Curriculum and Instruction – Mathematics

Quarter 1 Grade 8

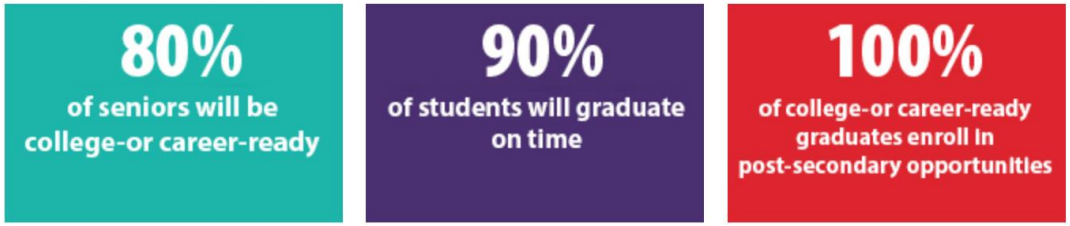
Mathematics
Grade 8: Year at a Glance
2019-2020

Q1			Q2	Q3			Q4	
Module 1 **Aug. 12-Sept. 6**	**Module 2** **Sept. 9 -Sept. 23**	**Module 3** **Sept. 23-Oct. 10**	**Module 4** **Oct. 21-Dec. 20** **(Includes Semester Exam Days)**	**Module 5** **Jan. 6 – Feb. 5**	**Module 6** **Feb. 6 –Feb. 28**	**Gr. 7 Module 5** **Lessons 6-7** **Feb. 27- Feb. 28**	**Module 7** **Mar. 9 -April 24** **TNReady April 13-May 8** **Review after TNReady** **May 9-May 24**	
Integer Exponents & Scientific Notation	**The Concept of Congruence**	**Similarity**	**Linear Equations**	**Examples of Functions from Geometry**	**Linear Functions**		**Introduction to Irrational Numbers Using Geometry**	
8.EE.A.1	**8.G.A.1**	**8.G.A.2**	**8.EE.B.5**	**8.F.A.1**	**8.F.B.4**	**8.SP.B.4**	**8.NS.A.1**	
8.EE.A.3	**8.G.A.3**	**8.G.A.3**	**8.EE.B.6**	**8.F.A.2**	**8.F.B.5**		**8.NS.A.2**	
8.EE.A.4	**8.G.B.4**	**8.G.B.4**	**8.EE.C.7**	**8.F.A.3**	**8.SP.A.1**		**8.EE.A.2**	
	8.G.B.5	**8.G.B.5**	**8.EE.C.8**	**8.G.C.7**	**8.SP.A.2**		**8.G.B.4**	
					8.SP.A.3		**8.G.B.5**	
							8.G.B.6	
							8.G.C.7	
							After TNReady	
							8.EE	**1, 3-6, 8**
							8.F	**1-3**
							8.G	**2, 5, 7**

■Major Content ➢ Supporting Content ■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**.

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 Mathematics Content Standards

Standards for Mathematical Practice

Literacy Sckills for Mathematical Proficency

How to Use the Curriculum Map

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.

■Major Content ➢ Supporting Content ■Major Content ➢ Supporting Content

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	
➘ **Indicates the Power Standard based on the 2017-18 TN Ready Assessment.**		
Instructional Focus Document – Grade 8		

Curriculum and Instruction – Mathematics

Quarter 1 Grade 8

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)**			
Domain: Expressions and Equations **Cluster:** Work with radicals and integer exponents ■ **8.EE.A.1** Know and apply the properties of integer exponents to generate equivalent numerical expressions.	**Essential Question(s):** • What is the purpose for using exponents? **Topic A Objectives** **Lesson 1**: (**8.EE.A.1**) • Students will know what it means for a number to be raised to a power and how to represent the repeated multiplication symbolically. **Lesson 2:** (**8.EE.A.1**) • 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. **Lesson 3:** (**8.EE.A.1**) • 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. **Lesson 4**: (**8.EE.A.1**) • Students know that a number raised to the zeroth power is equal to one.	**Topic A: Exponential Notation and Properties of Integer Exponents** **Topic A and Teacher Toolbox Alignment:** **Lesson 1: *Properties of Integer Exponents*** Integrating Teacher Toolbox Lessons **Lesson 1** **Lessons 2 & 4, combine** Suggestion for combining: • **Lesson 2** –Classwork Discussion Examples 1-2; Exercises 10-11;2nd Discussion, Exercises 25-31 • **Lesson 4** –conceptual development and guide through one proof of the exploratory challenge, students simply need to understand that any term raised to the zero power is equal to 1. Then do fluency exercise. **Lessons 3** **Continued below**	**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 **Vocabulary for Module 1 Topic A**: Order of Magnitude Laws of Exponents

Curriculum and Instruction – Mathematics

Quarter 1 Grade 8

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Domain: Expressions and Equations **Cluster:** Work with radicals and integer exponents ■ **8.EE.A.1** Know and apply the properties of integer exponents to generate equivalent numerical expressions.	**Lesson 5**: (**8.EE.A.1**) • Students know the definition of a number raised to a negative exponent. • Students simplify and write equivalent expressions that contain negative exponents.	**Topic A, cont'd** **Lesson 5** **Lesson 6 Omit** *Optional Quiz for Module 1 Topic A* **Mid-Module 1 Assessment & Review of Assessment: Do #1 & 3 (omit part c for both)** ***(Complete by 8/27/19)*** Optional Mid-Module 1 Assessment **Additional Resources:** *These optional resources may be used for extension, enrichment and/or additional practice, as needed.* Exponents of one, zero or negative: video Illustrative Math: Raising to the Zero and Negative Power 8.EE.1 **Reminder:** *It is recommended that teachers should begin preparing for Module 2 by 8/26/19.*	**Vocabulary for Module 1 Topic A**: Order of Magnitude Laws of Exponents

Curriculum and Instruction – Mathematics

Quarter 1 — Grade 8

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Domain: Expressions and Equations **Cluster:** Work with radicals and integer exponents ■ **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 x 108 and the population of the world as 7 x 109, and determine that the world population is more than 20 times larger. **Domain**: Expressions and Equations **Cluster:** Work with radicals and integer exponents ■ **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.	**Topic B Objectives:** **Lesson 8:** (**8.EE.A.3**) • 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. **Lesson 9**: (**8.EE.A.4**) • Students write, add, and subtract numbers in scientific notation and understand what is meant by the term leading digit.	**Topic B: Magnitude and Scientific Notation** **Topic B and Teacher Toolbox Alignment:** **Lesson 5: *Operations and Scientific Notation*** **Integrating Teacher Toolbox Lessons** **Lesson 7 omit** **Lesson 8** **Lesson 9 – 2 days** • Day 1: Discussion 1, example 1, exercises 1-6 • Day 2: Examples 2-3, exercises 7-9, closing ideas, Exit Ticket **Continued below**	**Vocabulary for Module 1 Topic B**: Powers of 10 Scientific Notation

Curriculum and Instruction – Mathematics

Quarter 1 Grade 8

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Domain: Expressions and Equations **Cluster:** Work with radicals and integer exponents ■ **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.	**Lesson 10:** (**8.EE.A.4**) • Students practice operations with numbers expressed in scientific notation and standard notation. **Lesson 11**: (**8.EE.A.4**) • Students continue to practice working with very small and very large numbers expressed in scientific notation. • Students read, write, and perform operations on numbers expressed in scientific notation. **Lesson 13:** (**8.EE.A.4**) • Students compare numbers expressed in scientific notation. • Students apply the laws of exponents to interpret data and use technology to compute with very large numbers.	**Topic b, cont'd** **Lessons 10-11, combine** Suggestion for combining: • **Lesson 10**-Examples 1-2, Exercises 1-2 • **Lesson 11**-Exercises 5-6 • Lesson 10 Exit Ticket **Lesson 12 Omit** **Lesson 13** **Optional Quiz for Module 1 Topic B** **End of Module 1 Assessment & Review of Assessment: Do all questions; however, #1 & #3 can be shortened by omitting part c from each.** ***(Complete by 9/6/19)*** **Optional End-Of-Module 1 Assessment** **Additional Resources:** *These optional resources may be used for extension, enrichment and/or additional practice, as needed.* Illustrative Math: Orders of Magnitude 8.EE.3 Illustrative Math: Choosing Appropriate Units 8.EE.4	

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Module 2 The Concept of Congruence **Grade 8 Pacing and Preparation Guide** **(Allow approximately 2 weeks for instruction, review and assessment)**			
Domain: Geometry **Cluster:** Understand and describe the effects of transformations on two dimensional figures and use informal arguments to establish facts about angles. ➢ **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.	**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? **Topic A Objectives:** **Lesson 1**: (**8.G.A.1)** • 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. **Lesson 2: (8.G.A.1a-c)** • 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. **Lesson 3**: **(8.G.A.1a-c)** • 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.	**Topic A: Definitions and Properties of the Basic Rigid Motions** **Topic A and Teacher Toolbox Alignment:** **Lesson 18: *Understand Properties of Transformations*** Integrating Teacher Toolbox Lessons **Lesson 1** **Lessons 2 & 3, Combine:** Suggestion for combining: • **Lesson 2** – Classwork Discussion, Example 1, Exercise 2 • **Lesson 3** – Classwork Discussion, Exercises 2-4; Choose the appropriate Exit Tickets items from both lessons **Continued below**	**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 **Vocabulary for Module 2 Topic A:** basic rigid motion, reflection, rotation, transformation, translation

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Domain: Geometry **Cluster:** Understand and describe the effects of transformations on two dimensional figures and use informal arguments to establish facts about angles. ➢ **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.	**Lesson 4 (8.G.A.1a-c)** • 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' **Lesson 5**: **(8.G.A.1a-c)** • 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.	**Topic A, cont'd** **Lesson 4** **Lessons 5 & 6, Combine:** Suggestion for combining: • **Lesson 5** - Discussion, Exercises 1-4 • **Lesson 6** – Example 1, Choose 2-3 items from Exercises 1-9, Exit Ticket **Continued below**	**Vocabulary for Module 2 Topic A:** basic rigid motion, reflection, rotation, transformation, translation
Domain: Geometry **Cluster:** Understand and describe the effects of transformations on two dimensional figures and use informal arguments to establish facts about angles. ➢ **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.	**Lesson 6**: **(8.G.A.1a-c)** • 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.	**Topic A, cont'd** **Lessons 5 & 6, Combine:** Suggestion for combining: • **Lesson 5** - Discussion, Exercises 1-4 • **Lesson 6** – Example 1, Choose 2-3 items from Exercises 1-9, Exit Ticket **Topic Assessment or Mid-Module 2 Assessment & Review of Assessment: (If you choose to administer the mid-module assessment, only include #1, 2, & 3a)** ***(Complete by 9/17/19)***	**Vocabulary for Module 2 Topic A:** basic rigid motion, reflection, rotation, transformation, translation

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
		Optional Quiz for Module 2 Topic A Optional Mid-Module 2 Assessment **Additional Resources:** *This optional resource may be used for extension, enrichment and/or additional practice, as needed.* Illustrative Math: Origami Silver Rectangle **Reminder:** *It is recommended that teachers should begin preparing for Module 3 by 9/9/19.*	
Domain: Geometry **Cluster:** Understand and describe the effects of transformations on two dimensional figures and use informal arguments to establish facts about angles. ➢ **8.G.A.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.	**Topic C Objectives:** **Lesson 12: (8.G.A.3)** • 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. **Lesson 13**: **(8.G.A.3)** • 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.	***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.*** **Topic C: Congruence and Angle Relationships** **Topic C Teacher Toolbox Alignment:** **Lesson 21: *Understand Angle Relationships*** **Lesson 22: *Understand Angle Relationships in Triangles*** Integrating Teacher Toolbox Lessons **Lesson 11 Omit** **Lesson 12** **Lesson 13**	**Vocabulary for Module 2 Topic B:** corresponding angles, alternate interior angles, and alternate exterior angles, transversal, sum theorem for triangles, parallel lines

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Domain: Geometry **Cluster:** Understand and describe the effects of transformations on two dimensional figures and use informal arguments to establish facts about angles. **8.G.A.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.	**Lesson 14**: **(8.G.A.3)** • 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.	**Topic C, cont'd** **Lesson 14** **Lessons 15 & 16 (Skip)** | **Items from these lessons will be combined with Module 3 lessons 13 & 14.** **Optional quiz for Module 2 Topic C** **End of Module 2 Assessment & Review of Assessment (omit #1)** ***(Complete by 9/25/19)*** **Optional End-of-Module 2 Assessment** **Additional Resources:** *These optional resources may be used for extension, enrichment and/or additional practice, as needed.* Illustrative Math: Find the Missing Angle Illustrative Math: A Triangle's Interior Angles Illustrative Math: Street Intersections	

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Module 3 Similarity **Grade 8 Pacing and Preparation Guide** **(Allow approximately 3.5 weeks for instruction, review and assessment)**			
Domain: Geometry **Cluster:** Understand and describe the effects of transformations on two dimensional figures and use informal arguments to establish facts about angles. ➢ **8.G.A.2** (**formerly 8.G.3**) Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates	**Essential Question(s):** • What effect does dilations, translations, rotations and reflections have on a 2-D figure drawn on a coordinate plane? **Topic A Objectives:** **Lesson 1**: (**8.G.A.2)** • 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. **Lesson 3**: (**8.G.A.2)** • 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.	**Topic A: Dilation** **Topic A and Teacher Toolbox Alignment:** **Lesson 20: *Transformations and Similarity*** Integrating Teacher Toolbox Lessons **Lesson 1** **Lesson 2 Omit** **Lesson 3** (During this lesson show the interactive video "*Coordinating" the Band from* Teacher Toolbox Lesson 20: *Transformations and Similarity* because it describes additional shapes.) **Continued below**	**Familiar Terms and Symbols for Module 3**: Angle-Preserving Scale Drawing **Vocabulary for Module 3:** dilation, scale drawing, similar, similarity transformation

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Quarter 1 Grade 8

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Domain: Geometry **Cluster:** Understand and describe the effects of transformations on two dimensional figures and use informal arguments to establish facts about angles. ➢ **8.G.A.2** (**formerly 8.G.3**) Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates	**Lesson 4**: (**8.G.A.2**) • Students experimentally verify the properties related to the fundamental theorem of similarity (FTS). **Lesson 5**: (**8.G.A.2**) • 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. **Lesson 6:** (**8.G.A.2**) • Students describe the effect of dilations on two-dimensional figures using coordinates	**Topic A, cont'd** **Lessons 4 & 5, Combine (2 days)** Suggestion for combining: • Lesson 4 – Exercises • Lesson 5 – Exercises 1-3, Example 1; choose appropriate Exit Tickets items from both lessons **Lesson 6 –** You may use the Exit Ticket from Lesson 7 for practice, as time permits. **Lesson 7 Omit** **Optional Quiz for Module 3 Topic A** **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 10/7/19)*** **Optional Mid-Module 3 Assessment** **Additional Resource(s):** *These optional resources may be used for extension, enrichment and/or additional practice, as needed.* Illustrative Math: Reflecting Reflections Illustrative Math: Effects of Dilations on Length, Area & Angles **Reminder**: *It is recommended that teachers should begin preparing for Module 4 by 9/26/19.*	**Vocabulary for Module 3:** dilation, scale drawing, similar, similarity transformation
Omit Topic B because *the standards addressed are no longer a part of the TN State Math Standards for grade 8.*			

Curriculum and Instruction – Mathematics

Quarter 1 Grade 8

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Domain: Geometry **Cluster**: Understand and apply the Pythagorean Theorem. ■ **8.G.B.4 (formerly 8.G.B.6)** Explain a proof of the Pythagorean Theorem and its converse. ■ **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.	**Essential Questions:** • How is the formula for Pythagorean Theorem derived? • How can the Pythagorean Theorem be used to make conjectures about triangles? **Topic C Objectives:** **Lesson 13**: (**8.G.B.4, 8.G.B.5)** • Students practice applying the Pythagorean theorem to find the lengths of sides of right triangles in two dimensions. **Lesson 14:** (**8.G.B.4, 8.G.B.5)** • Students illuminate the converse of the Pythagorean theorem through computation of examples and counterexamples. • Students apply the theorem and its converse to solve problems.	**Topic C: The Pythagorean Theorem** **Topic C and Teacher Toolbox Alignment** **Toolbox Lesson 23: *Understand the Pythagorean Theorem*** **Integrating Teacher Toolbox Lessons** **Lesson 13** **Lesson 14** ***(While teaching lessons 13 and 14, if not previously used, pull examples, exercises and/or problem set items from Module 2 Lessons 15 & 16 for further practice.)*** **End-of-Module Assessment (Do #1-2 and add Pythagorean Theorem items.) & Review of Assessment *(Complete by 10/10/19)*** ***Optional End-Of-Module 3 Assessment*** **Additional Resources:** *These optional resources may be used for extension, enrichment and/or additional practice, as needed.* Illustrative Math Tasks: Pythagorean Theorem Inside Mathematics Patterns in Prague Inside Mathematics Pugs	**Vocabulary for Module 3:** dilation, scale drawing, similar, similarity transformation

RESOURCE TOOLKIT The Resource Toolkit 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.		
Textbook Resources www.greatminds.org Eureka Math Grade 8 Remediation Guides Remediation Tools	**Standards Support** TNReady Math Standards Grade 8 Instructional Focus Document Achieve the Core Edutoolbox	**Videos** Khan Academy Learn Zillion
Calculator Activities TI-73 Activities CASIO Activities TI-Inspire for Middle Grades	**Interactive Manipulatives** **Glencoe Virtual Manipulatives** National Library of Interactive Manipulatives **SEL Resources** **SEL Connections with Math Practices** **SEL Core Competencies** The Collaborative for Academic, Social, and Emotional Learning (CASEL)	**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.) https://academy.act.org/ https://opened.com

Curriculum and Instruction – Mathematics

Quarter 1 **Grade 8**

August 2019

Module/Topic	Monday	Tuesday	Wednesday	Thursday	Friday	Notes:
				1	2	**Flex Day Options Include:** ***Standard***- Suggested standard(s) to review for the day (*-denotes a Power Standard) ***Pacing*** – Use this time to adjust instruction to stay on pace. ***Other***- This includes assessments, review, re-teaching, etc.
	5	6	7	8	9	
	12 *Quarter 1 Begins*	13	14	15	16	
Module 1 Topic A	19 Module 1 Topic A Lesson 1	20 Module 1 Topic A Lessons 2 & 4, combined	21 Module 1 Topic A Lesson 3	22 Module 1 Topic A Lesson 5	23 ***Flex Day Options*** **8.EE.A.1** **Pacing** **Other**	
Module 1 Topic B	26 **Mid-Module 1 Assessment** **Begin Prepping for Module 2**	27 **Mid-Module 1 Assessment**	28 Module 1 Topic B Lesson 8	29 Module 1 Topic B Lesson 9	30 ***Flex Day Options*** **8.EE.A.3** **8.EE.A.4** **Pacing** **Other**	

Use this time to establish routines, procedures, and build positive classroom culture.
Additional SEL resources: SEL Connections and SEL Competencies

Note: Please use this suggested pacing as a guide. It is understood that teachers may be up to 1 week ahead or 1 week behind depending on their individual class needs.

Curriculum and Instruction – Mathematics

Quarter 1 **Grade 8**

September 2019

Module/Topic	Monday	Tuesday	Wednesday	Thursday	Friday	Notes:
Module 1 Topic B	**2** ***Labor Day***	**3** Module 1 Topic B Lessons 10-11, combined	**4** Module 1 Topic B Lesson 13	**5** **End-of-Module 1 Assessment**	**6** **End-of-Module 1 Assessment**	**Flex Day Options Include:** ***Standard***- Suggested standard(s) to review for the day (*-denotes a Power Standard) ***Pacing*** – Use this time to adjust instruction to stay on pace. ***Other***- This includes assessments, review, re-teaching, etc.
Module 2 Topic A	**9** Module 2 Topic A Lesson 1 **Begin Prepping for Module 3**	**10** Module 2 Topic A Lessons 2-3, combined	**11** Module 2 Topic A Lesson 4	**12** Module 2 Topic A Lessons 5-6, combined	**13** ***Flex Day Options*** **8.G.A.1** **Pacing** **Other**	
Module 2 Topic C	**16** **Mid-Module 2 or Topic Assessment**	**17** **Mid-Module 2 or Topic Assessment**	**18** Module 2 Topic C Lesson 12	**19** *Parent/Teacher Conferences* Module 2 Topic C Lesson 13	**20** *½ day students* ***Flex Day Options*** **8.G.A.3** **Pacing** **Other**	
Module 3 Topic A	**23** Module 2 Topic C Lesson 14	**24** **End-of-Module 2 Assessment**	**25** **End-of-Module 2 Assessment**	**26** Module 3 Topic A Lesson 1 **Begin Prepping for Module 4**	**27** ***Flex Day Options*** **8.G.A.1** **8.G.A.2** **8.G.A.3** **Pacing** **Other**	
Module 3 Topic A	**30** Module 3 Topic A Lesson 3	1	2	3	4	

Note: Please use this suggested pacing as a guide. It is understood that teachers may be up to 1 week ahead or 1 week behind depending on their individual class needs.

Curriculum and Instruction – Mathematics

Quarter 1 **Grade 8**

October 2019						
Module/Topic	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Notes:**
Module 3 Topic A	30	**1** Module 3 Topic A Lesson 4	**2** Module 3 Topic A Lesson 5	**3** Module 3 Topic A Lesson 6	**4** ***Flex Day Options*** **8.G.A.2** **Pacing** **Other**	**Flex Day Options Include:** ***Standard-*** Suggested standard(s) to review for the day (*-denotes a Power Standard) ***Pacing*** – Use this time to adjust instruction to stay on pace. ***Other***- This includes assessments, review, re-teaching, etc.
Module 3 Topic C	**7** **Mid-Module 3 Assessment**	**8** Module 3 Topic C Lesson 13	**9** Module 3 Topic C Lesson 14	**10** **End-of-Module 3 Assessment**	**11** *½ day students* *Quarter 1 Ends* ***Flex Day Options*** **8.G.B.5*** **8.G.B.6** **Pacing** **Other**	
	14 *Fall Break*	**15**	**16**	**17**	**18**	
	21	**21**	**23**	**24**		
	28	**29**	**30**	**31** *Halloween*	1	

Note: Please use this suggested pacing as a guide. It is understood that teachers may be up to 1 week ahead or 1 week behind depending on their individual class needs.