity and use it to calculate trigonometric ratios.
- **CC.2.3.HS.A.7** Apply trigonometric ratios to solve problems involving right triangles.
- **CC.2.3.HS.A.14** Apply geometric concepts to model and solve real world problems.

• RADIANS AND THE UNIT CIRCLE

- **CC.2.2.HS.C.7** Apply radian measure of an angle and the unit circle to analyze the trigonometric functions.
- **CC.2.3.HS.A.9** Extend the concept of similarity to determine arc lengths and areas of sectors of circles.
- **CC.2.3.HS.A.7** Apply trigonometric ratios to solve problems involving right triangles.

8. CIRCLES

• CIRCLE BASICS

- **CC.2.3.HS.A.8** Apply geometric theorems to verify properties of circles.

• CENTRAL ANGLES, INSCRIBED ANGLES, AND CHORDS

- **CC.2.3.HS.A.8** Apply geometric theorems to verify properties of circles.
- **CC.2.3.HS.A.9** Extend the concept of similarity to determine arc lengths and areas of sectors of circles.

• SECANTS, ANGLES, AND INTERCEPTED ARCS

- **CC.2.3.HS.A.8** Apply geometric theorems to verify properties of circles.
- **CC.2.3.HS.A.9** Extend the concept of similarity to determine arc lengths and areas of sectors of circles.

• TANGENTS, ANGLES, AND INTERCEPTED ARCS

- **CC.2.3.HS.A.8** Apply geometric theorems to verify properties of circles.
- **CC.2.3.HS.A.9** Extend the concept of similarity to determine arc lengths and areas of sectors of circles.

9. PROPERTIES OF CIRCLES

• CONGRUENT AND SIMILAR CIRCLES

- **CC.2.3.HS.A.2** Apply rigid transformations to determine and explain congruence.
- **CC.2.3.HS.A.8** Apply geometric theorems to verify properties of circles.
- **CC.2.3.HS.A.6** Verify and apply theorems involving similarity as they relate to plane figures.
- **CC.2.3.HS.A.5** Create justifications based on transformations to establish similarity of plane figures.

• CIRCUMFERENCE AND ARC LENGTH

- **CC.2.3.HS.A.8** Apply geometric theorems to verify properties of circles.
- **CC.2.3.HS.A.9** Extend the concept of similarity to determine arc lengths and areas of sectors of circles.

• AREA OF CIRCLES AND SECTORS

- **CC.2.3.HS.A.8** Apply geometric theorems to verify properties of circles.
- **CC.2.3.HS.A.9** Extend the concept of similarity to determine arc lengths and areas of sectors of circles.

10. CONIC SECTIONS

• CIRCLES

- **CC.2.3.HS.A.8** Apply geometric theorems to verify properties of circles.
- **CC.2.3.HS.A.10** Translate between the geometric description and the equation for a conic section.

• PARABOLAS

- **CC.2.3.HS.A.10** Translate between the geometric description and the equation for a conic section.
- **CC.2.2.HS.D.7** Create and graph equations or inequalities to describe numbers or relationships.

• ELLIPSES

- **CC.2.3.HS.A.10** Translate between the geometric description and the equation for a conic section.
- **CC.2.2.HS.D.7** Create and graph equations or inequalities to describe numbers or relationships.
- **CC.2.2.HS.D.10** Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.

• HYPERBOLAS

- **CC.2.3.HS.A.10** Translate between the geometric description and the equation for a conic section.
- **CC.2.2.HS.D.7** Create and graph equations or inequalities to describe numbers or relationships.
- **CC.2.2.HS.D.10** Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.

11. SURFACE AREA

• SURFACE AREA AND VOLUME OF SPHERES

- **CC.2.3.HS.A.12** Explain volume formulas and use them to solve problems.
- **CC.2.3.HS.A.14** Apply geometric concepts to model and solve real world problems.

• SURFACE AREA OF COMPOSITE SOLIDS

- **CC.2.3.HS.A.14** Apply geometric concepts to model and solve real world problems.

• SURFACE AREA OF SIMILAR SOLIDS

- **CC.2.3.HS.A.14** Apply geometric concepts to model and solve real world problems.

12. VOLUME

- **CONVERTING BETWEEN TWO-DIMENSIONAL FIGURES AND THREE-DIMENSIONAL SOLIDS**
 - **CC.2.3.HS.A.13** Analyze relationships between two-dimensional and three-dimensional objects.
- **VOLUME OF PRISMS AND PYRAMIDS**
 - **CC.2.3.HS.A.12** Explain volume formulas and use them to solve problems.
- **VOLUME OF CYLINDERS AND CONES**
 - **CC.2.3.HS.A.12** Explain volume formulas and use them to solve problems.
- **MODELING SITUATIONS WITH GEOMETRY**
 - **CC.2.3.HS.A.14** Apply geometric concepts to model and solve real world problems.
 - **CC.2.3.HS.A.12** Explain volume formulas and use them to solve problems.

13. VOLUME OF COMPOSITE AND SIMILAR SHAPES

- **VOLUME OF COMPOSITE SOLIDS**
 - **CC.2.3.HS.A.12** Explain volume formulas and use them to solve problems.
- **VOLUME OF SIMILAR SOLIDS**
 - **CC.2.3.HS.A.12** Explain volume formulas and use them to solve problems.

14. BASIC PROBABILITY CONCEPTS

- **COMBINATIONS AND PERMUTATIONS**
 - **CC.2.4.HS.B.6** Use the concepts of independence and conditional probability to interpret data.
 - **CC.2.4.HS.B.7** Apply the rules of probability to compute probabilities of compound events in a uniform probability model.
- **INTRODUCTION TO PROBABILITY**
 - **CC.2.4.HS.B.6** Use the concepts of independence and conditional probability to interpret data.

15. ADVANCED PROBABILITY CONCEPTS

- **ANALYZING DECISIONS IN PROBABILITY**
 - **CC.2.4.HS.B.6** Use the concepts of independence and conditional probability to interpret data.
 - **CC.2.4.HS.B.7** Apply the rules of probability to compute probabilities of compound events in a uniform probability model.
- **CONDITIONAL PROBABILITY**
 - **CC.2.4.HS.B.6** Use the concepts of independence and conditional probability to interpret data.
 - **CC.2.4.HS.B.1** Summarize, represent, and interpret data on a single count or measurement variable.
 - **CC.2.4.HS.B.2** Summarize, represent, and interpret data on two categorical and quantitative variables.
- **GEOMETRIC PROBABILITIES**
 - **CC.2.4.HS.B.7** Apply the rules of probability to compute probabilities of compound events in a uniform probability model.
 - **CC.2.3.HS.A.9** Extend the concept of similarity to determine arc lengths and areas of sectors of circles.