Subject/Course: Math	Grade: 2					
	Suggested Timeline: 3 weeks					
Unit Title: Fleuncy of Sums and Differences to 20 and Word Problems to 100		Students start Grade 2 with extensive experience working with numbers to 10. Module 1 establishes a motivating, differentiated fluency program in the first few weeks that will provide ach student with enough practice to achieve mastery of the expected fluencies (i.e. adding and subtraccting within 20 and within 100) by the end of the year. Students learn to represent and solve problems using addition and subtraction: a practice that will also contine throughout the year.				
I Can Statements / Essential Questions / Objectives	**Content / Concepts**	**Skills / Competencies**	**Vocabulary**	**Assessments**	**Focus Standards**	**Standards for Math Practice**
Add and subtract numbers within 100 in the context of one- and two- step word problems	Place Value	Add up to four two-digit numbers using strategies based onplace value and properties of operations.	Addend, Compose / Decompose, Place value, Sum		Use place value understanding and properties of perations to add and subtract within 1000.	#1, #2, #3, #5, #6
Fluently add and subtract within 20 using mental strategies	Addition and Subtraction	Explain why addition and subtraction strategies work, using place value and the properties of operations.			Represent and solve problems involving addition and subtraction within 100.	
Use place value understanding and properties of operations to add and subtract	Prperties of Operations	Solve word problems that call for addition of three whole numbers whos sum is less than or equal to 20.				
		Apply properties of operations as strategies to add and subtract (commutative property of addition; associative property of addition).				

Important Standards Addressed in This Unit	Misconceptions	Proper Conceptions
Use mental strategies to add and subtract within 20.	Some students end their solution to a 2 step problem after they complete the first step. They may have misunderstood the question or onluy focused on finding the first part of the problem.	Students need to check their work to see if their answer makes sense in terms of the problem situation. They need many opportunities to solve a variety of two-step problems and develop the habit of reviewing their solution after they think they have finished.
	Many children have misconceptions about the equal sign. Students can misunderstand the use of the equal sign even if they have proficieint computational skills, They might also be predisposed to think of equality in terms of calculating answers rather than as a relation because it is easier for young children to carry out steps to find an answer than to identify relationships among quantities.	The equal sign means - is the same as, however, many primary students think that the equal sign tells you that the - answer is coming up. Students need to see examples of number sentences with an operation to teh right of the equal sign and the answer on the left, so they do not overgeneralize from those limited examples.

	Students might rely on a key word or phrase in a problem to suggest an operation that will lead to an incorrect solution. They might think that the word LEFT always means that subtraction must be used to find a solution.	Students need to solve problems where key words are contrary to such thinking. For example, the use of the word LEFT does not indicate subtraction as a solution method: Debbie took the 8 stickers she no longer wanted and gave them to Anna. Now Debbie has 11 stickers LEFT. How many stickers did Debbie have to begin with?
	Students may think that when adding two-digit numbers you must start at the ones place.	**It is important that students avoid using key words to solve problems. The goal is for students to make sense of the problem and understand what it is asking them to do, rather than search for "tricks" and/or guess at the operation needed to solve the problem.**

Subject/Course: Math	Grade: 2					
	Suggested Timeline: 4 weeks					
Unit Title: Addition and Subtraction with Length, Weight, Capacity, and Time Measurements		Students learn to measure and estimate using standard units for length and solve measurement owrd problems involving addition and subtraction of length. A major objective is for students to use measurement tools with the understanding that linear measure involves an iteration of units and that the smaller a unit, the more iterations are necessary to cover a given length. An underlying goal for this modue is for students to learn the meaning of a "unit" in different contexts (e.g. capacity, length, weight, and time). This understanding serves as the foundation of arithmetic, measurement, and geometry in elementary school. In particular, units play a central role in the next module and in the addition and subtraction algorithms of Module 4.				
I Can Statements / Essential Questions / Objectives	**Content / Concepts**	**Skills / Competencies**	**Vocabulary**	**Assessments**	**Focus Standards**	**Standards for Math Practice**
Use measurement tools	Time and Money	Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	Analog/ digital, Compose / decompose, a.m., p.m.		Measure and estimte lengths in standard units using appropriate tools.	MP # 1, 3, 5, 6
Understand a "unit" of measurement	Measurement	Measure the same length with different-sized units then discuss the measurement made with the smaller unit is more than the measurement made with the larger unit and vice versa.	Estimate, inch, feet, centimeter, meter		Tell and write time to the nearest five minutes using both analog and digital clocks.	
Solve word problems involving addition and subtraction of length	Addition and Subtraction	Estimate lengths using units of inches, feet, centimeters, and meters.	Money - dollar, quarter, dime, nickel, penny		Solve problems and make change using coins and paper currency with appropriate symbols.	

Understand the relationship between the size of a the unit and the number of units needed to cover a given length		Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.			Extend the concepts of addition and subtraction to problems involving length.	
Understand when to estimate and when to use exact measurements		Tell and write time from analog and digital clocks to the nearest five minutes.				
Estimate lengths		Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units by using drawings and equations with a symbol for the unknown number to represent the problem.				
		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.				

Important Standards Addressed in This Unit	**Misconceptions**	**Proper Conceptions**
None currently aligned.	When some students see standard rulers with numbers on the markings, they believe that the numbers are counting the marks instead of the units or spaces between the marks. Some students might think that they can only measure lengths with a ruler starting at the left edge.	Have students use informal or standard length units to make their own rulers by marking each whole unit with a number in the middle. They will see that the ruler is a representation of a row of units and focus on the spaces.

	Some students might confuse the hour and minutes hands. For the time of 3:45, they say the time is 9:15. Also, some students name the numeral closest to the hands, regardless of whether this is appropriate. For instance, for the time of 3:45 they say the time is 3:09 or 9:03. Assess students' understanding of the roles of the minute and hour hands and the relationship between them.	Provide situations where the ruler does not start at zero. For example, a ruler is broken and the first inch number that can be seen is 2. If a pencil is measured and it is 9 inches on this ruler, the students must subtract 2 inches from 9 inches to adjust for where the measurement started.
	Students may also focus on one attribute of a container when determining which container has more capacity.	Provide opportunities for students to experience and measure times to the nearest five minutes and the nearest hour. Have them focus on the movement and features of the hands on real or geared manipulative clocks.
		Provide opportunities for students to explore containers of different sizes and shapes when determining capacity.

Subject/Course: Math	Grade: 2					
	Suggested Timeline: 5 weeks					
Unit Title: Place Value, Counting, and Comparison of Numbers to 1000		All arithmetic algorithms are manipulations of place value units: ones, tens, hundreds, etc. In Module 3 students extend their understanding of base-ten notation and apply their understanding of place value to count and compare numbers to 1000. In Grade 2 the place value units move from a proportional model to a non-proportional number disk model (see picture). The place value table with number disks is one tool that can be used in grade 2 and beyond for modeling very large numbers and decimals, thus providing students greater facility with and understanding of mental math and algorithms.				
I Can Statements / Essential Questions / Objectives	**Content / Concepts**	**Skills / Competencies**	**Vocabulary**	**Assessments**	**Focus Standards**	**Standards for Math Practice**
Count numbers to 1000by ones, 2s, 5s, 10s, and 100s	Place Value	Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones.	Compose / decompose, Equivalent, Place value, Hundreds, Expanded form		Use place value concepts to represent amounts of tens and ones and to compare three digit numbers.	MP #2, 7, 8
Represent numbers to 1000 using concrete models, drawings, words, and numbers		Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.			Use place value concepts to read, write, and skip count to 1000.	
Compare numbers to 1000		Count within 1000; skip-count by 5s, 10s, and 100s.				
		Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.				

Important Standards Addressed in This Unit	Misconceptions	Proper Conceptions
There are no standards currently aligned to this resource.	Some students may not move beyond thinking of the number 358 as 300 ones plus 50 ones plus 8 ones to the concept of 8 singles, 5 bundles of 10 singles or tens, and 3 bundles of 10 tens or hundreds. They may also not think of 358 as 2 hundreds, 15 tens, and 8 ones, or other combinations.	Use base-ten blocks to model the collecting of 10 ones (singles) to make a ten (a rod) or 10 tens to make a hundred (a flat). It is important that students connect a group of 10 ones with the word ten and a group of 10 tens with the word hundred. Decomposing a number in various ways helps children be more flexible in their thinking.
	Students may think that the 4 in 46 represents 4, not 40. When adding two-digit numbers, some students might start with the digits in the ones place and record the entire sum. Then they add the digits in the tens place and record this sum. Assess students' understanding of a ten and provide more experiences modeling addition with grouped and pregrouped base-ten materials as mentioned above.	Students need many experiences representing two- and three-digit numbers with manipulatives that group (base ten blocks) and those that do NOT group, such as counters, etc.

	When subtracting two-digit numbers, students might start with the digits in the ones place and subtract the smaller digit from the greater digit. Then they move to the tens and the hundreds places and subtract the smaller digits from the greater digits.	Assess students' understanding of a ten and provide more experiences modeling subtraction with grouped and pregrouped base-ten materials.

Subject/Course: Math	Grade: 2					
	Suggested Timeline: 7 weeks					
Unit Title: Addition and Subtraction of Numbers to 1000		In Module 4, students continue to work with place value units to understand the addition and subtraction algorithms of numbers up to 1000. This work deepens their understanding of base-ten, place value, and properties of operations. It also challenges them to apply their knowledge to one-step and two-step word problems. During this module, students also continue to develop one of the required fluencies of the grade: addition and subtraction within 100.				
I Can Statements / Essential Questions / Objectives	**Content / Concepts**	**Skills / Competencies**	**Vocabulary**	**Assessments**	**Focus Standards**	**Standards for Math Practice**
Represent and solve addition and subtraction problems, including word problems, within 1000	Place Value	Add up to four two-digit numbers using strategies based on place value and properties of operations.	Addend, Compose / decompose, Equation, Equivalent, Place value, Sum, Hundreds, Expanded form		Use place value understanding and properties of operations to add and subtract within 1000.	MP #1,2,3,4,5,8
Use place value and properties of operations to find sums and differences	Addition and Subtraction	Add and subtract within 1000.			Represent and solve problems involving addition and subtraction within 100.	
Improve fluency with addition and subtraction within 100	Properties of Operations	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.			Use mental strategies to add and subtract within 20.	
Mentally add and subtract within 20		Explain why addition and subtraction strategies work, using place value and the properties of operations.				

		Use addition and subtraction within 100 to solve one- and two-step word problems by using drawings and equations with a symbol for the unknown number to represent the problem.				
		Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20.				
		Add and subtract within 20. Use strategies such as counting on; making ten; decomposing a number leading to a ten; using the relationship between addition and subtraction; and creating equivalent but easier or known sums.				
		Apply properties of operations as strategies to add and subtract (commutative property of addition; associative property of addition).				
		Understand subtraction as an unknown-addend problem. For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.				

Important Standards Addressed in This Unit	Misconceptions	Proper Conceptions
There are no standards currently aligned to this resource.	Students may overgeneralize the idea that answers to addition problems must be greater. Adding 0 to any number results in a sum that is equal to that number. Provide word problems involving 0 and have students model using drawings with an empty space for 0.	Students are usually proficient when they focus on a strategy relevant to particular facts. When these facts are mixed with others, students may revert to counting as a strategy and ignore the efficient strategies they learned. Provide a list of facts from two or more strategies and ask students to name a strategy that would work for that fact. Students should be expected to explain why they chose that strategy then show how to use it.
	Some students may not move beyond thinking of the number 358 as 300 ones plus 50 ones plus 8 ones to the concept of 8 singles, 5 bundles of 10 singles or tens, and 3 bundles of 10 tens or hundreds.	Use base-ten blocks to model the collecting of 10 ones (singles) to make a ten (a rod) or 10 tens to make a hundred (a flat). It is important that students connect a group of 10 ones with the word ten and a group of 10 tens with the word hundred.

Subject/Course: Math	Grade: 2					
	Suggested Timeline: 7 weeks					
Unit Title: Preparation for Multiplication and Division		In Module 5, students extend their understanding of a unit to build the foundation for multiplication and division. Making equal groups of "four apples each" establishes the unit "four apples" (or just four) that can then be counted: 1 four, 2 fours, 3 fours, etc. Relating the new unit to the one used to create it develops the idea of multiplication: 3 groups of 4 apples equal 12 apples (or 3 fours are 12).				
I Can Statements / Essential Questions / Objectives	**Content / Concepts**	**Skills / Competencies**	**Vocabulary**	**Assessments**	**Focus Standards**	**Standards for Math Practice**
Make equal groups of objects and count them	Equal Groups of Objects	Determine whether a group of objects (up to 20) has an odd or even number of members and write an equation to express an even number as a sum of two equal addends.	Addend, Equation, Equivalent, Sum, Odd, Even		Work with equal groups of objects to gain foundations for multiplication.	MP # 2,3,7,8
Partition a set into equal groups		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.				
Arrange a group of objects into an array						

Important Standards Addressed in This Unit	Misconceptions	Proper Conceptions
There are no standards currently aligned to this resource.	Students may not fully understand the relationship between multiplication and addition (Mulligan & Mitchelmore, 1997) and may persist in counting.	Students need to begin by seeing the connection between equal groups and repeated addition in order to build the connection between repeated addition and multiplication.
	Only gradually do students learn that the number of units in a rectangular array can be calculated from the number of units in each row and column.	The rectangular array is a powerful tool for multiplication and students need many opportunities to connect the number of units to the total in the rows and columns.

Subject/Course: Math	Grade: 2					
	Suggested Timeline: 6 weeks					
Unit Title: COmparison, Addition, and Subtraction with Length and Money		Module 6 provides another opportunity for students to practice their algorithms and problem-solving skills with perhaps the most well-known, interesting units of all: dollars, dimes, and pennies. Measuring and estimating length is revisited in this module in the context of units from both the customary system (e.g., inches and feet) and the Metric System (e.g., centimeters and meters). As they study money and length, students represent data given by measurement and money data using picture graphs, bar graphs, and line plots.				
I Can Statements / Essential Questions / Objectives	**Content / Concepts**	**Skills / Competencies**	**Vocabulary**	**Assessments**	**Focus Standards**	**Standards for Math Practice**
Measure and estimate length in both customary and metric units	Measurement	Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	Addend, Equation, Equivalent, Line plot, Sum, Picture graph, Bar graph, Inch, Feet, Centimenter, Meter, Dollar, Quarter, Dime, Nickel, Penny		Measure and estimate lengths in standard units using appropriate tools.	MP # 1,2,4,5,8
Add lengths	Time and Money	Measure the same length with different-sized units then discuss the measurement made with the smaller unit is more than the measurement made with the larger unit and vice versa.			Solve problems and make change using coins and paper currency with appropriate symbols.	
Solve addition and subtraction problems involving money	Represent and Interpret Data	Estimate lengths using units of inches, feet, centimeters, and meters.			Represent and interpret data using line plots, picture graphs, and bar graphs.	

Represent data given by measurement and money data using graphs	Addition and Subtraction	Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.			Extend the concepts of addition and subtraction to problems involving length.	
Improve fluency with addition and subtraction		Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately.				
		Make a line plot to show measurement data of the lengths of several objects to the nearest whole-number unit.				
		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.				
		Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units by using drawings and equations with a symbol for the unknown number to represent the problem.				

		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.				

Important Standards Addressed in This Unit	Misconceptions	Proper Conceptions
There are no standards currently aligned to this resource.	When some students see standard rulers with numbers on the markings, they believe that the numbers are counting the marks instead of the units or spaces between the marks.	Have students use informal or standard length units to make their own rulers by marking each whole unit with a number in the middle. They will see that the ruler is a representation of a row of units and focus on the spaces.
	Some students might think that they can only measure lengths with a ruler starting at the left edge.	Provide situations where the ruler does not start at zero. For example, a ruler is broken and the first inch number that can be seen is 2. If a pencil is measured and it is 9 inches on this ruler, the students must subtract 2 inches from the 9 inches to adjust for where the measurement started.

	Students might overgeneralize the value of coins when they count them. They might count them as individual objects. Also some students think that the value of a coin is directly related to its size, so the bigger the coin, the more it is worth.	Place pictures of a nickel on the top of five-frames that are filled with pictures of pennies. In like manner, attach pictures of dimes and pennies to ten-frames and pictures of quarters to 5 x 5 grids filled with pennies. Have students use these materials to determine the value of a set of coins in cents.
	Sometimes students will record twenty-nine dollars as 29$. Remind them that the dollar sign goes in front. The cent sign goes after the number and there is no decimal point used with the cent sign.	Notation takes time to develop. Just keep reminding students of the correct way to use the notation.
	The attributes for the same kind of object can vary. This will cause equal values in an object graph to appear unequal. For example, when making an object graph using shoes for boys and girls, five adjacent boy shoes would likely appear longer than five adjacent girl shoes.	To standardize the objects, place the objects on the same-sized construction paper or sticky-note, then make the object graph.

Subject/Course: Math	Grade: 2					
	Suggested Timeline: 4 weeks					
Unit Title: Recognizing Angles, Faces, and Vertices of Shapes, Fractions of Shapes		Students finish grade 2 by describing and analyzing shapes in terms of their sides and angles. In Module 7, students investigate, describe, and reason about the composition and decomposition and of shapes to form other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.				
I Can Statements / Essential Questions / Objectives	**Content / Concepts**	**Skills / Competencies**	**Vocabulary**	**Assessments**	**Focus Standards**	**Standards for Math Practice**
Identify, describe, and draw triangles, quadrilaterals, pentagons, and hexagons	Shape Attributes	Recognize and draw shapes having specified attributes. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.	Compose / decompose, Pentagon, Quadrilateral, Thirds, Fourths, Halves, Faces, Angles, Hexagon		Analyze and draw two- and three-dimensional shapes having specified attributes.	MP# 2, 3, 4, 6
Recognize that equal shares of identical wholes need not have the same shape	Fractions	Partition circles and rectangles into two, three, or four equal shares, recognize that equal shares of identical wholes need not have the same shape.			Use the understanding of fractions to partition shapes into halves, quarters, and thirds.	
Partition circles and rectangles into two, three, or four equal shares						
Recognize and draw shapes having specified attributes, such as a given number of angles or equal faces						

Important Standards Addressed in This Unit	Misconceptions	Proper Conceptions
There are no standards currently aligned to this resource.	Some students may think that a shape is changed by its orientation. They may see a rectangle with the longer side as the base, but claim that the same rectangle with the shorter side as the base is a different shape.	This is why is it so important to have young students handle shapes and physically feel that the shape does not change regardless of the orientation, as illustrated below.
	Students also may believe that a region model represents one out of two, three or four fractional parts without regard to the fact that the parts have to be equal shares, e.g., a circle divided by two equally spaced horizontal lines represents three thirds.	Show students examples and non-examples and have them explain why the shares are or are not equal.