

Curriculum and Instruction – Mathematics 2019-2020

Grade 7

Grade 7: Year at a Glance

	Qı	02		Q3		Q4
Module 1 Aug. 14-Sept. 6	Module 2 Sept. 9- Oct. 11	Module 3 Oct. 21-Nov 22	Module 4 Dec. 2- Jan. 17	Module 5 Topics A-C Grade 6 Module 6 Topic B Jan. 21- March 13	Grade 6 Module 6 Topic C Module 5 Topic D Jan. 21- March 13	Grade 7 Module 6 Mar. 23 – April 24 TNReady April 13- May 8 Review after TNReady May 9-May 24
Ratios and Proportional Relationships	Rational Numbers	Expressions and Equations	Percent and Proportional Relationships	Statistics & Probability	Statistics & Probability	Geometry
7.RP.A.1	7.NS.A.1	7.EE.A.1	7.RP.A.1	7.SP.A.1	7.SP.B.3	7.G.A.2
7.RP.A.2	7.NS.A.2	7.EE.A.2	7.RP.A.2	7.SP.A.2	7.SP.B.4	7.G.B.4
7.RP.A.3	7.NS.A.3	7.EE.B.3a	7.RP.A.3	7.SP.C.5	7.SP.D.8	7.G.B.5
7.EE.4a	7.EE.A.2	7.EE.B.3b	7.EE.B.3	7.SP.C.6		After TNReady Review Standards
7.G.A.1	7.EE.B.4a	7.EE.B.4	7.G.A.1	7.SP.C.7		7.RPA. 2
		7.G.B.3		7.SP.D.8		7.EE.B.3
		7.G.B.4				7.EE.B.4
		7.G.B.5				
	■ Major Content		> Su	porting 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?

80% of seniors will be college-or career-ready 90% of students will graduate on time

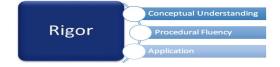
100%
of college-or career-ready
graduates enroll in
post-secondary opportunities

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



Coherence



Throughout this curriculum map, you will see resources as well as links to tasks that will support you in ensuring that students are able to reach the demands of the standards in your classroom. In addition to the resources embedded in the map, there are some high-leverage resources around the content standards and mathematical practice standards that teachers should consistently access. For a full description of each, click on the links below.

Tennessee Mathematics Content Standards

Standards for Mathematical Practice Literacy Sckills for Mathematical Proficency

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■Major Content

Supporting Content



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How to Use the Curriculum Map

Overview

An overview is provided for each quarter and includes the topics, focus standards, intended rigor of the standards and foundational skills needed for success of those standards.

Your curriculum map contains four columns that each highlight specific instructional components. Use the details below as a guide for information included in each column.

Tennessee State Standards

TN State Standards are located in the left column. Each content standard is identified as Major Content or Supporting Content. A key can be found at the bottom of the map.

Content

This section contains learning objectives based upon the TN State Standards. Best practices tell us that clearly communicating measurable objectives lead to greater student understanding. Additionally, essential questions are provided to guide student exploration and inquiry.

Instructional Support

District and web-based resources have been provided in the Instructional Support column. You will find a variety of instructional resources that align with the content standards. The additional resources provided should be used as needed for content support and scaffolding.

Vocabulary and Fluency

The inclusion of vocabulary serves as a resource for teacher planning and for building a common language across K-12 mathematics. One of the goals for Tennessee State Standards is to create a common language, and the expectation is that teachers will embed this language throughout their daily lessons. In order to aid your planning, we have also included a list of fluency activities for each lesson. It is expected that fluency practice will be a part of your daily instruction. (Note: Fluency practice is not intended to be speed drills, but rather an intentional sequence to support student automaticity. Conceptual understanding must underpin the work of fluency.

Instructional Calendar

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

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■ Major Content

Supporting Content



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Grade 7 Quarter 3 Overview

Module 4: Percent & Proportional Relationships

Quarter 3

Module 5: Statistics & Probability

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.A.2	Conceptual Understanding	6.RP.1, 6.RP.2, 6.RP.3			
7.RP.A.3	Application	6.RP.1, 6.RP.2, 6.RP.3			
7.EE.B.3	Procedural Fluency	7.NS.3			
7.G.A.1	Conceptual Understanding	6.SP.1, 6.SP.2			
7.SP.A.1	Conceptual Understanding	6.SP.1, 6.SP.2			
➤ 7.SP.A.2	Conceptual Understanding	7.SP.1			
7.SP.B.3	Conceptual Understanding	5.NF.4, 6.NS.1, 6.SP.2			
7.SP.B.4	Conceptual Understanding	7.SP.2, 7.SP.3			
7.SP.C.5	Conceptual Understanding				
7.SP.C.6	Conceptual Understanding	7.RP.3, 7.SP.5			
7.SP.C.7	Application	7.RP.3, 7.SP.6			
7.SP.D.8	Conceptual Understanding, Procedural Fluency, Application	7.RP.3, 7.SP.7			
<u> </u>	Indicates a Power Standard based on the 2017-18 TN Ready Assessment				
	Instructional Focus Document Grade 7				



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TH OTATE OTANDADDO	CONTENT	INOTRUCTIONAL OURRORT	VOCABULARY
IN STATE STANDARDS			VOCABULARY
Domain: Expressions and Equations Cluster: Use properties of operations to generate equivalent expressions 7.RP.A.2b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. Domain: Geometry Cluster: Draw, construct and describe geometrical figures and describe the relationships between them. 7.G.A.1 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.	Grade 7 Pacing and	rtional Relationships, Cont'd Preparation Guide instruction, review and assessment) Topic C: Scale Drawings Topic C Teacher Toolbox Alignment: Lesson 22: Scale Drawings How to Integrate Teacher Toolbox Lessons Lesson 12 Lesson 13 Additional Resources: These optional resources may be used for extension, enrichment and/or additional practice, as needed. Illustrative Math: Cider versus Juice-Variation 17.RP.A.2b Illustrative Math: Cider versus Juice-Variation 27.RP.A.2b Continued below	Familiar Terms for Module 4 Area, Circumference, Coefficient of the Term, Complex Fraction, Constant of Proportionality, Discount Price, Equation, Equivalent Ratios, Expression, Fee, Fraction, Greatest Common Factor, Length of a Segment, One-to-One Correspondence, Original Price, Percent, Perimeter, Pi, Proportional Relationship, Proportional To, Rate, Ratio, Rational Number, Sales Price, Scale Drawing, Scale Factor, Unit Rate



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Cluster: Draw, construct and describe geometrical figures and describe the relationships between them. 7.G.A.1 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.	 Given a scale drawing, students compute the lengths in the actual picture using the scale factor. Lesson 15 (7.G.A.1) Students solve area problems related to scale drawings and percent by using the fact that an area, A', of a scale drawing is k² times the corresponding area, A, in the original drawing, where k is the scale factor. 	Topic C, cont'd. Lesson 14 Lesson 15 Optional Quiz for Module 4 Topic C Additional Resources: These optional resources may be used for extension, enrichment and/or additional practice, as needed. Illustrative Math: Floor Plan 7.G.A.1 Reminder: It is suggested that teachers begin proporting for Module 5 by 1/7/20	Familiar Terms for Module 4 Area, Circumference, Coefficient of the Term, Complex Fraction, Constant of Proportionality, Discount Price, Equation, Equivalent Ratios, Expression, Fee, Fraction, Greatest Common Factor, Length of a Segment, One-to-One Correspondence, Original Price, Percent, Perimeter, Pi, Proportional Relationship, Proportional To, Rate, Ratio, Rational Number, Sales Price, Scale Drawing, Scale Factor, Unit Rate
Domain: Ratios and Proportional Relationships Cluster: Analyze proportional relationships and use them to solve real-world and mathematical problems. 7.RP.A.2c: Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed a t = pn. 7.RP.A.3 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.	Essential Question(s): Do proportional relationships have common features? If so what are they and how are they displayed in different representations? What strategies could you use to find the missing value in a proportion? How are your strategies related? Topic D Objectives: Lesson 16 (7.RP.A.3, 7.EE.B.3) Students write and use algebraic expressions and equations to solve percent word problems related to populations of people and compilations.	Topic D: Population, Mixture and Counting Problems Involving Percents Topic D Teacher Toolbox Alignment: Lesson 12: Problem Solving with Proportional Relationships Lesson 13: Proportional Relationships How to Integrate Teacher Toolbox Lessons Lesson 16 Lesson 17 Omit or use as extension lesson as time permits Lesson 18 Omit or use as extension lesson as time permits Optional Quiz for Module 4 Topic D End-of-Module 4 Assessment & Review of Assessment (Complete by 1/15/20) Optional Module 4 EOM Assessment	Familiar Terms for Module 4 Area, Circumference, Coefficient of the Term, Complex Fraction, Constant of Proportionality, Discount Price, Equation, Equivalent Ratios, Expression, Fee, Fraction, Greatest Common Factor, Length of a Segment, One-to-One Correspondence, Original Price, Percent, Perimeter, Pi, Proportional Relationship, Proportional To, Rate, Ratio, Rational Number, Sales Price, Scale Drawing, Scale Factor, Unit Rate

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Domain: Expressions and Equations Cluster: Solve real-life and mathematical problems using numerical and algebraic expressions and equations.		Additional Resources: These optional resources may be used for extension, enrichment and/or additional practice, as needed.	
7.EE.B.3: Solve multi-step real-world and mathematical problems posed with positive and negative rational numbers presented in any form (whole numbers, fractions, and decimals). a. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate. b. Assess the reasonableness of answers using mental computation and estimation strategies.		Illustrative Math: Gym Membership Plans 7.RP.A.2c Extended Constructive Response Task: Sleep Survey 7.EE.B.3 (pp. 1-6) Percent Increase and Decrease Video Lesson	





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Module 5 Statistics and Probability <u>Grade 7 Pacing and Preparation Guide</u> (Allow approximately 7.5 weeks for instruction, review and assessment)				
TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY	
Domain: Statistics and Probability Cluster: Investigate chance processes and develop, use and evaluate probability models. ➤ 7.SP.C.5: Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. ➤ 7.SP.C.6: Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.	 Essential Questions: What is the difference between theoretical and experimental probability? How can data collection assist in making predictions about an event? Topic A Objectives Lesson 1 (7.SP.C.5) Students understand that a probability is a number between 0 and 1 that represents the likelihood that an event will occur. Students interpret a probability as the proportion of the time that an event occurs when a chance experiment is repeated many times. Lesson 2 (7.SP.C.6) Students estimate probabilities by collecting data on an outcome of a chance experiment. Students use given data to estimate probabilities. 	Topic A: Calculating and Interpreting Probabilities Topic A Teacher Toolbox Alignment: Lesson 30: Understand Probability Lesson 31: Experimental Probability Lesson 33: Probability of Compound Events How to Integrate Teacher Toolbox Lessons Lesson 1 Lesson 2 Continued below	Vocabulary for Module 5: Topic a Chance Experiment, Chance Process Event Long-Run Relative Frequency Probability Familiar Terms and Symbols for Module 5: Measures of Center Measures of Variability Shape	



CONTENT **INSTRUCTIONAL SUPPORT VOCABULARY** TN STATE STANDARDS Lesson 3 (7.SP.C.6) **Domain:** Statistics and Probability Topic A, cont'd. Vocabulary for Module 5: Topic A • Students determine the possible outcomes Chance Experiment, Chance Process Cluster: Investigate chance processes and develop, use and evaluate probability models. for simple chance experiments. Lesson 3 Event Lesson 4 Long-Run Relative Frequency Given a description of a simple chance > 7.SP.C.6: Approximate the probability of a Lesson 5 Probability experiment, students determine the sample chance event by collecting data on the Lesson 6 Omit Probability Model space for the experiment. chance process that produces it and Lesson 7 Omit Random Sample Given a description of a chance experiment observing its long-run relative frequency, **Optional Quiz for Module 5 Topic A** Sample Space and an event, students determine for which Additional Resources: These optional Familiar Terms and Symbols for Module 5: and predict the approximate relative outcomes in the sample space the event resources may be used for extension, Measures of Center frequency given the probability. will occur. enrichment and/or additional practice, as Measures of Variability • Students distinguish between chance needed. Shape > 7.SP.C.7: Develop a probability model and experiments with equally likely outcomes Illustrative Math: Tossing Cylinders 7.SP.C.6 use it to find probabilities of events. and chance experiments for which the Illustrative Math: Rolling Dice 7.SP.C.5. Compare probabilities from a model to outcomes are not equally likely. 7.SP.C.6 observed frequencies; if the agreement is Lesson 4 (7.SP.C.6, 7.SP.C.7a) not good, explain possible sources of the • Students calculate probabilities of events discrepancy. a. Develop a uniform for chance experiments that have equally probability model by assigning equal likely outcomes. probability to all outcomes and use the Lesson 5 (7.SP.C.6, 7.SP.C.7b) model to determine probabilities of events. • Students calculate probabilities for chance For example, if a student is selected at experiments that do not have equally likely random from a class, find the probability outcomes. that Jane will be selected and the probability that a girl will be selected. b.Develop a uniform probability model by assigning equal probability to all outcomes. and use the model to determine probabilities of events. For example, if a student is selected at random from a class. find the probability that Jane will be

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be selected.

selected and the probability that a girl will



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CONTENT INSTRUCTIONAL SUPPORT **VOCABULARY** TN STATE STANDARDS **Domain:** Statistics and Probability **Essential Questions Topic B: Estimating Probabilities** Vocabulary for Module 5: Topic B Chance Process Cluster: Investigate chance processes and What is the difference between **Topic B Teacher Toolbox Alignment:** Long-Run Relative Frequency develop, use and evaluate probability models. theoretical and experimental probability? Lesson 32: Probability Models Probability How can data collection assist in making **How to Integrate Teacher Toolbox Lessons** > 7.SP.C.6 Approximate the probability of a Probability Model predictions about an event? chance event by collecting data on the Random Sample chance process that produces it and Relative Frequency of an Event Sample **Topic B Objectives:** Lesson 8 observing its long-run relative frequency, Lesson 9 Uniform Probability Model Lesson 10 Omit and predict the approximate chance given Lesson 8: (7.SP.C.6, 7.SP.C.7) the probability. Lesson 11 Omit Given theoretical probabilities based on Lesson 12 a chance experiment, students describe > 7.SP.C.7 Develop a probability model and what they expect to see when they Optional Quiz for Module 5 Topic B use it to find probabilities of events. observe many outcomes of the Compare probabilities from a model to experiment. Mid-Module 5 Assessment & Review of observed frequencies; if the agreement is Students distinguish between theoretical Assessment not good, explain possible sources of the probabilities and estimated probabilities. (Complete by 1/30/20) discrepancy. a. Develop a uniform Students understand that probabilities Optional Mid-Module 5 Assessment probability model by assigning equal can be estimated based on observing probability to all outcomes and use the outcomes of a chance experiment. Additional Resources: These optional model to determine probabilities of events. Lessons 9: (7.SP.C.7, 7.SP.C.7a, 7.SP.C.7b) resources may be used for extension, For example, if a student is selected at Students compare estimated enrichment and/or additional practice, as random from a class, find the probability probabilities to those predicted by a needed. that Jane will be selected and the probability model. Illustrative Math: Rolling Dice 7.SP.6, 7.SP.7 probability that a girl will be selected. **b**. Lesson 12: (7.SP.C.6, 7.SP.C.7b) Illustrative Math: How Many Buttons Develop a uniform probability model by Students use estimated probabilities to 7.SP.C.7.a assigning equal probability to all outcomes. judge whether a given probability model and use the model to determine is plausible. probabilities of events. For example, if a Students use estimated probabilities to student is selected at random from a class. make informed decisions. find the probability that Jane will be selected and the probability that a girl will be selected.

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During the 2016-17 academic year, the Tennessee State Department of Education revised the mathematics standards. While some grades experienced minimal changes, others experienced changes that resulted in the insertion of new content and the omission of current content. This type of change occurred in the 7th grade standards and as a result, some Eureka Math lessons had to be shifted from one grade to another. Below you will notice that there are some 6th grade lessons mixed in with some 7th grade lessons. Please complete the lessons, outlined in the next few sections, in the order listed to ensure consistency in the progression of the standards. For example, after completing Grade 7 Module 5 lessons 13-17, go to Grade 6 Module 6 and complete lessons 6, 8, 10-11. Afterwards, you will go back to Module 5 of grade 7 and complete the next set of lessons.

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
 Cluster: Use random sampling to draw inferences about a population. ▶ 7.SP.A.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences. ▶ 7.SP.A.2 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be. 	 Essential Questions(s): Why is random sampling important when collecting data? What methods can be used to compare information about two populations? Topic C Objectives: Lesson 13: (7.SP.A.1) Students differentiate between a population and a sample. Students differentiate between a population characteristic and a sample statistic. Students investigate statistical questions that involve generalizing from a sample to a larger population. Lesson 14: (7.SP.A.1, 7.SP.A.2) Students understand that how a sample is selected is important if the goal is to generalize from the sample to a larger population. Students understand that random selection from a population tends to produce samples that are representative of the population. 	Grade 7 Module 5 Topic C: Random Sampling and Estimating Population Characteristics Lesson 13 Lesson 14 Continued below	Vocabulary for Module 5: Topic C Population Random Sample Sample Statistic Statistical Inference



example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.

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CONTENT **INSTRUCTIONAL SUPPORT VOCABULARY** TN STATE STANDARDS Lesson 15: (7.SP.A.1, 7.SP.A.2) Topic C, cont'd. Vocabulary for Module 5: Topic C **Domain:** Statistics and Probability Cluster: Use random sampling to draw Population Students select a random sample from a Random Sample inferences about a population. population. Lesson 15 Lesson 16 Sample Statistic Students begin to develop an 7.SP.A.1 Understand that statistics can Lesson 17 Statistical Inference understanding of sampling variability. be used to gain information about a Lesson 16: (7.SP.A.2) population by examining a sample of the **Additional Resources:** These optional • Students select a random sample from a population; generalizations about a resources may be used for extension, population. enrichment and/or additional practice, as population from a sample are valid only if Given a description of a population, the sample is representative of that needed. students design a plan for selecting a Illustrative Math: Valentine Marbles 7.SP.A.2 population. Understand that random random sample from that population. Illustrative Math: Mr. Briggs's Class Likes Math sampling tends to produce representative Lesson 17: (7.SP.A.2) samples and support valid inferences. 7.SP.A.1 Students use data from a random sample **7.SP.A.2** Use data from a random sample to estimate a population mean. to draw inferences about a population with Continued below Students understand the term sampling an unknown characteristic of interest. variability in the context of estimating a Generate multiple samples (or simulated population mean. samples) of the same size to gauge the variation in estimates or predictions. For



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Domain: Statistics and Probability Cluster: Summarize and describe numerical data sets. 7.SP.D.8 (New Standard for 7th Grade) Summarize numerical data sets in relation to their context. 7.SP.D.8a (New Standard for 7th Grade) Give quantitative measures of center (median and/or mean) and variability (range and/or interquartile range), as well as describe any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.	 Gr. 6 Module 6 Topic B: Lesson 6 (7.SP.D.8a) Students describe the center of a data distribution using a fair share value called the mean. Students connect the fair share concept with the mathematical formula for finding the mean. Lesson 8 (7.SP.D.8, 7.SP.D.8a) Students interpret the mean of a data set as a typical value. Students compare and contrast two small data sets that have the same mean but differ in variability. Students see that a data distribution is not characterized only by its center. Students also consider variability (spread) when describing a data distribution. Students informally evaluate how precise the mean is as an indicator of a typical value for a distribution, based on the variability in the data. Students use dot plots to order data distributions according to the variability around the mean of the data distribution. 	Gr. 6 Module 6 Topic B: Summarizing a Distribution that is Approximately Symmetric Using the Mean and Mean Absolute Deviation Lesson 6 Lesson 8 Continued below	Vocabulary for Module 5: Measures of center, Mean. median, mode, variability, deviations, data distribution

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Domain: Statistics and Probability	Lessons 10-11 (7.SP.D.8, 7.SP.D.8a)	Lessons 10-11 (Do not include MAD	Vocabulary for Module 5:
Cluster: Summarize and describe numerical	Students calculate the mean and MAD for	problems. It is no longer addressed in the 7th	Measures of center, Mean. median, mode,
data sets.	a data distribution.	grade TN Math Standards)	variability, deviations, data distribution
7 CD D Q (Now Chanderd for 7th Crade)	Students use the mean and MAD-to	Additional Description There entired	
> 7.SP.D.8 (New Standard for 7 th Grade) Summarize numerical data sets in relation	describe a data distribution in terms of	Additional Resources: These optional resources may be used for extension,	
to their context.	center and variability.	enrichment and/or additional practice, as	
to their context.		needed.	
> 7.SP.D.8a (New Standard for 7th Grade)		Illustrative Math: Puzzle Time 7.SP.D.8 & 8a	
Give quantitative measures of center		Illustrative Math: Mean or Median 6.SP.B.5d	
(median and/or mean) and variability			





the estimate or prediction might be.

CONTENT INSTRUCTIONAL SUPPORT **VOCABULARY** TN STATE STANDARDS Vocabulary for Module 5: Topic C **Domain:** Statistics and Probability Gr. 7 Module 5 Topic C Gr. 7 Module 5 Topic C, cont'd.: Population Cluster: Use random sampling to draw Random Sampling and Estimating Lesson 18: (7.SP.A.1, 7.SP.A.2) inferences about a population. Sample Space **Population Characteristics** • Students use data from a random sample to estimate a population mean. > 7.SP.A.1 Understand that statistics can **Topic C Teacher Toolbox Alignment:** Students know that increasing the sample be used to gain information about a Lesson 26: Understand Random Samples size decreases the sampling variability of population by examining a sample of the Lesson 27: Making Statistical Inferences the sample mean. population; generalizations about a **How to Integrate Teacher Toolbox Lessons** Lesson 19: (7.SP.A.1, 7.SP.A.2) population from a sample are valid only if • Students understand the term sampling the sample is representative of that Lesson 18 variability in the context of estimating a population. Understand that random Lesson 19 population proportion. sampling tends to produce representative Lesson 20 • Students know that increasing the sample samples and support valid inferences. size decreases sampling variability. > 7.SP.A.2 Use data from a random sample Optional Quiz for Grade 7 Module 5 Topic C Lesson 20: (7.SP.A.2) to draw inferences about a population with Students use data from a random sample an unknown characteristic of interest. Additional Resources: These optional to estimate a population proportion. Generate multiple samples (or simulated resources may be used for extension, samples) of the same size to gauge the enrichment and/or additional practice, as variation in estimates or predictions. For needed. example, estimate the mean word length Illustrative Math: Valentine Marbles 7.SP.A.2 in a book by randomly sampling words Illustrative Math: Mr. Briggs's Class Likes Math from the book; predict the winner of a 7.SP.A.1 school election based on randomly sampled survey data. Gauge how far off



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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Cluster: Summarize and describe numerical data sets. ➤ 7.SP.D.8b (New Standard for 7th Grade) Know and relate the choice of measures of center (median and/or mean) and variability (range and/or interquartile range) to the shape of the data distribution and the context in which the data were gathered. Cluster: Draw informal comparative inferences about two populations. ➤ 7.SP.B.3 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team; on a dot plot or box plot, the separation between the two distributions of heights is noticeable.	 Essential Questions(s): What methods can be used to compare information about two populations? How can you determine variability for quantitative data? Gr. 6 Module 6 Topic C: Topic C Objectives: Lesson 12: (7.SP.D.8b) Given a data set, students determine the median of the data. Lesson 13: (7.SP.D.8b) Given a set of data, students describe how the data might have been collected. Students describe the unit of measurement for observations in a data set. Students calculate the median of the data and describe the variability in the data by calculating the interquartile range. Lesson 14: (7.SP.B.3) Students construct a box plot from a given set of data. Lesson 15: (7.SP.B.3) Given a box plot, students estimate the values that make up the five-number summary (Minimum, Q1, Median, Q3, Maximum). Students describe a data set using the five-number summary and the interquartile range. Students construct a box plot from a five-number summary. Lesson 16: (7.SP.B.3, 7.SP.D.8b) Students summarize a data set using box plots, the median, and the interquartile range. Students use box plots to compare two data distributions. 	Gr. 6 Module 6 Topic C: Summarizing a Distribution That Is Skewed Using the Median and the Interquartile Range Lesson 12 Lesson 13 Lesson 14 Lesson 15 Lesson 16 Additional Resources: These optional resources may be used for extension, enrichment and/or additional practice, as needed. Illustrative Math: Math Homework Problems 7.SP.D.8b Illustrative Math: Mean or Median 7.SP.D.8b Illustrative Math: College Athletes 7.SP.3 & 7.SP.4	Sample Statistic Mean Absolute Deviation (MAD) Measures of Center Measures of Variability

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TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY
Cluster: Draw informal comparative inferences about two populations. > 7.SP.B.3 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team; on a dot plot or box plot, the separation between the two distributions of heights is noticeable. > 7.SP.B.4 Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.	Cr. 7 Module 5 Topic D Lesson 21: (7.SP.B.3, 7.SP.B.4) Students understand that a meaningful difference between two sample means is one that is greater than would have been expected due to just sampling variability. Lesson 22: (7.SP.B.3, 7.SP.B.4) Students express the difference in sample means as a multiple of a measure of variability. Students understand that a difference in sample means provides evidence that the population means are different if the difference is larger than what would be expected as a result of sampling variability alone.	Gr. 7 Module 5 Topic D: Comparing Populations Teacher Toolbox Alignment: Lesson 28: Find Measures of Center and Variability Lesson 29: Use Measures of Center and Variability to Compare Data How to Integrate Teacher Toolbox Lessons Lesson 21 Lesson 22 Lesson 23 Omit Optional Quiz for Grade 7 Module 5 Topic D End of Module 5 Assessment & Review of Assessment (Complete by 3/5/20) Optional Module 5 EOM Assessment Additional Resources: These optional resources may be used for extension, enrichment and/or additional practice, as needed. Illustrative Math: College Athletes 7.SP.B.3 & 4 Illustrative Math: Offensive Linemen 7.SP.B.3 & 4 Reminder: It is recommended that teachers begin preparing for Module by 3/4/20.	Vocabulary for Module 5: Measure of variability Sample Space Sample Statistic Statistical Inference



Quarter 3 2019-2020 Grade 7

RESOURCE TOOLKIT						
	The Resource Toolkit provides additional support for comprehension and mastery of grade-level skills and concepts. While some of these resources are imbedded in the map, the use of these categorized materials can assist educators with maximizing their instructional practices to meet the needs of all students.					
Textbook Resources	Standards Support	Videos				
www.greatminds.org	TN Math Standards	Learn Zillion				
Grade 7 Remediation Guides	Grade 7 Instructional Focus Document	Khan Academy				
Remediation Tools	Achieve the Core					
	Edutoolbox					
Calculator Activities	Interactive Manipulatives	Additional Sites				
TI-73 Activities	Glencoe Virtual Manipulatives	Embarc Online				
CASIO Activities	National Library of Interactive Manipulatives	PBS: Grades 6-8 Lesson Plans				
TI-Inspire for Middle Grades		Grade 7 Flip Book				
		(This book contains valuable resources that help develop the				
		intent, the understanding and the implementation of the state				
		standards.)				
	SEL Resources	https://academy.act.org/				
	SEL Connections with Math Practices	https://opened.com				

The Collaborative for Academic, Social, and Emotional Learning (CASEL)

SEL Core Competencies





Quarter 3 2019-2020 Grade 7 January 2020 Module/Topic Wednesday **Friday Monday Tuesday Thursday Notes:** Flex Day Options Include: Winter Break Standard- Suggested standard(s) to review for the 8 9 10 6 (*-denotes a Power Standard) **Quarter 3 Begins** Flex Day Options 7.RP.A.2b Module 4 Topic C Module 4 Topic C Module 4 Topic C Module 4 Topic C 7.G.A.1 **Pacing** – Use this time to Module 4 Topic C Lesson 13 Lesson 14 Lesson 15 **Pacing** adjust instruction to stay on Lesson 12 Other pace. 13 15 14 16 17 **Other**- This includes assessments, review, re-End of Module 4 End of Module 4 End of Module 4 ½ day students Module 4 Topic C teaching, etc. Module 4 Topic C Assessment & Assessment & Flex Day Options Assessment & 7.G.A.1 Review of Review of Review of Lesson 16 **Pacing** Assessment Assessment Assessment Other 20 21 23 24 22 Module 5 Topic A Module 5 Topic A Module 5 Topic A Module 5 Topic A Martin Luther King Module 5 Topic A Lesson 1 Lesson 2 Lesson 3 Lesson 4 Ir. Day Flex Day Options 27 28 29 30 7.SP.C.5, 7.SP.C.6 Module 5 Topic A Module 5 Topic B Module 5 Topic B Module 5 Topic B 7.SP.C.7 Module 5 Topics A Lesson 5 Lesson 8 Lesson 9 Lesson 12 **Pacing** Topic B 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.



Curriculum and Instruction – Mathematics 2019-2020

Grade 7

February 2020									
Module/Topic	Monday	Tuesday	Wednesday	Thursday	Friday	Notes:			
Module 5 Topic C	Mid-Module 5 Assessment	Module 5 Topic C Lesson 13	Module 5 Topic C Lesson 14	Module 5 Topic C Lesson 16	Flex Day Options 7.SP.A.1 7.SP.A.2* Pacing Other	Flex Day Options Include: Standard- Suggested standard(s) to review for the day (*-denotes a Power Standard)			
Module 5 Topic C	Module 5 Topic C Lesson 17	Grade 6 Module 6 Lesson 6	Grade 6 Module 6 Lesson 8	Parent Teacher Conferences Grade 6 Module 6 Lessons 10-11, combined	1/2 day students Flex Day Options 7.SP.A.1 7.SP.A.2* Pacing Other	Pacing – Use this time to adjust instruction to stay on pace. Other- This includes assessments, review, reteaching, etc.			
Module 5 Topic C	President's Day (PD FLEX DAY)	Module 5 Topic C Lesson 18	Module 5 Topic C Lesson 19	20 Module 5 Topic C Lesson 20	21 Module 5 Topic C Assessment				
Module 5 Topic C	Grade 6 Module 6 Lesson 12	Grade 6 Module 6 Lesson 13	Grade 6 Module 6 Lesson 14	Grade 6 Module 6 Lesson 15	Flex Day Options 7.SP.A.1 7.SP.A.2* 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.



Curriculum and Instruction – Mathematics 2019-2020

Grade 7

March 2020										
Module/Topi	ic Monday	Tuesday	Wednesday	Thursday	Friday	Notes:				
Module 5 Topic (Grade 6 Module 6 Lesson 16	Module 5 Topic C Lesson 21	Module 5 Topic C Lesson 22	End of Module 5 Assessment	Flex Day Options 7.SP.B.3 7.SP.B.4 Pacing Other	Flex Day Options Include: Standard- Suggested standard(s) to review for the day (*-denotes a Power Standard)				
	9	10	11	12	Quarter 3 Ends	Pacing – Use this time to adjust instruction to stay on pace.				
Use this time to review, re-teach, remediate or progress with pacing.						Other- This includes assessments, review, re-				
						teaching, etc.				
	16	17	18	19	20					
	Quarter 4 Begins	24	25	26	27					
	30	31	1	2	3	CCC 2010/2010				



Curriculum and Instruction – Mathematics 2019-2020

Grade 7



SCS 2018/2019 Revised 7/8/2019csH