



Curriculum and Instruction – Mathematics

Quarter 3

BRIDGE MATH

Quarter 1	Quarter 2	Quarter 3	Quarter 4
Properties of Exponents, Expressions, Equations, and Inequalities, Linear Systems, Various Functions & Their Graphs, Rational and Irrational Expressions	Polynomials, Quadratic Functions and Equations	Basic Geometry, Similar Triangles, Measurement	Right Triangles, Probability and Statistics, Distance and Midpoint Formulas, Operations on Functions, Exponential Functions
August 6 2018 – October 5, 2018	October 15, 2018 – December 19, 2018	January 7, 2019 – March 8, 2019	March 18, 2019 – May 24, 2019
B.A.CED.A.1	B.A.APR.A.1	B.A.REI.A.1	B.A.REI.D.4
B.A.CED.A.2	B.A.APR.B.2	B.A.SSE.A.2	B.F.IF.C.6
B.A.CED.A.3	B.A.REI.B.2	B. G.C.A.1	B.G.SRT.B.2
B.A.SSE.A.1	B.F.IF.A.2	B.G.GMD.A.1	B.G.SRT.B.3
B.A.REI.C.3	B.F.IF.C.4	B.G.GMD.A.2	B.G.SRT.B.4
B.A.REI.D.5	B.N.CN.A.1	B.G.GMD.A.3	B.S.CP.A.1
B.F.IF.A.1	B.N.CN.A.2	B.G.MG.A.1	B.S.CP.A.2
B.F.IF.B.3	B.N.Q.A.1	B.G.MG.A.2	B.S.CP.A.3
B.F.IF.C.4	B.N.Q.A.3	B.G.SRT.A.1	B.S.CP.A.4
B.F.IF.C.5		B.N.Q.A.2	B.S.ID.A.1
B.N.RN.A.1			B.S.ID.B.2
B.N.Q.A.1			B.S.ID.B.3
B.N.Q.A.3			
B.S.ID.C.4			

[Tennessee Academic Standards for Mathematics](#)



Introduction

Destination 2025, Shelby County Schools' 10-year strategic plan, is designed not only to improve the quality of public education, but also to create a more knowledgeable, productive workforce and ultimately benefit our entire community.

What will success look like?



In order to achieve these ambitious goals, we must collectively work to provide our students with high quality, college and career ready aligned instruction. The Tennessee State Standards provide a common set of expectations for what students will know and be able to do at the end of a grade. The State of Tennessee provides two sets of standards, which include the Standards for Mathematical Content and The Standards for Mathematical Practice. The Content Standards set high expectations for all students to ensure that Tennessee graduates are prepared to meet the rigorous demands of mathematical understanding for college and career. The eight Standards for Mathematical Practice describe the varieties of expertise, habits of mind, and productive dispositions that educators seek to develop in all students. The Tennessee State Standards also represent three fundamental shifts in mathematics instruction: **focus, coherence and rigor**.

Instructional Shifts for Mathematics



[Tennessee Academic Standards for Mathematics](#)



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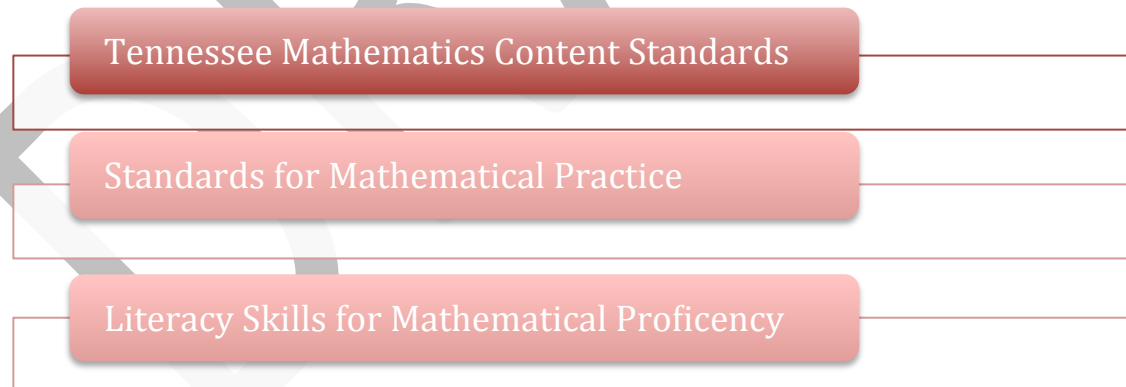
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The **Standards for Mathematical Practice** describe varieties of expertise, habits of minds and productive dispositions that mathematics educators at all levels should seek to develop in their students. These practices rest on important National Council of Teachers of Mathematics (NCTM) “processes and proficiencies” with longstanding importance in mathematics education. Throughout the year, students should continue to develop proficiency with the eight Standards for Mathematical Practice. The following are the eight Standards for Mathematical Practice:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of them.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

This curriculum map is designed to help teachers make effective decisions about what mathematical content to teach so that ultimately our students can reach Destination 2025. Throughout this curriculum map, you will see resources as well as links to tasks that will support you in ensuring that students are able to reach the demands of the standards in your classroom. In addition to the resources embedded in the map, there are some high-leverage resources around the content standards and mathematical practice standards that teachers should consistently access. For a full description of each, click on the links below.



[Tennessee Academic Standards for Mathematics](#)



Structure of the Standards

Structure of the TN State Standards include:

- **Content Standards** - Statements of what a student should know, understand, and be able to do.
- **Clusters** - Groups of related standards. Cluster headings may be considered as the big idea(s) that the group of standards they represent are addressing. They are therefore useful as a quick summary of the progression of ideas that the standards in a domain are covering and can help teachers to determine the focus of the standards they are teaching.
- **Domains** - A large category of mathematics that the clusters and their respective content standards delineate and address. For example, Number and Operations – Fractions is a domain under which there are a number of clusters (the big ideas that will be addressed) along with their respective content standards, which give the specifics of what the student should know, understand, and be able to do when working with fractions.
- **Conceptual Categories** – The content standards, clusters, and domains in the 9th-12th grades are further organized under conceptual categories. These are very broad categories of mathematical thought and lend themselves to the organization of high school course work. For example, Algebra is a conceptual category in the high school standards under which are domains such as Seeing Structure in Expressions, Creating Equations, Arithmetic with Polynomials and Rational Expressions, etc.



How to Use the Maps

Overview

An overview is provided for each quarter and includes the topics, focus standards, intended rigor of the standards and foundational skills needed for success of those standards.

Your curriculum map contains four columns that each highlight specific instructional components. Use the details below as a guide for information included in each column.

Tennessee State Standards

TN State Standards are located in the left column. Each content standard is identified as Major Content or Supporting Content (for Algebra I, Algebra II & Geometry only). A key can be found at the bottom of the map.

Content

This section contains learning objectives based upon the TN State Standards. Best practices tell us that clearly communicating measurable objectives lead to greater student understanding. Additionally, essential questions are provided to guide student exploration and inquiry.

Instructional Support & Resources

District and web-based resources have been provided in the Instructional Support & Resources columns. You will find a variety of instructional resources that align with the content standards. The additional resources provided should be used as needed for content support and scaffolding. The inclusion of vocabulary serves as a resource for teacher planning and for building a common language across K-12 mathematics. One of the goals for Tennessee State Standards is to create a common language, and the expectation is that teachers will embed this language throughout their daily lessons.

[Tennessee Academic Standards for Mathematics](#)



Topics Addressed in Quarter

- Basic Geometry
- Similar Triangles
- Measurement

Overview

This quarter introduces and reviews some basic geometry to students including angles, triangles and polygons. Students study angle relationships, classifications of triangles and their theorems and then the special angles and relationships in polygons and solve problems involving angles, triangles and polygons. Students then review measurement including perimeter, circumference, area of two-dimensional figures and surface area and volume of three-dimensional figures and solve problems using these figures, including the use of geometric probabilities. The quarter concludes with students studying solving real-world problems involving similar triangles and their properties and theorems.

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT & RESOURCES	
<p><i>Basic Geometry</i> Chapter 4 - McGraw-Hill Bridge Math <i>McGraw Hill Glencoe Geometry</i> PLEASE NOTE: TN CURRICULUM EMPHASIZES PROBLEM SOLVING ASPECTS, NOT THE PROOFS. (Allow approximately 2 weeks for instruction, review, and assessment)</p>			
<p>Domain: Geometric Measurement and Dimensions (G.GMD) Cluster: Visualize relationships between two-dimensional and three-dimensional objects. B.G.GMD.A.2 Use several angle properties to find an unknown angle measure.</p>	<p>Essential Question(s):</p> <ul style="list-style-type: none"> • How do the properties of triangles contribute to the geometric understanding of the world around us? • What can you say about the interior and exterior angles of a triangle and other polygons? • How do you use coordinate geometry to 	<p style="text-align: center;">McGraw-Hill Geometry</p> <p>Review of angles 1-5 Angle Relationships 4-1 Classifying Triangles 4-2 Angles of Triangles</p> <p style="text-align: center;">McGraw-Hill Bridge Math</p> <p>Refresh Your Math Skills, pp.152-153 4-1 Triangles and Triangle Theorems</p>	<p>Vocabulary:</p> <p>Angles, polygon, triangle, vertex, side, interior angle, exterior angle, postulate, included angle, included side, congruent triangles, congruent segments, congruent angles, SSS Congruence Postulate, ASA Congruence Postulate, SAS Congruence Postulate, AAS Congruence Postulate</p>

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	<p>find relationships within triangles?</p> <ul style="list-style-type: none"> How do you solve problems that involve measurements of triangles? <p>Objective(s):</p> <ul style="list-style-type: none"> Students will identify and use special pairs of angles. Students will identify perpendicular lines. Students will solve equations to find the measure of angles. Students classify triangles according to their sides or angles. Students will prove triangles are congruent. 	<p>4-2 Congruent Triangles Geometry Lab: Angles of Triangles, p. 243</p> <p>Additional Lessons/Resources: Engageny Geometry Module 1, Topic B, Lesson 6 – Solve for Unknown Angles – Angles and Lines at a Point Complementary & Supplementary Lesson 1 NCTM Illuminations: Triangle Classification CPalms: Discovering Triangle Sum Khan Academy Videos: Triangle Congruence Khan Academy: Working with Triangles</p> <p>Writing in Math/Discussion:</p> <ul style="list-style-type: none"> How many exterior angles does a triangle have? Draw a triangle and label all of its exterior angles. Explain why classifying an equiangular triangle as an <i>acute</i> equiangular triangle is unnecessary. Explain why a triangle cannot have an obtuse, acute, and a right exterior angle. 	
<p>Domain: Geometric Measurement and Dimensions (G.GMD) Cluster: Visualize relationships between two-dimensional and three-dimensional objects. B.G.GMD.A.2 Use several angle properties to find an unknown angle measure.</p>	<p>Essential Question(s):</p> <ul style="list-style-type: none"> How do the properties of triangles contribute to the geometric understanding of the world around us? What can you say about the interior and exterior angles of a triangle and other polygons? How do you solve problems that involve measurements of triangles? <p>Objective(s):</p> <ul style="list-style-type: none"> Students will establish congruence between two triangles to show that corresponding parts are congruent. Students will find angle and side 	<p>McGraw-Hill Bridge Math 4-3 Congruent Triangles and Proofs McGraw-Hill Geometry 4-6 Isosceles and Equilateral Triangles</p> <p>Task(s): CPalms Task: Are the Triangles Congruent? TN Task Arc- Investigating Congruence in Terms of Rigid Motion, Task 5</p> <p>Additional Lessons/Resources: Engageny Geometry Module 1, Topic D, Lesson 22 – Triangle Congruence Equilateral and Isosceles Triangle</p> <p>Vocabulary: legs, base, base angles, vertex angles, corollary, theorem</p> <p>Writing in Math/Discussion: Have students determine the measure of each angle in an equilateral triangle and justify their answer algebraically.</p>	



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<p>Domain: Geometric Measurement and Dimensions (G.GMD) Cluster: Visualize relationships between two-dimensional and three-dimensional objects. B.G.GMD.A.2 Use several angle properties to find an unknown angle measure.</p>	<p>measures of triangles.</p> <p>Essential Question(s): Is there a limit to the sum of the interior/exterior angles of a polygon why or why not?</p> <p>Objective(s):</p> <ul style="list-style-type: none"> • Students will find and use the measures of interior angles of polygons. • Students will find and use the measures of exterior angles of polygons. 	<p>McGraw-Hill Bridge Math 4-7 Polygons and Angles</p> <p>McGraw-Hill Geometry 6-1 Angles of Polygons Spreadsheet Lab Angles of Polygon, p. 398</p> <p>Task(s): CPalms Task: Interior Angles of a Polygon Illustrative: Sum of Angles in a Polygon</p> <p>Additional Lessons/Resources: Khan Academy: Triangle Angles Illustrations: Angle Sums</p>	<p>Vocabulary: Polygon, vertex, convex, concave, interior angles, exterior angles, consecutive sides, consecutive vertices, diagonal, the Polygon-Sum Theorem (Polygon Interior Angles Sum Theorem), the Polygon Exterior Angle Theorem</p> <p>Writing in Math/Discussion: As the number of sides of a regular polygon becomes larger and larger, what happens to the measure of each exterior angle of the polygon? As the number of sides of a regular polygon becomes larger and larger, what happens to the measure of each interior angle of the polygon? Explain how triangles are related to the Polygon-Sum Theorem (Polygon Interior Angles Sum Theorem).</p>
<p>Domain: Geometric Measurement and Dimensions (G.GMD) Cluster: Visualize relationships between two-dimensional and three-dimensional objects. B.G.GMD.A.2 Use several angle properties to find an unknown angle measure.</p>	<p>Essential Question(s): What can you conclude about the sides, angles, and diagonals of a parallelogram?</p> <p>Objective(s): Students will apply properties of parallelograms to find missing lengths and angle measures.</p>	<p>McGraw-Hill Bridge Math 4-8 Special Quadrilaterals: Parallelograms</p> <p>McGraw-Hill Geometry 6-3 Tests for Parallelograms</p> <p>Task(s) TN Task: Expanding Triangles</p>	<p>Vocabulary: Opposite sides, opposite angles, parallelogram, rectangle, rhombus, square, The Parallelogram-Side Theorem, The Parallelogram-Angle Theorem, The Parallelogram-Diagonal Theorem, The Rectangle-Diagonal Theorem, The Rhombus-Diagonal Theorem</p>



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		<p>Additional Lessons/Resources: CPalms: Quadrilateral Classification Game CPalms: To Be or Not to Be a Parallelogram Characteristics of Quadrilaterals</p>	<p>Writing in Math/Discussion: Are two parallelograms congruent if they both have four congruent angles? Justify your answer. Suppose that you are asked to prove the parallelogram-diagonal theorem. Write a paragraph that explains how you would proceed. (Do not write the two-column proof.)</p>
<p>Domain: Geometric Measurement and Dimensions (G.GMD) Cluster: Visualize relationships between two-dimensional and three-dimensional objects. B.G.GMD.A.2 Use several angle properties to find an unknown angle measure.</p>	<p>Essential Question(s): What are the properties of kites and trapezoids?</p> <p>Objective(s): Students will apply properties of trapezoids to find missing lengths and angle measures.</p>	<p>McGraw-Hill Bridge Math 4-9 Special Quadrilaterals: Trapezoids Graphing Technology Lab: The Triangle Inequality, p.195a Spreadsheet Lab: Angle of Polygons, 195b</p> <p>McGraw-Hill Geometry 6-6 Trapezoids and Kites</p> <p>Task(s) TN Task: Getting in Shape</p> <p>Additional Lessons/Resources: Khan Academy: Quadrilaterals- Kites As Geometric Shape</p> <p>ACT Practice (sample problems to prepare for the ACT) McGraw-Hill Bridge Math, pp. 200-201 McGraw-Hill Geometry, pp.388-389</p>	<p>Vocabulary: Trapezoid, bases, base angles, legs, median, isosceles trapezoid, kite, The Isosceles Trapezoid Theorem</p> <p>Writing in Math/Discussion: Differentiate between the word <i>median</i> when used in geometry to the word <i>median</i> used in statistics. Compare the median of a trapezoid to the median of a triangle. How are they alike? How are they different?</p>



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Measurement Chapter 5 -McGraw-Hill Bridge Math <i>McGraw Hill Glencoe Geometry</i> (Allow approximately 3.5 weeks for instruction, review, and assessment)			
<p>Domain: Geometric Measurement and Dimensions (G.GMD) Cluster: Visualize relationships between two-dimensional and three-dimensional objects B.G.GMD.A.1 Use relationships involving area, perimeter, and volume of geometric figures to compute another measure.</p> <p>Domain: Circles (G.C) Cluster: Find arc lengths and areas of sectors of circles. B.G.C.A.1 Apply a variety of strategies to determine the area and circumference of circles after identifying necessary information.</p>	<p>Essential Question(s):</p> <ul style="list-style-type: none"> How do you find the area of a polygon or find the circumference and area of a circle? How do perimeters and areas of similar polygons compare? <p>Objective(s): Students will apply perimeter, circumference and area formulas.</p>	<p>McGraw-Hill Bridge Math 5-2 & Perimeter, Circumference, and Area</p> <p>McGraw-Hill Geometry 1-6 Two-Dimensional Figures</p> <p>Task(s): Illustrative: Eight Circles Inside Math: Pizza Crusts</p> <p>Additional Lessons/Resources: Khan Academy: Language-and-notation-of-the-circle Khan Academy: Area and Perimeter Khan Academy: Area and Circumference of Circles CPalms: Area and Circumference 1 CPalms: Area and Circumference 2 CPalms: Area and Circumference 3</p>	<p>Vocabulary: Perimeter, circumference, area</p> <p>Writing in Math/Discussion: Since π is an irrational number, many calculations involving π are found using approximations 3.14 or 22/7. When might it be easier to use 22/7 rather than 3.14 to estimate area or circumference?</p>
<p>Domain: Geometric Measurement and Dimensions (G.GMD) Cluster: Visualize relationships between two-dimensional and three-dimensional objects B.G.GMD.A.1 Use relationships involving area, perimeter, and volume of geometric figures to compute another measure.</p> <p>Domain: Modeling with Geometry (G.MG)</p>	<p>Essential Question(s): How can you explain the concepts of probability and use probability to solve real-world problems?</p> <p>Objective(s): Students will determine probabilities using areas.</p>	<p>McGraw-Hill Bridge Math 5-3 Probability and Area</p> <p>McGraw-Hill Geometry 13-3 Geometric Probability</p> <p>Task(s): Inside Math: Marble Game</p>	<p>Vocabulary: probability</p> <p>Writing in Math/Discussion: The probability of an event is a number between 0 and 1. What is the probability that an event will always occur? What is the probability of an impossible event? Give an example of each.</p>



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<p>Cluster: Apply geometric concepts in modeling situations B.G.MG.A.1 Use appropriate technology to find the mathematical model for a set of non-linear data.</p>		<p>Additional Lessons/Resources: Khan Academy: Probability Basics</p>	
<p>Domain: Geometric Measurement and Dimensions (G.GMD) Cluster: Visualize relationships between two-dimensional and three-dimensional objects B.G.GMD.A.3 Apply a variety of strategies using relationships between perimeter, area, and volume to calculate desired measures in composite figures (i.e., combinations of basic figures).</p>	<p>Essential Question(s): How can you break a more complex problem into smaller problems?</p> <p>Objective(s): Students will solve problems involving irregular shapes.</p>	<p>McGraw-Hill Bridge Math 5-4 Problem Solving Skills: Irregular Shapes</p> <p>McGraw-Hill Geometry 11-4 Area of Regular Polygons and Composite Figures</p> <p>Task(s): NCTM Illuminations: Finding the Area of Irregular Figures</p> <p>Additional Lessons/Resources: Khan Academy: Perimeter and Area of a Non-Standard Polygon</p>	
<p>Domain: Modeling with Geometry (G.MG) Cluster: Apply geometric concepts in modeling situations B.G.MG.A.2 Solve problems involving surface area and volume in real-world context.</p>	<p>Essential Question(s): How can you break a more complex problem into smaller problems?</p> <p>Objective(s): Students will analyze space figures.</p>	<p>McGraw-Hill Bridge Math 5-5 Three-dimensional Figures and Loci</p> <p>McGraw-Hill Geometry 12-1 Representations of Three-Dimensional Figures</p> <p>Additional Lessons/Resources: Khan Academy: 2D vs. 3D Objects Platonic Solids Ornaments</p>	



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<p>Domain: Modeling with Geometry (G.MG) Cluster: Apply geometric concepts in modeling situations B.G.MG.A.2 Solve problems involving surface area and volume in real-world context.</p>	<p>Essential Question(s):</p> <ul style="list-style-type: none"> How can you determine the intersection of a solid and a plane? How do you find the surface area and volume of a solid? <p>Objective(s):</p> <ul style="list-style-type: none"> Students will find the surface area of three-dimensional figures. Students will find the volume of three-dimensional figures. 	<p>McGraw-Hill Bridge Math 5-6 Surface Area of Three-dimensional Figures 5-7 Volume of Three-dimensional Figures</p> <p>McGraw-Hill Geometry 12-2 Surface Area of Prisms & Cylinders 12-3 Surface Area of Pyramids & Cones 12-4 Volumes of Pyramids and Cones 12-5 Volumes of Prisms & Cylinders</p> <p>Task(s): Illustrative Math: Pyramids Illustrative Math: Volume Illustrative Math: Surface Area</p> <p>Additional Lessons/Resources: Khan Academy: Cylinder Volume and Surface-Area Surface Area of Pyramids and Cones Khan Academy: Volume of a Sphere Illuminations: Finding Surface Area and Volume</p> <p>ACT Practice (sample problems to prepare for the ACT) McGraw-Hill Bridge Math, pp. 242-243 McGraw-Hill Geometry, pp.456-457</p>	
<p>Similar Triangles Chapter 7 - McGraw-Hill Bridge Math <i>McGraw Hill Glencoe Geometry</i> (Allow approximately 3.5 weeks for instruction, review, and assessment)</p>			
<p>Domain: Seeing Structure in Expressions (A.SSE) Cluster: Write expressions in equivalent forms to solve problems.</p>	<p>Essential Question(s): How do we use proportional relationships in solving real-world problems?</p>	<p>McGraw-Hill Bridge Math 5-1 Ratios and Units of Measure</p> <p>Vocabulary: Measurement, customary, metric, compass, protractor, calipers, micrometers, precision, greatest possible error (GPE), ratio, rate, unit</p>	



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<p>B.A.SSE.A.2 Use algebraic structures to solve problems involving proportional reasoning in real-world context.</p>	<p>Objective(s): Students will use ratios and rates to solve problems.</p>	<p>McGraw-Hill Geometry 7-1 Ratios and Proportions 7-1 Graphing Technology Lab - Fibonacci Sequence and Ratios p. 464</p> <p>Additional Lessons/Resources: Khan Academy: Ratios, Rates and Proportions</p>	<p>rate, unit price.</p> <p>Writing in Math/Discussion: Compare and contrast a ratio and a proportion. Explain how you would use both to solve a problem.</p>
<p>Domain: Seeing Structure in Expressions (A.SSE) Cluster: Write expressions in equivalent forms to solve problems. B.A.SSE.A.2 Use algebraic structures to solve problems involving proportional reasoning in real-world context.</p>	<p>Essential Question(s):</p> <ul style="list-style-type: none"> Why are ratios and proportions important? How are they used in the real world? <p>Objective(s):</p> <ul style="list-style-type: none"> Students will find equivalent ratios. Students will use ratios and proportions to solve problems. 	<p>McGraw-Hill Bridge Math 7-1 Ratios and Proportions</p> <p>McGraw-Hill Geometry 7-1 Ratios and Proportions</p> <p>Task(s): TN Task Arc: Reasoning With Ratios and Rates (Select from Tasks 1 through 8)</p> <p>Additional Lessons/Resources: Khan Academy: Ratios Khan Academy: Writing Proportions Khan Academy: Ratio and Proportion</p>	<p>Vocabulary: Equivalent ratios, proportion, terms, extremes, means, cross products</p> <p>Writing in Math/Discussion: If $a/b = c/d$, is it always true that $a/c = b/d$? Explain.</p>
<p>Domain: Reasoning with Equations and Inequalities (A.REI) Cluster: Understand solving equations as a process of reasoning and explain the reasoning. B.A.REI.A.1 Build functions and write expressions, equations, and inequalities for common algebra settings leading to a solution in context (e.g., rate and distance problems and problems that can be solved using proportions).</p>	<p>Essential Question(s):</p> <ul style="list-style-type: none"> How do you show two polygons are similar? How do you use proportions to find side lengths in similar polygons? <p>Objective(s):</p> <ul style="list-style-type: none"> Students will identify similar polygons. Students will find missing measures of similar polygons. 	<p>McGraw-Hill Bridge Math 7-2 Similar Polygons</p> <p>McGraw-Hill Geometry 7-2 Similar Polygons</p> <p>Task(s): TN Task: Ratios, Proportions, and Similar Figures</p> <p>Additional Lessons/Resources: Similar Polygons - Lesson & Worksheets Lesson: Congruent and Similar Figures</p>	<p>Vocabulary: Similar</p> <p>Writing in Math/Discussion: When given two similar figures, how can you tell which angles are corresponding angles?</p>

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<p>Domain: Reasoning with Equations and Inequalities (A.REI)</p> <p>Cluster: Understand solving equations as a process of reasoning and explain the reasoning.</p> <p>B.A.REI.A.1 Build functions and write expressions, equations, and inequalities for common algebra settings leading to a solution in context (e.g., rate and distance problems and problems that can be solved using proportions).</p>	<p>Essential Question(s): How do you use proportions to find real and scale measurements?</p> <p>Objective(s): Students will find actual or scale length using scale drawings.</p>	<p>McGraw-Hill Bridge Math 7-3 Scale Drawings</p> <p>McGraw-Hill Geometry 7-7 Scale Drawings and Models</p> <p>Task(s): Illustrative Math: Floor Plan</p> <p>Additional Lessons/Resources: Drawing to Scale</p>	<p>Vocabulary: Scale drawing, scale</p> <p>Writing in Math/Discussion: You can produce a scale model of a certain object by extending each dimension by a constant. What must be true of the shape of the object? Explain your reasoning.</p>
<p>Domain: Reasoning with Equations and Inequalities (A.REI)</p> <p>Cluster: Understand solving equations as a process of reasoning and explain the reasoning.</p> <p>B.A.REI.A.1 Build functions and write expressions, equations, and inequalities for common algebra settings leading to a solution in context (e.g., rate and distance problems and problems that can be solved using proportions).</p>	<p>Essential Question(s):</p> <ul style="list-style-type: none"> What does the SAS Triangle Congruence Theorem tell you about triangles? What does the SSS Triangle Congruence Theorem tell you about triangles? <p>Objective(s): Students will use the AA, SSS, and SAS similarity postulates to determine if two triangles are similar and solve problems using similar triangles.</p>	<p>McGraw-Hill Bridge Math 7-4 Postulates for Similar Triangles</p> <p>McGraw-Hill Geometry 7-3 Similar Triangles</p> <p>Task(s): Select appropriate tasks from GSE Analytic Geometry Unit 1: Similarity, Congruence and Proofs</p> <p>Additional Lessons/Resources: Engage[™] Geometry Module 1, Topic D, Lesson 22 – Triangle Congruence</p> <p>Engageny Geometry Module 1, Topic D, Lesson 24 – Congruence Criteria for Triangles – ASA and SSS</p> <p>Khan Academy - Similar Triangle Basics</p>	<p>Vocabulary: The AA Similarity Postulate, the SSS Similarity Theorem, the SAS Similarity Theorem</p> <p>Writing in Math/Discussion: Compare and contrast the AA Similarity Postulate, the SSS Similarity Theorem, and the SAS Similarity Theorem</p> <p>Given a triangle, explain a process you can use to draw a similar triangle that is twice as large.</p>



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT & RESOURCES	
<p>Domain: Similarity, Right Triangles and Trigonometry (G.SRT) Cluster: Understand similarity in terms of similarity transformations. B.G.SRT.A.1 Apply similar triangles to solve problems, such as finding heights and distances.</p>	<p>Essential Question(s):</p> <ul style="list-style-type: none"> If a segment connects the midpoint of two sides of a triangle, what is known about the length of the third side? What is the relationship between the altitudes of two similar triangles? If two triangles are similar, what is known about their medians in relation to the corresponding sides of the triangles? <p>Objective(s):</p> <ul style="list-style-type: none"> Students will prove theorem involving similar triangles. Students will find unknown lengths of sides of triangles. 	<p>McGraw-Hill Bridge Math 7-5 Triangles and Proportional Segments McGraw-Hill Geometry 7-5 Parts of Similar Triangles</p> <p>Task(s): Illustrative: Congruent and Similar Triangles Illustrative: Similar Triangles</p> <p>Additional Lessons/Resources: Khan Academy: Triangle Similarity</p> <p>Writing in Math/Discussion: If two rectangles are similar, do you think their diagonals are proportional to corresponding sides? Explain.</p>	
<p>Domain: Reasoning with Equations and Inequalities (A.REI) Cluster: Understand solving equations as a process of reasoning and explain the reasoning. B.A.REI.A.1 Build functions and write expressions, equations, and inequalities for common algebra settings leading to a solution in context (e.g., rate and distance problems and problems that can be solved using proportions).</p>	<p>Essential Question(s):</p> <ul style="list-style-type: none"> If a line is parallel to one side of a triangle and intersects the other sides at any points except the vertex, what is known about that line? What do you know about the median of a trapezoid in relation to the lengths of the bases? <p>Objective(s):</p> <ul style="list-style-type: none"> Students will use theorems involving parallel lines and proportional segments to find unknown lengths. Students will divide a line segment into congruent parts. Students will solve problems using indirect measurement. 	<p>McGraw-Hill Bridge Math 7-6 Parallel Lines and Proportional Segments 7-7 Problem Solving Skills: Indirect Measurements McGraw-Hill Geometry 7-4 Parallel Lines and Proportional Parts 7-5 Extend: Geometry Lab: Fractals</p> <p>Task(s): Illustrative: Midpoints of Triangle Sides</p> <p>Additional Lessons/Resources: Brightstorm: Proportional Segments Between Parallel lines Brightstorm: Indirect Measurement</p> <p>Vocabulary: Median</p> <p>Writing in Math/Discussion: Construct the following segment as directed:</p> <ul style="list-style-type: none"> A segment separated into two segments in which their lengths have a ratio of 1 to 3. 	



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT & RESOURCES	
		<p>ACT Practice (sample problems to prepare for the ACT) McGraw-Hill Bridge Math, pp. 294-295; pp.336-337 McGraw-Hill Geometry, pp.456-457; pp. 532-533</p>	

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[Tennessee Academic Standards for Mathematics](#)



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BRIDGE MATH

RESOURCE TOOLBOX

NWEA MAP Resources: https://teach.mapnwea.org/assist/help_map/ApplicationHelp.htm#UsingTestResults/MAPReportsFinder.htm - Sign in and Click the Learning Continuum Tab – this resources will help as you plan for intervention, and differentiating small group instruction on the skill you are currently teaching. (Four Ways to Impact Teaching with the Learning Continuum)
<https://support.nwea.org/khanrit> - These Khan Academy lessons are aligned to RIT scores.

<p>Textbook Resources http://www.connected.mcgraw-hill.com/ http://www.pearsonsuccessnet.com/</p>	<p>Standards Common Core Standards - Mathematics Common Core Standards - Mathematics Appendix A http://www.ccsstoolbox.org/ Common Core Lessons Tennessee State Math Standards</p>	<p>Videos Brightstorm Teacher Tube The Futures Channel Khan Academy Math TV Lamar University Tutorial Shmoop - We Speak Students</p>
<p>Additional Sites Illuminations (NCTM) Stem Resources www.learnzillion.com</p>	<p>Interactive Manipulatives & Tasks National Math Resources MARS Course 2 NASA Space Math Math Vision Project UT Dana Center Edutoolbox (formerly TNCore) Illustrative Mathematics Inside Math Tasks Math Vision Project Tasks Better Lesson National Math Resources SMARTboard Lessons</p>	<p>Calculator Math Nspired Texas Instrument Activities Casio Activities</p>
<p>Literacy Graphic Organizers (9-12)</p>	<p>ACT TN ACT Resources ACT College & Career Readiness Mathematics Standards</p>	

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