Curriculum and Instruction – Mathematics

Quarter 3 **Grade 6**

Mathematics
Grade 6: Year at a Glance
2018-2019

	Q1		Q2		Q3		Q4

Module 1 Aug. 6 – Sept. 14 Ratios and Unit Rates	Module 2 Sept. 17-Oct. 22 Arithmetic Operations Including Division of Fractions	Module 3 Oct. 23-Nov. 27 Rational Numbers	Module 4 Nov. 28-Jan. 30 Expressions and Equations	Module 5 Jan. 31 - March 8 Area, Surface Area & Volume	Module 6 March 18 – April 12 Statistics	After Testing April 29 – May 24 Lessons from Modules 1, 2, 4, 5 & 6
6.RP.1	6.NS.1	6.NS.5	6.EE.1	6.G.1	6.SP.1	6.RP.3
6.RP.2	6.NS.2	6.NS.6	6.EE.2	6.G.2	6.SP.2	6.NS.4
6.RP.3	6.NS.4	6.NS.7	6.EE.3	6.G.3	6.SP.3	6.EE.2c
	6.NS.4	6.NS.8	6.EE.4	6.G.4	6.SP.4	6.EE.6
			6.EE.5		6.SP.5	6.EE.7
			6.EE.6			6.G.2
			6.EE.7			6.G.4
			6.EE.8			6.SP.2
			6.EE.9			6.SP.3
						6.SP.4
						6.SP.5

Major Content	Supporting Content

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)**

Eureka Grade 6 Pacing and Preparation Guide
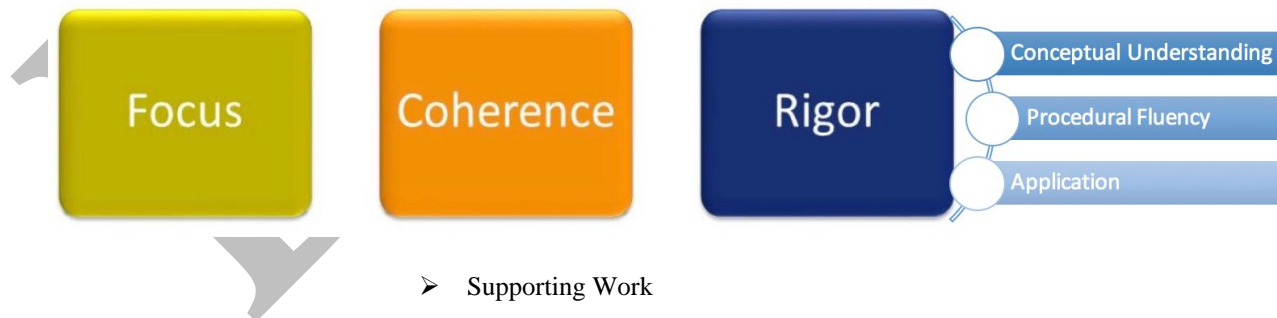
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Introduction

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?

80% of seniors will be college-or career-ready

90% of students will graduate on time

100% of college-or career-ready graduates enroll in post-secondary opportunities

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

Focus

Coherence

Rigor
- Conceptual Understanding
- Procedural Fluency
- Application

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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 Mathematics Content Standards

Standards for Mathematical Practice

Literacy Skills for Mathematical Proficiency
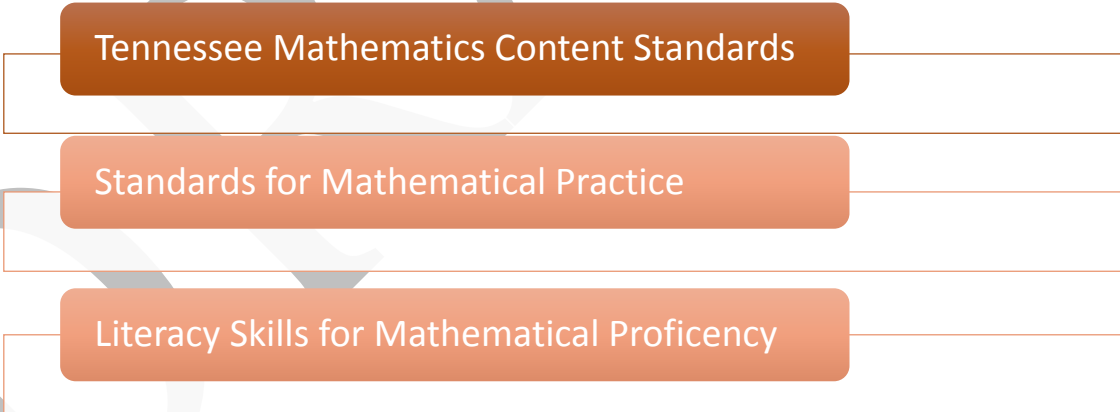
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Structure of the Standards

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.

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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.

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Grade 6 Quarter 3 Overview

Module 4: Expressions & Equations
Module 5: Area, Surface Area (SA), & Volume

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
6.EE.2	Procedural Fluency	5.OA.2, 5.OA.3
6.EE.3	Application	5.OA.2
6.EE.4	Conceptual Understanding	5.OA.2
6.EE.5	Conceptual Understanding, Procedural Fluency	5.OA.2, 5.OA.3, 6.EE.1
6.EE.6	Conceptual Understanding; Application	5.OA.2, 5.OA.3, 6.EE.1
6.EE.7	Procedural Fluency & Application	5.NF.1, 5.NF.4, 6.NS.1
6.EE.8	Conceptual Understanding & Application	6.NS.6, 6.NS.7
6.EE.9	Conceptual Understanding & Application	5.OA.3
6.G.1	Procedural Fluency; Application	5.NF.4
6.G.2	Conceptual Understanding, Procedural Fluency & Application	5.MD.5
6.G.3	Procedural Fluency; Application	5.G.2
6.G.4	Conceptual Understanding	5.MD.C.5

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
	Module 4 Expressions and Equations, Cont'd **Grade 6 Pacing and Preparation Guide** (Allow approximately 3 weeks for instruction, review and assessment)		
☐ **6.EE.A.2a:** Write expressions that record operations with numbers and with letters standing for numbers. "Subtract y from 5" as 5-y ☐ **6.EE.A.2b:** Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.	**Topic E Objectives:** **Lesson 15:** • Students read expressions in which letters stand for numbers. They assign operation terms to operations when reading. • Students identify parts of an algebraic expression using mathematical terms for all operations. **Lesson 16:** • Students write algebraic expressions that record all operations with numbers and/or letters standing for the numbers.	**Topic E: Expressing Operations in Algebraic Form** **Lesson 15** **Lesson 16** **Lesson 17 Omit** For Topic E, you may use the resources from Teacher Toolbox *Lesson 16: Algebraic Expressions* for review, remediation, and/or assessment to meet the needs of your students. **Mid-Module 4 Assessment (omit #1-2) & Review of Assessment** *(Complete by 1/15/19)* **Reminder:** *It is recommended that teachers begin preparing for Module 5 by 1/16/18.*	**Vocabulary for Module 4:** Equation, Equivalent Expressions, Exponential Notation for Whole Number Exponents, Expression, Linear Expression, Number Sentence, Numerical Expression, Solution of an Equation Truth Values of a Number Sentence Value of a Numerical Expression, Variable **Familiar Terms and Symbols for Module 4:** Distribute, Expand, Factor, Number Sentence, Product, Properties of Operations (distributive, commutative, associative), Quotient, Sum, Term, True or False Number Sentence, Variable or Unknown Number
☐ **6.EE.A.2a**: Write expressions that record operations with numbers and with letters standing for numbers. "Subtract y from 5" as 5-y ☐ **6.EE.A.2.c**: Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order	**Essential Question(s):** • How do arithmetic properties contribute to algebraic understanding? • How do the order of operations and properties help simplify and evaluate algebraic expressions? • In what ways can you reason and solve one-variable equations and inequalities?	**Topic F: Writing and Evaluating Expressions and Formulas** **Lesson 18** **Lesson 19** **Lesson 20** **Lesson 21 Omit** **Lesson 22** For Topic F, you may use the resources from Teacher Toolbox *Lessons 16: Algebraic Expressions and 17: Equivalent*	

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
(Order of Operations). **Domain**: Expressions and Equations **Cluster:** Reason about and solve one-variable equations and inequalities. 🟩 **6.EE.B.6:** Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	**Topic F Objectives:** **Lesson 18:** • Students use variables to write expressions involving addition and subtraction from real-world problems. • Students evaluate these expressions when given the value of the variable. **Lesson 19:** • Students develop expressions involving addition and subtraction from real-world problems. • Students evaluate these expressions for given values. **Lesson 20:** • Students develop expressions involving multiplication and division from real-world problems. • Students evaluate these expressions for given values. ~~**Lesson 21:**~~ • ~~Students develop formulas involving multiplication and addition from real-world problems.~~ • ~~Students evaluate these formulas for given values.~~ **Lesson 22:** • Students evaluate and write formulas involving exponents for given values in real-world problems.	==*Expressions* for review, remediation, and/or assessment to meet the needs of your students.== **Additional Resources:** *These optional resources may be used for extension, enrichment and/or additional practice, as needed.* Illustrative Math: Firefighter Allocation Illustrative Math: Families of Triangles 6.EE.C.2 Assessment Tasks for 6.EE.A.2	

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Domain: Expressions and Equations **Cluster:** Reason about and solve one-variable equations and inequalities. 🟩 **6.EE.B.5:** Understand solving an equation or inequality is carried out by determining if any of the values from a given set make the equation or inequality true. Use substitution to determine whether a given number in a specified set makes an equation or inequality true. 🟩 **6.EE.B.6:** Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. 🟩 **6.EE.B.7:** Solve real-world and mathematical problems by writing and solving one-step equations of the form $x + p = q$ and $px = q$ for cases in which p, q, and x are all nonnegative rational numbers.	**Essential Questions(s):** • How can you determine if values from a specified set, if any, make an equation or inequality true? **Topic G Objectives:** **Lesson 23:** • Students explain what the equality and inequality symbols including =, <, >, ≤, and ≥ represent. They determine if a number sentence is true or false based on the given symbol. **Lesson 24:** • Students identify values for the variables in equations and inequalities that result in true number sentences. • Students identify values for the variables in equations and inequalities that result in false number sentences. **Lesson 25:** • Students learn the definition of solution in the context of placing a value into a variable to see if that value makes the equation true. **Lesson 26:** • Students solve one-step equations by relating an equation to a diagram. • Students check to determine if their solutions make the equations true. **Lesson 27:** • Students solve one-step equations by relating an equation to a diagram. • Students check to determine if their	**Topic G: Solving Equations** **Lesson 23-25, Combine** Suggestions for combining • Lesson 23 - Opening exercise, Example 1, Exercises 1-10 • Lesson 24 - Example 1, Exercises 1-12 • Lesson 25 - Example 1 • Homework - Lessons 23-24 Problem Sets **Lesson 26** **Lesson 27** **Lesson 28 Omit** **Lesson 29 Omit** ==**For Topic G, you may use the resources from Teacher Toolbox *Lessons 18: Understand Solutions to Equations and 19: Solve Equations* for review, remediation, and/or assessment to meet the needs of your students.**== **Additional Resources:** *These optional resources may be used for extension, enrichment and/or additional practice, as needed.* Illustrative Math: Log Ride Illustrative Math: Exponent Experimentation 3 Illustrative Math: Morning Walk Performance Assessment Task: Boxes 6.EE.B.4 & 6.EE.B.5	

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
	solutions make the equations true. ~~**Lesson 28:**~~ • ~~Students calculate the solutions of two-step equations by using their knowledge of order of operations and the properties of equality for addition, subtraction, multiplication, and division. Students employ tape diagrams to determine their answers.~~ • ~~Students check to determine if their solutions make the equations true.~~ ~~**Lesson 29**~~: • ~~Students use their knowledge of simplifying expressions, order of operations, and properties of equality to calculate the solution of multi-step equations. Students use tables to determine their answers.~~ • ~~Students check to determine if their solutions make the equations true.~~		
▪ **6.EE.B.5:** Understand solving an equation or inequality is carried out by determining if any of the values from a given set make the equation or inequality true. Use substitution to determine whether a given number in a specified set makes an equation or inequality true. ▪ **6.EE.B.6**: Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. ▪ **6.EE.B.7:** Solve real-world and	**Essential Question(s):** • How can you write and evaluate an expression that represents a real-life problem? • How can you show that inequalities can have infinitely many solutions? • In what ways can you show the relationship between dependent and independent variables? **Topic H Objectives:** **Lesson 30:** • ~~Students calculate missing angle measures by writing and solving equations.~~ **Lesson 31:**	**Topic H: Applications of Equations** **Lesson 30 Skip and do after TNReady** **Lesson 31** **Lesson 32 Omit** **Lesson 33-34, Combine** Suggestions for combining • Lesson 33 – Examples 1-2 • Lesson 34 – Examples 1-3, Exercises 1-5, Exit Ticket & Problem Set (HW) <mark>**For Topic H, you may use the resources from Teacher Toolbox *Lessons 20: Solve Inequalities and 21: Dependent and Independent Variables* for review, remediation, and/or assessment to meet**</mark>	

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
mathematical problems by writing and solving one-step equations of the form x + p = q and px = q for cases in which p, q, and x are all nonnegative rational numbers. ■ **6.EE.B.8**: Interpret and write an inequality of the form x > c or x < c which represents a condition or constraint in a real-world or mathematical problem. Recognize that inequalities have infinitely many solutions; represent solutions of inequalities on number line diagrams. **Domain**: Expressions and Equations **Cluster:** Represent and analyze quantitative relationships between dependent and independent variables. ■ **6.EE.C.9**: Use variables to represent two quantities in a real-world problem that change in relationship to one another. For example, Susan is putting money in her savings account by depositing a set amount each week (50). Represent her savings account balance with respect to the number of weekly deposits (s = 50w, illustrating the relationship between balance amount s and number of weeks w). **a.** Write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. **b.** Analyze the relationship between the	• Students analyze an equation in two variables to choose an independent variable and a dependent variable. • Students determine whether or not the equation is solved for the second variable in terms of the first variable or vice versa. They then use this information to determine which variable is the independent variable and which is the dependent variable. • Students create a table by placing the independent variable in the first row or column and the dependent variable in the second row or column. They compute entries in the table by choosing arbitrary values for the independent variable (no constraints) and then determine what the dependent variable must be. ~~Lesson 32:~~ • ~~Students analyze an equation in two variables, choose an independent variable and a dependent variable, make a table, and make a graph for the equation by plotting the points in the table. For the graph, the independent variable is usually represented by the horizontal axis, and the dependent variable is usually represented by the vertical axis.~~ **Lesson 33:** • Students understand that an inequality with numerical expressions is either true or false. It is true if the numbers calculated on each side of the inequality sign result in a correct statement and is false otherwise. • Students understand solving an inequality is answering the question of which values	<mark>the needs of your students.</mark> **End-of-Module 4 Assessment & Review of Assessment** *(Complete by 1/30/19)* **Additional Resources:** *These optional resources may be used for extension, enrichment and/or additional practice, as needed.* TN Task Ark: Exploring Expressions and Equations (6.EE.8 tasks) Illustrative Math: Fishing Adventures 1 Illustrative Math: Chocolate Bar Sales	

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
dependent and independent variables using graphs and tables, and relate these to the equation.	from a specified set, if any, make the inequality true. **Lesson 34:** • Students recognize that inequalities of the form $x < c$ and $x > c$, where x is a variable and c is a fixed number, have infinitely many solutions when the values of x come from a set of rational numbers.		

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Module 5 Area, Surface Area and Volume Problems			

Module 5 Area, Surface Area and Volume Problems

Grade 6 Pacing and Preparation Guide

(Allow approximately 6 weeks for instruction, review and assessment)

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Domain: Geometry **Cluster:** Solve real-world and mathematical problems involving area, surface area and volume. ➢ **6.G.A.1**: Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; know and apply these techniques in the context of solving real-world and mathematical problems.	**Essential Question(s):** • How can you find the area of composite figure? • How can my understanding of finding areas of rectangles and triangles help find the area of another shape? • How can the coordinate plane be used as a strategy to find the length of a side of a figure and the area of a figure? **Topic A Objectives:** **Lesson 1** • Students show the area formula for the region bounded by a parallelogram by composing it into rectangles. They understand that the area of a parallelogram is the area of the region bounded by the parallelogram. **Lesson 2** • Students justify the area formula for a right triangle by viewing the right triangle as part of a rectangle composed of two right triangles. **Lesson 3** • Students show the area formula for a triangular region by decomposing a triangle into right triangles. For a given triangle, the height of the triangle is the length of the altitude. The length of the base is called either the length base or, more commonly, the base.	**Topic A: Area of Triangles, Quadrilaterals and Polygons** **Lesson 1** **Lesson 2** **Lesson 3-4, Combine** Suggestions for combining • Teacher walk through Lesson 3 modeling exercise, have students complete part of the chart for Exercise 1 in Lesson 3 • Students work through the challenge in Lesson 4 with teacher guidance. **Lesson 5** **Lesson 6** **For Topic A, you may use the resources from Teacher Toolbox *Lesson 22: Area of Polygons* for review, remediation, and/or assessment to meet the needs of your students.** **Additional Resources:** *These optional resources may be used for extension, enrichment and/or additional practice, as needed.* Illustrative Math: Finding Area of Polygons Task Illustrative Math: Polygons in the Coordinate Plane Task Illustrative Math: Same Base Height Variation 2 Task	**Vocabulary for Module 5** Altitude and Base of a Triangle, Cube, Hexagon, Line Perpendicular to a Plane, Net, Parallel Planes, Pentagon, Right Rectangular Prism, Surface of a Prism, Triangular Region **Familiar Terms and Symbols for Module 5**: Angle, Area, Length of a Segment, Parallel, Parallelogram, Perimeter, Perpendicular, Quadrilateral, Rectangle, Segment, Square, Trapezoid, Triangle, Volume

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
	• Students understand that the height of the triangle is the perpendicular segment from a vertex of a triangle to the line containing the opposite side. The opposite side is called the base. • Students understand that any side of a triangle can be considered a base and that the choice of base determines the height. **Lesson 4** • Students construct the altitude for three different cases: an altitude that is a side of a right angle, an altitude that lies over the base, and an altitude that is outside the triangle. • Students deconstruct triangles to justify that the area of a triangle is exactly one half the area of a parallelogram. **Lesson 5** • Students show the area formula for the region bounded by a polygon by decomposing the region into triangles and other polygons. They understand that the area of a polygon is actually the area of the region bounded by the polygon. • Students find the area for the region bounded by a trapezoid by decomposing the region into two triangles. They understand that the area of a trapezoid is actually the area of the region bounded by the trapezoid. Students decompose rectangles to determine the area of other quadrilaterals. **Lesson 6** • Students determine the area of composite figures in real-life contextual situations	Illustrative Math: Same Base and Height Variation 1 Task	

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
	using composition and decomposition of polygons. • Students determine the area of a missing region using composition and decomposition of polygons.		
Domain: Geometry **Cluster:** Solve real-world and mathematical problems involving area, surface area and volume. ➢ **6.G.A.3**: Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side that joins two vertices (vertical or horizontal segments only). Know and apply these techniques in the context of solving real-world and mathematical problems.	**Essential Question(s):** • How can you find the area of composite figure? • How can my understanding of finding areas of rectangles and triangles help find the area of another shape? • How can the coordinate plane be used as a strategy to find the length of a side of a figure and the area of a figure? **Topic B Objectives:** **Lesson 8:** • Given coordinates for the vertices, students draw polygons in the coordinate plane. Students find the area enclosed by a polygon by composing or decomposing using polygons with known area formulas. • Students name coordinates that define a polygon with specific properties. **Lesson 9:** • Students find the perimeter of irregular figures using coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. • Students find the area enclosed by a polygon on the coordinate plane by composing or decomposing using polygons with known area formulas.	**Topic B: Polygons on the Coordinate Plane** **Lesson 7 Omit** **Lesson 8** **Lesson 9** **Lesson 10** **For Topic B, you may use the resources from Teacher Toolbox *Lesson 23: Polygons in the Coordinate Plane* for review, remediation, and/or assessment to meet the needs of your students.** **Mid-Module 5 Assessment & Review of Assessment** *(Complete by 2/15/19)* **Additional Resources:** *These optional resources may be used for extension, enrichment and/or additional practice, as needed.* Illustrative Math: Polygons in the Coordinate Plane Task Illustrative Math: Walking the Block 6.G.A.3	

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
	Lesson 10: • Students determine distance, perimeter, and area in real-world contexts.		
Domain: Geometry **Cluster:** Solve real-world and mathematical problems involving area, surface area and volume. ➢ **6.G.A.2**: Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Know and apply the formulas V = lwh and V = Bh where B is the area of the base to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	**Essential Question(s):** • How is the formula for the area of rectangles used in finding the volume of rectangular prisms? • What are two ways to find the volume of a rectangular prism? **Topic C Objectives:** **Lesson 11** • Students extend their understanding of the volume of a right rectangular prism with integer side lengths to right rectangular prisms with fractional side lengths. They apply the formula $V = l \cdot w \cdot h$ to find the volume of a right rectangular prism and use the correct volume units when writing the answer. **Lesson 12** • Students extend the volume formula for a right rectangular prism to the formula $V =$ Area of base · height. They understand that any face can be the base. **Lesson 13** • Students develop, understand, and apply formulas for finding the volume of right rectangular prisms and cubes. **Lesson 14** • Students understand that volume is additive, and they apply volume formulas to	**Topic C: Volume of Right Rectangular Prisms** **Lessons 11-12, Combine** Suggestions for combining • Lesson 11 - Examples 1&2, • Students then complete the station exercises from Lesson 12, and when finished, complete the Lesson 11 exercises. **Lesson 13** **Lesson 14** **For Topic C, you may use the resources from Teacher Toolbox *Lesson 25: Volume* for review, remediation, and/or assessment to meet the needs of your students.** **Additional Resources:** *These optional resources may be used for extension, enrichment and/or additional practice, as needed.* Illustrative Math: Computing Volume Progression 1 Illustrative Math: Computing Volume Progression 2 Illustrative Math: Computing Volume Progression 3 Illustrative Math: Computing Volume	**Vocabulary for Module 5** Altitude and Base of a Triangle, Cube, Hexagon, Line Perpendicular to a Plane, Net, Parallel Planes, Pentagon, Right Rectangular Prism, Surface of a Prism, Triangular Region **Familiar Terms and Symbols for Module 5**: Angle, Area, Length of a Segment, Parallel, Parallelogram, Perimeter, Perpendicular, Quadrilateral, Rectangle, Segment, Square, Trapezoid, Triangle, Volume

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
	determine the volume of composite solid figures in real-world contexts. • Students apply volume formulas to find missing volumes and missing dimensions.	Progression 4	
Domain: Geometry **Cluster:** Solve real-world and mathematical problems involving area, surface area and volume. ➢ **6.G.A.2**: Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Know and apply the formulas $V = lwh$ and $V = Bh$ where B is the area of the base to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. ➢ **6.G.A.4**: Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.	**Essential Question(s):** • How does the change in height affect the volume or surface area of a prism? • How can a net be used to find the surface area of a pyramid, rectangular or triangular prism? • Why are nets used to find the surface area of a pyramid, rectangular or triangular prism? **Topic D Objectives:** **Lesson 15:** • Students use absolute value to determine Students construct three-dimensional figures through the use of nets. They determine which nets make specific solid figures and determine if nets can or cannot make a solid figure. **Lesson 16:** • Students construct nets of three-dimensional objects using the measurements of a solid's edges. **Lesson17:** • Students use nets to determine the surface area of three-dimensional figures. **Lesson 18:** • Students determine that a right rectangular prism has six faces: top and bottom, front and back, and two sides. They determine	**Topic D: Nets and Surface Area** **Lesson 15** **Lesson 16** **Lesson 17** **Lesson 18** (Make connections to using nets to calculate SA for some of the examples and exercises.) **Lesson 19** ==For Topic D, you may use the resources from Teacher Toolbox *Lesson 24: Nets and Surface Area* for review, remediation, and/or assessment to meet the needs of your students.== **End of Module 5 Assessment & Review of Assessment** *(Complete by 3/1/19)* **Reminder:** *It is recommended that teachers begin preparing for Module 6 by 3/1/19.* **Additional Resources:** Illustrative Math: Volumes with Fractional Edge Lengths Illustrative Math: Banana Bread Illustrative Math: Nets for Pyramids and Prisms 6.G.A.4 Nets Lesson	

🟩 Major Work

➢ Supporting Work

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
	that surface area is obtained by adding the areas of all the faces and develop the formula $SA = 2lw + 2lh + 2wh$. • Students develop and apply the formula for the surface area of a cube as $SA = 6s^2$. **Lesson 19:** • Students determine the surface area of three-dimensional figures in real-world contexts. • Students choose appropriate formulas to solve real-life volume and surface area problems.		

■ Major Work   ➢ Supporting Work

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.

Textbook Resources	Standards Support	Videos
www.greatminds.org Eureka Math Grade 6 Remediation Guide	TN Math Standards Gr. 6 Instructional Focus Document Achieve the Core Edutoolbox	Learn Zillion Khan Academy
Calculator Activities TI-83 & TI-84 Activities for Middle Grades TI-Inspire for Middle Grades CASIO Activities	**Interactive Manipulatives** Glencoe Virtual Manipulatives National Library of Interactive Manipulatives	**Additional Sites** Embarc Online PBS: Grades 6-8 Lesson Plans Grade 6 Flip Book (This book contains valuable resources that help develop the intent, the understanding and the implementation of the state standards.)

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Shelby County Schools – Grade 6 – January 2019

Mon	Tue	Wed	Thu	Fri	
	1 New Year's Day	**2** Teacher PD	**3** Teacher PD	**4** Administrative Day	
7 **Q3 Begins** Recap any Module 4 lessons that were taught before Winter Break, as needed.	**8** Recap any Module 4 lessons that were taught before Winter Break, as needed.	**9** Recap any Module 4 lessons that were taught before Winter Break, as needed.	**10** **Module 4 Lessons 15**	**11**	
14 **Mid-Module 4 Assessment (omit #1 & 2) & Review of Assessment Window**	**15** **Mid-Module 4 Assessment (omit #1 & 2) & Review of Assessment Window**	**16**	**17** **Prepare for Module 5**	**18**	
21 M L King's Day (no school)	**22** **Module 4 Topic G (Combine lessons 23-25; omit 28 & 29)**	**23**	**24**	**25** **Module 4 Topic H (combine lessons 33 & 34; do lesson 30 after TNReady)**	
28	**29** **End-of-Module 4 Assessment & Review of Assessment Window**	**30** **End-of-Module 4 Assessment & Review of Assessment Window**	**31** **Begin Module 5 (omit lessons 4 & 7)**		

■ Major Work   ➢ Supporting Work

Shelby County Schools – Grade 6 – February 2019					
Mon	**Tue**	**Wed**	**Thu**	**Fri**	
				1	
4	**5**	**6**	**7**	**8**	
11	**12**	**13**	**14** **Mid-Module 5 Assessment & Review of Assessment**	**15**	
18 President's Day **Module 5 Topic C (omit lessons 12 & 18)**	**19**	**20**	**21**	**22**	
25	**26**	**27**	**28** **End-of-Module 5 Assessment & Review of Assessment Window**		

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Shelby County Schools – Grade 6 – March 2019					
Mon	**Tue**	**Wed**	**Thu**	**Fri**	
				1 **End-of-Module 5 Assessment & Review of Assessment Window** **Prepare for Module 6**	
4	**5**	**6**	**7**	**8** Q3 Ends	
11 Spring Break	**12** Spring Break	**13** Spring Break	**14** Spring Break	**15** Spring Break	
18	**19**	**20**	**21**	**22**	
25	**26**	**27**	**28**	**29**	

■ Major Work   ➢ Supporting Work

 Major Work   ➢   Supporting Work