

Grade: 2

			Mathematics Grade 2 – Year at a Glance 2019 - 2020					Q4	scs
Module 1 Aug. 12 – Aug. 27	Module 2 Aug. 28 – Sept. 12	Module 3 Sept.13 – Oct. 11	Module 4 Oct. 21 – Dec. 13	2 <sup>nd</sup> Grade Tasks Dec. 16 – Dec.20	Module 5 Jan. 6 – Feb. 3	Module 6 Feb. 4 – Mar. 3	Module 7 Mar. 7-Apr. 21	Ap	Module 8 r. 22-May 22
Sums and Differences to 100	Addition and Subtraction of Length Units	Place Value, Counting, and Comparison of Numbers to 1,000	Addition and Subtraction Within 200 with Word Problems to 100	Activities/tasks for standards below (please use these tasks to expose students to standards prior to state testing)	Addition and Subtraction Within 1,000 with Word Problems	Foundations of Multiplication and Division	Problem Solving with Length, Money, and Data	Vindow	Time, Shapes, and Fractions as Equal Parts of Shapes
2.0A.A.1	2.MD.A.1	2.NBT.A.1	2.0A.A.1	2.MD.C.7	2.NBT.B.7	2.OA.C.3	2.NBT.B.5	2 Se	2.MD.C.7
2.OA.B.2	2.MD.A.2	2.NBT.A.2	2.NBT.B.5	2.G.A.1	2.NBT.B.8	2.0A.C.4	2.MD.A.1	sti	2.G.A.1
2.NBT.B.5	2.MD.A.3	2.NBT.A.3	2.NBT.B.6	2.G.A.3	2.NBT.B.9	2.G.A.2	2.MD.A.2	Ϋ́	2.G.A.3
	2.MD.A.4	2.NBT.A.4	2.NBT.B.7				2.MD.A.3	pag	
	2.MD.B.5		2.NBT.B.8				2.MD.A.4	2 Z	
	2.MD.B.6		2.NBT.B.9				2.MD.B.5	F	
							2.MD.B.6		
							2.MD.C.8		
							2.MD.D.9		
							2.MD.D.10		

Key:

- 1	•	
	Major Content	Additional Content

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.

Use the following guide as you prepare to teach a module for additional guidance in planning, pacing, and suggestions for omissions. Pacing and Preparation Guide (Omissions)

10125



Quarter 3

Grade: 2

### 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

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**



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.



SCS 2019/2020 Revised 7/10/19 2 of 23



Quarter 3

Grade: 2

### 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.

SCS 2019/2020 Revised 7/10/19 3 of 23



Grade: 2

### Grade 2 Quarter 3 Overview

Module 5: Addition and Subtraction Within 1,000 with word Problems Module 6: Foundations of Multiplication and Division Module 7: Problem Solving with Length, Money and Data (will be continued in Q4)

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.

Focus Grade Level Standard	Type of Rigor	Foundational Standards				
2.NBT.B.5	Procedural Fluency	1.NBT.C4, 1.NBT.C.5, 1.NBT.C.6, 2.OA.B.2				
2.NBT.B.7	Conceptual Understanding/Procedural Fluency	2.NBT.1, 2.NBT.2, 1,NBT,2				
2.NBT.B.8	Procedural Fluency	2.NBT.1, 2.NBT.2, 1,NBT,2, 2.OA.3				
2.NBT.B.9	Conceptual Understanding	1.OA.3, 1.OA.4, K.OA.2				
2.OA.C.3	Conceptual Understanding	1.OA.7				
2.0A.C.4	Conceptual Understanding	1.OA.7				
2.MD.C.8	Conceptual Understanding/ Procedural Fluency	Introductory				
2.MD.D.10	Procedural Fluency/Application	1.MD.C.4, 1.OA.A.1, 1.OA.A.2, K.MD.B.3				
2.G.A.2	Conceptual Understanding/ Procedural Fluency	Introductory				
Indicates Power Standard (2017-2018)						
	Instructional Focus Document – Grade 2					

SCS 2019/2020 Revised 7/10/19 4 of 23



Quarter 3

Grade: 2

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY/FLUENCY
	Module 5: Addition and Subtraction W	Vithin 1,000 with word Problems to 100	
<ul> <li>Domain: Number and Operations in Base Ten Cluster: Use place value understanding and properties of operations to add and subtract.</li> <li>2.NBT.B.7- Add and subtract within 1000 using concrete models, drawings, strategies based on place value, properties of operations, and/or the relationship between addition and subtraction to explain the reasoning used.</li> <li>2.NBT.B.8- Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.</li> <li>2.NBT.B.9- Explain why addition and subtraction strategies work, using place value and the properties of operations.</li> </ul>	<ul> <li>Essential Questions</li> <li>How can I relate 10 more, 10 less, and 100 less to addition and subtraction of 10 and 100?</li> <li>How can I add and subtract multiple of 100?</li> <li>How can I use the associative property to add and subtract?</li> <li>How can I relate manipulative representations to the addition algorithm?</li> <li>How can I use math drawings to represent addition and subtraction?</li> <li>How can I use addition to explain why subtraction works?</li> <li>Topic A – Strategies for Adding and Subtracting Within 1, 000</li> <li>Objectives/Learning Targets:</li> <li>Lesson 1: I can relate 10 more, 10 less, 100 more, and 100 less to addition and subtract. (2.NBT.B.7, 2.NBT.B.8)</li> <li>Lesson 2: I can add and subtract multiples of 100 including counting on to subtract. (2.NBT.B.7, 2.NBT.B.8)</li> <li>Lesson 3: I can Add multiples of 100 and some tens within 1,000. (2.NBT.B.7, 2.NBT.B.8)</li> </ul>	Eureka Parent Newsletter – Topic A Optional Quiz: Topic: A Pacing Considerations: Combine Lessons 2 and 3: Review both lessons and choose the problems that align to the depth of knowledge the standard requires and meets the needs of your students in both the concept development, problem set and exit ticket. Additional instructional resources for enrichment/remediation: Remediation Guide Ready teacher-toolbox aligned lessons: • Lesson 13: Add Three-Digit Numbers • Lesson 14: Subtract Three-Digit Numbers 2earn: Mission 5 Lesson 1 – More or Less Lesson 3 – Way? Arrow Way! Lesson 4 – Break It Down Lesson 5 – Easier Adding Lesson 6 – Easier Subtracting Lesson 7 – Thousand Strategies	<ul> <li>Module 5 Vocabulary Compensation</li> <li>Familiar Terms and Symbols Addend, addition, algorithm, bundle, compose, decompose, difference, equation</li> <li>Fluency Practice: Topic A <ul> <li>Lesson 1: Place value, more/less</li> <li>Lesson 2: Place value, How many more hundreds?</li> </ul> </li> <li>Lesson 3: How Many More to Make 100? Sprint: Subtracting Multiples of Ten and Some Ones</li> <li>Lesson 4: Subtracting Multiples of Hundreds and Tens, Sprint: Subtracting Multiples of Ten and Some Ones</li> <li>Lesson 5: Making the next hundred, Making the next hundred to add</li> <li>Lesson 6: Compensation with Subtraction</li> <li>Lesson 7: Making the Next Hundred to Add, Compensation with subtraction</li> </ul>
			SCS 2019/2020 Revised 7/10/19
			Kevised //10/15
Major Conte	ent	<ul> <li>Supporting Content</li> </ul>	5 of 23



Quarter 3

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY/FLUENCY				
	<ul> <li>Lesson 4: I can subtract multip and some tens within 1,000. (2 2.NBT.B.8, 2.NBT.B.9)</li> <li>Lesson 5: I can use the assoc property to make a hundred in addend. (2.NBT.B.7, 2.NBT.B. 2.NBT.B.9)</li> <li>Lesson 6: I can use the assoc property to subtract from three- numbers and verify solutions w addition. (2.NBT.B.7, 2.NBT.B</li> <li>Lesson 7: I can share and crif solution strategies for varied ad subtraction problems within 1,0 (2.NBT.B.7, 2.NBT.B.9)</li> </ul>	ples of 100       Embarc.online – Module 5         NBT.B.7,       Embarc.online – Module 5         iative one       Add three-digit numbers with base ten blocks (2.NBT.B.7)         .8,       Mentally add 10 or 100 visualizing base ten blocks (2.NBT.B.8)         ciative digit inth       Explain addition using the commutative and associative properties (2.NBT.B.9)         .9)       I-Ready Lessons         Adding a two-digit number and a multiple of 10         Adding two-digit numbers         Two-digit sums and estimation         Two-digit sums with base-ten models         Subtracting 10 from a two-digit numbers         Adding three-digit numbers         Subtracting a one-digit numbers         Adding three-digit numbers         Subtracting two-digit numbers and estimating differences         Add or Subtract 10 or 100         Task Bank:         Choral Counting (2.NBT.B.8)					
			SCS 2019/2020 Revised 7/10/19				
Major Conter	nt	<ul> <li>Supporting Content</li> </ul>	6 of 23				



Quarter 3

INSTRUCTIONAL SUPPORT       VOCABULARY/FLUENCY         Domain: Number and Operations in Base Ten Cluster: Use place value understanding and properties of operations to add and subtract.       Topic B: Strategies for Composing Tens and Hundreds Within 1,000       Topic B: Strategies for Composing Tens and Hundreds Within 1,000       Fluency Practice:         Discrete models, drawings, strategies based on place value, properties of operations to the addition and subtraction to explain the reasoning used.       Objectives/Learning Targets:       Pacing Considerations:       Topic B         • Lesson 8-9: I can relate manipulative representations to the addition algorithm. (2.NBT.B.7, 2.NBT.B.9)       • Lesson 8-9: I can relate manipulative represent additions with up to two compositions and relate drawing to the compositions and relate drawing to the       Pacing Considerations:       Topic B         • Lesson 10-11: Compensation, Sprint: Addition Crossing Tens, Place Value, Say Ten Counting, Compensation       • Lesson 10-11: Compensation, Sprint: Addition Crossing Tens, Place Value, Say Ten Counting, Compensation       • Mich problems st and wit					
Domain: Number and Operations in Base 1 en Cluster: Use place value understanding and properties of operations to add and subtract.       Topic B: Strategies for Composing Tens and Hundreds Within 1,000       Fluency Practice: <ul> <li><b>2.NBT.B.7</b>- Add and subtract within 1000 using concrete models, drawings, strategies based on place value, properties of operations, and/or the relationship between addition and subtraction to explain the reasoning used.       <b>Objectives/Learning Targets:</b></li></ul>	IN STATE STANDARDS	CONTENT		VOCABULARY/FLUENCY	
<ul> <li><b>1</b> 2.NBT.B.7- Add and subtract within 1000 using concrete models, drawings, strategies based on place value, properties of operations, and/or the relationship between addition and subtraction to explain the reasoning used.</li> <li><b>1</b> 2.NBT.B.9- Explain why addition and subtraction to explain the reasoning used.</li> <li><b>1</b> 2.NBT.B.9- Explain why addition and subtraction to explain the reasoning used.</li> <li><b>1</b> 2.NBT.B.9- Explain why addition and subtraction to explain the reasoning used.</li> <li><b>1</b> 2.NBT.B.9- Explain why addition and subtraction to explain the reasoning used.</li> <li><b>1</b> 2.NBT.B.9- Explain why addition and subtraction to explain the reasoning used.</li> <li><b>1</b> 2.NBT.B.9- Explain why addition and subtraction to explain the reasoning used.</li> <li><b>1</b> 2.NBT.B.9- Explain why addition and subtraction to explain the reasoning used.</li> <li><b>1</b> 2.NBT.B.9- Explain why addition and subtraction to explain the reasoning used.</li> <li><b>1</b> 2.NBT.B.9- Explain why addition and subtraction to explain the reasoning used.</li> <li><b>1</b> 2.NBT.B.9- Explain why addition and subtraction to explain the reasoning used.</li> <li><b>1</b> 2.NBT.B.9- Explain why addition and subtraction to explain the reasoning used.</li> <li><b>1</b> 2.NBT.B.9- Explain why addition and subtraction to explain the reasoning used.</li> <li><b>1</b> 2.NBT.B.9- Explain why addition and subtraction to explain the reasoning used.</li> <li><b>1</b> 2.NBT.B.9- Explain why addition and subtraction to explain the reasoning used.</li> <li><b>2</b> 2.NBT.B.9- Explain why addition and subtraction to explain the reasoning used.</li> <li><b>2</b> 2.NBT.B.9- Explain why addition and subtraction to the explain the reasoning used.</li> <li><b>2</b> 2.NBT.B.9- Explain why addition and subtraction the explain the reasoning used.</li> <li><b>2</b> 2.NBT.B.9- Explain why addition and subtraction the explain the reasoning used.</li> <li><b>2</b> 2.NBT.B.9- Explain why addition and subtraction the explai</li></ul>	<b>Domain:</b> Number and Operations in Base Ten <b>Cluster:</b> Use place value understanding and properties of operations to add and subtract.	Topic B: Strategies for Composing Tens and Hundreds Within 1,000	Eureka Parent Newsletter – Topic B Optional Quiz: Topic: B	Fluency Practice: Topic B	
subtraction strategies work, using place value and the properties of operations. Lesson 12: can choose and explain solution strategies and record with a written addition method. (2.NBT.B.7) Complete Mid-Module Assessment Complete Mid-Module Assessment Mumbers Zeam: Mission 5 Lesson 8 – Add Away Lesson 9 – Double Bundle Lesson 13: Add Three-Digit Numbers Zeam: Mission 5 Lesson 12 – Double Bundle Lesson 12 – Double Bundle Lesson 12 – Sum Sharing Embarc.online – Module 5 Videos:	<ul> <li>2.NBT.B.7- Add and subtract within 1000 using concrete models, drawings, strategies based on place value, properties of operations and/or the relationship between addition and subtraction to explain the reasoning used.</li> <li>2.NBT.B.9- Explain why addition and subtraction strategies work, using place value and the properties of operations.</li> </ul>	<ul> <li>Objectives/Learning Targets:         <ul> <li>Lesson 8-9: I can relate manipulative representations to the addition algorithm. (2.NBT.B.7, 2.NBT.B.9)</li> <li>Lesson 10-11: I can use math drawings to represent additions with up to two compositions and relate drawing to the addition algorithm. (2.NBT.B.7, 2.NBT.B.9)</li> <li>Lesson 12: I can choose and explain solution strategies and record with a written addition method. (2.NBT.B.7, 2.NBT.B.9)</li> </ul> </li> <li>Complete Mid-Module Assessment</li> </ul>	Pacing Considerations:         Combine Lesson 8 and 9: Review both         lessons and choose the problems that align to         the depth of knowledge the standard requires         and meets the needs of your students in both         the concept development, problem set and exit         ticket.         Additional instructional resources for         enrichment/remediation:         Remediation Guide         Ready teacher-toolbox aligned lessons:         • Lesson 13: Add Three-Digit         Numbers         Zearn: Mission 5         Lesson 8 - Add Away         Lesson 10 - Compose and Match         Lesson 11 - Math Magic         Lesson 12 - Sum Sharing         Embarc.online – Module 5         Videos:	<ul> <li>Lesson 8-9: Add Common Units, Sprin Two-Digit Addition, Making the Next Te to Add, Add Common Units, More Tens and Ones</li> <li>Lesson 10-11: Compensation, Sprint: Addition Crossing Tens, Place Value, S Ten Counting, Compensation</li> <li>Lesson 12: Compensation, Sprint: Compensation Addition</li> </ul>	t: A Commented [CLB2]: Need Specific guidance around the following: Which lesson for fluency and application problem. Wh parts of each concept development for each lesson. Which problems from each problem set and will they d one exit ticket if so which one or both exit tickets.
(2.NBT.B.7)			(2.NBT.B.7)		
SCS 2019/2020 Revised 7/10/19				SCS 2019/20 Revised 7/10/	20 19
Major Content > Supporting Content 7 of 23	Major Con	tent	<ul> <li>Supporting Content</li> </ul>	7 of	23



Quarter 3

Grade: 2

TN STATE STANDARDS	CONTENT		INSTRUCTIONAL SUPPORT		VOCABULARY	/FLUENCY
			Explain addition using the commutative and associative properties (2.NBT.B.9) I-Ready Lessons: Adding a two-digit number and a multiple of 10 Adding two-digit numbers Two-digit sums and estimation Two-digit sums with base-ten models Mental addition of two-digit numbers Adding three-digit numbers Task Bank: Many ways to do addition 2 (2.NBT.B.7)			
Domain: Number and Operations in Base Ten	Topic C- Strategies or Decompos	sing Tens	Eureka Parent Newsletter – Topic C	Flue	ency Practice:	
<b>Cluster:</b> Use place value understanding and properties of operations to add and subtract.	and Hundreds Within 1,000		Optional Quiz: Topic: C	Тор	ic C	=
<b>2.NBT.B.7-</b> Add and subtract within 1000	Objectives/Learning Targets:		Pacing Considerations:	•	Lesson 13: Making the Next Hundred, Su	btracting Multiples of
using concrete models, drawings, strategies based on place value, properties of operations	<ul> <li>Lesson 13: I can relate manipu representations to the subtraction</li> </ul>	ulative	Combine lessons 14 and 15: Review both	•	Lesson 14-15: Grad	e 2 Core Fluency
and/or the relationship between addition and subtraction to explain the reasoning used.  2.NBT.B.9- Explain why addition and subtraction strategies work, using place value and the remarking of constraints.	algorithm, and use addition to e the subtraction method works. (2.NBT.B.7, 2.NBT.B.9) Lesson 14-15: I can use math to represent subtraction with up	drawings	lessons and choose the problems that align to the depth of knowledge the standard requires and meets the needs of your students in both the concept development, problem set and exit ticket.		Differentiated Practic Nearest Ten to Subtr Common Units, Get Count by Ten or One Pennies	e Sets, Using the act, Subtract to 10, 20, or 30, with Dimes and
and the properties of operations.	decompositions, relate drawing algorithm, and use addition to e the subtraction method works. (2.NBT.B.7, 2.NBT.B.9)	is to the explain why	Combine lessons 16 and 17: Review both lessons and choose the problems that align to the depth of knowledge the standard requires	•	Lesson 16-17: Sprin Teens, Coin Drop, M the Nearest Ten to S Common Units	nt: Subtraction from ore or Less, Using ubtract, Subtract
				•		SCS 2019/2020 Revised 7/10/19
Major Conte	nt		<ul> <li>Supporting Content</li> </ul>			8 of 23

**Commented [CLB3]:** Need Specific guidance around the following: Which lesson for fluency and application problem. What parts of each concept development for each lesson. Which problems from each problem set and will they do one exit ticket if so which one or both exit tickets.

# **Commented [CLB4]:** Need Specific guidance around the following:

Which lesson for fluency and application problem. What parts of each concept development for each lesson. Which problems from each problem set and will they do one exit ticket if so which one or both exit tickets.



Quarter 3

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY/FLUENCY
	<ul> <li>Lesson 16-17- I can subtract from multiples of 100 and from numbers with zero in the tens place. (2.NBT.B.7, 2.NBT.B.9)</li> <li>Lesson 18- I can apply and explain alternate methods for subtracting from multiples of 100 and from numbers with zero in the tens place. (2.NBT.B.7, 2.NBT.B.9)</li> </ul>	and meets the needs of your students in both the concept development, problem set and exit ticket. Additional instructional resources for enrichment/remediation: Remediation Guide Ready teacher-toolbox aligned lessons: • Lesson 14: Subtract Three-Digit Numbers Zearn: Mission 5 Lesson 13 – Prove It Lesson 14 – Subtract and Prove Lesson 15 – Showing Subtraction Lesson 16 – Smart Strategies Lesson 16 – Smart Strategies Lesson 18 – Multiple Zeros Embarc.online – Module 5 Videos: Add three-digit numbers with base ten blocks (2.NBT.B.7) Explain addition using the commutative and associative properties (2.NBT.B.9) I-Ready Lessons Subtracting 10 from a two-digit number Subtracting a one-digit number from a two-digit number	Lesson 18: Grade 2 Core Fluency Differentiated Practice Sets, Get the Ten Out and Subtract
			SCS 2019/2020 Revised 7/10/19

*		
Major Content	Supporting Content	9 of 2



Quarter 3

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY	//FLUENCY	
<b>Domain:</b> Number and Operations in Base Ten <b>Cluster:</b> Use place value understanding and properties of operations to add and subtract.	Topic D- Student Explanations for Choice of Solution Methods	<u>Eureka Parent Newsletter – Topic D</u> <u>Optional Quiz: Topic: D</u>	Fluency Practice: Topic D Lesson 19-20: Grade 2 C	Core Fluency	
<ul> <li>2.NBT.B.7- Add and subtract within 1000 using concrete models, drawings, strategies based on place value, properties of operations, and/or the relationship between addition and subtraction to explain the reasoning used.</li> <li>2.NBT.B.9- Explain why addition and subtraction strategies work, using place value and the properties of operations.</li> </ul>	Objectives/Learning Targets: Lesson 19-20: I can choose and explain solution strategies and record with a written addition or subtraction method. (2.NBT.B.7, 2. NT.B.8, 2.NBT.B.9) End-of-Module Assessment	Pacing Considerations:         Combine lessons 19 and 20: Review both         lessons and choose the problems that align to         the depth of knowledge the standard requires         and meets the needs of your students in both         the concept development, problem set and exit         ticket.         Additional instructional resources for         enrichment/remediation:         Remediation Guide         Ready teacher-toolbox aligned lessons:         Lesson 13: Add Three-Digit         Numbers         Lesson 14: Subtract Three-Digit         Numbers	Differentiated Practice Se Ten, Skip Counting by Tw	ts, Take from the os	<b>Commented [CLB5]:</b> Need Specific guidance around the following: Which lesson for fluency and application problem. What parts of each concept development for each lesson. Which problems from each problem set and will they do one exit ticket if so which one or both exit tickets.'
		Zearn: Mission 5 Lesson 19 – Sum Different Strategies Lesson 20 – Strategy Selection Embarc.online – Module 5		SCS 2019/2020	
				Revised 7/10/19	
Major Conte	ent	<ul> <li>Supporting Content</li> </ul>		10 of 23	



Quarter 3

Grade: 2

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY/FLUENCY
		Videos: Add three-digit numbers with base ten blocks (2.NBT.B.7) Mentally add 10 or 100 visualizing base ten blocks (2.NBT.B.8) Explain addition using the commutative and associative properties (2.NBT.B.9) I-Ready Lessons: Adding a two-digit number and a multiple of 10 Adding two-digit numbers Two-digit sums and estimation Two-digit sums with base-ten models Subtracting 10 from a two-digit number Mental addition of two-digit numbers Adding three-digit numbers Subtracting a one-digit number from a two-digit number Subtracting two-digit numbers and estimating differences Add or subtract 10 or 100 Task Bank: How many days until summer vacation? (2.NBT.B.7) Peyton and Presley discuss addition (2.NBT.B.7, 2.NBT.B.9)	
			SCS 2019/2020

SCS 2019/2020 Revised 7/10/19

Major Content Supporting Content 11 of 23



Quarter 3

Grade: 2



Quarter 3

TN STATE STANDARDS	CONTENT		INSTRUCTIONAL SUPPORT	VOCABULARY/FLUENCY	
			Videos: <u>Use repeat addition to find the total number</u> <u>objects in an array</u> (2.OA.C.4) I-Ready Lessons: Understand patterns Multiplication Concepts: Arrays Task Bank: <u>Counting Dots in Arrays</u> (2.OA.C.4)		
<ul> <li>Domain: Operations and Algebraic Thinking Cluster: Work with equal groups of objects to gain foundations for multiplication</li> <li>2.OA.C.4 - Use repeated addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.</li> </ul>	<ul> <li>Topic B- Arrays and Equal Group Objectives/ Learning Targets</li> <li>Lesson 5: I can compose array rows and columns, and count to total using objects. (2.OA.C.4.)</li> <li>Lesson 6: I can decompose ar rows and columns, and relate to addition. (2.OA.C.4.)</li> <li>Lesson 7: I can represent arra distinguish rows and columns u drawings. (2.OA.C.4)</li> <li>Lesson 8: I can create arrays u square tiles with gaps. (2.OA.C. Lesson 9: I can solve word pro- involving addition of equal grou and columns. (2.OA.C.4)</li> <li>Complete Mid- Module Asses</li> </ul>	s ys from the rays into the rays into the the the the the the the the	Eureka Parent Newsletter: Topic B Optional Quiz: Topic B Pacing Considerations: Omit Lesson 8 Additional instructional resources for enrichment/remediation: <u>Remediation Guide</u> Ready teacher-toolbox aligned lessons: • Lesson 23: <u>Add Using Arrays</u> Zearn: Mission 6 Lesson 5 – Groups to Array Lesson 6 – A Row, a Column, Array, Lesson 7 – Hooray Array! Lesson 9 Array Addition	<ul> <li>Topic B</li> <li>Lesson 5: Making the Next Ten to Add, Grade 2 Core Fluency Practice Sets, Happy Counting by Tens: Crossing 100</li> <li>Lesson 6: Making the Next Hundred Drill, Grade 2 Core Fluency Practice Sets, Happy Counting by Tens: Crossing 100</li> <li>Lesson 7: Coin Drop, Sprint: Sums to the Teens</li> <li>Lesson 8: Using the Nearest Ten to Subtract, Sprint: Subtraction from Teens</li> <li>Lesson 9: Get the Ten Out and Subtract, Grade 2 Core Fluency Practice Sets, Happy Counting by Tens: Crossing 100</li> </ul>	
SCS 2019/2020 Revised 7/10/19					
Major Conte	ent		<ul> <li>Supporting Content</li> </ul>	13 of 23	



Quarter 3

TN STATE STANDADDS	CONTENT		PPOPT	
		Embarc.online: Module 6 Videos: Use repeat addition to find the objects in an array (2.OA.C.4) I-Ready Lessons: Understand patterns Multiplication Concepts: Arrays Task Bank: Red and Blue Tiles (2.OA.C.4) Partitioning a rectangle into a s (2.OA.C.4, 2.G.A.2)	total number	
<ul> <li>Domain: Operations and Algebraic Thinking Cluster: Work with equal groups of objects to gain foundations for multiplication</li> <li>2.OA.C.4 - Use repeated addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.</li> <li>Domain: Geometry Cluster: Reason with shapes and their attributes</li> <li>2.G.A.2- Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.</li> </ul>	<ul> <li>Topic C- Rectangular Arrays as a Foundation for Multiplication and</li> <li>Objectives/ Learning Targets</li> <li>Lessons 10-11: I can use squar compose a rectangle, and relat array model. (2.OA.C.4, 2.G.A.2)</li> <li>Lesson 12: I can use math dra compose a rectangle with squa (2.G.A.2)</li> <li>Lesson 13: I can use square ti decompose a rectangle. (2.OA.2.G.A.2)</li> <li>Lesson 14: I can use scissors a rectangle into same-size squar compose arrays with the square (2.G.A.2)</li> </ul>	Division       Eureka Parent Newsletter: To         Division       Optional Quiz: Topic C         Pacing Considerations:       Pacing Considerations:         o to the       Omit lessons 11 and 16         Additional instructional resorenrichment/remediation:       Remediation Guide         S.       Ready teacher-toolbox aligned         • Lesson 27: Understand       Rectangles	ppic C Topic • • • • • • • • • • • • •	c C Lessons 10-11: Happy Counting by Tens: Crossing 100, Sprint: Sums to the Teens, Sprint: Subtraction Crossing Ten Lesson 12: Compensation, Grade 2 Core Fluency Practice Sets Lesson 13: Making the Next Ten to Add, Grade 2 Core Fluency Practice Sets Lesson 14: Sprint: Subtraction from Teens, Coin Drop, More and Less Lesson 15: Sprint: Subtraction Crossing the Ten, Using the Nearest Ten to Subtract, Subtract Common Units Lesson 16: Get to 10, 20, or 30, Count by Ten or One with Dimes and Pennies, Grade 2 Core Fluency Practice Sets
Major Conte	nt	> Support	ting Content	14 of 23
				14 01 23



Quarter 3

<ul> <li>Lesson 15: I can use math drawings to partition a rectangle with square lites, and relate to repeated addition. (2.OA.C.4, 2.G.A.2)</li> <li>Lesson 16: I can use grid paper to create designs to develop spatial structuring. (2.G.A.2)</li> <li>Lesson 16: I can use grid paper to create (2.G.A.2)</li> <li>Lesson 16: I can use grid paper to create (2.G.A.2)</li> <li>Termore and the structuring of the structuring (2.G.A.2)</li> <li>Lesson 16: I can use grid paper to create (2.G.A.2)</li> <li>Lesson 16: I can use grid paper to create (2.G.A.2)</li> <li>Lesson 16: I can use grid paper to create (2.G.A.2)</li> <li>Lesson 16: I can use grid paper to create (2.G.A.2)</li> <li>Lesson 16: I can use grid paper to create (2.G.A.2)</li> <li>Lesson 16: I can use grid paper to create (2.G.A.2)</li> <li>Lesson 16: I can use grid paper to create (2.G.A.2)</li> <li>Ready Lesson: I can use grid paper to create (2.G.A.2)</li> <li>Ready Lesson: I can use grid paper to create (2.G.A.2)</li> <li>Ready Lesson: I can use grid paper to create (2.G.A.2)</li> <li>Ready Lesson: I can use grid paper to create (2.G.A.2)</li> <li>Ready Lesson: I can use grid paper to create (2.G.A.2)</li> </ul>	TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY/FLUENCY
		<ul> <li>Lesson 15: I can use math drawings to partition a rectangle with square tiles, ar relate to repeated addition. (2.OA.C.4, 2.G.A.2)</li> <li>Lesson 16: I can use grid paper to creadesigns to develop spatial structuring. (2.G.A.2)</li> </ul>	Zearn: Mission 6 Lesson 10 – Tile Time Lesson 12 – Step-by-Step Arrays Lesson 13 – Breaking Down Arrays Lesson 14 – Array Builder Lesson 15 – Repeated Rows         Embarc.online: Module 6 Videos: Lego Pad: Trajectory of Understanding (2.G.A.2) Partition rectangles into same size squares using columns and rows (2.G.A.2)         I-Ready Lessons: Understand patterns Multiplication Concepts: Arrays Concepts of area in two-dimensional shapes         Task Bank: Partitioning a rectangle into a square (2.OA.C.4, 2.G.A.2)	
SCS 2019/202 Revised 7/10/1				SCS 2019/2020 Revised 7/10/19
Major Content > Supporting Content 15 of 2	Major Conte	nt	Supporting Content	15 of 23



Quarter 3

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY/FLUENCY
<ul> <li>Domain: Operations and Algebraic Thinking Cluster: Work with equal groups of objects to gain foundations for multiplication</li> <li>2.OA.C.3- Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.</li> </ul>	<ul> <li>Topic D- The Meaning of Even an Numbers</li> <li>Objectives/ Learning Targets         <ul> <li>Lesson 17: I can relate double numbers and write number ser express the sums. (2.OA.C.3)</li> <li>Lesson 18: I can pair objects a count to relate to even numbers: (2.OA.C.3)</li> <li>Lesson 19: I can investigate th of even numbers: 0,2,4,6, and ones place and relate to odd m (2.OA.C.3)</li> <li>Lesson 20: I can use rectangut to investigate odd and even nu (2.OA.C.3)</li> </ul> </li> <li>Complete End of Module Assee</li> </ul>	Id Odd       Eureka Parent Newsletter: Topic D         Optional Quiz: Topic D       Pacing Considerations:         as to even itences to and skip s.       No pacing considerations recommended         Additional instructional resources for enrichment/remediation: Remediation Guide       Ready teacher-toolbox aligned lessons:         aud ar arrays umbers.       Ready teacher-toolbox aligned lessons:         ular arrays umbers.       Lesson 4: Understand Odd and Even Numbers         zearn: Mission 6       Lesson 17 – Even Doubles         Lesson 18 – Doubly Even       Lesson 20 – Even the Odds         Embarc.online: Module 6       Videos:         Determine whether a number is odd or even by looking at the ones place (2.OA.C.3)         Recognize even and odd numbers by forming partners and equal groups (2.OA.C.3)         I-Ready Lessons:         Understand patterns         Multiplication Concepts: Arrays         Task Bank:         Buttons Odd and Even (2.OA.C.3)	Topic D         • Lesson 17: Subtraction Patterns, Grade 2 Core Fluency Practice         • Lesson 18: Skip-Counting by Twos, Sprint: Subtraction from Teens
			Revised 7/10/19
Major Conte	ent	Supporting Content	16 of 23



Quarter 3

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY	FLUENCY	
	Module 7- Problem Solving with Len	gth, Money, and Data (continued in Q4)			
Domain: Measurement and Data	Essential Questions	Eureka Parent Newsletter – Topic A	Vocabulary		
Cluster: Represent and interpret data	<ul> <li>What is the easiest way to count a group of coins?</li> </ul>	Optional Quiz: Topic A	Bar, category, data, degre line plot, picture graph, sca	e, foot, inch, legend, ale, survey, symbol,	
<b>2.MD.D.10</b> - Draw a picture graph and a bar graph (with intervals of one) to represent a	<ul> <li>Is there more than one way to make the same amount of money?</li> </ul>	Pacing Considerations:	table, yard		
data set with up to four categories. Solve addition and subtraction problems related to	How can you tell which attributes of an object can be measured?	Combine Lessons 1 and 2: Review both	Familiar Terms and Symb Benchmark number, centi	ols meter. cents. coins.	Commented [CLB7]: Need Specific guidance around
the data in a graph.	What are some ways data can be	lessons and choose the problems that align to the depth of knowledge the standard requires	compare, compose, decor	npose, difference.	the following: Which lesson for fluency and application problem. Wh
	<ul> <li>How can you decide what type of graph</li> </ul>	and meets the needs of your students in both the concept development, problem set and exit	Donard, chapoint		parts of each concept development for each lesson. Which problems from each problem set and will they c
	to use once you have collected data?	ticket.	Fluency Practice:		one exit ticket if so which one or both exit tickets.
	Topic A- Problem Solving with Categorical	Combine Lessons 3 and 4: Review both	Горіс А		
	Data Objectives / Learning Objectives	lessons and choose the problems that align to the depth of knowledge the standard requires and meets the needs of your students in both	Lesson 1- Count by 10 or Nickels, Grade 2 Core Flu Practice Sets	5 with Dimes and ency Differentiated	<b>Commented [CLB8]:</b> Need Specific guidance around the following: Which lesson for fluency and application problem. Wh
	Lesson 1: I can sort and record data into a table using up to four categories; use	the concept development, problem set and exit ticket.	Lesson 2- Grade 2 Core I Differentiated Practice Set	Fluency s, Coin Drop	Which problems from each problem set and will they one exit ticket if so which one or both exit tickets.
	category counts to solve word problems. (2. MD.D.10)	Additional instructional resources for	Lesson 3- Sprint: Addition 5, Coin Drop	and Subtraction by	
	<ul> <li>Lesson 2: I can draw and label a picture graph to represent data with up to four</li> </ul>	enrichment/remediation:	Lesson 4- Coin Drop, Ski	p-Counting by 5	
	categories. (2. MD.D.10)	Remediation Guide	Lesson 5- Grade 2 Core I Differentiated Practice Set	Fluency s, Coin Drop	
	graph to represent data; relate the count	Ready teacher-toolbox aligned lessons:     Lesson 23: Draw and Use Bar			
	<ul> <li>Lesson 4: I can draw a bar graph to represent a given data set. (2. MD.D.10)</li> </ul>	Graphs and Picture Graphs     Math in Action: Use Measurement			
	Lesson 5: I can solve word problems				
	using data presented in a bar graph. (2. MD.D.10)	Zearn: Mission 7 Lesson 2 – Picturing Data			
		Lesson 4 – Bar Graph Path Lesson 5 – Graphing Pennies			
<u></u>			1	SCS 2019/2020 Revised 7/10/19	
Major Cont	tent	<ul> <li>Supporting Content</li> </ul>		17 of 23	



Quarter 3

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY/FLUENCY			
Domain: Number and Operations in Base Ten         Cluster: Use place value understanding and         properties of operations to add and subtract.         2.NBT.B.5- Fluently add and subtract within         100 using strategies based on place value,	Topic B- Problem solving with Co Bills Objectives /Learning Targets	INSTRUCTIONAL SUPPORT  Embarc.online – Module 7 Videos: Compare Picture Graphs and Bar Graphs (2.MD.D.10) I-Ready Lessons: Picture Graphs Task Bank: Favorite loe Cream Flavor (2.MD.D.10) Eureka Parent Newsletter – Topic B Optional Quiz: Topic B Pacing Considerations: No nacing considerations for lesson 6.8	Fluency Practice: Topic B Lesson 6- Decomposition Tree, Grade 2 Core Fluency Differentiated Practice Sets Lesson 2 Stin-Count by \$5 and \$10			
properties of operations, and/or the relationship between addition and subtraction <b>Domain:</b> Measurement and Data	<ul> <li>Lesson 6. Franticognize they coins and count up to find their (2.NBT.B.5, 2. MD.C.8)</li> <li>Lesson 7: I can solve word provinvolving the total value of a group involving the total value of a group of the total value of total value</li></ul>	Additional instructional resources for enrichment/remediation:	Lesson 7- Skip-Count by \$5 and \$10 Between 85 and 205, Sprint: Subtraction Across a Ten Lesson 8- Sprint: Adding Across a Ten			
2.MD.C.8- Solve contextual problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately.	<ul> <li>Cons. (2.NB1.B.5, 2. MD.C.8)</li> <li>Lesson 8: I can solve word pro involving the total value of a gro (2.NBT.B.5, 2. MD.C.8)</li> </ul>	Remediation Guide         blems         up of bills.         Ready teacher-toolbox aligned lessons:         •       Lesson 25: Solve Word Problems Involving Money         •       Math in Action: Use Measurement				
		Zearn: Mission 7 Lesson 7 – Coin Count Lesson 9 – Coins and Dollars Lesson 10 – Change Exchange Lesson 12 – The Dollar Store Lesson 13 – Solving with Cents				
	SCS 2019/2020 Revised 7/10/19					
Major Conte	ent	<ul> <li>Supporting Content</li> </ul>	18 of 23			



Quarter 3

TN STATE STANDARDS	CONTENT	INSTRUCTIONAL SUPPORT	VOCABULARY/FLUENCY
		Embarc.online – Module 7         Videos:         Count Money by Drawing Pictures (2.MD.C.8)         I-Ready Lessons:         Coin Values         Counting Coin Values         Task Bank:         Alexander Who Used to be Rich Last Sunday         (2.MD.C.8)         Choices, Choices, Choices (2.MD.C.8)         Jamar's Penny Jar (2.MD.C.8)         Saving Money 1 (2.NBT.B.5, 2.MD.C.8)         Susan's Choice (2.MD.C.8)         Visiting the Arcade (2.MD.C.8)	
			SCS 2019/2020 Revised 7/10/19
Major Conte	nt	Supporting Content	19 of 23



Quarter 3

RESOURCE TOOLKIT								
The Resource Toolbox provides additional support for comprehension and mastery of grade-level skills and concepts. Incorporated materials may assist educators with grouping, enrichment, remediation, and differentiation.								
Textbook Resources	TN Core/CCSS		Videos					
Eureka Math Teacher Support	Tennessee Math Standards		Making math fun with place value games					
	Achieve the Core - Tasks		LearnZillion					
Internetive Manipulations								
			Additional Sites					
Base Ten Blocks			Inverse relationship of addition and subtraction	<u>1</u>				
Addition Chart			Adding Doubles					
			Write a subtraction sontoned based on the nic	turo				
			Add three or more one-digit numbers					
			Balance addition equations one-digit					
			Popup Addition Game					
			Popup Subtraction Game					
			Read and Write Numbers					
			Illustrative Mathematics 2nd Grade					
Other								
Use this guide as you prepare to teach a module for addition	nal quidance in planning, pa	cing, and suggestions for omissio	ons.					
Pacing and Preparation Guide (Omissions)	J. J	3,						
Homework Help: Digital Access								
Parent Roadmap								
Parent Newsletters								
				SCS 2019/2020				
				Revised 7/10/19				
Major Content		> Supportin	ng Content					
· · · · · · · · · · · · · · · · · · ·			5	20 of 23				



## SHELBY COUNTY SCHOOLS 2019-2020 MATHEMATICS INSTRUCTIONAL CALENDAR – GRADE 2

SCS

January 2020							
Module	Monday	Tuesday	Wednesday	Thursday	Friday	Notes:	
			1	2 Winter Brea	3 ak	Flex Day Options include: Standard- Suggested standard(s) to review for the day (* denotes a Denuer Standard)	
						(*-denotes a rower standard)	
Module 5	6 Begin 3 <sup>rd</sup> Quarter Module 5 Topic A: Lesson 1	<b>7</b> Module 5 Topic A: <u>Lesson 2</u> <u>and 3 combined</u>	8 Module 5 Topic A: Lesson 4	<b>9</b> Module 5 Topic A: Lesson 5	10 Flex Day Options 2.NBT.B.7 2.NBT.B.8 Pacing Other	<ul> <li>Pacing – Use this time to adjust instruction to stay on pace</li> <li>Other – Includes assessments, review, reteaching, etc.</li> </ul>	
Module 5	<b>13</b> Module 5 Topic A: Lesson 6	<b>14</b> Module 5 Topic A: Lesson 7	<b>15</b> Module 5 Topic B: <u>Lesson 8</u> <u>and 9 combined</u>	<b>16</b> Module 5 Topic B: Lesson 10	17 ½ day students Flex Day Options 2.NBT.B.7 2.NBT.B.9 Pacing Other	Optional Quizzes: Module 5 <u>Topic A</u> <u>Topic B</u> <u>Topic C</u> <u>Topic D</u> (Quizzes should not take more than 15 minutes to administer)	
Module 5	20 Martin Luther King Jr. Day (Out)	<b>21</b> Module 5 Topic B: Lesson 11	<b>22</b> Module 5 Topic B: Lesson 12	23 M5 Mid Module Assessment	<b>24</b> Module 5 Topic C: Lesson 13		
Module 5	27 Module 5 Topic C: <u>Lesson 14</u> <u>and 15 combined</u>	28 Module 5 Topic C: Lesson <u>16 and 17</u> <u>combined</u>	<b>29</b> Module 5 Topic C: Lesson 18	<b>30</b> Module 5 Topic D: Lesson <u>19 and 20</u> <u>combined</u>	31 Flex Day Options 2.NBT.B.7 2.NBT.B.9 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.



## SHELBY COUNTY SCHOOLS 2019-2020 MATHEMATICS INSTRUCTIONAL CALENDAR – GRADE 2



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.





## SHELBY COUNTY SCHOOLS 2019-2020 MATHEMATICS INSTRUCTIONAL CALENDAR - GRADE 2

March 2020						
Module	Monday	Tuesday	Wednesday	Thursday	Friday	Notes:
Module 6 Module 7	2 Module 6 Topic D: Lesson 20	<b>3</b> M6 End of Module Assessment	4 Module 7 Topic A: <u>Lesson 1</u> and 2 combined	5 Module 7 Topic A: <u>Lesson 3</u> <u>and 4 combined</u>	6 Flex Day Options 2.0A.C.3 2.MD.D.10 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
Module 7	9 Module 7 Topic A: Lesson 5	<b>10</b> Module 7 Topic B: Lesson 6	<b>11</b> Module 7 Topic B: Lesson 7	<b>12</b> Module 7 Topic B: Lesson 8	13 End of 3 <sup>rd</sup> Quarter Flex Day Options 2.NBT.B.5* 2.MD.C.8 Pacing Other	instruction to stay on pace <b>Other</b> – Includes assessments, review, reteaching, etc. Optional Quizzes: Module 7
	16	17	18	19	20	<u>Topic A</u> <u>Topic B</u>
		Spri	ng Break			(Quizzes should not take more than 15 minutes to administer)
Module 7	23 <sup>4th</sup> Quarter begins Module 7 Topic B: Lesson 9	<b>24</b> Module 7 Topic B: Lesson 10	25 Module 7 Topic B: Lesson 11 and 12 combined	<b>26</b> Module 7 Topic B: Lesson 13	27 Flex Day Options 2.NBT.B.5* 2.MD.C.8 Pacing Other	
Module 7	30 M7 Mid Module Assessment	31 Module 7 Topic C: Lesson 14 and 15 combined	1	2	3	

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.