Grade 2 Curriculum Map

Unit/Timeframe: **Topic 1:** Understanding Addition and Subtraction Approximately 2 weeks	**Grade Level: 2**

Additional Notes

First two weeks of September:
Reviewing 1st grade standards while building community and teamwork –

Time— half hour and hour (1.MD.3)
Graphs – reading pictographs and bar graphs (1.MD.4)
Money – recognizing coins and their values (1.MD.Ma5)
Place Value – ones and tens (1.NBT.2)

Content Standards	**2011 MA Curriculum Framework for Literacy**
2.OA.1: Use addition and subtraction within 100 to solve one- and two- step word problems. *This topic only addresses through 20.	N/A

Essential Questions	**Knowledge/Concepts**	**Skills**
How can I use related addition and subtraction strategies to solve story problems?	Understand that there are numerous ways to answer addition and subtraction story problems, including use of manipulatives, drawings, number lines, part-part-whole mats, equations, etc.	**Students will be able to:** Use addition and subtraction to solve story problems within 20. Apply different addition and subtraction strategies such as: joining, separating, part-part-whole, comparing, and using an

	Recognize different addition and subtraction situations, such as putting together and adding to (with an unknown in any position). *See Table (*Common Addition and Subtraction Situations*) on **page 183** of Massachusetts Curriculum Framework. **Misconceptions**: The whole amount can be on either side of the equation. Many children have misconceptions about the equal sign. Students can misunderstand the use of the equal sign, even if they have proficient computational skills. 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. ***Do not teach key words in isolation…students need to have lots of experience in visualizing the context of the problem. Special attention should be paid to comparison problems.	unknown in any position of an equation. Write equations to match the visual representations. Recognize what part of the story problem is the part, which is the whole, and what is the unknown. Use related facts to complete and solve problems with models, and understand the inverse relationship of fact families.

	In a subtraction sentence, the number representing the whole is always the largest and the first number in the sentence.	
Common Resources		**Common Assessments**
enVisionMath Program: See *Math Background* 1A and 1B **Additional Resources:** Using 2 color counters Part-part-whole mats Unifix cubes or dominoes to model horizontal and vertical Rekenrek up to 20 120 Chart Math Literature Balance scale for equivalence and equal sign instruction Story Mats Number Lines Dice – both with dots and numerals Spinners Number cards for games Ten-frames WEB SITE: **AVMR Resources for Number Sense and Computation –** http://learn.district196.org/course/view.php?id=1482 **Math Reads:** *100 Ways to Celebrate 100 Days*		**enVisionMath Program:** ***Optional*** - *Quick Check* *Practice Master* *Problem Solving* *Topic Test* **Informal Assessments:** White boards Anecdotal assessments Journals/Notebooks Frequent observations

1001 Things to Spot in the Sea *One Is a Snail, Ten Is a Crab*	

Vocabulary
Part, whole, add, sum, addition sentence, plus (+), equal sign (=), join, subtract, difference, subtraction sentence, subtraction sign/minus (-), separate, more, less, fewer, related, fact family, missing addend, compare

Unit/Timeframe: **Addition and Subtraction Strategies (Topics 2-3)***	**Grade Level: 2**
Approximately 4 weeks for conceptual unit **Topic 2**: Addition Strategies	

Additional Notes
***Please consider this as a part of a two-Topic unit. You may wish to be flexible with the sequence of the lessons and/or Topics throughout the unit (e.g. teaching lessons from within this unit – but from different Topics - together or in a different order).**

Content Standards	**2011 MA Curriculum Framework for Literacy**
2.OA.1: Use addition and subtraction within 100 to solve one- and two- step word problems. **2.OA.2**: Fluently add and subtract within 20 using mental strategies. *This topic only addresses through 20.	N/A

Essential Questions	Knowledge/Concepts	Skills
What are some strategies for solving addition problems?	Understand that order doesn't matter in addition. The whole amount can be on either side of an equation. Understand that a number does not change when adding 0. Understand how doubles facts can help you solve near doubles facts. Different understandings of addition and subtraction situations *See Table (*Common Addition and Subtraction Situations*) on **page 183** of Massachusetts Curriculum Framework. **Misconceptions**: Many children have misconceptions about the equal sign. Students can misunderstand the use of the equal sign even if they have proficient computational skills. 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. ***Do not teach key words in	**Students will be able to:** Make a ten as a strategy to add. Use doubles to add. Use near doubles to add. Draw a picture and write a number sentence for story problems. Add three numbers together. Fluently apply addition strategies.

	isolation…students need to have lots of experience in visualizing the context of the problem	
Common Resources		**Common Assessments**
enVisionMath Program: See *Math Background* 35A and 35B **Additional Resources:** Using 2 color counters Part-part-whole mats Unifix cubes or dominoes to model horizontal and vertical Rekenrek up to 20 120 Chart Math Literature Balance scale for equivalence and equal sign instruction Story Mats Number Lines Dice – both with dots and numerals Spinners Number cards for games Ten-frames WEB SITE: **AVMR Resources for Number Sense and Computation –** http://learn.district196.org/course/view.php?id=1482 **Math Reads:** *One Is a Snail, Ten Is a Crab* *Ten Friends*		**enVisionMath Program:** ***Optional*** *-* *Quick Check* *Practice Master* *Problem Solving* *Topic Test* **Informal Assessments:** White boards Anecdotal assessments Journals/Notebooks Frequent observations

Vocabulary
Doubles facts, near doubles, join, addition sentence, plus (+), equals, sum

Unit/Timeframe: **Addition and Subtraction Strategies (Topics 2-3)***	**Grade Level: 2**
Approximately 4 weeks for conceptual unit **Topic 3:** Subtraction Strategies	

Additional Notes

***Please consider this as a part of a two-Topic unit. You may wish to be flexible with the sequence of the lessons and/or Topics throughout the unit (e.g. teaching lessons from within this unit – but from different Topics - together or in a different order).**

Content Standards	2011 MA Curriculum Framework for Literacy
2.OA.1: Use addition and subtraction within 100 to solve one- and two- step word problems. **2.OA.2:** Fluently add and subtract within 20 using mental strategies. *This topic only addresses through 20.	N/A

Essential Questions	Knowledge/Concepts	Skills
What are some strategies for solving subtraction problems?	Understand that a value does not change when subtracting 0. Understand how addition facts help	**Students will be able to:** Use 10 as an anchor when subtracting

	you solve subtraction problems. Different understandings of addition and subtraction situations *See Table (*Common Addition and Subtraction Situations*) on **page 183** of Massachusetts Curriculum Framework. **Misconceptions**: In a subtraction sentence, the number representing the whole is always the largest – and the first number in the sentence.	Decompose numbers. Relate addition to subtraction. Draw a picture and write a number sentence for a story problem. Use number lines to subtract. Solve story problems with two questions. Use fact families to solve subtraction problems.
Common Resources		**Common Assessments**
enVisionMath Program: See *Math Background* 69A and 69B **Additional Resources:** Using 2 color counters Part-part-whole mats Unifix cubes or dominoes to model horizontal and vertical Rekenrek up to 20 120 Chart Math Literature Balance scale for equivalence and equal sign instruction Story Mats Number Lines Dice – both with dots and numerals		**enVisionMath Program:** ***Optional*** *-* *Quick Check* *Practice Master* *Problem Solving* *Topic Test* **Informal Assessments:** White boards Anecdotal assessments Journals/Notebooks Frequent observations

Spinners Number cards for games Ten-frames **Math Reads:** *1001 Things to Spot in the Sea* WEB SITE: **AVMR Resources for Number Sense and Computation –** http://learn.district196.org/course/view.php?id=1482	
Vocabulary	
No new vocabulary	

Unit/Timeframe: **Grouping and Place Value Patterns (Topics 4 & 5)*** Approximately 3 ½ weeks for conceptual unit **Topic 4:** Working with Equal Groups	**Grade Level: 2**
Additional Notes	
***Please consider this as a part of a two-Topic unit. You may wish to be flexible with the sequence of the lessons and/or Topics throughout the unit (e.g. teaching lessons from within this unit – but from different Topics - together or in a different order).**	

Content Standards		2011 MA Curriculum Framework for Literacy
2.OA.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. **2.OA.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.		N/A
Essential Questions	**Knowledge/Concepts**	**Skills**
What are the different strategies we use to represent repeated addition?	Understand that repeated addition is joining equal groups. Understand that skip counting can be used to solve repeated addition problems. Understand that an array is a way to model a repeated addition sentence. Understand that an array is one way to think about repeated addition. **Misconceptions:** Knowing rows vs. columns; the terms are often confused. Students may have trouble with word problems that entail both items and groups of items (e.g. 7 boxes of cookies with 12 cookies per box). Explicit instruction on this is important.	**Students will be able to:** Look at an array and write the repeated addition sentence to match. Build an array to match the repeated addition. Use repeated addition to solve word problems. Use a model to solve word problems.

Common Resources	Common Assessments
enVisionMath Program: See *Math Background* 99A and 99B **Additional Resources:** Arrays Using 2 color counters Part-part-part-whole mats Unifix cubes Color tiles 100 Chart Math Literature Story Mats Number Lines **Math Reads:** *100 Ways to Celebrate 100 Days* *1001 Things to Spot in the Sea* *The Five-Dog Night* *The King's Commissioners* *Math for All Seasons* WEB SITE: **AVMR Resources for Number Sense and Computation** http://learn.district196.org/course/view.php?id=1482	**enVisionMath Program:** ***Optional*** - *Quick Check* *Practice Master* *Problem Solving* *Topic Test* **Informal Assessments:** White boards Anecdotal assessments Journals/Notebooks Frequent observations
Vocabulary	
Array, equal groups, skip counting	

Unit/Timeframe: **Grouping and Place Value Patterns (Topics 4 & 5)***	**Grade Level: 2**
Approximately 3 ½ weeks for conceptual unit **Topic 5:** Place Value to 100	

Additional Notes

***Please consider this as a part of a two-Topic unit. You may wish to be flexible with the sequence of the lessons and/or Topics throughout the unit (e.g. teaching lessons from within this unit – but from different Topics - together or in a different order).**

Content Standards	**2011 MA Curriculum Framework for Literacy**
2.NBT.1: Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; **2.NBT.2:** Count within 1000; skip-count by 5s, 10s, and 100s. **2.NBT.3:** Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. **2.NBT.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. **2.NBT.5:** Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. **2.OA.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.	N/A

Essential Questions	**Knowledge/Concepts**	**Skills**
How can numbers to 100 be shown and compared?	Understand that the three digits of a three-digit number represent	**Students will be able to:**

	hundreds, tens, and ones - in a specific order. Understand how to use the 100 chart to add and subtract 10 in any row. Understand how to compare three-digit numbers using symbols. Understand how to use data from a chart to solve problems. **Misconception:** Knowing the correct sign for greater than and less than. Teachers should encourage reading the entire comparison as a statement.	Read and write numbers from zero to ninety-nine. Identify the number before and after a given number. Skip count 5, 10, 100. Look for patterns on the hundreds chart. Identify even and odd numbers.

Common Resources	**Common Assessments**
enVisionMath Program: See *Math Background* 121A and 121B **Additional Resources:** *Even Stephen and Odd Todd* (video online) Using 2 color counters Number word chart Base ten blocks Unifix cubes 100 Chart	**enVisionMath Program:** ***Optional*** - *Quick Check* *Practice Master* *Problem Solving* *Topic Test* **Informal Assessments:** White boards Anecdotal assessments Journals/Notebooks

Place value mat Math Literature Story Mats Number Lines Greater than less than symbol cards **Math Reads:** *100 Ways to Celebrate 100 Days* *Arithme-tickle* *Even Steven and Odd Todd* *A Fair Bear Share* *The King's Commissioners* *Missing Math* *My Little Sister Ate One Hare* WEB SITE: **AVMR Resources for Number Sense and Computation** http://learn.district196.org/course/view.php?id=1482	Frequent observations
Vocabulary	
Greater than (>), less than (<), equal to (=), digits, number word, word form, compare, odd, even, before, after, more, less, ten more, ten less,	

Unit/Timeframe: **Mental Addition and Subtraction Strategies (Topics 6-7)*** Approximately 5 weeks for conceptual unit **Topic 6:** Mental Addition	**Grade Level: 2**

Additional Notes

***Please consider this as a part of a two-Topic unit. You may wish to be flexible with the sequence of the lessons and/or Topics throughout the unit (e.g. teaching lessons from within this unit – but from different Topics - together or in a different order).**

Content Standards	**2011 MA Curriculum Framework for Literacy**
2.OA.2: Fluently add and subtract within 20 using mental strategies. **2.NBT.2:** Count within 1,000; skip-count by 5's, 10's, and 100's **2.NBT.5**: Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction **2.OA.8:** Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.	N/A

Essential Questions	**Knowledge/Concepts**	**Skills**
How can sums be determined in your head?	Understand that strategies for basic facts and most algorithms for operations use equivalence to transform calculations into simpler ones. Understand that adding tens is like adding ones. Understand that two-digit addition	**Students will be able to:** Mentally add multiples of 10 to a two-digit number. Mentally add a one-digit number to a two-digit number. Use a 100 chart to add two-digit numbers.

	may require renaming 10 ones as 1 ten. Understand how two-digit numbers can be broken apart by place value and added in different ways. Understand how numbers on a 100 chart can help us to add by seeing patterns that enable mental math and bolster number sense. **Misconceptions**: Both place values don't always change when you add two-digit numbers. There is no one "correct" mental addition strategy.	Break apart two-digit numbers by place value to add.
Common Resources		**Common Assessments**
enVisionMath Program: See *Math Background* 155A and 155B **Additional Resources:** Using 2 color counters Part-part-whole mats Unifix cubes or dominoes to model horizontal and vertical Rekenrek up to 20 100 Chart		**enVisionMath Program:** ***Optional*** - *Quick Check* *Practice Master* *Problem Solving* *Topic Test* **Informal Assessments:** White boards Anecdotal assessments Journals/Notebooks

Math Literature Balance scale for equivalence and equal sign instruction Story Mats Number Lines Dice – both with dots and numerals Spinners Number cards for games Ten-frames **Math Reads:** *A Fair Bear Share* *The King's Commissioners* *Missing Math* WEB SITE: **AVMR Resources for Number Sense and Computation –** http://learn.district196.org/course/view.php?id=1482	Frequent observations
Vocabulary	
Mental math, next ten, tens digit	

Unit/Timeframe: **Mental Addition and Subtraction Strategies (Topics 6-7)*** Approximately 5 weeks for conceptual unit **Topic 7:** Mental Subtraction	**Grade Level: 2**

Additional Notes

***Please consider this as a part of a two-Topic unit. You may wish to be flexible with the sequence of the lessons and/or Topics throughout the unit (e.g. teaching lessons from within this unit – but from different Topics - together or in a different order).**

Content Standards	**2011 MA Curriculum Framework for Literacy**
2.OA.2: Fluently add and subtract within 20 using mental strategies. **2.NBT.2:** Count within 1,000; skip-count by 5's, 10's, and 100's **2.NBT.5**: Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction **2.OA.8:** Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.	N/A

Essential Questions	**Knowledge/Concepts**	**Skills**
How can differences be determined in your head?	Understand that strategies for basic facts and most algorithms for operations use equivalence to transform calculations into simpler ones. Understand that subtracting tens is like subtracting ones. Understand subtraction as an unknown	**Students will be able to:** Mentally subtract multiples of 10 from a two-digit number. Count up by place value (starting with the ones place before the tens place) to find a difference. Use a 100 chart to subtract two-digit

	addend. Understand how numbers on a 100 chart can help us to subtract by seeing patterns that enable mental math and bolster number sense. Understand that some problems have data missing that is needed to find the answer, and some problems have extra data not needed to solve the problem. **Misconceptions**: Both place values don't always change when you add two-digit numbers. There is no one "correct" mental addition strategy.	numbers. Determine whether or not a problem give them enough information to be solved. Determine if some information in a problem is not needed to come to a solution.
Common Resources		**Common Assessments**
enVisionMath Program: See *Math Background* 185A and 185B **Additional Resources:** Using 2 color counters Part-part-whole mats Unifix cubes or dominoes to model horizontal and vertical		**enVisionMath Program:** ***Optional*** - *Quick Check* *Practice Master* *Problem Solving* *Topic Test* **Informal Assessments:**

Rekenrek up to 20 100 Chart Math Literature Balance scale for equivalence and equal sign instruction Story Mats Number Lines Dice – both with dots and numerals Spinners Number cards for games Ten-frames **Math Reads:** N/A WEB SITE: **AVMR Resources for Number Sense and Computation –** http://learn.district196.org/course/view.php?id=1482	White boards Anecdotal assessments Journals/Notebooks Frequent observations
Vocabulary	
No new vocabulary	

Unit/Timeframe: **Adding and Subtracting Two-Digit Numbers (Topics 8 & 9)*** Approximately 7 weeks for conceptual unit **Topic 8:** Adding Two-Digit Numbers	**Grade Level: 2**

Additional Notes

***Please consider this as a part of a two-Topic unit. You may wish to be flexible with the sequence of the lessons and/or Topics throughout the unit (e.g. teaching lessons from within this unit – but from different Topics - together or in a different order).**

- Skip Lesson **8-8**

Content Standards	**2011 MA Curriculum Framework for Literacy**
2.NBT.5: Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. **2.NBT.6:** Add up to four two-digit numbers using strategies based on place value and properties of operations. **2.MD.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.	N/A

Essential Questions	**Knowledge/Concepts**	**Skills**
What are some strategies for solving two-digit addition problems?	Understand base-ten place value. Understand that regrouping is taking ten ones and replacing it with one ten and so on. Understand that adding starts on the right.	**Students will be able to:** Add up to four two-digit numbers with and without regrouping. Use a number line to add Use strategies to add up to four two-digit

	Misconception: Knowing what regrouping a ten or more than one ten actually is. Knowing where to start the addition problem (left to right or right to left) Where to put the plus sign when writing vertical problem. Lining up the vertical problem using place value.	numbers.
Common Resources		**Common Assessments**
enVisionMath Program: See *Math Background* 211A and 211B **Additional Resources:** *(game)Close to 100* http://www.westbranch.k12.oh.us *Race to 50…100* Number word chart Base ten blocks Unifix cubes 100 Chart Place value mat Math Literature Story Mats Number Lines		**enVisionMath Program:** ***Optional*** *-* *Quick Check* *Practice Master* *Problem Solving* *Topic Test* **Informal Assessments:** White boards Anecdotal assessments Journals/Notebooks Frequent observations

Math Reads: *Centipede's 100 Shoes* *A Fair Bear Share* *Missing Math*	
Vocabulary	
Regroup, number line	

Unit/Timeframe: **Adding and Subtracting Two-Digit Numbers (Topics 8 & 9)***	**Grade Level: 2**
Approximately 7 weeks for conceptual unit **Topic 9:** Subtracting Two-Digit Numbers	
Additional Notes	
***Please consider this as a part of a two-Topic unit. You may wish to be flexible with the sequence of the lessons and/or Topics throughout the unit (e.g. teaching lessons from within this unit – but from different Topics - together or in a different order).** • Skip Lesson **9-8**	
Content Standards	**2011 MA Curriculum Framework for Literacy**
2.NBT.5: Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. **2.MD.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.	N/A

Essential Questions	Knowledge/Concepts	Skills
What is the standard procedure for subtracting two-digit numbers?	Understand how to break up a ten to make ten ones. Understand place value and when to regroup when subtracting. Understand the inverse relationship between addition and subtraction. Understand that the answer to one problem is needed to find the answer to another problem. **Misconception:** Knowing *when* to regroup… Children have difficulty with the second problem in a multi-step problem by not using the information from the first problem.	**Students will be able to:** Use addition to check a subtraction problem. Subtract two-digit numbers with and without regrouping. Solve two question problems with addition and subtraction.
Common Resources		**Common Assessments**
enVisionMath Program: See *Math Background* 253A and 253B **Additional Resources:** Game: Race to Zero		**enVisionMath Program:** ***Optional*** - *Quick Check* *Practice Master* *Problem Solving* *Topic Test*

https://www.eduplace.com Using 2 color counters Number word chart Part-part-whole mat Base ten blocks Unifix cubes 100 Chart Place value mat Math Literature Story Mats Number Line **Math Reads:** N/A	**Informal Assessments:** White boards Anecdotal assessments Journals/Notebooks Frequent observations
Vocabulary	
Regroup, subtract, subtraction sentence, next ten, mental math	

Unit/Timeframe: **Topic 10:** Place Value to 1,000 Approximately 2 weeks	**Grade Level: 2**
Content Standards	**2011 MA Curriculum Framework for Literacy**
2.NBT.1: Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones **2.NBT.1b**: 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).	N/A

2.NBT.2: Count within 1000; skip-count by 5s, 10s, and 100s. **2.NBT.3:** Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. **2.NBT.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. **2.NBT.8:** Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900		
Essential Questions	**Knowledge/Concepts**	**Skills**
What number patterns are helpful in reading, representing, and writing numbers to 1,000?	Understand that numbers can be used for different purposes and can be classified and represented in different ways. Adding or subtracting hundreds or tens is similar to adding or subtracting single-digit numbers. We can compare and order numbers using various resources (e.g. number line and 100 Chart), symbols/expressions, and objects. **Misconceptions**: Some students may have trouble learning and applying the comparison symbols. Some students don't remember which place value to analyze when comparing the values of digits.	**Students will be able to :** Compare three-digit numbers using the <, >, and = symbols. Order three-digit numbers from least to greatest and greatest to least. Find, identify, and apply number patterns to numbers on a hundreds chart. Solve problems by finding number patterns. Identify and record three-digit numbers in expanded form, standard form, and number word form.

Common Resources	Common Assessments
enVisionMath Program: See *Math Background* 295A and 295B **Additional Resources:** Math Literature Forward counting games Backward counting games Sequencing numbers games – Ex. – Treasure Hunt and Number Tracks 100 Chart Number lines Base-ten blocks Unifix cubes **Math Reads:** *My Little Sister Ate One Hare* *Six-Dinner Sid: A Highland Adventure* *Tyrannosaurus Math* WEB SITE: **AVMR Resources for Number Sense and Computation –** http://learn.district196.org/course/view.php?id=1482	**enVisionMath Program:** ***Optional*** *-* *Quick Check* *Practice Master* *Problem Solving* *Topic Test* **Informal Assessments:** White boards Anecdotal assessments Journals/Notebooks Frequent observations

Vocabulary
Expanded form, standard form, number word, number form, greater than, less than, hundreds, thousands, compare, order, base-ten blocks

Unit/Timeframe: Approximately 1 ½ weeks	**Topic 11:** Three-Digit Addition & Subtraction	**Grade Level: 2**

Additional Notes

- **Lessons 11-1, 11-2, & 11-5**, entail sophisticated addition and subtraction strategies that may not be appropriate to teach in the given order. Developmentally, these concepts may be more realistic for Grade 3 – or as an extension/enrichment lesson. Teachers should consider omitting them.
- Supplement with additional lessons using base-ten models before going into the main lessons, which emphasize the standard algorithm
- Fluency with the standard algorithm for adding and subtracting three-digit numbers is **not expected until Grade 4**. In order to develop conceptual understanding, emphasis in Grades 2 and 3 should be on strategies related to properties of operations, place value, and the relationship between addition and subtraction.
- Consider supplementing **Lesson 11-9** with simpler place value number riddles. Students often find this lesson frustrating, due to the complexity.

Content Standards	**2011 MA Curriculum Framework for Literacy**
2.NBT.7: 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.9:** Explain why addition and subtraction strategies work, using place value and the properties of operations.	N/A

Essential Questions	**Knowledge/Concepts**	**Skills**
How do I add and subtract three-digit numbers?	Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and	**Students will be able to:**

	hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds. **Misconceptions**: The standard algorithm is not a trick. Students need a strong foundation in adding and subtracting with place-value models in order to make the connection to the algorithm.	Use place value blocks to add and subtract 2 three-digit numbers with and without regrouping. Use paper and pencil to add and subtract 2 three-digit numbers with and without regrouping. Use clues to reason about number riddles.
Common Resources		**Common Assessments**
enVisionMath Program: See *Math Background* 337A and 337B **Additional Resources:** 100 Chart Number lines Base-ten blocks Unifix cubes Place value mats **Math Reads:** *Centipede's 100 Shoes* WEB SITE: **AVMR Resources for Number Sense and Computation –** http://learn.district196.org/course/view.php?id=1482		**enVisionMath Program:** ***Optional*** - *Quick Check* *Practice Master* *Problem Solving* *Topic Test* **Informal Assessments:** White boards Anecdotal assessments Journals/Notebooks Frequent observations

Vocabulary
No new vocabulary

Unit/Timeframe: **Money (Topics 13 & 14)***	**Grade Level: 2**
Approximately 2 weeks for conceptual unit **Topic 13:** Counting Money	

Additional Notes

***Please consider this as a part of a two-Topic unit. You may wish to be flexible with the sequence of the lessons and/or Topics throughout the unit (e.g. teaching lessons from within this unit – but from different Topics - together or in a different order).**

- The half-dollar and the dollar coins <u>are not</u> explicitly part of the standard.

Content Standards	**2011 MA Curriculum Framework for Literacy**
2.MD.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?	N/A

Essential Questions	**Knowledge/Concepts**	**Skills**
How can money amounts be counted in different ways?	Understand that there are more efficient ways to count bills and coins. Understand that different groups of coins can add up to the same amount.	**Students will be able to:** Identify the names and values of dollar bills quarters, dimes, nickels, and pennies.

	Misconceptions: The size of a coin does not indicate its value. Students often place the $ after the value (ex. 4$, rather than $4) due to the way it is read.	Count mixed groups of coins. Use a list to organize equivalence. Use the $ and ¢ symbols appropriately.
Common Resources		**Common Assessments**
enVisionMath Program: See *Math Background* 417A and 417B **Additional Resources:** Play money/Real money/Magnetic money 100 Chart Number lines Price tags Money Flash Cards Memory Matching Games *Money Bingo* Value charts and posters Math Literature/Trade books **Math Reads:** *100 Ways to Celebrate 100 Days* *How the Second Grade Got $8,205.50 to Visit the Statue of Liberty* *Start Saving, Henry!*		**enVisionMath Program:** ***Optional*** *-* *Quick Check* *Practice Master* *Problem Solving* *Topic Test* **Informal Assessments:** White boards Anecdotal assessments Journals/Notebooks Frequent observations

Vocabulary
Dollar bill, quarter, dime, nickel, penny, greatest value, least value, tally marks, dollar sign, cent sign, coin, value, organized list, decimal point

Unit/Timeframe: **Money (Topics 13 & 14)***	**Grade Level: 2**
Approximately 2 weeks for conceptual unit **Topic 14:** Money	

Additional Notes
***Please consider this as a part of a two-Topic unit. You may wish to be flexible with the sequence of the lessons and/or Topics throughout the unit (e.g. teaching lessons from within this unit – but from different Topics - together or in a different order).**

Content Standards	**2011 MA Curriculum Framework for Literacy**
2.MD.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?	N/A

Essential Questions	**Knowledge/Concepts**	**Skills**
What are the standard procedures for adding and subtracting two-digit coin amounts?	Understand that using operations with money is the same as with whole numbers. Understand why we always round **up** when working with money.	**Students will be able to:** Add and subtract 2-digit coin amounts. Estimate sums and differences of money (2-digit coin values).

	Misconceptions: Students often forget to record the cent symbol. Subtraction *must* begin with the larger value; students can just pick any value to start with. Students shouldn't round to the closest 10, but should always round up.	Solve real-life problems involving money. Use the $ and ¢ symbols appropriately.
Common Resources		**Common Assessments**
enVisionMath Program: See *Math Background* 443A and 443B **Additional Resources:** Play money/Real money/Magnetic money 100 Chart Number lines Price tags Money Flash Cards Memory Matching Games *Money Bingo* Value charts and posters Math Literature/Trade books **Math Reads:** *How the Second Grade Got $8,205.50 to Visit the Statue of Liberty*		**enVisionMath Program:** ***Optional*** - *Quick Check* *Practice Master* *Problem Solving* *Topic Test* **Informal Assessments:** White boards Anecdotal assessments Journals/Notebooks Frequent observations

Start Saving, Henry!	
Vocabulary	
Estimate, rounding up	

Unit/Timeframe: Approximately 2 weeks	**Topic 15: Measuring Length**	**Grade Level: 2**

Additional Notes

- **Lesson 15-1** is optional; it deals with non-standard measurement, which is not a part of the 2nd Grade curriculum.
- Rulers with inches and centimeters and a meter stick are needed.
- Use the front of 15-6 newspaper with paper clips as an optional activity.
- Do the front of 15-9 together and then put in a center.

Content Standards	**2011 MA Curriculum Framework for Literacy**
2.MD.1: Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. **2.MD.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. **2.MD.3:** Estimate lengths using units of inches, feet, centimeters, and meters. **2.MD.4:** Measure to determine how much longer one object is than another,	N/A

expressing the length difference in terms of a standard length unit. **2.MD.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.		
Essential Questions	**Knowledge/Concepts**	**Skills**
How can I use tools to measure the lengths of objects?	Understand that the length of any object can be used as a measurement unit for length, but a standard unit (e.g. centimeter) is always the same length. Understand how the type of units (e.g. centimeters vs. inches) impacts the final measurement. Understand that the lengths of two objects can be compared by subtracting to find the difference. Understand that using operations with units of measure is the same as with whole numbers. **Misconceptions**: Students need to have a lot of clarification/instruction on how to use different types of rulers. Consider showing only a portion of a	**Students will be able to:** Estimate and measure in inches, feet, and yards. Estimate and measure in centimeters and meters. Compare lengths. Add and subtract measurements.

	ruler, in order demonstrate that the endpoint is the focus of the measuring process.	
Common Resources		**Common Assessments**
enVisionMath Program: See *Math Background* 465A and 465B **Additional Resources:** Yarn/string Rulers (inches and cm) Meter stick Yard stick Tape measure Classroom objects to measure Math Literature/Trade books **Math Reads:** *How Big Is a Foot?* *Math for All Seasons* *Measuring Penny* *Tyrannosaurus Math*		**enVisionMath Program:** ***Optional*** *-* *Quick Check* *Practice Master* *Problem Solving* *Topic Test* **Informal Assessments:** White boards Anecdotal assessments Journals/Notebooks Frequent observations
Vocabulary		
Distance around (i.e. perimeter), unit, inch (in.), foot (ft.), yard (yd.), length, width, centimeter (cm), meter (m), height, nearest inch, nearest centimeter		

Unit/Timeframe: Approximately 1.5 weeks	**Special Topic: Relationships of Time**	**Grade Level: 2**

Additional Notes

- This is a Massachusetts-specific standard, and is not included in the enVisionMath program.
- Incorporating topic 16-1 and 16-2

Content Standards	**2011 MA Curriculum Framework for Literacy**
2.MD.Ma.7: Know the relationships of time, including seconds in a minute; minutes in an hour; hours in a day; days in a week, a month, and a year; and weeks in a month and a year.	N/A

Essential Questions	**Knowledge/Concepts**	**Skills**
How can time be represented in different ways?	Understand that time can be measured with various units, and that there is equivalence among units. Understand the hour hand needs to be on the hour or between that hour and the next hour. **Misconceptions**: Students mistake the minute and hour hand. Students often get confused about	**Students will be able to:** Tell time in 5 minute intervals. Tell time before and after the hour. Make the following conversions – Seconds-minutes Minutes-hours Hours-one day Days-week Days-one month Days-one year

	expressing time as before or after the hour. Students often get confused about which day of the week is the first one. Students sometimes mix up the terms *days* and *dates*. Students often get confused about which month of the year is the first one (because of the school calendar).	Weeks-one year Months-one year
Common Resources		**Common Assessments**
Additional Resources: Special Topic Unit (pdf) – see attached Calendars Clocks Daily schedules **Math Reads:** *100 Ways to Celebrate 100 Days* *Six-Dinner Sid: A Highland Adventure*		**Informal Assessments:** White boards Anecdotal assessments Journals/Notebooks Frequent observations
Vocabulary		
Analog clock, digital clock, second, minute hand, minute, hour hand, hour, half hour, A.M., P.M., quarter past, half past, quarter to, day, week, month, year		

Unit/Timeframe: Approximately 1 ½ weeks	**Topic 16:** Time, Graphs, & Data	**Grade Level: 2**

Additional Notes

- Please note that 2.MD.10 specifies the use of a *single-unit scale* for reading graphs, however the enVisionMath materials include scaled units in their keys. This is unnecessary to teach.

Content Standards	**2011 MA Curriculum Framework for Literacy**
2.MD.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. **2.MD.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.	N/A

Essential Questions	**Knowledge/Concepts**	**Skills**
How can data be organized in different ways?	Understand that data can be organized in different ways. Understand that lengths of objects can be organized in different ways. Understand that there are various types of graphs that can be used to represent data.	**Students will be able to:** Represent data using various graphs. Use pictographs and bar graphs to solve problems.

	Misconceptions: Students get confused on how to interpret a line plot correctly. Students are confused when it comes to creating a bar graph.	
Common Resources		**Common Assessments**
enVisionMath Program: See *Math Background* 507A and 507B **Additional Resources:** Inch ruler Classroom objects Connecting cubes 2 color counters Cups Unit cubes **Math Reads:** *The Great Graph Contest* *One World, One Day*		**enVisionMath Program:** ***Optional*** *-* *Quick Check* *Practice Master* *Problem Solving* *Topic Test* **Informal Assessments:** White boards Anecdotal assessments Journals/Notebooks Frequent observations
Vocabulary		
Bar graph, data, line plot, symbol, pictograph, key, title, labels		

Unit/Timeframe: Approximately 2 weeks	**Topic 12:** Geometry	**Grade Level:2**

Additional Notes

- There is an error in the Teacher's Edition regarding vertices; a cone has no vertex.
- In order to divide a rectangle into equal pieces, students should use vertical and horizontal lines. Though two diagonal lines can technically create four equal pieces, a student can only prove this through by comparing areas– which is not covered in this grade level.

Content Standards	**2011 MA Curriculum Framework for Literacy**
2.G.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. **2.G.2:** Partition a rectangle into rows and columns of same-size squares and count to find the total number of them. **2.G.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.	N/A

Essential Questions	**Knowledge/Concepts**	**Skills**
How can shapes and solids be described, compared, and used to make other shapes?	Understand that some shapes can be decomposed into other shapes. Understand that three-dimensional shapes have length, width, and height.	**Students will be able to:** Identify the plane shapes that form the flat surfaces of a solid figure.

	Understand that equal shares of identical wholes need not have the same shape **Misconceptions:** Students believe that a cone has a vertex when it does not. Confuse plane figures vs. solid figures. In order to create true fractional amounts (e.g. thirds), all of the pieces need to be equal; uneven groupings/splits do not produce actual fractions.	Identify and draw polygons and list their attributes. Make different shapes from a large shape by drawing horizontal, diagonal, and vertical lines in different places. Relate plane shapes to solid figures. Partition circles and rectangles into two, three, or four equal shares. Use the terms *halves*, *thirds*, *half of*, *a third of*, etc.

Common Resources	Common Assessments
enVisionMath Program: See *Math Background* 379A and 379B **Additional Resources:** Magformers 3-D Shapes (solid figures and everyday objects) Pattern blocks Attribute blocks Math Literature/Trade books Ex. – *Round as a Moon Cake*, *Buildings*, *The Greedy Triangle*, *The Shape Shifter* Geoboards Tangrams	**enVisionMath Program:** ***Optional*** *-* *Quick Check* *Practice Master* *Problem Solving* *Topic Test* **Informal Assessments:** White boards Anecdotal assessments Journals/Notebooks Frequent observations

Fraction towers, tiles, strips, circles, etc. **Math Reads:** *Bees, Snails & Peacock Tails* *Full House* *Mailing May*	
Vocabulary	
Sphere, pyramid, cylinder, cone, cube, rectangular, prism, solid figure, flat surface, face, edge, vertex (vertices), plane shapes, circle, square, triangle, rectangle, polygon, angle, side, quadrilateral, pentagon, hexagon, trapezoid, parallelogram, rows, columns, equal, unequal, halves, thirds, fourths	