



Curriculum and Instruction – Mathematics

2019-2020

Quarter 1

Grade 6

Mathematics
Grade 6: Year at a Glance
2019-2020

Q1

Q2

Q3

Q4

Module 1 Aug. 6 – Sept. 20	Module 2 Sept. 23-Oct. 11	Module 3 Oct. 21-Nov. 22	Module 4 Dec. 1-Jan. 31	Module 5 Feb. 3- March 4	Module 6 March 5 – April 10 TNReady Dates April 13-May 8	After Testing May 9 – May 24
Ratios and Unit Rates	Arithmetic Operations Including Division of Fractions	Rational Numbers	Expressions and Equations	Area, Surface Area & Volume	Statistics	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		



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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?**

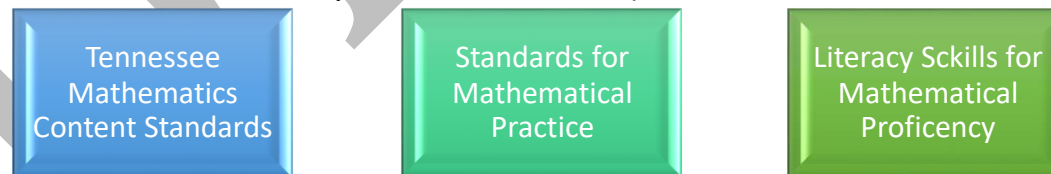


In order to achieve these ambitious goals, we must collectively work to provide our students with high quality, college and career ready aligned instruction. The Tennessee State Standards provide a common set of expectations for what students will know and be able to do at the end of a grade. The State 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



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.



How to Use the Curriculum Map

■ Major Work

➤ Supporting Work



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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 6 Quarter 1 Overview

Module 1: Ratios & Unit Rates

■ Major Work

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Module 2: Arithmetic Operations

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.RP.1	Conceptual Understanding	4.MD.1, 4.OA.2, 5.NF.5, 5.OA.3
6.RP.2	Conceptual Understanding	4.OA.2, 5.NF.3, 5.NF.7, 6.RP.1
6.RP.3	Procedural Fluency & Application	
➤ 6.NS.1	Conceptual Understanding & Procedural Fluency	5.NF.7
➤ 6.NS.3	Procedural Fluency	5.NBT.5, 5.NBT.6, 5.NBT.7
➤ Indicates a Power Standard based on the 2017-18 TN Ready Assessment.		
Instructional Focus Document Grade 6		

■ Major Work

➤ Supporting Work



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Module 1 Ratios and Unit Rates Grade 6 Pacing and Preparation Guide (Allow approximately 4.5 weeks for instruction, review and assessment)			
<p>Domain: Ratios and Proportional Relationships Cluster: Understand ratio concepts and use ratio reasoning to solve problems.</p> <p>■ 6.RP.A.1: Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.</p>	<p>Essential Question(s):</p> <ul style="list-style-type: none"> How can ratio and rate reasoning be used to solve real-world mathematical problems? How is a ratio or rate used to compare two quantities or values? <p>Topic A Objectives:</p> <p>Lesson 1: (6.RP.A.1)</p> <ul style="list-style-type: none"> Students understand that a ratio is an ordered pair of numbers which are not both zero. Students understand that a ratio is often used instead of describing the first number as a multiple of the second. Students use the precise language and notation of ratios (e.g., 3: 2, 3 to 2). Students understand that the order of the pair of numbers in a ratio matters and that the description of the ratio relationship determines the correct order of the numbers. Students conceive of real-world contextual situations to match a given ratio. <p>Lesson 2: (6.RP.A.1)</p> <ul style="list-style-type: none"> Students reinforce their understanding that a ratio is an ordered pair of nonnegative numbers, which are not both zero. Students continue to learn and use the precise language and notation of ratios (e.g., 3: 2, 3 to 2). Students demonstrate their understanding that the order of the pair of numbers in a ratio matters. Students create multiple ratios from a context in which more than two quantities are given. Students conceive of real-world contextual situations to match a given ratio. 	<p>Topic A: Representing and Reasoning About Ratios</p> <p>Topic A Teacher Toolbox Alignment: Lesson 1 Ratios Integrating Teacher Toolbox Lessons</p> <p>Lessons 1 & 2, Combine Suggestions for combining</p> <ul style="list-style-type: none"> Lesson 1 – Example 1, Exercise 2 Lesson 2- Exploratory Challenge and Problem set; Lesson Exit Ticket #1 & 3, Lesson 2 Exit Ticket <p>Continued below</p>	<p>Vocabulary for Module 1 Topic A Equivalent Ratios, Rate, Ratio, Value of a Ratio</p>
<p>Domain: Ratios and Proportional</p>	<p>Topic A Objectives, cont'd:</p>	<p>Topic A: cont'd</p>	<p>Vocabulary for Module 1 Topic A</p>

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<p>Relationships Cluster: Understand ratio concepts and use ratio reasoning to solve problems.</p> <ul style="list-style-type: none"> ■ 6.RP.A.1: Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. ■ 6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. 	<p>Lessons 3: (6.RP.A.1, 6.RP.A.3)</p> <ul style="list-style-type: none"> • Students develop an intuitive understanding of equivalent ratios by using tape diagrams to explore possible quantities of each part when given the part-to-part ratio. Students use tape diagrams to solve problems when the part-to-part ratio is given and the value of one of the quantities is given. • Students formalize a definition of equivalent ratios: Two ratios, $A : B$ and $C : D$, are equivalent ratios if there is a nonzero number c such that $C = cA$ and $D = cB$. <p>Lessons 4: (6.RP.A.1, 6.RP.A.3)</p> <ul style="list-style-type: none"> • Given a ratio, students identify equivalent ratios. Students use tape diagrams and the description of equivalent ratios to determine if two ratios are equivalent. • Students relate the nonzero number cc in the description of equivalent ratios to the tape diagrams they have been using to find equivalent ratios. <p>Lesson 5: (6.RP.A.1, 6.RP.A.3)</p> <ul style="list-style-type: none"> • Students use tape diagrams to find an equivalent ratio when given the part-to-part ratio and the total of those two quantities. Students use tape diagrams to find an equivalent ratio when given the part-to-part ratio and the difference between those two quantities. • Students make the connection between the constant, cc, in the definition of equivalent ratios and the value of the unit in the tape diagram used to solve ratio problems. 	<p>Lessons 3 & 4, Combine Suggestions for combining</p> <ul style="list-style-type: none"> • Lesson 3- Exercises 2-4 • Lesson 4- Example 1, Exercises 1-2 • Combine Exit Tickets • Choose items from Lessons 3 & 4 Problem sets <p>Lessons 5 & 6, Combine Suggestions for combining</p> <ul style="list-style-type: none"> • Lesson 5 – Example 1 • Lesson 6 – Exercise 1 • Choose exercises from both lessons • Combine exit tickets • Choose problems from both Problem Sets <p>Continued below</p>	<p>Equivalent Ratios, Rate, Ratio, Value of a Ratio, Part-to-part</p>
<p>Domain: Ratios and Proportional Relationships</p>	<p>Topic A Objectives, cont'd</p>	<p>Topic A, cont'd</p>	<p>Vocabulary for Module 1 Topic A</p>

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<p>Cluster: Understand ratio concepts and use ratio reasoning to solve problems.</p> <p>■ 6.RP.A.1: Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.</p> <p>■ 6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.</p> <p>a: Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.</p>	<p>Lesson 6: ((6.RP.A.3a))</p> <ul style="list-style-type: none"> Students use tape diagrams to solve problems when given a ratio between two quantities and a change to those quantities that changes the ratio. <p>Lesson 7: (6.RP.A.1, 6.RP.A.3)</p> <ul style="list-style-type: none"> Students understand the relationship between ratios and fractions. Students describe the fraction A/B associated with the ratio $A:B$ as the value of the ratio A to B. Students understand that when given a ratio $A:B$, different ratios can be formed from the numbers A and B. For example, $B:A$, $A:(A+B)$, and $B:(A+B)$ are associated with the same ratio relationship. <p>Lesson 8: (6.RP.A.1, 6.RP.A.3)</p> <ul style="list-style-type: none"> Students understand the value of the ratio $A:B$ is the quotient A/B as long as B is not zero. They understand that if two ratios are equivalent, then their values are the same (when they have values). Students use the value of a ratio to solve ratio problems in a real-world context. Students use the value of a ratio in determining whether two ratios are equivalent. 	<p>Lessons 5 & 6, Combine</p> <p>Suggestions for combining</p> <ul style="list-style-type: none"> Lesson 5 – Example 1 Lesson 6 – Exercise 1 Choose exercises from both lessons Combine exit tickets Choose problems from both Problem Sets <p>Lessons 7 & 8, Combine</p> <p>Suggestions for combining</p> <ul style="list-style-type: none"> Lesson 7- Examples 1 & 2, Exercises 1-2 Lesson 8 – Exercise 3, Problem Set Combine Exit Tickets <p>Optional Quiz for Topic A</p> <p>Additional Resources: <i>These optional resources may be used for extension, enrichment and/or additional practice, as needed.</i></p> <p>TNCore Task Arc: Reasoning with Ratios and Rates (Edutoolbox.org)</p> <p>Illustrative Math: Games at Recess 6.RP.A.1</p> <p>Illustrative Math: Bag of Marbles 6.RP.A.1, 6.RP.A.3a</p> <p>Inside Math: Candies Task 6.RP.A.1</p>	<p>Equivalent Ratios, Rate, Ratio, Value of a Ratio</p>

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<p>Domain: Ratios and Proportional Relationships Cluster: Understand ratio concepts and use ratio reasoning to solve problems.</p> <p>■ 6.RP.A.1: Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.</p> <p>■ 6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. a: Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.</p>	<p>Essential Question(s):</p> <ul style="list-style-type: none"> How is a ratio or rate used to compare two quantities or values? <p>Topic B Objectives</p> <p>Lesson 9: (6.RP.A.3a)</p> <ul style="list-style-type: none"> Students understand that a ratio is often used to describe the relationship between the amount of one quantity and the amount of another quantity as in the cases of mixtures or constant rates. Students understand that a ratio table is a table of equivalent ratios. Students use ratio tables to solve problems. <p>Lesson 10: (6.RP.A.3a)</p> <ul style="list-style-type: none"> Students identify both the additive and multiplicative structure of a ratio table and use the structure to make additional entries in the table. Students use ratio tables to solve problems. <p>Lesson 11: (6.RP.A.3a)</p> <ul style="list-style-type: none"> Students solve problems by comparing different ratios using two or more ratio tables. 	<p>Topic B: Collections of Equivalent Ratios</p> <p>Topic B Teacher Toolbox Alignment: Lesson 3: Equivalent Ratios Integrating Teacher Toolbox Lessons</p> <p>Lessons 9-11, Combine Suggestions for combining</p> <ul style="list-style-type: none"> Lesson 9 Examples 1 & 2 Lesson 10 Exploratory Challenge Lesson 11 Exercises 1-2 & Problem Set Lesson 11 Exit Ticket <p>Continued below</p>	<p>Vocabulary for Module 1 Topic B Equivalent Ratios, Ratio, Ratio Relationship, Value of Ratio, Type of Quantity, Unit of Measurement</p>
<p>Domain: Ratios and Proportional Relationships Cluster: Understand ratio concepts and use ratio reasoning to solve problems.</p> <p>■ 6.RP.A.1: Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.</p> <p>■ 6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.</p>	<p>Lesson 12: (6.RP.A.3, 6.RP.A.3a)</p> <ul style="list-style-type: none"> Students create equivalent ratios using a ratio table and represent these ratios on a double number line diagram. Students extend and use a double number line diagram to solve ratio problems related to the real world. <p>Lesson 13: (6.RP.A.1, 6.RP.A.3)</p> <ul style="list-style-type: none"> Students restate a ratio in terms of its value; for example, if the ratio of length <i>A</i> to length <i>B</i> is 3:5 (in the same units), students state that length <i>A</i> is 3/5 of length <i>B</i>, length <i>B</i> is 5/3 of length <i>A</i>, length <i>A</i> is 	<p>Topic B, cont'd</p> <p>Lessons 12-13, Combine Suggestions for combining</p> <ul style="list-style-type: none"> Lesson 12 Exercises 2-4 Lesson 13 Exercises 1-3, Problem Set Exit Tickets from both lessons <p>Continued below</p>	<p>Vocabulary for Module 1 Topic B Equivalent Ratios, Ratio, Ratio Relationship, Value of Ratio, Type of Quantity, Unit of Measurement</p>

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<p>a: Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.</p>	<p>3/8 of the total length, and length B is 5/8 of the total length.</p> <ul style="list-style-type: none"> Students use the value of the ratio to problem-solve by writing and solving equations. 		
<p>Domain: Ratios and Proportional Relationships Cluster: Understand ratio concepts and use ratio reasoning to solve problems.</p> <p>■ 6.RP.A.1: Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. ■ 6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.</p> <p>a: Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.</p>	<p>Lesson 14: (6.RP.A.1, 6.RP.A.3a)</p> <ul style="list-style-type: none"> Students associate with each ratio $A:B$ the ordered pair (A, B) and plot it in the $x-y$ coordinate plane. Students represent ratios in ratio tables, equations, and double number line diagrams and then represent those ratios in the coordinate plane. <p>Lesson 15: (6.RP.A.1, 6.RP.A.3a)</p> <ul style="list-style-type: none"> Students associate with each ratio $A:B$ the ordered pair (A, B) and plot it in the $x-y$ coordinate plane. Given a ratio table, students plot the ratios in the plane and observe that they lie on a line through the origin. Students conclude that the coordinates in the line satisfy $y = kx$, where k is the value of an associated ratio. 	<p>Topic B, cont'd</p> <p>Lessons 14-15, Combine Suggestions for combining</p> <ul style="list-style-type: none"> Lesson 14 All Assign Lesson 15 Exercises & Problem set for HW Lesson 14 Exit Ticket <p>Optional Quiz for Topic B</p> <p>Eureka Math Mid-Module 1 Assessment & Review of Assessment <i>(Complete by 9/4/19)</i> Optional Module 1 Mid Module Assessment</p> <p>Reminder: <i>It is recommended that teachers begin preparing for Module 2 by 9/6/19.</i></p> <p>Additional Resources: <i>These optional resources may be used for extension, enrichment and/or additional practice, as needed.</i> World Series of Pop Culture Task: 6.RP.A.3a</p>	<p>Vocabulary for Module 1 Topic B Equivalent Ratios, Ratio, Ratio Relationship, Value of Ratio, Type of Quantity, Unit of Measurement</p>

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<p>Domain: Ratios and Proportional Relationships Cluster: Understand ratio concepts and use ratio reasoning to solve problems.</p> <p>■ 6.RP.A.1: Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.</p> <p>■ 6.RP.A.2: Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$. Use rate language in the context of a ratio relationship. For example, this recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar. Also, we paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger. (Expectations for unit rates in 6th grade are limited to non-complex fractions)</p> <p>■ 6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.</p>	<p>Essential Questions</p> <ul style="list-style-type: none"> What are the differences between ratio, rate, and unit rate? <p>Topic C Objectives:</p> <p>Lesson 16: (6.RP.A.1, 6.RP.A.2, 6.RP.A.3)</p> <ul style="list-style-type: none"> Students associate a description of a ratio relationship, such as “5 miles for every 2 hours,” to a new quantity, “2.5 miles/hour,” called a <i>rate</i>. Given a ratio, students precisely identify the associated rate. They identify the unit rate and the rate unit. <p>Lesson 17: (6.RP.A.1, 6.RP.A.2, 6.RP.A.3)</p> <ul style="list-style-type: none"> Given a rate, students find ratios associated with the rate, including a ratio where the second term is one and a ratio where both terms are whole numbers. Students recognize that all ratios associated to a given rate are equivalent because they have the same value. <p>Lesson 19: (6.RP.A.1, 6.RP.A.2, 6.RP.A.3)</p> <ul style="list-style-type: none"> Students solve problems by analyzing different unit rates given in tables, equations, and graphs. <p>Lesson 20: (6.RP.A.1, 6.RP.A.2, 6.RP.A.3)</p> <ul style="list-style-type: none"> Students solve problems by analyzing different unit rates given in words, tables, equations, and graphs. 	<p>Topic C: Unit Rates</p> <p>Topic C Teacher Toolbox Alignment: Lesson 2: Understand Unit Rate Lesson 4: Solve Problems with Unit Rate Integrating Teacher Toolbox Lessons</p> <p>Lessons 16-17, Combine Suggestions for combining</p> <ul style="list-style-type: none"> Lesson 16 Example & Exploratory Challenge b Lesson 17 Examples 1-6 & Problem Set Exit Ticket from both lessons <p>Lesson 18 Omit Lesson 19 Lesson 20</p> <p>Continued below</p>	<p>Vocabulary for Module 1 Topic C Rate, Unit Rate, Unit of Measurement</p>

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<p>Domain: Ratios and Proportional Relationships Cluster: Understand ratio concepts and use ratio reasoning to solve problems.</p> <ul style="list-style-type: none"> ■ 6.RP.A.1: Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. ■ 6.RP.A.2: Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$. Use rate language in the context of a ratio relationship. For example, this recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar. Also, we paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger. (Expectations for unit rates in 6th grade are limited to non-complex fractions) ■ 6.RP.A.3b: Solve unit rate problems including those involving unit pricing and constant speed. For example, if a runner ran 10 miles in 90 minutes, running at that speed, how long will it take him to run 6 miles? How fast is he running in miles per hour? ■ 6.RP.A.3d: Use ratio reasoning to convert customary and metric measurement units (within the same system); manipulate and transform units appropriately when multiplying or dividing quantities. 	<p>Essential Questions</p> <ul style="list-style-type: none"> • What are the differences between ratio, rate, and unit rate? <p>Topic C Objectives, cont'd:</p> <p>Lesson 21: (6.RP.A.1, 6.RP.A.2, 6.RP.A.3b, 6.RP.A.3d)</p> <ul style="list-style-type: none"> • Students use rates between measurements to convert measurement in one unit to measurement in another unit. They manipulate and transform units appropriately when multiplying or dividing quantities. <p>Lesson 22: (6.RP.A.1, 6.RP.A.2, 6.RP.A.3b, 6.RP.A.3d)</p> <ul style="list-style-type: none"> • Students decontextualize a given speed situation, representing symbolically the quantities involved with the formula $\text{distance} = \text{rate} \cdot \text{time}$. <p>Lesson 23: (6.RP.A.1, 6.RP.A.2, 6.RP.A.3b, 6.RP.A.3d)</p> <ul style="list-style-type: none"> • Students solve constant rate work problems by calculating and comparing unit rates. 	<p>Topic C: Unit Rates, cont'd</p> <p>Lessons 21-22, Combine Suggestions for combining</p> <ul style="list-style-type: none"> • Lesson 21 Examples 1-2; Exercises 1-2 • Lesson 22 Example 2; Exercises 1-2 & Problem Set • Exit Tickets from both lessons <p>Lesson 23</p>	<p>Vocabulary for Module 1 Topic C Rate, Unit Rate, Unit of Measurement</p>

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
<p>Domain: Ratios and Proportional Relationships Cluster: Understand ratio concepts and use ratio reasoning to solve problems.</p> <p>■ 6.RP.A.1: Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.</p> <p>■ 6.RP.A.3c: Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.</p>	<p>Essential Question(s):</p> <ul style="list-style-type: none"> How can you express ratios as percent? How can a visual model help to find the percent of a quantity? How can a visual model help to find a quantity given the part of the whole? <p>Topic D Objectives:</p> <p>Lesson 24: (6.RP.A.1, 6.RP.A.3c)</p> <ul style="list-style-type: none"> Students understand that percents are related to part-to-whole ratios and rates where the whole is 100. Students model percents and write a percent as a fraction over 100 or a decimal to the hundredths place. <p>Lesson 25: (6.RP.A.1, 6.RP.A.3c)</p> <ul style="list-style-type: none"> Students write a fraction and a decimal as a percent of a whole quantity and write a percent of a whole quantity as a fraction or decimal. <p>Lesson 26: (6.RP.A.3c)</p> <ul style="list-style-type: none"> Students find the percent of a quantity. Given a part and the percent, students solve problems involving finding the whole. <p>Lesson 27: (6.RP.A.3c)</p> <ul style="list-style-type: none"> Students find the percent of a quantity. Given a part and the percent, students solve problems involving finding the whole. <p>Lessons 28: (6.RP.A.3c)</p> <ul style="list-style-type: none"> Given a part and the percent, students find the percent of a quantity and solve problems involving finding the whole. 	<p>Topic D: Percent</p> <p>Topic D Teacher Toolbox Alignment: Lesson 5: Solve Problems with Percent Integrating Teacher Toolbox Lessons Lessons 24-25, Combine Suggestions for combining</p> <ul style="list-style-type: none"> Lesson 24 Show computer model Lesson 25 Examples 1-2; Exercise 1 Exit Tickets from both lessons <p>Lesson 26 Lessons 27-28, Combine Suggestions for combining</p> <ul style="list-style-type: none"> Complete Example 1 from Lesson 27, and have students complete 2 of the 5 columns in the Exercise. From there, move into the Example from Lesson 28, and have students complete 3 of the 6 rows in the Exercise. For homework, lesson 27 Problem Set exercises & lesson 28 Problem Set #1 and Exit tickets from both lessons <p>Lesson 29 Omit Optional Quiz for Topic D Eureka Math End-of Module 1 Assessment #2-4 & Review of Assessment (Complete by 9/19/19)</p> <p>Optional Module 1 EOM Assessment Additional Resource(s): These optional resources may be used for extension, enrichment and/or additional practice, as needed. Illustrative Math: Shirt Sale Task: 6.RP.3c Illustrative Math: Overlapping Squares 6.RP.A.3c</p>	<p>Vocabulary for Module 1 Topic D Percent, part-to-whole</p>

Module 2 Arithmetic Operations

■ Major Work

➤ Supporting Work



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Grade 6

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
<p>Grade 6 Pacing and Preparation Guide (Allow approximately 4.5 weeks for instruction, review and assessment)</p>			
<p>Domain: The Number System Cluster: Apply and extend previous understandings of multiplication and division to divide fractions by fractions.</p> <p>■ 6.NS.A.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.</p>	<p>Essential Question(s):</p> <ul style="list-style-type: none"> How does division of fractions relate to multiplication of fractions? How is division of fractions used in the real world? <p>Topic A Objectives: Lessons 3: (6.NS.A.1)</p> <ul style="list-style-type: none"> Students use fraction bars and area models to show the division of fractions by fractions with common denominators. Students make connections to the multiplication of fractions. In addition, students understand that to get the quotient when dividing fractions, they must ask, “How many groups of the divisor are in the dividend?” <p>Lessons 4: (6.NS.A.1)</p> <ul style="list-style-type: none"> Students use fraction bars and area models to divide fractions by fractions with different denominators. Students make connections between visual models and multiplication of fractions. 	<p>Topic A: Dividing Fractions by Fractions</p> <p>Topic A Teacher Toolbox Alignment: Lesson 6: Understand Division with Fractions Lesson 7: Divide with Fractions Integrating Teacher Toolbox Lessons</p> <p>Lesson 1 Omit (Use the TT lessons) Lesson 2 Omit (Use the TT lessons)</p> <p>Lessons 3-4, Combine Suggestions for combining</p> <ul style="list-style-type: none"> Lesson 3 Classwork; Examples 2-3; Exercise 5 Lesson 4 Examples 3-4 Lesson 3 Exit Ticket, Lesson 4 Exit Ticket #2 <p>Continued below</p>	<p>Familiar Terms & Symbols for Module 2: Algorithm, Composite Number, Distributive Property, Dividend, Divisor, Estimate, Factors, Multiples, Prime Number, Reciprocal</p> <p>Vocabulary for Module 2 Topic A Multiplicative Inverses</p>
<p>Domain: The Number System Cluster: Apply and extend previous understandings of multiplication and division to divide fractions by fractions.</p> <p>■ 6.NS.A.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.</p>	<p>Lesson 7: (6.NS.A.1)</p> <ul style="list-style-type: none"> Students formally connect models of fraction division to multiplication and the invert-and-multiply rule. <p>Lesson 8: (6.NS.A.1)</p> <ul style="list-style-type: none"> Students divide fractions by mixed numbers by first converting the mixed numbers into a fraction with a value larger than one. Students use equations to find quotients. 	<p>Topic A, cont'd Lesson 5 Omit Lesson 6 Omit Lesson 7 Lesson 8</p> <p>Optional Quiz for Module 2 Topic A Additional Resources: <i>These optional resources may be used for extension, enrichment and/or additional practice, as needed.</i>-TNCore Bike Ride Task Illustrative Math: Cup of Rice Task</p>	<p>Vocabulary for Module 2 Topic A Multiplicative Inverses</p>

■ Major Work

➤ Supporting Work



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
<p>Domain: The Number System Cluster: Compute fluently with multi-digit numbers and find common factors and multiples.</p> <p>➤ 6.NS.B.3: Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.</p>	<p>Essential Question:</p> <ul style="list-style-type: none"> What strategies can be used to add and subtract decimals? 	<p>Topic B: Multi-Digit Decimal Operations - Adding, Subtracting and Multiplying</p> <p>Topic B Teacher Toolbox Alignment: Lesson 9: Add and Subtract Decimals <i>Use this lesson as a review of adding & subtracting decimals.</i> The link below includes guidance on what resources to use from the lesson. Integrating Teacher Toolbox Lessons</p> <p>Lesson 9 omit Lesson 10 omit Lesson 11 omit</p> <p>Optional Quiz for Module 2 Topic B</p> <p>Eureka Math Mid- Module 2 Assessment & Review of Assessment: Select items that directly reflect the outcome of the standards. <i>(Complete by 10/2/19)</i></p> <p>Optional Module 2 Mid Module Assessment</p> <p>Reminder: <i>It is recommended that teachers begin preparing for Module 3 by 10/7/19.</i> Additional Resources: <i>These optional resources may be used for extension, enrichment and/or additional practice, as needed.</i> Illustrative Math: Movie Ticket Task Math Activities: Sections 2-2 to 2-8</p>	<p>Vocabulary for Module 2 Topic B No new vocabulary</p>

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
<p>Domain: The Number System Cluster: Compute fluently with multi-digit</p>	<p>Essential Question:</p>	<p>Topic C: Dividing Whole Numbers and Decimals</p>	<p>Vocabulary for Module 2 Topic C</p>

■ Major Work

➤ Supporting Work



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
<p>numbers and find common factors and multiples.</p> <p>➤ 6.NS.B.2: Fluently divide multi-digit numbers using a standard algorithm.</p> <p>➤ 6.NS.B.3: Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.</p>	<ul style="list-style-type: none"> • How does division of rational numbers relate to multiplication of rational numbers? <p>Topic C Objectives:</p> <p>Lesson 13: (6.NS.B.2)</p> <ul style="list-style-type: none"> • Students understand that the standard algorithm of division is simply a tally system arranged in place value columns. <p>Lesson 14: (6.NS.B.2, 6.NS.B.3)</p> <ul style="list-style-type: none"> • Students use their knowledge of dividing multi-digit numbers to solve for quotients of multi-digit decimals. • Students understand the mathematical concept of decimal placement in the divisor and the dividend and its connection to multiplying by powers of 10. <p>Lesson 15: (6.NS.B.2, 6.NS.B.3)</p> <ul style="list-style-type: none"> • Students use mental math and their knowledge of dividing multi-digit numbers to solve for quotients of multi-digit decimals. • Students understand the mathematical concept of decimal placement in the divisor and the dividend and its connection to multiplying by powers of 10. 	<p>Topic C Teacher Toolbox Alignment: Lesson 8: Divide Multi-Digit Numbers Lesson 10: Multiply and Divide Decimals Integrating Teacher Toolbox Lessons</p> <p>Lesson 12 Omit Lesson 13 Lesson 14 Lesson 15 (Please notice and correct the error in Exercise #4)</p> <p>Optional Quiz for Module 2 Topic C</p> <p>Additional Resources: <i>These optional resources may be used for extension, enrichment and/or additional practice, as needed.</i> Illustrative Math: Interpreting a Division Computation Illustrative Math: Batting Average</p>	<p>Powers of 10</p>

■ Major Work

➤ Supporting Work



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
<p>Domain: The Number System Cluster: Compute fluently with multi-digit numbers and find common factors and multiples.</p> <p>➤ 6.NS.B.4: Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor.</p>	<p>Essential Question: Why is it important to be able to find the greatest common factor and least common multiple of a set of numbers?</p> <p>Topic D Objective Lesson 18: (6.NS.B.4)</p> <ul style="list-style-type: none"> Students find the least common multiple and greatest common factor and apply knowledge of factors to use the distributive property. 	<p>Topic D: Number Theory- Thinking Logically About Multiplicative Arithmetic</p> <p>Topic D Teacher Toolbox Alignment: Lesson 11: <i>Common Factors and Multiples</i> Integrating Teacher Toolbox Lessons</p> <p>Lesson 16 Omit Lesson 17 Omit Lesson 18 Lesson 19 Omit</p> <p>Optional Quiz for Module 2 Topic D</p> <p>End of Module 2 Assessment & Review of Assessment <i>(Complete by 10/10/19)</i> Module 2 EOM Alternate Assessment</p> <p>Additional Resources: These optional resources may be used for extension, enrichment and/or additional practice, as needed. Illustrative Math: Greatest Common Factor 6.NS.4 Illustrative Math: Bake Sale Task</p>	<p>Vocabulary for Module 2 Topic D Least common multiple, greatest common factor</p>

■ Major Work

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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.

<p>Textbook Resources www.greatminds.org Eureka Math Grade 6 Remediation Guide Remediation Tools</p>	<p>Standards Support TN Math Standards Instructional Focus Document Achieve the Core Edutoolbox</p>	<p>Videos Learn Zillion Khan Academy</p>
<p>Calculator Activities TI-73 Activities CASIO Activities TI-Inspire for Middle Grades</p>	<p>Interactive Manipulatives Glencoe Virtual Manipulatives National Library of Interactive Manipulatives</p> <p>SEL Resources SEL Connections with Math Practices SEL Core Competencies The Collaborative for Academic, Social, and Emotional Learning (CASEL)</p>	<p>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.) https://academy.act.org/ https://opened.com https://www.freckle.com/</p>

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Grade 6

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	13	14	15	16	
<div style="border: 1px solid black; padding: 5px;"> <p>Use this time to establish routines, procedures, and build positive classroom culture. Additional SEL resources: SEL Connections and SEL Competencies</p> </div>						
	<i>1st Day of School</i>					
Module 1 Topic A	19 Module 1 Topic A Lessons 1- 2, combined	20 Module 1 Topic A Lessons 3- 4, combined	21 Module 1 Topic A Lessons 5-6, combined	22 Module 1 Topic A Lessons 7-8, combined	23 Flex Day Options 6.RP.A.1 6.RP.A.3a Pacing Other	
Module 1 Topic B	26 Module 1 Topic B Lessons 9-11, combined	27 Module 1 Topic B Lessons 9-11, combined	28 Module 1 Topic B Lessons 12-13, combined	29 Module 1 Topic B Lessons 14-15, combined	30 Flex Day Options 6.RP.A.1 6.RP.A.3a Pacing Other	

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.

■ Major Work

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Curriculum and Instruction – Mathematics

Quarter 1

2019-2020

Grade 6

September 2019

Module/Topic	Monday	Tuesday	Wednesday	Thursday	Friday	Notes:
Module 1 Mid-Module 1 Assessment	2 <i>Labor Day</i>	3 Mid-Module 1 Assessment	4 Mid-Module 1 Assessment	5 Module 1 Topic C Lessons 16-17, combined	6 Module 1 Topic C Lesson 19 Begin Prepping for Module 2	Flex Day Options Include: Standard- Suggested standard(s) to review for the day (*-denotes a Power Standard)
Module 1 Topics C & D	9 Module 1 Topic C Lesson 20	10 Module 1 Topic C Lessons 21-22, combined	11 Module 1 Topic C Lesson 23	12 Module 1 Topic D Lessons 24-25, combined	13 Flex Day Options 6.RP.A.2 6.RP.A.3b 6.RP.A.3d Pacing Other	Pacing – Use this time to adjust instruction to stay on pace. Other- This includes assessments, review, re-teaching, etc.
Module 1 Topics C & D	16 Module 1 Topic D Lesson 26	17 Module 1 Topic D Lessons 27-28, combined	18 End-of-Module 1 Assessment	19 <i>Parent Teacher Conferences</i> End-of-Module 1 Assessment	20 <i>½ day students</i> Flex Day Options 6.RP.A.3b 6.RP.A.3c 6.RP.A.3d Pacing Other	
Module 2 Topic A (omit lessons 1-2 & 5-6)	23 Module 2 Topic A TT Lessons 6	24 Module 2 Topic A TT Lesson 7	25 Module 2 Topic A Lessons 3-4, combined	26 Module 2 Topic A Lesson 7	27 Flex Day Options 6.NS.A.1* 6.RP.A.3c Pacing Other	
Module 2 Topic B	30 Module 2 Topic B Lesson 8	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.

■ Major Work

➤ Supporting Work



Curriculum and Instruction – Mathematics

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Grade 6

October 2019

Module/Topic	Monday	Tuesday	Wednesday	Thursday	Friday	Notes:
Module 2 Topics B & C	30	1 Module 2 Topic B TT Lesson 9	2 Mid-Module 2 Assessment (choose items that most represent the standards)	3 Module 2 Topic C Lesson 13	4 Flex Day Options 6.NS.A.1* 6.NS.B.3* 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 2 Topics C & D (omit lessons 16, 17, & 19)	7 Module 2 Topics C Lesson 14 Begin Prepping for Module 3	8 Module 2 Topics C Lesson 15	9 Module 2 Topics C Lesson 18	10 End-of-Module 2 Assessment	11 ½ day (students) Quarter 1 Ends Flex Day Options 6.NS.B.3* 6.NS.B.4 Pacing Other	
	14	15	16	17	18	
<i>Fall Break</i>						
	21	21	23	24	25	
	28	29	30	31 <i>Halloween</i>	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.

■ Major Work

➤ Supporting Work