



# Curriculum and Instruction – Mathematics

Quarter 1

Grade 7



## Grade 7: Year at a Glance 2018-2019

Q1		Q2		Q3		Q4
Module 1 Aug. 6-Sept. 7	Module 2 Sept. 12- Oct. 25	Module 3 Oct. 25-Nov 29	Module 4 Nov. 30- Jan. 18	Module 5 Topics A-C <b>Grade 6 Module 6 Topic B</b> Jan. 23- March 8	<b>Grade 6 Module 6 Topic C</b> Module 5 Topic D Jan. 23- March 8	Grade 7 Module 6 Mar. 18 – April 12  Review after <u>TNReady</u> April 29-May 24
Ratios and Proportional Relationships	Rational Numbers	Expressions and Equations	Percent and Proportional Relationships	Statistics & Probability	Statistics & Probability	Geometry
7.RP.1	7.NS.1	7.EE.1	7.RP.1	7.SP.1	7.SP.3	7.G.2
7.RP.2	7.NS.2	7.EE.2	7.RP.2	7.SP.2	7.SP.4	7.G.4
7.RP.3	7.NS.3	7.EE.3a	7.RP.3	7.SP.5	7.SP.8	7.G.5
7.EE.4a	7.EE.2	7.EE.3b	7.EE.3	7.SP.6		<u>After TNReady</u> Review Standards
7.G.1	7.EE.4a	7.EE.4	7.G.1	7.SP.7		7.RP.2
		7.G.3		7.SP.8		7.EE.3
		7.G.4				7.EE.4
		7.G.5				

Key:

■ Major Content	➤ Supporting Content
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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.

[Eureka Grade 7 Pacing and Preparation Guide](#)

SCS 2018/2019  
Revised 6/26/18 CSH



### Introduction

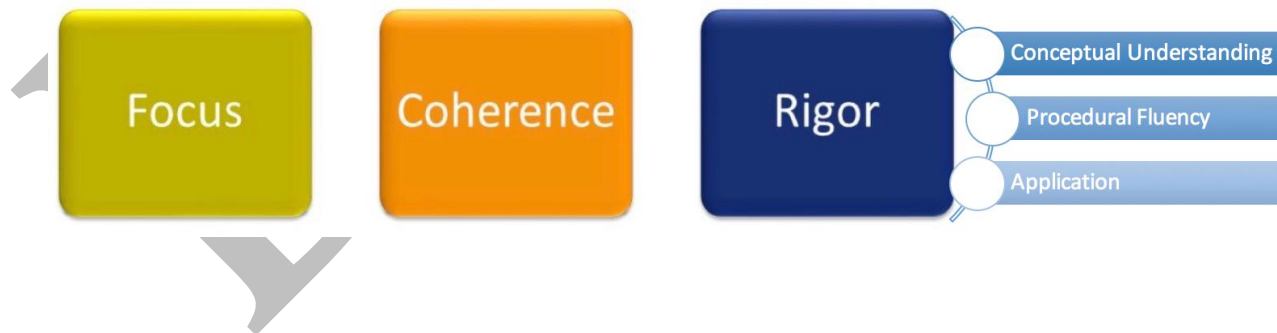
Destination 2025, Shelby County Schools' 10-year strategic plan, is designed not only to improve the quality of public education, but also to create a more knowledgeable, productive workforce and ultimately benefit our entire community.

### 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





# Curriculum and Instruction – Mathematics

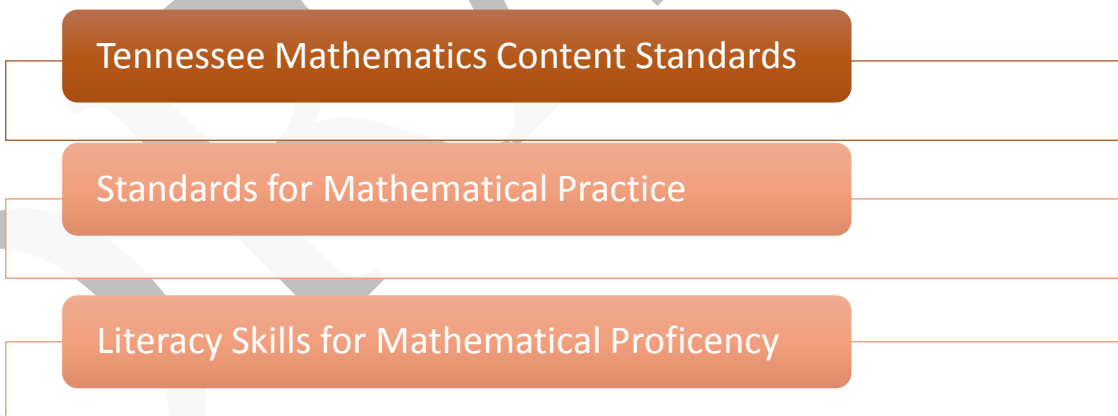
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The **Standards for Mathematical Practice** describe varieties of expertise, habits of minds and productive dispositions that mathematics educators at all levels should seek to develop in their students. These practices rest on important National Council 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 7 Quarter 1 Overview

- Module 1: Ratios and Proportional Relationships
- Module 2: Rational Numbers

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
7.RP.1	Procedural Fluency	6.RP.1, 6.RP.2
7.RP.2	Conceptual Understanding	6.RP.2, 6.RP.3
7.RP.3	Conceptual Understanding	6.RP.3
7.EE.4a	Conceptual Understanding, Procedural Fluency, Application	6.EE.6, 6.EE.7, 6.EE.8
7.G.1	Procedural Fluency	6.G.1, 6.G.3
7.NS.1	Conceptual Understanding	5.NF.1, 6.NS.1, 6.NS.5, 6.NS.6, 6.NS.7
7.NS.2	Conceptual Understanding	



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
<b>Module 1 Ratios and Proportional Relationships</b> <u><a href="#">Grade 7 Pacing and Preparation Guide</a></u> (Allow approximately 5 weeks for instruction, review and assessment)			
<p><b>Domain:</b> Ratios and Proportional Relationships  <b>Cluster:</b> Analyze proportional relationships and use them to solve real-world and mathematical problems.</p> <p>■ <b>7.RP.A.2a</b> Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.</p>	<p><b>Essential Question(s):</b></p> <ul style="list-style-type: none"> <li>When is the relationship between two quantities proportional?</li> </ul> <p><b>Topic A Objectives:</b></p> <p><b>Lesson 1:</b></p> <ul style="list-style-type: none"> <li>Students compute unit rates associated with ratios of quantities measured in different units.</li> <li>Students use the context of the problem to recall the meanings of value of a ratio, equivalent ratios, rate, and unit rate, relating them to the context of the experience.</li> </ul> <p><b>Lesson 2:</b></p> <ul style="list-style-type: none"> <li>Students understand that two quantities are proportional to each other when there exists a constant (number) such that each measure in the first quantity multiplied by this constant gives the corresponding measure in the second quantity.</li> </ul> <p><b>Lessons 3-4:</b></p> <ul style="list-style-type: none"> <li>Students examine situations to decide whether two quantities are proportional to each other by checking for a constant multiple between measures of <math>x</math> and measures of <math>y</math> when given in a table.</li> <li>Students study examples of relationships that are not proportional in addition to those that are.</li> </ul> <p><b>Lessons 5-6:</b></p> <ul style="list-style-type: none"> <li>Students decide whether two quantities are proportional to each other by graphing on a</li> </ul>	<p><b>Topic A: Proportional Relationships</b></p> <p><b>Lesson 1</b>  <b>Lesson 2</b></p> <p><b>Lessons 3 &amp; 4, Combine</b>            Suggestion for combining</p> <ul style="list-style-type: none"> <li>Lesson 3 – Example</li> <li>Lesson 4 – Example; Students then complete the Exercises and Exit Ticket in Lesson 4.</li> </ul> <p><b>Lesson 5</b>  <b>Lesson 6</b></p> <p><b>For Topic A, you may choose to use resources from Teacher Toolbox Lesson 10: Understand Proportional Relationships for review, remediation, and/or assessment to meet the needs of your students.</b></p> <p><b>Grade 7 Module 1 Topic A Assessment</b>  <b>Additional Resources:</b> <i>These optional resources may be used for extension, enrichment and/or additional practice, as needed.</i>  <a href="#">TN PBS Stations: Video Lesson</a>  <a href="#">Math Station Activities pp. 1, 21, 28 &amp; 37</a>  <a href="#">Illustrative Math: Robot Races 7.RP.2</a></p>	<p><b>Vocabulary for Module 1:</b> Constant of Proportionality, Miles per Hour, One-To-One Correspondence Between Two Figures in the Plane, Proportional Relationship, Scale Drawing and Scale Factor</p> <p><b>Familiar Terms and Symbols for Module 1:</b> Equivalent Ratio Rate, Ratio, Ratio Table, Unit Rate</p>



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	<p>coordinate plane and observing whether the graph is a straight line through the origin.</p> <ul style="list-style-type: none"> <li>Students study examples of quantities that are proportional to each other as well as those that are not.</li> </ul>		
<p>■ <b>7.RP.A.2b</b> Identify the constant of proportionality (unit rate) in tables, graphs and equations, diagrams and verbal descriptions of proportional relationship.</p> <p>■ <b>7.RP.A.2c</b> Represent proportional relationships by equations. For example, if total cost <math>t</math> is proportional to the number <math>n</math> of items purchased at a constant price <math>p</math>, the relationship between the total cost and the number of items can be expressed as <math>t = pn</math>.</p> <p>■ <b>7.RP.A.2d</b> Explain what a point <math>(x, y)</math> on the graph of a proportional relationship means in terms of the situation, with special attention to the points <math>(0, 0)</math> and <math>(1, r)</math> where <math>r</math> is the unit rate.</p> <p><b>Domain:</b> Expressions and Equations  <b>Cluster:</b> Solve real-life and mathematical problems using numerical and algebraic expressions and equations and inequalities.</p> <p>■ <b>7.EE.B.4a</b> Solve contextual problems leading to equations of the form <math>px + q = r</math> and <math>p(x + q) = r</math>, where <math>p</math>, <math>q</math>, and <math>r</math> are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</p>	<p><b>Essential Question:</b></p> <ul style="list-style-type: none"> <li>How can the order of operations and the fundamentals of algebra be applied to solve problems?</li> </ul> <p><b>Topic B Objectives:</b></p> <p><b>Lesson 7:</b></p> <ul style="list-style-type: none"> <li>Students identify the same value relating the measures of <math>x</math> and the measures of <math>y</math> in a proportional relationship as the constant of proportionality and recognize it as the unit rate in the context of a given situation.</li> <li>Students find and interpret the constant of proportionality within the contexts of problems.</li> </ul> <p><b>Lesson 8-9:</b></p> <ul style="list-style-type: none"> <li>Students use the constant of proportionality to represent proportional relationships by equations in real-world contexts as they relate the equations to a corresponding ratio table or graphical representation.</li> </ul> <p><b>Lesson 10:</b></p> <ul style="list-style-type: none"> <li>Students consolidate their understanding of equations representing proportional relationships as they interpret what points on the graph of a proportional relationship mean in terms of the situation or context of the problem, including the point <math>(0, 0)</math>.</li> <li>Students are able to identify and interpret in context the point <math>(1, r)</math> on the graph of a proportional relationship where <math>r</math> is the unit</li> </ul>	<p><b>Topic B: Unit Rate and Constant of Proportionality</b></p> <p><b>Lesson 7-</b> Use this lesson as a review by assigning the examples, exit ticket and/or problem set for homework.</p> <p><b>Lessons 9 &amp; 10, Combine</b>          Suggestion for combining</p> <ul style="list-style-type: none"> <li>Do all of lesson 9</li> <li>Assign Lesson 10 Problem Set for homework</li> <li>Lesson 9 Exit Ticket</li> </ul> <p><b>For Topic B, you may choose to use resources from Teacher Toolbox Lesson 11: <i>Equations for Proportional Relationships</i> for review, remediation, and/or assessment to meet the needs of your students</b></p> <p><b>Grade 7 Module 1 Topic B Assessment</b></p> <p><b>Mid- Module 1 Assessment &amp; Review of Assessment</b>  <i>(Complete by 8/24/18)</i></p> <p><b>Grade 7 Module 1 Mid-Module Alternate Assessment</b></p> <p><b>Additional Resources:</b> <i>These optional resources may be used for extension, enrichment and/or additional practice, as needed.</i></p> <p><a href="#">TN Task: Coupon Book Sales</a></p>	





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	rate.	<a href="#">Illustrative Math: Gym Membership Plans 7.RP.2a, 7.RP.2c</a> <a href="#">NCTM Illuminations: Golden Ratio 7.RP.2b</a>	
<p><b>Domain:</b> Ratios and Proportional Relationships  <b>Cluster:</b> Analyze proportional relationships and use them to solve real-world and mathematical problems.</p> <p>■ <b>7.RP.A.1</b> Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks <math>\frac{1}{2}</math> mile in each <math>\frac{1}{4}</math> hour, compute the unit rate as the complex fraction <math>(\frac{1}{2})/(\frac{1}{4})</math> miles per hour, equivalently 2 miles per hour.</p> <p>■ <b>7.RP.A.3</b> Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.</p> <p><b>Domain:</b> Expressions and Equations  <b>Cluster:</b> Solve real-life and mathematical problems using numerical and algebraic expressions and equations and inequalities.</p> <p>■ <b>7.EE.B.4a</b> Solve contextual problems leading to inequalities of the form <math>px + q &gt; r</math> or <math>px + q &lt; r</math>, where <math>p</math>, <math>q</math>, and <math>r</math> are specific rational numbers. Graph the solution set of the inequality on a number line and interpret it in the context of the problem. For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be</p>	<p><b>Essential Question:</b></p> <ul style="list-style-type: none"> <li>How can proportions increase our understanding of the real world?</li> </ul> <p><b>Topic C Objectives:</b></p> <p><b>Lesson 11:</b></p> <ul style="list-style-type: none"> <li>Students use ratio tables and ratio reasoning to compute unit rates associated with ratios of fractions in the context of measured quantities such as recipes, lengths, areas, and speed.</li> </ul> <p><b>Lesson 13:</b></p> <ul style="list-style-type: none"> <li>Students use tables to find an equivalent ratio of two partial quantities given a part-to-part ratio and the total of those quantities, in the third column, including problems with ratios of fractions.</li> </ul> <p><b>Lesson 14:</b></p> <ul style="list-style-type: none"> <li>Students solve multi-step ratio problems including fractional markdowns, markups, commissions, and fees.</li> </ul> <p><b>Lesson 15:</b></p> <ul style="list-style-type: none"> <li>Students use equations and graphs to represent proportional relationships arising from ratios and rates involving fractions.</li> <li>Students interpret what points on the graph of the relationship mean in terms of the situation or context of the problem.</li> </ul>	<p><b>Topic C: Ratios and Rates Involving Fractions</b></p> <p><b>Lesson 11</b> (<u>Skip Example 1 and begin with Example 2</u>)  <b>Lesson 12</b> Omit  <b>Lesson 13</b>  <b>Lesson 14</b>  <b>Lesson 15</b></p> <p><b>For Topic C, you may choose to use the resources from the following Teacher Toolbox lessons for review, remediation, and/or assessment to meet the needs of your students.</b></p> <ul style="list-style-type: none"> <li><b>Lesson 9: Ratios Involving Complex Fractions</b></li> <li><b>Lesson 12: Problem Solving with Proportional Relationships</b></li> <li><b>Lesson 13: Proportional Relationships</b></li> </ul> <p>Module 1 Topic C Assessment</p> <p><b>Reminder:</b> <i>It is recommended that teachers begin preparing for Module 2 by 8/27/18.</i></p> <p><b>Additional Resources:</b> <i>These optional resources may be used for extension, enrichment and/or additional practice, as needed.</i>  <a href="#">TN Task Arc: Reasoning with Ratios and Rates</a>  <a href="#">Illustrative Math: Molly's Run 7.RP.1</a>  <a href="#">Illustrative Math: Friends Meeting on Bicycles 7.RP.3</a></p>	



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<p>at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions. (Note that inequalities using <math>&gt;</math>, <math>&lt;</math>, <math>\leq</math>, <math>\geq</math> are included in this standard).</p>			
<p><b>Domain:</b> Ratios and Proportional Relationships  <b>Cluster:</b> Analyze proportional relationships and use them to solve real-world and mathematical problems.</p> <p>■ <b>7.RP.A.2b</b> Identify the constant of proportionality (unit rate) in tables, graphs and equations, diagrams and verbal descriptions of proportional relationship.</p> <p><b>Domain:</b> Geometry  <b>Cluster:</b> Draw, construct, and describe geometrical figures and describe the relationships between them.</p> <p>➤ <b>7.G.A.1</b> Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.</p>	<p><b>Essential Question:</b></p> <ul style="list-style-type: none"> <li>How can you apply ratios and proportional reasoning to real-world situations and how can this be extended to scale drawings?</li> </ul> <p><b>Topic D Objectives</b></p> <p><b>Lesson 16:</b></p> <ul style="list-style-type: none"> <li>Students understand that a scale drawing is either the reduction or the enlargement of a two-dimensional picture.</li> <li>Students compare the scale drawing picture with the original picture and determine if the scale drawing is a reduction or an enlargement.</li> <li>Students match points and figures in one picture with points and figures in the other picture</li> </ul> <p><b>Lesson 17:</b></p> <ul style="list-style-type: none"> <li>Students recognize that the enlarged or reduced distances in a scale drawing are proportional to the corresponding distances in the original picture.</li> <li>Students recognize the scale factor to be the constant of proportionality.</li> <li>Given a picture or description of geometric figures, students make a scale drawing with a given scale factor.</li> </ul> <p><b>Lesson 18:</b></p> <ul style="list-style-type: none"> <li>Given a scale drawing, students compute the lengths in the actual picture using the scale.</li> <li>Students identify the scale factor in order to make intuitive comparisons of size and then</li> </ul>	<p><b>Topic D: Ratios of Scale Drawings</b></p> <p><b>Lesson 16</b>  <b>Lesson 17</b>  <b>Lesson 18</b>  <b>Lesson 19</b>  <b>Lesson 20</b> - This lesson can be omitted or used as an extension lesson/project as time permits.  <b>Lesson 21 Omit</b>  <b>Lesson 22 - Omit or use as an extension if time permits.</b></p> <p><b>For Topic D, you may choose to use the resources from Teacher Toolbox Lesson 22: Scale Drawings for review, remediation, and/or assessment to meet the needs of your students</b></p> <p>Topic D Assessment</p> <p><b>End of Module 1 Assessment &amp; Review of Assessment</b>  <i>(Complete by 9/7/18)</i>  <b>Module 1 End-of-Module Alternate Assessment</b></p> <p><b>Additional Resources:</b> <i>These optional resources may be used for extension, enrichment and/or additional practice, as needed</i>  <a href="#">Illustrative Math: Buying Coffee 7.RP.2b</a>  <a href="#">Illustrative Math Floor Plan Task 7.G.1</a>  <a href="#">Illustrative Math Rescaling Washington Park</a></p>	



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	devise a strategy for efficiently finding actual lengths using the scale. <b>Lesson 19:</b> <ul style="list-style-type: none"> <li>• Students identify the scale factor.</li> <li>• Given a scale drawing, students compute the area in the actual picture.</li> </ul>	<a href="#">7.G.1</a>	
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**Module 2 Rational Numbers**  
**[Grade 7 Pacing and Preparation Guide](#)**  
 (Allow approximately 4 weeks for instruction, review and assessment)

<p><b>Domain:</b> The Number System  <b>Cluster:</b> Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.</p> <p>■ <b>7.NS.A.1</b> Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.</p>	<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>• When should we use additive inverse or multiplicative inverse?</li> <li>• How do we use a number line to show addition and subtraction of rational numbers?</li> </ul> <p><b>Topic A Objectives</b></p> <p><b>Lesson 1:</b></p> <ul style="list-style-type: none"> <li>• Students add positive integers by counting up and negative integers by counting down.</li> <li>• Students will justify that an integer plus its opposite add to zero.</li> <li>• Students know the opposite of a number is called the additive inverse.</li> </ul> <p><b>Lesson 2:</b></p> <ul style="list-style-type: none"> <li>• Students model integer addition on the number line.</li> <li>• Students recognize that the distance between an integer and zero on the number line is the absolute value of the integer.</li> <li>• Students use the number line to model addition and subtraction of integers.</li> </ul> <p><b>Lesson 3:</b></p> <ul style="list-style-type: none"> <li>• Students understand addition of integers.</li> </ul>	<p><b>Topic A: Addition and Subtraction of Integers and Rational Numbers</b></p> <p><b>Lesson 1</b>  <b>Lessons 2 &amp; 3, Combine</b>      Suggestion for combining</p> <ul style="list-style-type: none"> <li>• Lesson 2 – Examples 1-3; Exercises 1-2</li> <li>• Lesson 3 – Exercises 2-3</li> <li>• Combine Problem Sets: Lesson 2 #1-2; Lesson 3 #1-3</li> </ul> <p><b>Lesson 4</b>  <b>Lesson 5</b> – (Begin by using Exercise 1 as an example, then continue with exercises 2-3, closing and appropriate exit ticket and problem set items.)  <b>Lesson 6</b>  <b>Lesson 7</b>  <b>Lesson 8</b> – (Do Fluency Exercise and use Table 3 as an anchor chart for reference and discussion.)  <b>Lesson 9</b></p> <p><b>For Topic A, you may use the resources from the following Teacher Toolbox lessons for review, remediation, and/or assessment to meet the needs of your</b></p>	<p><b>Vocabulary for Module 2:</b>      Additive Identity, Additive Inverse, Formula for the Distance Between Two Numbers, Multiplicative Identity, Repeating Decimal Expansion, Terminating Decimal Expansion</p> <p><b>Familiar Terms and Symbols for Module 2:</b>      Absolute Value, Associative Property (of Multiplication and Addition), Commutative Property (of Multiplication and Addition), Credit, Debit, Deposit, Distributive Property (of Multiplication Over Addition), Equation, Expression, Integer, Inverse, Multiplicative Inverse, Negatives, Opposites, Overdraft, Positives, Rational Numbers, Withdraw</p>
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	<p><b>Lesson 4:</b></p> <ul style="list-style-type: none"> <li>Students understand the rules for adding rational numbers.</li> </ul> <p><b>Lesson 5:</b></p> <ul style="list-style-type: none"> <li>Students justify the rule for subtraction.</li> <li>Students justify the rule for subtraction for all rational numbers from the inverse relationship between addition and subtraction.</li> </ul> <p><b>Lesson 6:</b></p> <ul style="list-style-type: none"> <li>Students justify the distance formula for rational numbers on a number line.</li> <li>Students know the definition of subtraction in terms of addition.</li> <li>Students solve word problems involving changes in distance or temperature.</li> </ul> <p><b>Lesson 7:</b></p> <ul style="list-style-type: none"> <li>Students recognize that the rules for adding and subtracting integers apply to rational numbers.</li> <li>Students use number lines to model addition and subtraction of rational number.</li> </ul> <p><b>Lesson 8:</b></p> <ul style="list-style-type: none"> <li>Students use properties of operations to add and subtract rational numbers.</li> <li>Students recognize that any problem involving addition and subtraction of rational numbers can be written as a problem using addition and subtraction of positive numbers only.</li> <li>Students use the commutative and associative properties of addition to rewrite numerical expressions in different forms.</li> </ul>	<p><b>students</b></p> <ul style="list-style-type: none"> <li><b>Lesson 1: Understand Addition of Positive and Negative Integers</b></li> <li><b>Lesson 2: Understand Subtraction of Positive and Negative Numbers</b></li> <li><b>Lesson 3: Add and Subtract Positive and Negative Numbers</b></li> <li><b>Lesson 7: Add and Subtract Rational Numbers</b></li> </ul> <p>Module 2 Topic A Assessment</p> <p><b>Additional Resources:</b> <i>These optional resources may be used for extension, enrichment and/or additional practice, as needed</i></p> <p><a href="#">TN PBS Stations: Video Lesson</a>  <a href="#">Illustrative Math: Distances on the Number Line 7.NS.1</a></p>	
<p><b>Domain:</b> The Number System  <b>Cluster:</b> Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.</p>	<p><b>Essential Questions</b></p> <ul style="list-style-type: none"> <li>What is the relationship between multiplication and division?</li> <li>How do the properties of operation help us compute with rational numbers?</li> </ul>	<p><b>Topic B: Multiplication and Division of Integers and Rational Numbers</b></p> <p><b>Lesson 10 Omit</b>  <b>Lessons 11 &amp; 12, Combine</b>          Suggestion for combining</p>	



# Curriculum and Instruction – Mathematics

## Quarter 1

## Grade 7

<p>■ <b>7.NS.A.2</b> Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <p>■ <b>7.NS.A.2a</b> Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as <math>(-1)(-1) = 1</math> and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.</p> <p>■ <b>7.NS.A.2b</b> Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If <math>p</math> and <math>q</math> are integers, then <math>-(p/q) = (-p)/q = p/(-q)</math>. Interpret quotients of rational numbers by describing real-world contexts.</p> <p>■ <b>7.NS.A.2c</b> Apply properties of operations as strategies to multiply and divide rational numbers.</p> <p>■ <b>7.NS.A.2d</b> Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.</p>	<p><b>Topic B Objectives:</b></p> <p><b>Lesson 11:</b></p> <ul style="list-style-type: none"> <li>Students understand the rules for multiplication of integers and that multiplying the absolute values of integers results in the absolute value of the product.</li> <li>Students use the rules for multiplication of signed numbers and give real-world examples.</li> </ul> <p><b>Lesson 12:</b></p> <ul style="list-style-type: none"> <li>Students recognize that division is the reverse process of multiplication and that integers can be divided provided the divisor is not zero.</li> <li>Students understand that every quotient of integers (with a nonzero divisor) is a rational number and divide signed numbers by dividing their absolute values to get the absolute value of the quotient.</li> </ul> <p><b>Lesson 13:</b></p> <ul style="list-style-type: none"> <li>Students understand that the context of a real-life situation often determines whether a rational number should be represented as a fraction or decimal.</li> <li>Students understand that decimals specify points on the number line by repeatedly subdividing intervals into tenths.</li> <li>Students convert positive decimals to fractions and fractions to decimals when the denominator is a product of only factors of either 2 or 5.</li> </ul> <p><b>Lesson 14:</b></p> <ul style="list-style-type: none"> <li>Students understand that every rational number can be converted to a decimal.</li> <li>Students represent fractions as decimal numbers that either terminate in zeros or repeat.</li> <li>Students interpret word problems and</li> </ul>	<ul style="list-style-type: none"> <li>Lesson 11 – Start with Exercises;</li> <li>Lesson 12 – Sprint; Example 1, Exercise 3;</li> <li>Choose appropriate Problem Set items from both lessons</li> </ul> <p><b>Lesson 13</b> <b>Lesson 14</b> <b>Lesson 15</b> <b>Lesson 16</b></p> <p><b>For Topic B, you may use the resources from the following Teacher Toolbox lessons for review, remediation, and/or assessment to meet the needs of your students</b></p> <ul style="list-style-type: none"> <li><b>Lesson 4: Multiply and Divide Positive and Negative Integers</b></li> <li><b>Lesson 5: Terminating and Repeating Decimals</b></li> <li><b>Lesson 6: Multiply and Divide Rational Numbers</b></li> </ul> <p>Module 2 Topic B Assessment <b>Mid-Module 2 Assessment &amp; Review of Assessment</b> <i>(Complete by 10/5/18)</i> Module 2 MM Alternate Assessment</p> <p><b>Reminder:</b> <i>It is recommended that teachers should begin preparing for Module 3 by 10/1/18.</i></p> <p><b>Additional Resources:</b> <i>These optional resources may be used for extension, enrichment and/or additional practice, as needed.</i> <a href="#">TN Task: Extending the Number System Illustrative Math Distributive Property of Multiplication 7.NS.2a</a> <a href="#">Illustrative Math Temperature Change 7.NS.2b</a></p>	
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# Curriculum and Instruction – Mathematics

Quarter 1

Grade 7

	<p>convert between fraction and decimal forms of rational numbers.</p> <p><b>Lesson 15:</b></p> <ul style="list-style-type: none"><li>• Students interpret word problems and convert between fraction and decimal forms of rational numbers.</li></ul> <p><b>Lesson 16:</b></p> <ul style="list-style-type: none"><li>• Students use properties of operations to multiply and divide rational numbers. They use commutative, associative and distributive properties of multiplication to generate equivalent expressions.</li><li>• Students determine the sign of an expression that contains products and quotients by checking whether the number of negative terms is even or odd.</li></ul>	<p><u>Illustrative Math: Decimal Expansion of Fractions 7.NS.2d</u></p>	
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# Curriculum and Instruction – Mathematics

Quarter 1

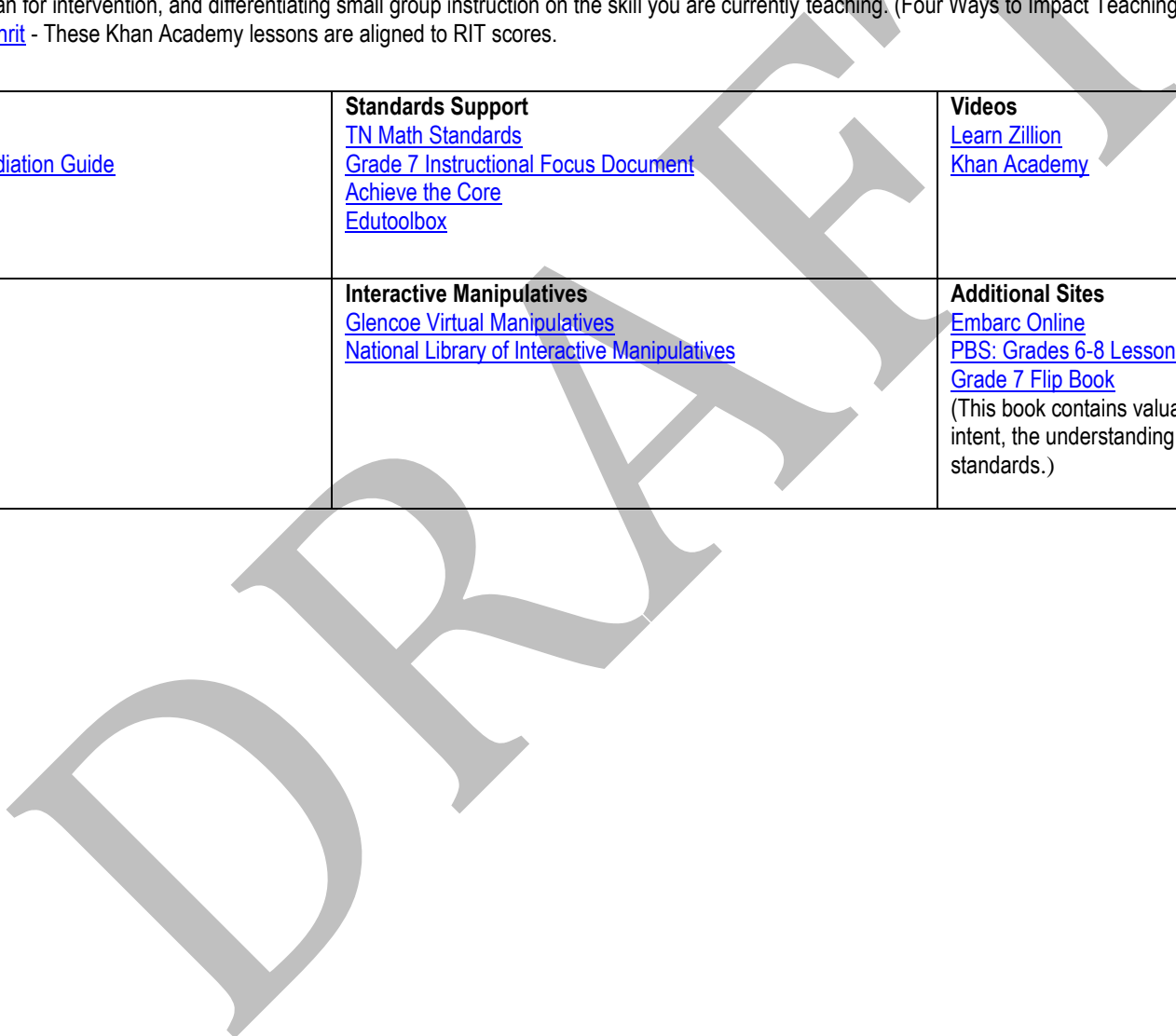
Grade 7

## 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](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><b>Textbook Resources</b>  <a href="http://www.greatminds.org">www.greatminds.org</a>  <a href="#">Eureka Math Grade 7 Remediation Guide</a></p>	<p><b>Standards Support</b>  <a href="#">TN Math Standards</a>  <a href="#">Grade 7 Instructional Focus Document</a>  <a href="#">Achieve the Core</a>  <a href="#">Edutoolbox</a></p>	<p><b>Videos</b>  <a href="#">Learn Zillion</a>  <a href="#">Khan Academy</a></p>
<p><b>Calculator Activities</b>  <a href="#">TI-73 Activities</a>  <a href="#">CASIO Activities</a>  <a href="#">TI-Inspire for Middle Grades</a></p>	<p><b>Interactive Manipulatives</b>  <a href="#">Glencoe Virtual Manipulatives</a>  <a href="#">National Library of Interactive Manipulatives</a></p>	<p><b>Additional Sites</b>  <a href="#">Embarc Online</a>  <a href="#">PBS: Grades 6-8 Lesson Plans</a>  <a href="#">Grade 7 Flip Book</a>            (This book contains valuable resources that help develop the intent, the understanding and the implementation of the state standards.)</p>





Curriculum and Instruction – Mathematics

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Grade 7

Shelby County Schools – Grade 7 – 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	16	17	
20	21	22	23	24 Module 1 Mid-Module Assessment & Review Window	
27 Start Preparing for Module 2	28	29	30	31	





# Curriculum and Instruction – Mathematics

Quarter 1

Grade 7

## Shelby County Schools – Grade 7 – September 2018

Mon	Tue	Wed	Thu	Fri	
<b>3</b> <a href="#">Labor Day</a>	<b>4</b>	<b>5</b>	<b>6</b> Module 1 End-of-Module Assessment Window & Review	<b>7</b> Module 1 End-of-Module Assessment Window & Review	
<b>10</b> Begin Module 2	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	
<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>21</b>	
<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	



# Curriculum and Instruction – Mathematics

Quarter 1

Grade 7

## Shelby County Schools – Grade 7 – October 2018

Mon	Tue	Wed	Thu	Fri	
<b>1</b> Start Preparing for Module 3	<b>2</b>	<b>3</b>	<b>4</b> Module 2 Mid-Module Assessment & Review Window	<b>5</b> Q1 Ends Module 2 Mid-Module Assessment & Review Window	
<b>8</b> <a href="#">Columbus Day</a> Fall Break	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	
<b>15</b> Q2 Begins	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	
<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	
<b>29</b>	<b>30</b>	<b>31</b> <a href="#">Halloween</a>			