



Curriculum and Instruction – Mathematics

Quarter 1

Grade 8



Mathematics Grade 8: Year at a Glance 2018-2019

Q1		Q2		Q3		Q4	
Module 1 Aug.6-Aug. 28	Module 2 Aug.29- Sept. 18	Module 3 Sept.19-Oct. 5	Module 4 Oct.15-Dec.14 (Includes Semester Exam Days)	Module 5 Jan 14-Feb. 6	Module 6 Feb. 7-Mar.1	Gr. 7 Module 5 Lessons 6-7 Feb. 27–Feb 28	Module 7 Mar. 4 -April 12 After TNReady April 29-May 24
Integer Exponents and Scientific Notation	The Concept of Congruence	Similarity	Linear Equations	Examples of Functions from Geometry	Linear Functions		Introduction to Irrational Numbers Using Geometry
8.EE.1	8.G.1	8.G.2	8.EE.5	8.F.1	8.F.4	8.SP.4	8.NS.1
8.EE.3	8.G.3	8.G.3	8.EE.6	8.F.2	8.F.5		8.NS.2
8.EE.4	8.G.4	8.G.4	8.EE.7	8.F.3	8.SP.1		8.EE.2
	8.G.5	8.G.5	8.EE.8	8.G.7	8.SP.2		8.G.4
					8.SP.3		8.G.5
							8.G.6
							8.G.7
							After TNReady
							8.EE 1, 3-6, 8
							8.F 1-3
							8.G 2, 5, 7

Note: Please use the suggested pacing as a guide. It is understood that teachers may be up to one week ahead or one week behind depending on the needs of their students.

Use this guide as you prepare to teach a module for additional guidance in planning, pacing, and suggestions for omissions. [Pacing and Preparation Guide \(Omissions\)](#)

Major Content	Supporting Content
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61619



■ Major Content

➤ Supporting Content



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



■ Major Content

➤ Supporting Content



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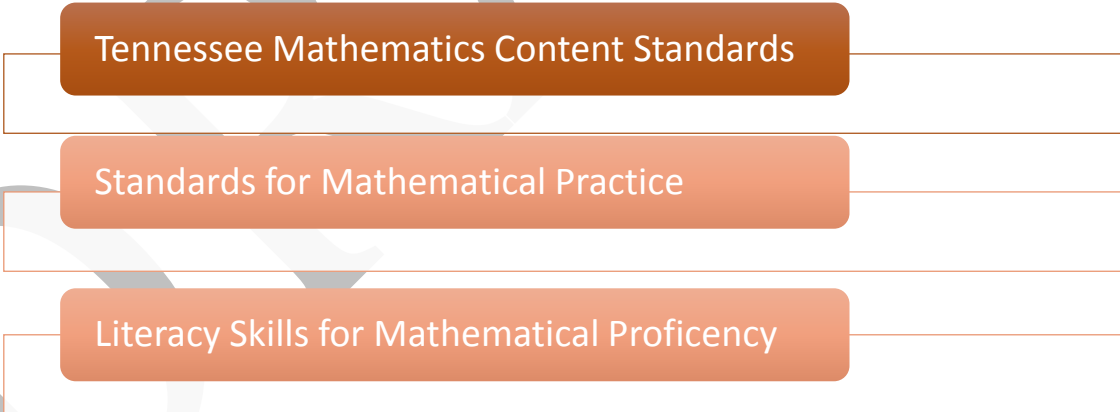
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The **Standards for Mathematical Practice** describe varieties of expertise, habits of minds and productive dispositions that mathematics educators at all levels should seek to develop in their students. These practices rest on important National Council 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.





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. 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

District and web-based resources have been provided in the Instructional Support column. 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.

Vocabulary and Fluency

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. In order to aid your planning, we have also included a list of fluency activities for each lesson. It is expected that fluency practice will be a part of your daily instruction. (Note: Fluency practice is not intended to be speed drills, but rather an intentional sequence to support student automaticity. Conceptual understanding must underpin the work of fluency.

Instructional Calendar

As a support to teachers and leaders, an instructional calendar is provided **as a guide**. Teachers should use this calendar for effective planning and pacing, and leaders should use this calendar to provide *support* for teachers. Due to variances in class schedules and differentiated support that may be needed for students' adjustment to the calendar may be required.



Grade 8 Quarter 1 Overview

Module 1: Integer Exponents & Scientific Notation

Module 2: The Concept of Congruence

Module 3: Similarity

The chart below includes the standards that will be addressed in this quarter, the type of rigor the standards address, and foundational skills needed for mastery of these standards. Consider using these foundational standards to address student gaps during intervention time as appropriate for students

Grade Level Standard	Type of Rigor	Foundational Standards
8.EE.1	Conceptual Understanding & Procedural Fluency	6.EE.1
8.EE.3	Conceptual Understanding & Procedural Fluency	5.NBT.2
8.EE.4	Conceptual Understanding & Procedural Fluency	7.EE.3
8.G.1	Conceptual Understanding	7.G.2, 7.G.4
8.G.2	Conceptual Understanding	
8.G.3	Conceptual Understanding	6.G.3
8.G.4	Conceptual Understanding	
8.G.5	Procedural Fluency & Application	



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Module 1 Integer Exponents and Scientific Notation Grade 8 Pacing and Preparation Guide (Allow approximately 3.5 weeks for instruction, review and assessment)			
<p>Domain: Expressions and Equations Cluster: Work with radicals and integer exponents</p> <p>■ 8.EE.A.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions.</p>	<p>Essential Question(s):</p> <ul style="list-style-type: none"> What is the purpose for using exponents? <p>Topic A Objectives</p> <p>Lesson 1:</p> <ul style="list-style-type: none"> Students will know what it means for a number to be raised to a power and how to represent the repeated multiplication symbolically. <p>Lesson 2:</p> <ul style="list-style-type: none"> Students will use the definition of exponential notation to make sense of the first law of exponents. Students will simplify exponential expressions and write equivalent expressions using the first law of exponents. <p>Lesson 3:</p> <ul style="list-style-type: none"> Students know that when a product is raised to a power, each factor of the product is raised to that power. Students write simplified, equivalent numeric, and symbolic expressions using this new knowledge of powers. <p>Lesson 4:</p> <ul style="list-style-type: none"> Students know that a number raised to the zeroth power is equal to one. <p>Lesson 5:</p> <ul style="list-style-type: none"> Students know the definition of a number raised to a negative exponent. Students simplify and write equivalent expressions that contain negative exponents. 	<p>Topic A: Exponential Notation and Properties of Integer Exponents</p> <p>Lesson 1 Lesson 2 Lessons 3 & 4, Combine: Suggestion for combining:</p> <ul style="list-style-type: none"> Lesson 3 – Examples 1-2; Exercises 1-5, 7-13; Exit Ticket; Problem Set Lesson 4 – Use the definition $x^m / x^m = x^{m-m} = x^0 = 1$ and show examples in expanded form to explain numbers raised to the zeroth power. Then do fluency exercise. <p>Lesson 5 Lesson 6 Omit <i>Grade 8 M1 TA Assessment</i></p> <p>For Topic A, you may choose to use resources from Teacher Toolbox Lesson 1: Properties of Integer Exponents for review, remediation and/or assessment to meet the needs of your students.</p> <p>Mid-Module 1 Assessment & Review of Assessment: Do #1 & 3 (omit part c for both) (Complete by 8/20/18) <i>Grade 8 Mid-Module 1 Alternate Assessment</i></p> <p>Additional Resources: <i>These optional resources may be used for extension, enrichment and/or additional practice, as needed.</i></p>	<p>Vocabulary for Module 1: Order of Magnitude Scientific Notation</p> <p>Familiar Terms and Symbols for Module 1: Base, Exponent, Power, Equivalent Fractions Expanded Form (of decimal numbers), Exponential Notation, Integer, Square and Cube (of a number), Whole Number</p>



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
		<p>Exponents of one, zero or negative: video Illustrative Math: Raising to the Zero and Negative Power 8.EE.1</p> <p>Reminder: It is recommended that teachers should begin preparing for Module 2 by 8/15/18.</p>	
<p>■ 8.EE.A.3 Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities and to express how many times as much one is than the other. For example, estimate the population of the United States as 3×10^8 and the population of the world as 7×10^9, and determine that the world population is more than 20 times larger.</p> <p>■ 8.EE.4 Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notations are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.</p>	<p>Topic B Objectives:</p> <p>Lesson 7:</p> <ul style="list-style-type: none"> Students know that positive powers of 10 are very large numbers, and negative powers of 10 are very small numbers. Students know that the exponent of an expression provides information about the magnitude of a number. <p>Lesson 8:</p> <ul style="list-style-type: none"> Students compare and estimate quantities in the form of a single digit times a power of 10. Students use their knowledge of ratios, fractions, and laws of exponents to simplify expressions. <p>Lesson 9:</p> <ul style="list-style-type: none"> Students write, add, and subtract numbers in scientific notation and understand what is meant by the term leading digit. <p>Lesson 10:</p> <ul style="list-style-type: none"> Students practice operations with numbers expressed in scientific notation and standard notation. <p>Lesson 11: Optional</p> <ul style="list-style-type: none"> Students continue to practice working with 	<p>Topic B: Magnitude and Scientific Notation</p> <p>Before starting Lesson 7, show the Interactive Tutorial video from Teacher Toolbox Lesson 4: Scientific Notation (start at part 4 of video)</p> <p>Lessons 7 & 8, Combine Suggestion for combining:</p> <ul style="list-style-type: none"> Include a discussion about 10^n and 10^{-n} (from lesson 7) during the instruction of lesson 8. <p>Lesson 9 Lesson 10</p> <ul style="list-style-type: none"> Time permitting, do the RWBE from Lesson 13 as part of lesson 10 <p>Lesson 11 (Optional) – As time permits, use this as an extension lesson because it extends beyond the expectations of the target standards. Lesson 12 Lesson 13 Omit Grade 8 M1 TB Assessment</p> <p>For Topic B, you may choose to use</p>	



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
	<p>very small and very large numbers expressed in scientific notation.</p> <ul style="list-style-type: none"> Students read, write, and perform operations on numbers expressed in scientific notation. <p>Lesson 12:</p> <ul style="list-style-type: none"> Students understand how choice of unit determines how easy or difficult it is to understand an expression of measurement. Students determine appropriate units for various measurements and rewrite measurements based on new units. 	<p>resources from the following Teacher Toolbox lesson for review, remediation and/or assessment to meet the needs of your students.</p> <ul style="list-style-type: none"> Lesson 5: Operations and Scientific Notation <p>End of Module 1 Assessment & Review of Assessment: Do all questions; however, #1 & #3 can be shortened by omitting part c from each. <i>(Complete by 8/28/18)</i> Grade 8 End-Of-Module 1 Alternate Assessment</p> <p>Additional Resources: <i>These optional resources may be used for extension, enrichment and/or additional practice, as needed.</i> Illustrative Math: Orders of Magnitude 8.EE.3 Illustrative Math: Choosing Appropriate Units 8.EE.4</p>	

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
<p>Module 2 The Concept of Congruence <u>Grade 8 Pacing and Preparation Guide</u> (Allow approximately 3.5 weeks for instruction, review and assessment)</p>			
<p>Domain: Geometry Cluster: Understand and describe the effects of transformations on two dimensional figures and use informal arguments to establish facts about angles.</p> <p>➤ 8.G.A.1 Verify experimentally the properties of rotations, reflections, and translations: a. Lines are taken to lines, and line segments to line segments of the same length. b. Angles are taken to angles of the same measure. c. Parallel lines are taken to parallel lines.</p>	<p>Essential Questions: What are the different ways a segment (or figure) may be transformed and how do you know if a transformation produces figures that are similar or congruent to the original figure?</p> <p>Topic A Objectives:</p> <p>Lesson 1:</p> <ul style="list-style-type: none"> • Students are introduced to vocabulary and notation related to rigid motions (e.g., transformation, image, and map). • Students are introduced to transformations of the plane and learn that a rigid motion is a transformation that is distance-preserving. <p>Lesson 2:</p> <ul style="list-style-type: none"> • Students perform translations of figures along a specific vector. Students label the image of the figure using appropriate notation. • Students learn that a translation maps lines to lines, rays to rays, segments to segments, and angles to angles. • Students learn that translations preserve lengths of segments and degrees of angles. <p>Lesson 3:</p> <ul style="list-style-type: none"> • Students learn that when lines are translated, they are either parallel to the given line or they coincide. • Students learn that translations map parallel lines to parallel lines. <p>Lesson 4</p>	<p>Topic A: Definitions and Properties of the Basic Rigid Motions</p> <p>Lesson 1 Lessons 2 & 3, Combine: Suggestion for combining:</p> <ul style="list-style-type: none"> • Lesson 2 – Examples 1, 2, & 4, Exercise 2 • Lesson 3 – Exercises 2-5; Choose the appropriate Exit Tickets items from both lessons <p>Lesson 4 Lessons 5 & 6, Combine: Suggestion for combining:</p> <ul style="list-style-type: none"> • Lesson 5 • Lesson 6 – Choose 2-3 items from Exercises 1-9 to include in your discussion of lesson 5. <p>For Topic A, you may choose to use Teacher Toolbox Lesson 18: <i>Understand Properties of Transformations</i> for review and remediation to meet the needs of your students.</p> <p>Topic Assessment or Mid-Module 2 Assessment & Review of Assessment: (If you choose to administer the mid-module assessment, only include #1, 2, & 3a) <i>(Complete by 9/7/18)</i> Grade 8 M2 TA Assessment Grade 8 Mid-Module 2 Alternate Assessment</p>	<p>Vocabulary for Module 2: Angle preserving, basic rigid motion, between, congruence, congruent, directed line segment, distance preserving, exterior angle, reflection, rotation, transformation, translation, transversal, vector</p> <p>Familiar Terms and Symbols for Module 2: Area and perimeter, Parallel and perpendicular lines, ray, line, line segment, angle, supplementary, complementary, vertical, and adjacent angles, triangle, quadrilateral</p>



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	<ul style="list-style-type: none"> • Students know the definition of reflection and perform reflections across a line using a transparency. Students show that reflections share some of the same fundamental properties with translations (e.g., lines map to lines, angle- and distance-preserving motion). • Students know that reflections map parallel lines to parallel lines. • Students know that for the reflection across a line L and for every point P not on L, L is the bisector of the segment joining P to its reflected image P' <p>Lesson 5:</p> <ul style="list-style-type: none"> • Students know how to rotate a figure a given degree around a given center. • Students know that rotations move lines to lines, rays to rays, segments to segments, and angles to angles. • Students know that rotations preserve lengths of segments and degrees of measures of angles. • Students know that rotations move parallel lines to parallel lines. <p>Lesson 6:</p> <ul style="list-style-type: none"> • Students learn that a rotation of 180 degrees moves a point on the coordinate plane (a, b) to $(-a, -b)$. • Students learn that a rotation of 180 degrees around a point, not on the line, produces a line parallel to the given line. 	<p>Additional Resources: <i>This optional resource may be used for extension, enrichment and/or additional practice, as needed.</i> Illustrative Math: Origami Silver Rectangle</p> <p>Reminder: <i>It is recommended that teachers should begin preparing for Module 3 by 9/5/18.</i></p>	



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY		
<p>➤ 8.G.3 (formerly 8.G.5) Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.</p>	<p>Topic C Objectives:</p> <p>Lesson 12:</p> <ul style="list-style-type: none"> • Students know that corresponding angles, alternate interior angles, and alternate exterior angles of parallel lines are equal. • Students know that when these pairs of angles are equal, then lines are parallel. • Students know that corresponding angles of parallel lines are equal because of properties related to translation. • Students know that alternate interior angles of parallel lines are equal because of properties related to rotation. • Students present informal arguments to draw conclusions about angles formed when parallel lines are cut by a transversal. <p>Lesson 13:</p> <ul style="list-style-type: none"> • Students know the angle sum theorem for triangles; the sum of the interior angles of a triangle is always 180°. • Students present informal arguments to draw conclusions about the angle sum of a triangle. <p>Lesson 14:</p> <ul style="list-style-type: none"> • Students know a third informal proof of the angle sum theorem. • Students know how to find missing interior and exterior angle measures of triangles and present informal arguments to prove their answer is correct. 	<p><i>The standard addressed in Topic B is no longer a part of the TN State Math Standards for grade 8. You may choose to Omit Topic B or, if time permits you may teach these four lessons because students verify that the basic properties of individual rigid motions remain intact and perform sequences as a prelude to learning about congruence in high school geometry.</i></p> <p>Topic C: Congruence and Angle Relationships</p> <p>Lesson 11 Omit Lesson 12 Lesson 13 Lesson 14</p> <table border="1" data-bbox="1056 800 1507 954"> <tr> <td>Lessons 15 & 16 (Skip)</td> <td>Items from these lessons will be combined with Module 3 lessons 13 & 14.</td> </tr> </table> <p><i>For Topic C, you may choose to use resources from the following Teacher Toolbox lessons for review, remediation and/or assessment to meet the needs of your students.</i></p> <ul style="list-style-type: none"> • Lesson 21: <i>Understand Angle Relationships</i> • Lesson 22: <i>Understand Angle Relationships in Triangles</i> <p>Grade 8 M2 TC Assessment</p> <p>End of Module 2 Assessment (omit #1) & Review of Assessment</p>	Lessons 15 & 16 (Skip)	Items from these lessons will be combined with Module 3 lessons 13 & 14.	
Lessons 15 & 16 (Skip)	Items from these lessons will be combined with Module 3 lessons 13 & 14.				



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
		<p><i>(Complete by 9/18/18)</i> Grade 8 End-of-Module 2 Alternate Assessment</p> <p>Additional Resources: <i>These optional resources may be used for extension, enrichment and/or additional practice, as needed.</i></p> <p>Illustrative Math: Find the Missing Angle Illustrative Math: A Triangle's Interior Angles Illustrative Math: Street Intersections</p>	

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■ Major Content

➤ Supporting Content



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Module 3 Similarity Grade 8 Pacing and Preparation Guide (Allow approximately 2 weeks for instruction, review and assessment)			
<p>Domain: Geometry Cluster: Understand and describe the effects of transformations on two dimensional figures and use informal arguments to establish facts about angles.</p> <p>➤ 8.G.2 (formerly 8.G.3) Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates</p>	<p>Essential Question(s):</p> <ul style="list-style-type: none"> What effect does dilations, translations, rotations and reflections have on a 2-D figure drawn on a coordinate plane? <p>Topic A Objectives:</p> <p>Lesson 1:</p> <ul style="list-style-type: none"> Students learn the definition of dilation and why “same shape” is not good enough to say when two figures are similar. Students know that dilations magnify and shrink figures. <p>Lesson 3:</p> <ul style="list-style-type: none"> Students know that dilations map circles to circles and ellipses to ellipses. Students know that to shrink or magnify a dilated figure back to its original size from center O with scale factor r the figure must be dilated by a scale factor of $1/r$. <p>Lesson 4:</p> <ul style="list-style-type: none"> Students experimentally verify the properties related to the fundamental theorem of similarity (FTS). <p>Lesson 5:</p> <ul style="list-style-type: none"> Students verify the converse of the fundamental theorem of similarity experimentally. Students apply the fundamental theorem of similarity to find the location of dilated points on the plane. <p>Lesson 6:</p> <ul style="list-style-type: none"> Students describe the effect of dilations on two-dimensional figures using coordinates. 	<p>Topic A: Dilation</p> <p>Lesson 1 Lesson 2 Omit Lesson 3 (During this lesson show the interactive video “Coordinating” the Band from Teacher Toolbox Lesson 20: <i>Transformations and Similarity</i> because it describes additional shapes.)</p> <p>Lessons 4 & 5, Combine (2 days) Suggestion for combining:</p> <ul style="list-style-type: none"> Lesson 4 – Exercises Lesson 5 – Exercises 1-3, Example 1; choose appropriate Exit Tickets items from both lessons <p>Lesson 6 Lesson 7 Omit</p> <p>For Topic A, you may choose to use Teacher Toolbox Lesson 20: <i>Transformations and Similarity</i> for review, remediation and/or assessment to meet the needs of your students.</p> <p>Grade 8 M3 TA Assessment</p> <p>Topic A Assessment or Mid-Module 3 Assessment (Do items 2 & 3, but adjust #2 to not include use of a protractor or ruler, or add items that do not require use of a protractor or ruler.) (Complete by 9/27/18)</p>	<p>Vocabulary for Module 3: dilation, scale drawing, similar, similarity transformation</p> <p>Familiar Terms and Symbols for Module 3: Angle-Preserving Scale Drawing</p>



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY			
		<p>Grade 8 Mid-Module 3 Alternate Assessment</p> <p>Additional Resource(s): <i>These optional resources may be used for extension, enrichment and/or additional practice, as needed.</i></p> <p>Illustrative Math: Reflecting Reflections Illustrative Math: Effects of Dilations on Length, Area & Angles</p> <p>Reminder: <i>It is recommended that teachers should begin preparing for Module 4 by 9/24/18.</i></p>				
		<p>Omit Topic B because the standards addressed are no longer a part of the TN State Math Standards for grade 8.</p>				
<p>Domain: Geometry Cluster: Understand and apply the Pythagorean Theorem.</p> <p>■ 8.G.B.4 (formerly 8.G.B.6) Explain a proof of the Pythagorean Theorem and its converse.</p> <p>■ 8.G.B.5 (formerly 8.G.B.7) Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two- and three-dimensions.</p>	<p>Essential Questions:</p> <ul style="list-style-type: none"> How is the formula for Pythagorean Theorem derived? How can the Pythagorean Theorem be used to make conjectures about triangles? <p>Topic C Objectives:</p> <p>Lesson 13:</p> <ul style="list-style-type: none"> Students practice applying the Pythagorean theorem to find the lengths of sides of right triangles in two dimensions. <p>Lesson 14:</p> <ul style="list-style-type: none"> Students illuminate the converse of the Pythagorean theorem through computation 	<p>Topic C: The Pythagorean Theorem</p> <table border="1" data-bbox="1056 1000 1512 1185"> <tr> <td data-bbox="1056 1000 1201 1032">Lesson 13</td> <td data-bbox="1201 1000 1512 1032" rowspan="2"><i>(While teaching lessons 13 and 14, pull examples, exercises and/or problem set items from Module 2 Lessons 15 & 16.)</i></td> </tr> <tr> <td data-bbox="1056 1032 1201 1065">Lesson 14</td> </tr> </table> <p>For Topic C, may choose to use resources from Teacher Toolbox Lesson 23: <i>Understand the Pythagorean Theorem</i> for review, remediation and/or assessment to meet the needs of your students.</p> <p>End-of-Module Assessment (Do #1-2 and</p>	Lesson 13	<i>(While teaching lessons 13 and 14, pull examples, exercises and/or problem set items from Module 2 Lessons 15 & 16.)</i>	Lesson 14	
Lesson 13	<i>(While teaching lessons 13 and 14, pull examples, exercises and/or problem set items from Module 2 Lessons 15 & 16.)</i>					
Lesson 14						



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
	<p>of examples and counterexamples.</p> <ul style="list-style-type: none"> Students apply the theorem and its converse to solve problems. 	<p>add Pythagorean Theorem items.) & Review of Assessment <i>(Complete by 10/5/18)</i> Grade 8 End-Of-Module 3 Alternate Assessment</p> <p>Additional Resources: <i>These optional resources may be used for extension, enrichment and/or additional practice, as needed.</i></p> <p>Illustrative Math Tasks: Pythagorean Theorem Inside Mathematics Patterns in Prague Inside Mathematics Pugs</p>	

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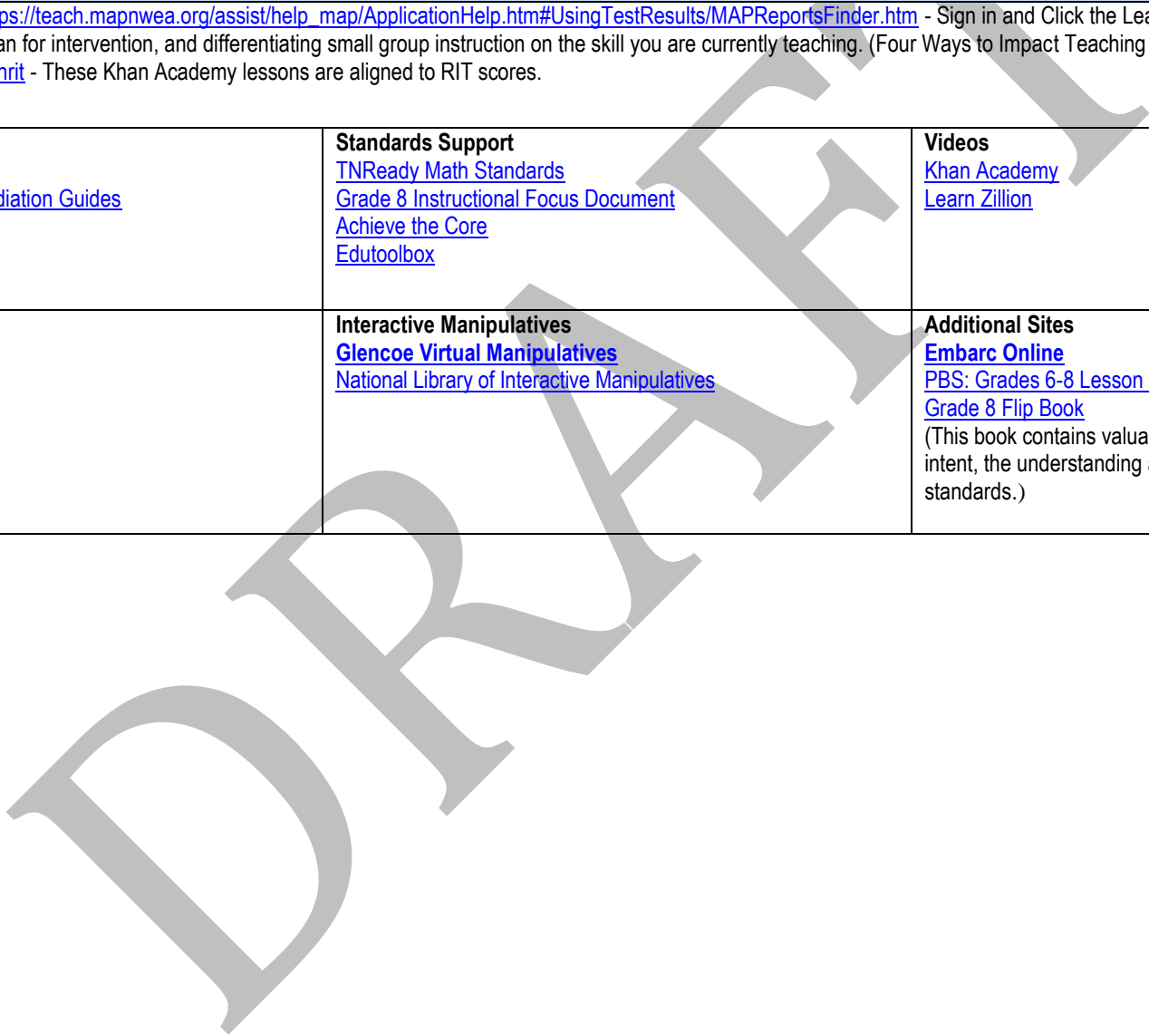
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RESOURCE TOOLBOX

The Resource Toolbox provides additional support for comprehension and mastery of grade-level skills and concepts. While some of these resources are imbedded in the map, the use of these categorized materials can assist educators with maximizing their instructional practices to meet the needs of all students.

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 www.greatminds.org Eureka Math Grade 8 Remediation Guides</p>	<p>Standards Support TNReady Math Standards Grade 8 Instructional Focus Document Achieve the Core Edutoolbox</p>	<p>Videos Khan Academy Learn Zillion</p>
<p>Calculator Activities TI-73 Activities CASIO Activities TI-Inspire for Middle Grades</p>	<p>Interactive Manipulatives Glencoe Virtual Manipulatives National Library of Interactive Manipulatives</p>	<p>Additional Sites Embarc Online PBS: Grades 6-8 Lesson Plans Grade 8 Flip Book (This book contains valuable resources that help develop the intent, the understanding and the implementation of the state standards.)</p>





Curriculum and Instruction – Mathematics

Quarter 1

Grade 8

Shelby County Schools – Grade 8 - August 2018

Mon	Tue	Wed	Thu	Fri	
		1	2	3	
6 Q1 Begins Prepare to launch Module 1	7	8	9	10	
13	14	15 Start preparing for Module 2	16	17	
20 Mid-Module 1 Assessment & Review of Assessment	21	22	23	24	
27 End-of-Module 1 Assessment & Review of Assessment	28 End-of-Module 1 Assessment & Review of Assessment	29 Begin Module 2	30	31	

■ Major Content

➤ Supporting Content



Curriculum and Instruction – Mathematics

Quarter 1

Grade 8

Shelby County Schools – Grade 8 - September 2018					
Mon	Tue	Wed	Thu	Fri	
3 Labor Day	4	5 Start preparing for Module 3	6	7 Topic A Assessment or Mid-Module 2 Assessment (see map for more information)	
10	11	12	13 Parent Conferences	14	
17	18 Topic B Assessment or End-of-Module 2 Assessment (see map for more information)	19 Begin Module 3	20	21	
24 Start preparing for Module 4	25	26	27 Topic A Assessment or Mid-Module 3 Assessment (see map for more information)	28	

■ Major Content

➤ Supporting Content



Curriculum and Instruction – Mathematics

Quarter 1

Grade 8

Shelby County Schools – Grade 8 - October 2018					
Mon	Tue	Wed	Thu	Fri	
1	2	3	4 Topic B or End-of-Module 3 Assessment & Review of Assessment	5 Q1 Ends Topic B or End-of-Module 3 Assessment & Review of Assessment	
8 Columbus Day Fall Break	9	10	11	12	
15	16	17	18	19	
22	23	24	25	26	
29	30	31 Halloween			

■ Major Content

➤ Supporting Content