TOWNSHIP OF UNION PUBLIC SCHOOLS

Grade 2/ Mathematics

Updated June 18, 2019

Mission Statement

The mission of the Township of Union Public Schools is to build on the foundations of honesty, excellence, integrity, strong family, and community partnerships. We promote a supportive learning environment where every student is challenged, inspired, empowered, and respected as diverse learners. Through cultivation of students' intellectual curiosity, skills and knowledge, our students can achieve academically and socially, and contribute as responsible and productive citizens of our global community.

Philosophy Statement

The Township of Union Public School District, as a societal agency, reflects democratic ideals and concepts through its educational practices. It is the belief of the Board of Education that a primary function of the Township of Union Public School System is to formulate a learning climate conducive to the needs of all students in general, providing therein for individual differences. The school operates as a partner with the home and community.

Course Description

This guide has been created to assist district Grade 2 teachers in meeting the goals required to master the standards outlined in the Curricular Framework for Mathematics. The framework is aligned to the New Jersey Student Learning Standards for Mathematics and reflect the skills and knowledge students need to succeed in college, career, and life.

Curriculum Units/Pacing Guide

Unit # / Title	Number of Days
Unit 1: **Add and Subtract within 100 and Understand Place Value to 1000**	45
Unit 2: **Place Value Strategies for Addition and Subtraction**	45
Unit 3: **Measurement**	45
Unit 4: **Reason with Shapes and Represent Data**	45

Unit Standards Overview

Overview	Standards	Unit Skills Focus	Content-Specific Practices (when applicable)
Unit 1 **Title: Add and Subtract within 100 and Understand Place Value to 1000**	• 2.OA.A.1* • 2.OA.B.2* • 2.NBT.A.1 • 2.NBT.A.2* • 2.NBT.A.3 • 2.NBT.A.4 • 2.NBT.B.8	• Represent and solve problems involving addition and subtraction • Add and subtract within 20 • Understand place value • Use place value understanding and properties of operations to add and subtract	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.
Suggested Resources *Provide links to specific resources/activities*	2.OA.A.1 Pencil and a Sticker 2.OA.B.2 Building toward fluency 2.NBT.A.1 Making 124 2.NBT.A.1 Largest Number Game 2.NBT.A.3 Looking at Numbers Every Which Way 2.NBT.A.4 Ordering 3-digit numbers 2.NBT.B.8 Choral Counting		

Unit 2
Title: Place Value Strategies for Addition and Subtraction
	• 2.OA.A.1*
	• 2.OA.B.2*
	  • 2.OA.C.3
	  • 2.OA.C.4
	  • 2.G.A.2
	• 2.NBT.B.5*
	• 2.NBT.B.6
	• 2.NBT.B.7
	• 2.NBT.B.9
	• 2.NBT.A.2*
		• Represent and solve problems involving addition and subtraction
		• Add and subtract within 20
		• Work with equal groups of objects to gain foundations for multiplication
		• Reason with shapes and their attribute
		• Use place value understanding and properties of operations to add and subtract	

		• Understand place value	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.
Suggested Resources *Provide links to specific resources/activities*	2.OA.B.2 Hitting the Target Number 2.OA.C.3 Red and Blue Tiles 2.OA.C.4 Counting Dots in Arrays 2.G.A.2 Partitioning a Rectangle into Unit Squares 2.NBT.B.6 Toll Bridge Puzzle 2.NBT.B.7 How Many Days Until Summer Vacation? 2.NBT.B.9 Peyton and Presley Discuss Addition		
Unit 3 **Title: Measurement**	• 2.MD.A.1 • 2.MD.A.3 • 2.MD.A.2 • 2.MD.A.4 • 2.MD.B.5 • 2.MD.B.6 • 2.MD.C.7 • 2.NBT.A.2* • 2.NBT.B.5*	• Measure and estimate lengths in standard units • Relate addition and subtraction to length • Work with time • Understand place value • Use place value understanding and properties of operations to add and subtract	
Suggested Resources *Provide links to specific resources/activities*	2.MD.A.1,3,4 Determining Length 2.MD.B.5 High Jump Competition 2.MD.B.6 Frog and Toad on the Number Line 2.MD.C.7 Ordering Time		
Unit 4 **Title: Reason with Shapes and Represent Data**	• 2.G.A.1 • 2.G.A.3 • 2.MD.C.8 • 2.MD.D.9 • 2.MD.D.10 • 2.OA.B.2* • 2.NBT.B.5*	• Reason with shapes and their attributes • Work with money • Represent and interpret data • Add and subtract within 20 • Use place value understanding and properties of operations to add and subtract	

Suggested Resources *Provide links to specific resources/activities*	2.MD.C.8 Delayed Gratification 2.MD.D.9 Hand Span Measures 2.MD.D.9 The Longest Walk 2.MD.D.10 Favorite Ice Cream Flavor 2.NBT.B.5 Saving Money 1 2.NBT.B.5 Saving Money 2		

Curricular Units

Unit 1 Grade 2		
Content Standards	**Suggested Standards for Mathematical Practice**	**Critical Knowledge & Skills**
• 2.OA.A.1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. *(benchmarked)	MP.1 Make sense of problems and persevere in solving them. MP 2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • count on and put together to add to solve one- and two-step word problems. • take from or take apart to subtract to solve one- and two-step word problems. • use drawings and equations to represent the problem. Learning Goal 1: Add and subtract <u>within 20</u> to solve 1- and 2-step word problems with unknowns in any position.
• 2.OA.B.2. Fluently add and subtract within 20 using mental strategies. *By end of Grade 2, know from memory all sums of two one-digit numbers.* *(benchmarked)	MP 2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • add <u>within 10</u> using mental strategies with accuracy and efficiency. • subtract <u>within 10</u> using mental strategies with accuracy and efficiency. Learning Goal 2: Fluently add and subtract <u>within 10</u> using mental strategies.
• 2.NBT.A.1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: 2.NBT.A.1.a. 100 can be thought of as a bundle of ten tens — called a "hundred."	MP 2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): • 100 can be thought of as a bundle of ten tens — called a *hundred.* • The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 *tens* and 0 *ones*). Students are able to: • represent 100 as a bundle of ten *tens.* • represent the number of *hundreds*, *tens*, and *ones* in a 3-digit

2.NBT.A.1.b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).		number. Learning Goal 3: Represent a 3-digit number as specific amounts of *hundreds*, *tens*, and *ones*. Learning Goal 4: Identify ten *tens* as 100 and represent two hundred, three hundred, … nine hundred with 2, 3, …, 9 hundred bundles (with zero *tens* and zero *ones*).
• 2.NBT.A.2. Count within 1000; skip-count by 5s, 10s, and 100s. *(benchmarked)	MP 2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • count by fives within 1000. • count by tens within 1000. • count by hundreds within 1000. Learning Goal 5: Skip count by 5s and 10s up to 100...beginning at any multiple of 5.
• 2.NBT.A.3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.	MP 2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): • Expanded form Students are able to: • read numbers to 1000 written using base-ten numerals. • read number names to 1000. • read numbers to 1000 written in expanded form. • write numbers to 1000 using base-ten numerals, number names, and expanded form. Learning Goal 6: Read numbers to 1000 using base-ten numerals, number names, and expanded form. Learning Goal 7: Write numbers to 1000 using base-ten numerals, number names, and expanded form.
• 2.NBT.A.4. Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.	MP 2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.7 Look for and make use of structure.	Concept(s): • Place value Students are able to: • use the number of the hundreds, tens and/or ones digits to compare two three-digit numbers.

	MP.8 Look for and express regularity in repeated reasoning.	• write the results of the comparison using >, =, or <. Learning Goal 8: Use symbols >, =, < to record the results of comparing two 3-digit numbers by decomposing the number into a number (100s, 10s, and 1s).
• 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.	MP 2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): • Place value Students are able to: • Mentally add 10 or 100 from any given number between 100 and 900. • Mentally subtract 10 or 100 from any given number between 100 and 900. Learning Goal 9: Mentally add or subtract 10 or 100 from any given number between 100 and 900.

Unit 1 Assessment Plan	
Formative Assessment *When possible, provide links to specific samples/ documents/ assignments/etc.*	**Summative Assessment** *When possible, provide links to specific samples/ documents/ assignments/etc.*

• Daily formative assessment will take place in the form of quick check questions to determine students' ability to achieve objective and which tier they will work in.
• Formative assessment will take place in the form of math journal questions to determine students' ability to achieve objective and which tier they will work in.
• Daily formative assessment in the form of independent practice to monitor students' understanding of concepts and abilities to apply them to independent work.
• Mid-chapter checkpoint quiz and ECR to assess students' progress with concepts and ability to explain them.
• Weekly math drills on addition and subtraction to assess students' progress with math facts.
	• End of the unit assessment consisting of:
	  • Multiple choice questions
	  • Short answer responses
	• Extended constructed response- Students will complete task and explain in writing how they were able to construct their responses using key mathematical vocabulary

Focus Mathematical Concepts
Prerequisite skills:

Go Math- Grade 1 Unit 1 –Operations and Algebraic Thinking

- Chapter 1- Addition Concepts
- Chapter 2- Subtraction Concepts
- Chapter 3- Addition Strategies
- Chapter 4- Subtraction Strategies
- Chapter 5- Addition and Subtraction Relationships

Common Misconceptions:
Practice Addition Facts- Students may show difficulty recalling sums for basic facts using mental strategies
Practice Subtraction Facts- Students may show difficulty recalling differences for basic facts using mental strategies
Use Compensation- Students may show difficulty using compensation to develop flexible thinking for 2-digit addition
Model Regrouping for Addition- Students may show difficulty modeling 2-digit addition with regrouping
Model Regrouping for Subtraction- Students may show difficulty modeling 2-digit subtraction with regrouping
Solve Multistep Problems- Students may show difficulty analyzing word problems to determine what operations to use to solve multistep problems
Regrouping with Zeros- Students may show difficulty recording subtraction using the standard algorithm when there are zeros in the minuend

Number Fluency (for grades K-5):
Students exhibit computational fluency when they demonstrate flexibility in the computational methods they choose, understand and can explain these methods, and produce accurate answers efficiently.

Grade Level Fluency

Grade	Required Fluencies
K	Add/Subtract within 5
1	Add/Subtract within 10
2	**Add/Subtract within 20** **Add/Subtract within 100**

District/School Tasks	District/School Primary and Supplementary Resources
• Students will be differentiated based on their completion of formative assessment. • Students will take on an active role in group work during the differentiated activities. • Students will learn collaboration while working with members in their	• Go Math Second Grade Teacher and Student Editions • Go Math Enrich, Reteach, and On Level pages • Think Central for school and home/ITools • Math on the Spot Videos

groups.

- Students will connect mathematics with literature, informational text, and real world usage.
- Students will learn how to add and subtract numbers using models and standard algorithm.
- Students will practice creating fact families using different addends, they will also create math fact families.
- Students will use writing skills and reasoning to explain how they arrived at an answer.
- Students will use 21st century skills through daily usage of technology.
- Students will practice test taking strategies during small group instruction.

- Go Math Grab-and-Go Centers kit
- IReady Program
- Math Journal
- YouTube videos/songs
- Educational games
- Math Literature
  - All About Animals Go Math Literaure
  - Monster Musical Chairs by Stewart Murphy and Scott Nash
  - Elevator Magic by Stewart Murphy
  - If You Were a Minus Sign by Trisha Shashkin
  - Hershey's Kisses Subtraction Book by Jerry Pallotta
  - Subtraction Action by Loreen Leedy
  - Math-tepieces: The Art of Problem Solving by Greg Tang
- Manipulatives
  - Two color counters
  - Number Line
  - Tens Frame
  - Fact Family Houses
  - Math boards
  - Number chart
  - Counting tape
  - Graphic organizers
  - White boards
  - Calendars
  - Spinners
  - Dice

• National Library of Virtual Manipulatives: Algebra, Grades Pre-K-2
http://nlvm.usu.edu/en/nav/grade_g_1.html
• Word Problem Games/Lessons/Links (k-8)
http://www.mathwire.com/problemsolving/probs2.html
• Logic Problem Solving
http://www.mathwire.com/problemsolving/hblogic
• Timed Math Facts Challenges
http://www.kidport.com/Grade2/Math/NumberSense/G2-M-NS-Add12.htm
• Printable Speed Drills Addition www.math-drills.com

Instructional Best Practices and Exemplars

- Students will be assessed on two formative questions and tiered accordingly each day. Students will work in collaborative groups and explain

how they arrived at their answers. This will help students develop reasoning skills and make real world connections to mathematics.

- Students will work in their groups to complete GO Deeper and THINK Smarter problems. This will help students use collaborative skills and provide them with opportunity to explain their mathematical processes, as well as share and model test-taking strategies.
- Teacher and student modeling will be utilized daily with use of technology to promote problem solving, communication, and 21st century skills.
- Animated activities will be used throughout the unit to reinforce previously learned skills. This will help students visualize mathematical processes and also provide more opportunities to build skills with technology.
- At the close of each lesson, a student volunteer will restate the lesson and explain how to complete the objective, allowing students to take on leadership roles and work on speaking and listening skills.
- Students will participate in a daily Math Journal activity, which will reinforce the lesson. It will also provide students with the opportunity to explain mathematical processes in written form.
- Students will connect mathematics to the real world by listening to read aloud, All about Animals from GoMath. They will use literature to review addition concepts. This will assist students in determining relevance for mathematics.
- Students will participate in solving problems by using arrays and models.
- Students will use a calendar to create mathematical problems to find sums.
- Students will use whiteboards to practice with a partner how to show double facts while passing the boards to each other to check how to solve the problem. This will help students to develop listening and speaking skills.
- Children will practice showing the same number by using various combinations of ten frames. This will help to prepare children for regrouping. And reinforce speaking and listening skills.
- Children will use the strategy of Break Apart to make a ten as a way to assist in test taking skills.
- Students will use "Math on the Spot" as a visual aid to assist in mathematical strategies.
- Students will be exposed to reviewing, modeling and writing: Identify the place value of digits and write numbers in different ways to help when adding two 2-digit addends.
- Students will use counting tape to notice patterns that will help them create counting short cuts (mental math) when adding and subtracting.
- Students will practice subtracting 2 digit numbers with spinners and dice.
- Students will practice addition and subtraction with a two-digit shuffle game.

Unit 1 Suggested Modifications/Accommodations/Extension Activities		
English Language Learners (ELL) *When possible, provide links to specific samples/ documents/ assignments/etc.*	**Special Education / 504** *When possible, provide links to specific samples/ documents/ assignments/etc.*	**Gifted and Talented** *When possible, provide links to specific samples/ documents/ assignments/etc.*
Examples of Strategies and Practices that Support English Language Learners: ***All WIDA Can Do Descriptors can be found at:** https://wida.wisc.edu/teach/can-do/descriptors • Pre-teaching of vocabulary and concepts	**Examples of Strategies and Practices that Support Students with Disabilities:** ***Refer to students' IEP for specific modifications and accommodations** • Use of visual and multisensory formats	**Examples of Strategies and Practices that Support Gifted & Talented Students:** • Adjusting the pace of lessons • Curriculum compacting • Inquiry-based instruction

• Visual learning, including graphic organizers • Use of cognates to increase comprehension • Teacher modeling • Pairing students with beginning English language skills with students who have more advanced English language skills • Scaffolding •Word walls •Sentence frames •Think-pair-share •Cooperative learning groups •Teacher think-aloud	• Use of assisted technology • Use of prompts • Modification of content and student products • Testing accommodations • Authentic assessments	• Independent study • Higher-order thinking skills • Interest-based content • Student-driven instruction • Real-world problems and scenarios

Unit 1 Connections	
NJSLS - Technology *When possible, provide links to specific samples/ documents/ assignments/etc.* Refer to the NJ Technology Standards	**Career Readiness Practices** *When possible, provide links to specific samples/ documents/ assignments/etc.* Refer to the NJ Career Readiness Practices
Technology Standards: Technology standards are embedded throughout all curricular units. **8.1 Educational Technology** All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge. **8.2 Technology Education, Engineering, Design and Computational Thinking - Programming** All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.	**Career Ready Practices:** • CRP1: Act as a responsible and contributing citizen and employee. • CRP2: Apply appropriate academic and technical skills. • CRP3: Attend to personal health and financial well-being. • CRP4: Communicate clearly and effectively and with reason. • CRP5: Consider the environmental, social and economic impacts of decisions. • CRP6: Demonstrate creativity and innovation. • CRP7: Employ valid and reliable research strategies. • CRP8: Utilize critical thinking to make sense of problems and persevere in solving them. • CRP9: Model integrity, ethical leadership and effective management. • CRP10: Plan education and career paths aligned to personal goals. • CRP11: Use technology to enhance productivity. • CRP12: Work productively in teams while using global competence.
21st Century Skills *When possible, provide links to specific samples/ documents/ assignments/etc.* Refer to the 21st Century Life and Skills	**Interdisciplinary Connections** *When possible, provide links to specific ELA/Math/Sci/SS standards as well as samples/ documents/ assignments/etc.* Refer to the NJ Student Learning Standards

21st Century Themes • Global Awareness • Environmental Literacy • Health Literacy • Civic Literacy • Financial, Economic, Business, and Entrepreneurial Literacy **21st Century Skills** • Creativity and Innovation (E) • Critical Thinking and Problem Solving (T) (A) • Communication (E) • Collaboration (E) (T)	**Interdisciplinary connections are made across grades and content areas to model the integration of knowledge and skills in the real world.**

Unit 2 Grade 2		
Content Standards	**Suggested Standards for Mathematical Practice**	**Critical Knowledge & Skills**
• 2.OA.A.1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. *(benchmarked)	MP.1 Make sense of problems and persevere in solving them. MP 2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • count on and put together to add to solve one- and two-step word problems. • take from or take apart to subtract to solve one- and two-step word problems. • use drawings and equations to represent the problem. Learning Goal 1: Add and subtract within 100 to solve 1- and 2-step word problems with unknowns in any position.
• 2.OA.B.2. Fluently add and subtract within 20 using mental strategies. *By end of Grade 2, know from memory all sums of two one-digit numbers.**(benchmarked)	MP 2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • add within 10 using mental strategies with accuracy and efficiency. • subtract within 10 using mental strategies with accuracy and efficiency. Learning Goal 2: Fluently add and subtract within 10 using mental strategies.
• 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	MP 2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning	Concept(s): • Even: groups having even numbers of objects will pair up evenly. • Odd: groups having odd numbers of objects will not pair up evenly. Students are able to: • pair up to 20 object, count by 2s and determine whether the group contains an even or odd number of objects. • write an equation to express an even number as a sum of two equal addends.

		Learning Goal 3: Write an equation to express an even number as a sum of two equal addends.
• 2.OA.C.4. Use 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	MP 2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): • Arrays as arrangements of objects. Students are able to: • with objects arranged in an array, use repeated addition to find the total. • with objects arranged in an array, write an equation to express repeated addition. Learning Goal 4: Use 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.
• 2.G.A.2. Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	MP 2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • partition a rectangle into rows and columns of same-size squares and count to find the total number. Learning Goal 5: Partition a rectangle into rows and columns of same-size squares and count to find the total number.
• 2.NBT.B.5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. *(benchmarked)	MP 2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • with accuracy and efficiency, add and subtract within 50 using strategies based on place value. • with accuracy and efficiency, add and subtract within 50 using strategies based on properties of operations. • with accuracy and efficiency, add and subtract within 50 using strategies based on the relationship between addition and subtraction. Learning Goal 6: Use a variety of strategies (place value, properties of operation, and/or the relationship between addition and subtraction) to add and subtract within 50.
• 2.NBT.B.6. Add up to four two-digit numbers using strategies based on place value and properties of operations.	MP 2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • add three two digit numbers using place value strategies and properties of operations. • add four two digit numbers using place value strategies and properties of operations. Learning Goal 7: Add up to four two -digit numbers using strategies based on place value and properties of operations.
• 2.NBT.B.7. Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations,	MP 2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically.	Concept(s): • In adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones. • Sometimes it is necessary to compose or decompose tens or hundreds.

and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.	MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Students are able to: • add and subtract within 1000, using concrete models or drawings. • add and subtract within 1000 using strategies based on place value. • add and subtract within 1000 using properties of operations or the relationship between addition and subtraction. • relate the strategies to a written method. Learning Goal 8: Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method.
• 2.NBT.B.9. Explain why addition and subtraction strategies work, using place value and the properties of operations.	MP 2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • Explain, using objects and drawings, why addition and subtraction strategies based on place value work. • Explain, using objects and drawings, why addition and subtraction strategies based on properties of operations work. Learning Goal 9: After applying addition and subtraction strategies based on place value and the properties of operations, explain why these strategies work using drawings or objects [for example, 37 + 12 equals 30 + 7 + 10 + 2 (place value) which equals 30 + 10 + 7 + 2 (property of operations)].
• 2.NBT.A.2. Count within 1000; skip-count by 5s, 10s, and 100s. *(benchmarked)	MP 2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • count within 1000 by ones. • count within 1000 by fives, tens, and hundreds beginning at any multiple of 5, 10, or 100. Learning Goal 10: Count within 1000 by ones, fives, tens, and hundreds beginning at any multiple of 1, 5, 10, or 100 (e.g. begin at 505 and skip count by 5 up to 605, or begin at 600 and skip count by 100 up to 1000).

Unit 2 Assessment Plan	
Formative Assessment *When possible, provide links to specific samples/ documents/ assignments/etc.*	**Summative Assessment** *When possible, provide links to specific samples/ documents/ assignments/etc.*
• Daily formative assessment will take place in the form of quick check questions to determine students' ability to achieve objective and which	• End of the unit assessment consisting of: • Multiple choice questions relating to number concepts

tier they will work in. • Formative assessment will take place in the form of math journal questions to determine students' ability to achieve objective and which tier they will work in. • Daily formative assessment in the form of independent practice to monitor students' understanding of concepts and abilities to apply them to independent work. • Mid-Chapter checkpoint quiz • Mid-Chapter Extended Constructed Response (ECR) to assess students' progress with concepts and ability to explain them.	• Questions requiring application and explanation of skills acquired throughout the unit • Extended Constructed Response (ECR)- Students will complete task and explain in writing how they were able to construct their responses

Focus Mathematical Concepts

Prerequisite skills:

Go Math- Grade 1 Unit 2 --Number and Operations in Base Ten

- Chapter 6- Count and Model Numbers
- Chapter 7- Compare Numbers
- Chapter 8- Two Digit Addition and Subtraction

Common Misconceptions:
Even and Odd Numbers- Students may show difficulty identifying numbers as odd or even.
Counting Patterns Within 100, and then Within 1,000- Students may show difficulty with skip-counting by 5s and 10s, or even by 2s.
Problem Solving- Students may show difficulty with solving problems by finding different combinations of tens and ones to represent 2-digit numbers using the strategy *find a pattern*
Group Tens as Hundreds- Students may show difficulty with understanding that each group of 10 tens is equivalent to one 100
Count On and Count Back by 10 and 100- Students may show difficulty in identifying 10 more, 10 less, 100 more, or 100 less than a given number

Number Fluency (for grades K-5):
Students exhibit computational fluency when they demonstrate flexibility in the computational methods they choose, understand and can explain these methods, and produce accurate answers efficiently.

Grade Level Fluency

Grade	Required Fluencies
K	Add/Subtract within 5
1	Add/Subtract within 10

2	**Add/Subtract within 20** **Add/Subtract within 100**

District/School Tasks	**District/School Primary and Supplementary Resources**

• Students will be differentiated based on their completion of formative assessment.
• Students will take on an active role in group work during the differentiated activities.
• Students will learn collaboration while working with members in their groups.
• Students will learn how to write numbers in word form, preparing for check writing skills.
• Students will practice counting by 1s, 5s, and 10s; which will help to prepare them for money and time telling skills.
• Students will connect mathematics with literature and informational text.
• Students will use writing skills and reasoning to explain how they arrived at an answer.
• Students will use 21st century skills through daily usage of technology.
• Students will practice test taking strategies during small group instruction.
	• Go Math Second Grade Teacher and Student Editions
	• Go Math Enrich, Reteach, and On Level pages
	• Think Central for school and home/ITools
	• Math on the Spot Videos
	• Go Math Grab-and-Go Centers kit
	• IReady Program
	• Math Journal
	• YouTube videos/songs
	• Educational games
	• Math Literature
	  • Whales – Go Math Literature
	  • Even Steven and Odd Todd by Kathryn Cristaldi
	  • Earth Day-Hooray by Stuart J. Murphy
	• Manipulatives
	  • Connecting cubes
	  • Base ten blocks
	  • Hundreds chart
	  • Graphic organizers
	National Library of Virtual Manipulatives: Base Blocks (stay in base 10): http://nlvm.usu.edu/en/nav/topic_t_1.html
	• Place value game: www.splashmath.com/place-value-games
	• Place Value Puzzle: www.funbrain.com/games/place-value
	• Place Value (Read and Write Numbers) www.mathsisfun.com/place-value.html
	• Place Value Game www.mtnbrook.k12.al.us/site/handlers/filedownload.ashx?moduleinstanceid=16232&dataid=13018&FileName=Place%20Value%20Games.pdf
	• Place Value Games : http://www.mathwire.com/games/pvgames
	• Addition or Subtraction- Number Sense: www.homeschoolmath.net/choose-op/choose-operation-game.php?mi=0&ma=100&ops=2

Instructional Best Practices and Exemplars

- Students will be assessed on formative questions and tiered accordingly each day. Students will work in collaborative groups and explain how they arrived at their answers. This will help students develop reasoning skills and make real world connections to mathematics.
- Students will work in their groups to complete daily problem solving applications. This will help students use collaborative skills and provide them with opportunity to explain their mathematical processes, as well as share and model test-taking strategies.
- Teacher and student modeling will be utilized daily with usage of technology to promote problem solving, communication, and 21st century skills.
- At the close of each lesson, a student volunteer will restate the lesson and explain how to complete the objective, allowing students to take on leadership roles and work on speaking and listening skills.
- Students will participate with various Math Journal activities, which will reinforce the lesson. It will also provide students with the opportunity to explain mathematical processes in written form.
- Students will participate in a "book club" reading of informational text, Whales from GoMath. While reading, students will connect mathematical concepts to real world situations and answer mathematical questions based on place-value concepts. Students will then work with partners to create their own math story using mathematical vocabulary appropriately. Students will share their writing with the class. This will assist students in the ability to explain how they arrived at their answer and foster communication skills.
- Students will be asked to define the word *pair*. They will then be asked if they can arrange amounts of a specified number of connecting cubes in pairs. The class will determine that even numbers can be broken into pairs and odd numbers cannot. This will allow students to take an active part in the lesson.
- Students will listen to read aloud, Even Steven and Odd Todd. The class will compare and contrast the items that each character liked. Students will be chosen to "quiz" the class as to whether a number is even or odd. Students will then use connecting cubes to demonstrate specific numbers of odd and even numbers. It will then be noted that even numbers can be divided into equal groups and odd numbers cannot. Students will also learn and participate in singing an odd and even "Bingo song" from YouTube. This will assist students in foundations for multiplication by recognizing equal groups.
- Students will be lined up in groups of ten and single children to represent tens an ones. They will then count by tens and then count on by ones until all children are counted. Students will then be provided with two digits and asked to arrange them in two different ways. Students will compare and contrast the two numbers to determine that the place a digit is in determines its value. This will help students to visualize place value.
- Students will use charts to locate the correct spelling of two digit numbers, using hyphens appropriately. This will assist students with real world skills of check writing.
- Students will participate in a base-ten "Go Fish" game. This will allow students the kinesthetic opportunity to match numbers in standard form, written form, and expanded form.
- Students will work collaboratively to show 2-digit numbers and equivalent representations of the number when trading in one ten for ten ones. This will assist students in developing number sense and fluency to prepare
- Students will use the C.U.B. and/or C.U.B.E.S. strategies to solve word problems. Students will then draw upon the previous lesson of showing equivalent numbers by using various combinations of tens and ones. They will use graphic organizers to chart and extend the pattern shown. The strategy will allow students to connect mathematical problem solving with patterns.
- Students will activate prior knowledge and build fluency by practicing skip counting by 2s, 5s, and 10s. They will then continue patterns to fill in a hundred chart and continue counting patterns in various increments from various numbers in the hundreds chart. This will later be applied to numbers to 1000.
- Students will participate in a read aloud, Earth Day—Hooray! The text will reinforce place value skills and their connection to real world situations, as well as provide support in developing responsible global citizens.
- Students will complete a review activity; they take an active role in deciding which concepts they individually require support in.

Unit 2 Suggested Modifications/Accommodations/Extension Activities		
English Language Learners (ELL) *When possible, provide links to specific samples/ documents/ assignments/etc.*	**Special Education / 504** *When possible, provide links to specific samples/ documents/ assignments/etc.*	**Gifted and Talented** *When possible, provide links to specific samples/ documents/ assignments/etc.*
Examples of Strategies and Practices that Support English Language Learners: ***All WIDA Can Do Descriptors can be found at:** https://wida.wisc.edu/teach/can-do/descriptors • Pre-teaching of vocabulary and concepts • Visual learning, including graphic organizers • Use of cognates to increase comprehension • Teacher modeling • Pairing students with beginning English language skills with students who have more advanced English language skills • Scaffolding •Word walls •Sentence frames •Think-pair-share •Cooperative learning groups •Teacher think-aloud	**Examples of Strategies and Practices that Support Students with Disabilities:** ***Refer to students' IEP for specific modifications and accommodations** • Use of visual and multisensory formats • Use of assisted technology • Use of prompts • Modification of content and student products • Testing accommodations • Authentic assessments	**Examples of Strategies and Practices that Support Gifted & Talented Students:** • Adjusting the pace of lessons • Curriculum compacting • Inquiry-based instruction • Independent study • Higher-order thinking skills • Interest-based content • Student-driven instruction • Real-world problems and scenarios

Unit 2 Connections	
NJSLS - Technology *When possible, provide links to specific samples/ documents/ assignments/etc.* Refer to the NJ Technology Standards	**Career Readiness Practices** *When possible, provide links to specific samples/ documents/ assignments/etc.* Refer to the NJ Career Readiness Practices
Technology Standards: Technology standards are embedded throughout all curricular units. **8.1 Educational Technology** All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge. **8.2 Technology Education, Engineering, Design and Computational Thinking - Programming** All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking	**Career Ready Practices:** • CRP1: Act as a responsible and contributing citizen and employee. • CRP2: Apply appropriate academic and technical skills. • CRP3: Attend to personal health and financial well-being. • CRP4: Communicate clearly and effectively and with reason. • CRP5: Consider the environmental, social and economic impacts of decisions. • CRP6: Demonstrate creativity and innovation. • CRP7: Employ valid and reliable research strategies. • CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.

and the designed world as they relate to the individual, global society, and the environment.	• CRP9: Model integrity, ethical leadership and effective management. • CRP10: Plan education and career paths aligned to personal goals. • CRP11: Use technology to enhance productivity. • CRP12: Work productively in teams while using global competence.
21st Century Skills *When possible, provide links to specific samples/ documents/ assignments/etc.* Refer to the 21st Century Life and Skills	**Interdisciplinary Connections** *When possible, provide links to specific ELA/Math/Sci/SS standards as well as samples/ documents/ assignments/etc.* Refer to the NJ Student Learning Standards
21st Century Themes • Global Awareness • Environmental Literacy • Health Literacy • Civic Literacy • Financial, Economic, Business, and Entrepreneurial Literacy **21st Century Skills** • Creativity and Innovation (E) • Critical Thinking and Problem Solving (T) (A) • Communication (E) • Collaboration (E) (T)	**Interdisciplinary connections are made across grades and content areas to model the integration of knowledge and skills in the real world.**

Unit 3 Grade 2		
Content & Practice Standards		**Critical Knowledge & Skills**
• 2.MD.A.1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure.	Concept(s): No new concept(s) introduced Students are able to: • measure lengths of objects using rules, yardsticks, meter sticks and measuring tapes. Leaning Goal 1: Estimate lengths of objects and measure lengths of objects using appropriate tools.
• 2.MD.A.2. Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.	MP 2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure.	Concept(s): No new concept(s) introduced Students are able to: • measure the length of an object using different units of measure. • compare the measurements and explain how they relate to each unit. Learning Goal 2: Compare measurements of an object taken with two different units of measure and describe how the two measurements relate to the size of the unit chosen.
• 2.MD.A.3. Estimate lengths using units of inches, feet, centimeters, and meters	MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure.	Concept(s): No new concept(s) introduced Students are able to: • estimate lengths of objects. Leaning Goal 1: Estimate lengths of objects and measure lengths of objects using appropriate tools.
• 2.MD.A.4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.	MP.5 Use appropriate tools strategically. MP.6 Attend to precision.	Concept(s): No new concept(s) introduced Students are able to: • Measure objects, comparing to determine how much longer one object is than another. • Express the difference in length in terms of a standard unit of measure.

		Learning Goal 3: Compare lengths of two objects and determine how much longer one object is than the other using a standard unit of measure.
• 2.MD.B.5. Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem *For example, if Angela needs 30 feet of ribbon for gifts, but she only has 17 feet, number sentences 17 + □ = 30 and 30 - □ = 17 both represent the situation and □ represents the number of feet of ribbon that she still needs.*	MP.1 Make sense of problems and persevere in solving them. MP 2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically.	Concept(s): No new concept(s) introduced Students are able to: • add and subtract, within 100, to solve word problems involving lengths (lengths are given in the same units). • use drawings to represent the problem. • use number sentences with a symbol for the unknown to represent the problem. Learning Goal 4: Add and subtract within 100 to solve word problems involving lengths using a symbol to represent the unknown number.
• 2.MD.B.6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.	MP.4 Model with mathematics. MP 2 Reason abstractly and quantitatively. MP.5 Use appropriate tools strategically.	Concept(s): No new concept(s) introduced Students are able to: • use equally spaced points of a number line to represent whole numbers as lengths from 0. • represent whole number sums within 100 on a number line diagram. • represent whole number differences within 100 on a number line diagram. Learning Goal 5: Use a number line to represent the solution of whole number sums and differences related to length within 100.
• 2.MD.C.7. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	MP.5 Use appropriate tools strategically. MP.6 Attend to precision.	Concept(s): No new concept(s) introduced Students are able to: • use analog and digital clocks, tell time to the nearest five minutes using a.m. and p.m. • use analog and digital clocks, write time to the nearest five minutes using a.m. and p.m.

		Learning Goal 6: Tell and write time using analog and digital clocks to the nearest five minutes using a.m. and p.m.
• 2.NBT.A.2. Count within 1000; skip-count by 5s, 10s, and 100s. *(benchmarked)	MP 2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • count within 1000 by ones. • count within 1000 by fives, tens, and hundreds beginning at any multiple of 5, 10, or 100. Learning Goal 7: Orally count within 1000 including skip-counting by 5s, 10s, and 100s
• 2.NBT.B.5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. *(benchmarked)	MP 2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): • Place value • Relationship between addition and subtraction • Properties of Operations Students are able to: • add and subtract within 100 using place value strategies. • add and subtract within 100 using properties of operations and the relationship between addition and subtraction. Learning Goal 8: Select and use a strategy (place value, properties of operation, and/or the relationship between addition and subtraction) to add and subtract within 100.

Unit 3 Assessment Plan	
Formative Assessment *When possible, provide links to specific samples/ documents/ assignments/etc.*	**Summative Assessment** *When possible, provide links to specific samples/ documents/ assignments/etc.*

• Daily formative assessment will take place in the form of quick check questions to determine students' ability to achieve objective and which tier they will work in.
• Formative assessment will take place in the form of math journal questions to determine students' ability to achieve objective and which tier they will work in.
• Daily formative assessment in the form of independent practice to monitor students' understanding of concepts and abilities to apply them to independent work.
• Mid-chapter checkpoint quiz and ECR to assess students' progress with concepts and ability to explain them.
• Weekly math drills on addition and subtraction to assess students' progress with math facts.
	• End of the unit assessment consisting of:
	  • Multiple choice questions
	  • Short answer responses
	Extended constructed response- Students will complete task and explain in writing how they were able to construct their responses using key mathematical vocabulary

Focus Mathematical Concepts

Districts should consider listing prerequisites skills. Concepts that include a focus on relationships and representation might be listed as grade level appropriate.

Prerequisite skills:

Go Math- **Grade 1** Chapter 9- Measurement

Common Misconceptions:

Count Collections- Students may show difficulty identifying coins and counting them

Time to Hour and Half Hour- Students may show difficulty telling and writing time from analog and digital clocks to the nearest minutes

A.M. and P.M.- Students may show difficulty identifying AM and PM

Problem Solving- Students may show difficulty solving word problems involving dollar bills, quarters, dimes, nickels, and pennies using symbols appropriately

Measure with an Inch Ruler- Students may show difficulty with properly aligning a ruler to measure

Estimate Length in Feet- Students may show difficulty with the ability to estimate the length of an object

Measure and Compare Length- Students may show difficulty with measuring more than one objects and comparing their lengths

Number Fluency (for grades K-5):

Students exhibit computational fluency when they demonstrate flexibility in the computational methods they choose, understand and can explain these methods, and produce accurate answers efficiently.

Grade Level Fluency

Grade	Required Fluencies
K	Add/Subtract within 5
1	Add/Subtract within 10

2	**Add/Subtract within 20** **Add/Subtract within 100**

District/School Tasks	District/School Primary and Supplementary Resources
• Students will be differentiated based on their completion of formative assessment. • Students will take on an active role in group work during the differentiated activities. • Students will learn collaboration while working with members in their groups. • Students will connect mathematics with literature, informational text, and real world usage. • Students will use writing skills and reasoning to explain how they arrived at an answer. • Students will use 21st century skills through daily usage of technology. • Students will practice test taking strategies during small group instruction.	• A Quarter from the Tooth Fairy, by Karen Holtzman • Making Cents, close reading passage and comprehension questions from "Readworks.org" • Look at Our Coins, by Gloria Chen • The Coin Counting Book, by Rozanne Lanczak Williams • Coin PowerPoint • Coin Manipulatives • Hundreds Chart • Magic Money and parent letter • "I Have/ You Have Money" game • "Color by Coin!" Money sort • Time Powerpoints • Tell Time with Turtles, by Melissa McDonnald • Clock manipulatives • "I Have/ You Have Time" game • Ruler • Colored Tiles • Number Chart • Counting tape • String (meter length) • Unit Cubes • Go Math Enrich, Reteach, and On Level pages • Common Core standards practice • Go Math Enrich, Reteach, and On Level pages • Think Central and Iready for school and home connection Additional Digital Resources • http://www.mathsisfun.com/money/index.html • http://www.apples4theteacher.com/math.html#moneygames • http://www.mathsisfun.com/time-clocks.html • http://www.mathsisfun.com/time-clocks-analog-digital.html • Elapsed Time https://www.ixl.com/math/grade-2/elapsed-time • Telling Time word problems http://www.quia.com/rr/37585.html

	• Time games, printables, powerpoints http://www.lil-fingers.com/games/time/ • Counting Money: www.splashmath.com/counting-money-games-for-2nd-graders • Purchasing Items http://www.lizardpoint.com/fun/java/buyit/BuyIt.html Money Flashcards www.math-salamanders.com/printable-money-flashcards.html

Instructional Best Practices and Exemplars

- Students will be assessed on "Check" questions and tiered accordingly during lessons. Students will work in collaborative partners or groups and explain how they arrived at their answers. This will help students develop reasoning skills and make real world connections to mathematics.
- Students will work in their groups to complete daily Go Deeper, Think Smarter, and Problem Solving problems. This will help students use collaborative skills and provide them with opportunity to explain their mathematical processes, as well as share and model test-taking strategies.
- Teacher and student modeling will be utilized daily with usage of technology to promote problem solving, communication, and 21st century skills.
- At the close of certain lesson, a student volunteer will restate the lesson and explain how to complete the objective, allowing students to take on leadership roles and work on speaking and listening skills.
- Students will participate with Math Journal activities, which will reinforce lessons. It will also provide students with the opportunity to explain mathematical processes in written form.
- Students will participate in a close reading activity of the passage, Making Cents. While reading, students will connect mathematical concepts to real world situations and ask and answer questions based on how coins are minted.
- Students will listen to read aloud, A Quarter from the Tooth Fairy to provide them with a literature connection to learn about money.
- Students will listen to read aloud, Look at Our Coins to introduce the concept of buying items in real world situations, a classroom store will be set up and utilized.
- Students will use literature to connect time order events, while learning to tell time.
- Students will use previously learned skills of skip counting to find the total value of coins in a kinesthetic activity.
- Students will categorize coins by color and sort different ways of showing the same value.
- Students will practice questioning and listening skills to reinforce the process of counting coins and telling time.
- Students will each be given a dime, nickel, and penny. They will be asked to work with partners to describe each coin and their values in order to build coin vocabulary. They will then draw a quick picture to represent each coin.
- Children will be provided a group of coins and asked to order from greatest value to least value before finding the total value. They will determine that coins in this order can be counted quickly using counting patterns they are familiar with (Magic Money).
- Children will work with partners to demonstrate a specific amount by using a variety of coin manipulatives.
- Students will build mathematical vocabulary by comparing and contrasting the dollar sign and cent sign.
- Students will use text features to complete a mathematical chart showing two possible ways to display each money amount.
- Children will use the CUB or CUBES strategies and apply previously learned problem solving skills to solve problems dealing with money.
- Students will make a clock to demonstrate understanding of the minute and hour hands.
- Children will match analog clock to digital clock faces in a sorting activity.
- Students will illustrate activities that are performed in the A.M. or P.M. time frame.
- Students will connect mathematics to the real world by listening to read aloud, Nature Walk. They will use literature to review how to measure the lengths of various things in nature. This will assist students in determining relevance for mathematics.

- Students will participate in a Cross curriculum connection of social studies to math: Students will measure different parts of the American flag and discuss the different measurements the children came up with.
- Students will participate in a Cross curriculum connection of science to math: Students will compare their measurements and discuss how the lengths of the leaves are different based on their measurements and observations. The students will also measure the distance between each vain of the leaf.
- Students will be allotted time to come up with predictions of things that measure about 1 inch long. They will present with their classmates what they came up with.
- Students will use nonstandard units (colored tiles) to measure lengths of objects placed in their groups. They will use the colored tiles as a measurement tool that requires the children to place a row of tiles along the length of the object and determine the total number of tiles. To establish an accurate measurement, children must understand the importance of aligning the left edge of the first tile with the left end of the object to be measured.
- Students will be introduced to the chapter through show what you know this will help students to assess prior knowledge on the use of rulers.
- Game: Estimating lengths: This activity gives children the opportunity to practice estimating the lengths of objects in nonstandard units.
- Students will be allotted time to come up with predictions of things that measure about 1 centimeter long. They will share and show with their classmates what they found in the classroom that is about ten centimeters long.
- Students will use nonstandard units (unit cubes) to measure lengths of objects placed in their groups. They will use the unit cubes as a measurement tool that requires the children to place a row of cubes along the length of the object and determine the total number of cubes. To establish an accurate measurement, children must understand the importance of aligning the left edge of the first unit cube with the left end of the object to be measured. In this lesson children use iterations of a unit cube as a step in the conceptual development in measuring lengths and centimeters.
- Students will estimate using unit cubes the length of an object.
- Students will participate in groups to explore measurements through drawing marks on a piece of paper of specific lengths through verbal directions. Students will think, pair, and share to come up with ideas of what they drew.
- Students will practice predicting and measuring length through the game called "How Long?"
- Group activity: Students will place a meter stick on the floor and have a partner stand at opposite ends of the meter stick. Then repeat for two meters. This will allow students to get a sense of how far apart they are using a standard form of measurement.
- Cross curriculum activity between Math and Social Studies: Student will be introduced to how measuring is important to many, jobs such as construction, officers, and scientist are some examples.
- Students will interpret measurement data displayed on a line plot. Through this, students will share and show 3 or more sentences to describe what the line plot shows and how to interpret it.
- Students will participate by using addition and subtraction on a line plot to solve problems involving length.
- Students are provided multiple choice and mixed-response format to practice test taking skills.

Unit 3 Suggested Modifications/Accommodations/Extension Activities		
English Language Learners (ELL) *When possible, provide links to specific samples/ documents/ assignments/etc.*	**Special Education / 504** *When possible, provide links to specific samples/ documents/ assignments/etc.*	**Gifted and Talented** *When possible, provide links to specific samples/ documents/ assignments/etc.*
Examples of Strategies and Practices that Support English Language Learners: ***All WIDA Can Do Descriptors can be found at:** https://wida.wisc.edu/teach/can-do/descriptors	**Examples of Strategies and Practices that Support Students with Disabilities:** ***Refer to students' IEP for specific modifications and accommodations** • Use of visual and multisensory formats	**Examples of Strategies and Practices that Support Gifted & Talented Students:** • Adjusting the pace of lessons • Curriculum compacting • Inquiry-based instruction

• Pre-teaching of vocabulary and concepts • Visual learning, including graphic organizers • Use of cognates to increase comprehension • Teacher modeling • Pairing students with beginning English language skills with students who have more advanced English language skills • Scaffolding •Word walls •Sentence frames •Think-pair-share •Cooperative learning groups •Teacher think-aloud	• Use of assisted technology • Use of prompts • Modification of content and student products • Testing accommodations • Authentic assessments	• Independent study • Higher-order thinking skills • Interest-based content • Student-driven instruction • Real-world problems and scenarios

Unit 3 Connections	
NJSLS - Technology *When possible, provide links to specific samples/ documents/ assignments/etc.* Refer to the NJ Technology Standards	**Career Readiness Practices** *When possible, provide links to specific samples/ documents/ assignments/etc.* Refer to the NJ Career Readiness Practices
Technology Standards: Technology standards are embedded throughout all curricular units. **8.1 Educational Technology** All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge. **8.2 Technology Education, Engineering, Design and Computational Thinking - Programming** All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.	**Career Ready Practices:** • CRP1: Act as a responsible and contributing citizen and employee. • CRP2: Apply appropriate academic and technical skills. • CRP3: Attend to personal health and financial well-being. • CRP4: Communicate clearly and effectively and with reason. • CRP5: Consider the environmental, social and economic impacts of decisions. • CRP6: Demonstrate creativity and innovation. • CRP7: Employ valid and reliable research strategies. • CRP8: Utilize critical thinking to make sense of problems and persevere in solving them. • CRP9: Model integrity, ethical leadership and effective management. • CRP10: Plan education and career paths aligned to personal goals. • CRP11: Use technology to enhance productivity. • CRP12: Work productively in teams while using global competence.
21st Century Skills *When possible, provide links to specific samples/ documents/ assignments/etc.* Refer to the 21st Century Life and Skills	**Interdisciplinary Connections** *When possible, provide links to specific ELA/Math/Sci/SS standards as well as samples/ documents/ assignments/etc.* Refer to the NJ Student Learning Standards

21st Century Themes • Global Awareness • Environmental Literacy • Health Literacy • Civic Literacy • Financial, Economic, Business, and Entrepreneurial Literacy **21st Century Skills** • Creativity and Innovation (E) • Critical Thinking and Problem Solving (T) (A) • Communication (E) • Collaboration (E) (T)	**Interdisciplinary connections are made across grades and content areas to model the integration of knowledge and skills in the real world.**

Unit 4 Grade 2		
Content & Practice Standards		**Critical Knowledge & Skills**
• 2.G.A.1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.	MP 2 Reason abstractly and quantitatively. MP.6 Attend to precision. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • draw shapes having specified attributes (e.g. number of equal faces, number of angles) • identify triangles, quadrilaterals, pentagons, hexagons, and cubes. Learning Goal 1: Draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
• 2.G.A.3. Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.	MP.4 Model with mathematics. MP.7 Look for and make use of structure.	Concept(s): • Equal shares of identical wholes need not have the same shape. Students are able to: • partition rectangles into two, three, or four equal shares. • partition two same-sized rectangles to show that equal shares of identical wholes need not have the same shape. • describe the shares using the words halves, thirds, fourths, half of, a third of, a fourth of, etc. • recognize and then describe the whole as two halves, three thirds, four fourths. Learning Goal 2: Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc. and describe the whole as two halves, three thirds, and four fourths.
• 2.MD.C.8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. *Example: If you have 2 dimes and 3 pennies, how many cents do you have?*	MP.1 Make sense of problems and persevere in solving them. MP 2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.8 Look for and express	Concept(s): • Know the value of dollar bills, quarters, dimes, nickels, and pennies. Students are able to: • identify dollar bills, quarters, dimes, nickels, and pennies. • using dollar bills, quarters, dimes, nickels, and pennies, count to determine the total amount of money. • solve word problems involving dollar bills, quarters, dimes, nickels, and pennies. Learning Goal 3: Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using the $ and ¢ symbols appropriately.

	regularity in repeated reasoning.	
• 2.MD.D.9. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.	MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): • Generate data. Students are able to: • generate measurement data by measuring lengths, to the nearest whole unit, of several objects or by making repeated measurements of the same object. • record the measurements in a line plot having a horizontal scale in whole number units. Learning Goal 4: Use tools of measurement to measure lengths of several objects to the nearest whole unit and represent the data on a line plot with appropriate whole number units on the horizontal scale.
• 2.MD.D.10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put together, take-apart, and compare problems using information presented in a bar graph.	MP.1 Make sense of problems and persevere in solving them. MP 2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • draw a picture graph to represent a data set with up to four categories. • draw a bar graph to represent a data set with up to four categories. • use information in a bar graph to solve simple put together, take apart, and compare problems. Learning Goal 5: Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in the graph.
• 2.OA.B.2. Fluently add and subtract within 20 using mental strategies. *By end of Grade 2, know from memory all sums of two one-digit numbers.* *(benchmarked)	MP 2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concept(s): No new concept(s) introduced Students are able to: • add within 20 using mental strategies with accuracy and efficiency. • subtract within 20 using mental strategies with accuracy and efficiency. Learning Goal 6: Fluently add and subtract within 20 using mental strategies.
• 2.NBT.B.5. Fluently add	MP 2 Reason abstractly and	Concept(s): No new concept(s) introduced

and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. *(benchmarked)	quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Students are able to: • with accuracy and efficiency, add and subtract within 100 using place value strategies, properties of operations and/or the relationship between addition and subtraction. Learning Goal 7: Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

Unit 4 Assessment Plan	
Formative Assessment *When possible, provide links to specific samples/ documents/ assignments/etc.*	**Summative Assessment** *When possible, provide links to specific samples/ documents/ assignments/etc.*

• Daily formative assessment will take place in the form of quick check questions to determine students' ability to achieve objective and which tier they will work in.
• Formative assessment will take place in the form of math journal questions to determine students' ability to achieve objective and which tier they will work in.
• Daily formative assessment in the form of independent practice to monitor students' understanding of concepts and abilities to apply them to independent work.
• Mid-chapter checkpoint quiz and ECR to assess students' progress with concepts and ability to explain them.
• Weekly math drills on addition and subtraction to assess students' progress with math facts.
	• End of the unit assessment consisting of:
	  • Multiple choice questions
	  • Short answer responses
	Extended constructed response- Students will complete task and explain in writing how they were able to construct their responses using key mathematical vocabulary

Focus Mathematical Concepts
Districts should consider listing prerequisites skills. Concepts that include a focus on relationships and representation might be listed as grade level appropriate. **Prerequisite** skills:

Go Math- **Grade 1**
Chapter 10- Represent Data
Chapter 11- 3 Dimensional Geometry
Chapter 12- 2 Dimensional Geometry

Common Misconceptions:
Problem Solving- Students may have difficulty displaying data
Read Picture Graphs- Students may struggle comparing the wrong data when answering comparison questions
Angels in Two Dimensional Shape- Children may misread the rule and not pay attention to the words *more than* and *fewer than*
Attribute of Three Dimensional Shapes- Students may have difficulty identifying faces, edges, and vertices of a 3-dimensional shape

Number Fluency (for grades K-5):
Students exhibit computational fluency when they demonstrate flexibility in the computational methods they choose, understand and can explain these methods, and produce accurate answers efficiently.

Grade Level Fluency

Grade	Required Fluencies
K	Add/Subtract within 5
1	Add/Subtract within 10
2	**Add/Subtract within 20** **Add/Subtract within 100**

District/School Tasks	District/School Primary and Supplementary Resources
• Students will be differentiated based on their completion of formative assessment. • Students will take on an active role in group work during the differentiated activities. • Students will learn collaboration while working with members in their groups. • Students will connect mathematics with literature, informational text, and real world usage. • Students will use writing skills and reasoning to explain how they arrived at an answer. • Students will use 21st century skills through daily usage of technology. • Students will practice test taking strategies during small group instruction.	• Go Math Enrich, Reteach, and On Level pages • Common Core standards practice • Go Math Enrich, Reteach, and On Level pages • Think Central and Iready for school and home connection • The Greedy Triangle • Three dimensional shapes • A Farmer's Job Additional Digital Resources • The Greedy Triangle by Stephanie Sheggield www.mathplayground.com/geoboard/ http://www.mathcats.com/explore/polygons.html • Sorting Shapes by Attribute https://learnzillion.com/lesson_plans/6121-recognize-shape-attributes/ www.cpalms.org/Public/PreviewResourceLesson/Preview/28645 • Tangrams: www.tangram-channel.com

	www.abcya.com/games/tangrams • Perimeter/Area www.pinterest.com/mrstraceyfuller/2nd-grade-perimeter-area/ www.scholastic.com/teachers/blog-posts/genia-connell/10-hands-strategies-teaching-area-and-perimeter/ • Fraction Problem Solving http://www.beaconlearningcenter.com/WebLessons/IWantMyHalf/default.htm

Instructional Best Practices and Exemplars

- Students will be assessed on "Check" questions and tiered accordingly during lessons. Students will work in collaborative partners or groups and explain how they arrived at their answers. This will help students develop reasoning skills and make real world connections to mathematics.
- Students will work in their groups to complete daily Go Deeper, Think Smarter, and Problem Solving problems. This will help students use collaborative skills and provide them with opportunity to explain their mathematical processes, as well as share and model test-taking strategies.
- Teacher and student modeling will be utilized daily with usage of technology to promote problem solving, communication, and 21st century skills.
- At the close of lessons, a student volunteer will restate the lesson and explain how to complete the objective, allowing students to take on leadership roles and work on speaking and listening skills.
- Students will participate with Math Journal activities, which will reinforce lessons. It will also provide students with the opportunity to explain mathematical processes in written form.
- Children will use the CUB or CUBES strategies and apply previously learned problem solving skills.
- Students will participate in creating a "Shape Monster" using a variety of the shapes we are learning about.
- Identify shapes and fractions in everyday situations.
- Students will read and participate in identifying shapes in literature text, The Greedy Triangle.

Unit 4 Suggested Modifications/Accommodations/Extension Activities

English Language Learners (ELL) *When possible, provide links to specific samples/ documents/ assignments/etc.*	**Special Education / 504** *When possible, provide links to specific samples/ documents/ assignments/etc.*	**Gifted and Talented** *When possible, provide links to specific samples/ documents/ assignments/etc.*
Examples of Strategies and Practices that Support English Language Learners: ***All WIDA Can Do Descriptors can be found at:** https://wida.wisc.edu/teach/can-do/descriptors • Pre-teaching of vocabulary and concepts • Visual learning, including graphic organizers • Use of cognates to increase comprehension	**Examples of Strategies and Practices that Support Students with Disabilities:** ***Refer to students' IEP for specific modifications and accommodations** • Use of visual and multisensory formats • Use of assisted technology • Use of prompts • Modification of content and student products	**Examples of Strategies and Practices that Support Gifted & Talented Students:** • Adjusting the pace of lessons • Curriculum compacting • Inquiry-based instruction • Independent study • Higher-order thinking skills • Interest-based content

• Teacher modeling • Pairing students with beginning English language skills with students who have more advanced English language skills • Scaffolding •Word walls •Sentence frames •Think-pair-share •Cooperative learning groups •Teacher think-aloud	• Testing accommodations • Authentic assessments	• Student-driven instruction • Real-world problems and scenarios

Unit 4 Connections	
NJSLS - Technology *When possible, provide links to specific samples/ documents/ assignments/etc.* Refer to the NJ Technology Standards	**Career Readiness Practices** *When possible, provide links to specific samples/ documents/ assignments/etc.* Refer to the NJ Career Readiness Practices
Technology Standards: Technology standards are embedded throughout all curricular units. **8.1 Educational Technology** All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge. **8.2 Technology Education, Engineering, Design and Computational Thinking - Programming** All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.	**Career Ready Practices:** • CRP1: Act as a responsible and contributing citizen and employee. • CRP2: Apply appropriate academic and technical skills. • CRP3: Attend to personal health and financial well-being. • CRP4: Communicate clearly and effectively and with reason. • CRP5: Consider the environmental, social and economic impacts of decisions. • CRP6: Demonstrate creativity and innovation. • CRP7: Employ valid and reliable research strategies. • CRP8: Utilize critical thinking to make sense of problems and persevere in solving them. • CRP9: Model integrity, ethical leadership and effective management. • CRP10: Plan education and career paths aligned to personal goals. • CRP11: Use technology to enhance productivity. • CRP12: Work productively in teams while using global competence.
21st Century Skills *When possible, provide links to specific samples/ documents/ assignments/etc.* Refer to the 21st Century Life and Skills	**Interdisciplinary Connections** *When possible, provide links to specific ELA/Math/Sci/SS standards as well as samples/ documents/ assignments/etc.* Refer to the NJ Student Learning Standards
21st Century Themes • Global Awareness	**Interdisciplinary connections are made across grades and content areas to**

• Environmental Literacy • Health Literacy • Civic Literacy • Financial, Economic, Business, and Entrepreneurial Literacy **21st Century Skills** • Creativity and Innovation (E) • Critical Thinking and Problem Solving (T) (A) • Communication (E) • Collaboration (E) (T)	**model the integration of knowledge and skills in the real world.**