Enduring Understandings	Essential Questions	Standards	Timeline	Notes and Resources including Math Practices, Fact Fluency Map* and additional information.
Unit 1 Addition and Subtraction within 20 Resource: MX Unit 1				
• Numbers are related to each other. • Knowing the solution to one equation can help us know the answer to a related problem. • Number can be decomposed to make them easier to combine. • Addition facts have related subtraction facts. • Addition equations can have more than two addends and these can be grouped and added in any order. • Addition and subtraction is facilitated by mentally making groups of ten.	1. What strategies can help us become fluent with math facts? 2. How are addition and subtraction related? 3. How can I use the properties of addition to help me add three or more numbers? 4. How can making groups of ten help me to add and subtract numbers fluently?	OA.1 Use Addition and subtraction to solve problems with in 100 OA.2 Fluently add and subtract with 20 using mental strategies. OA.3 Identify numbers as odd or even. NBT.5 Fluently add and subtract with 100 using strategies based on place value, properties of operations, and the relationship between addition and subtraction. NBT.6 add up to 4 2 digit numbers NBT.9 Explain why addition and subtraction strategies work.	21 lessons 29 days Beg. Sept- Mid Oct.	**Math Practices Focus** 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 6. Attend to precision. 7. Look for and make use of structure. **Tier I Correlation** Lessons 8-11 fact strategies Lessons 16 Odd Even **Fact Focus**: Facts to 10 review including switch partners, count on from highest number, 5 groups, doubles, near doubles and partners of ten. **Fact Fluency:** Assess facts to 10 • Supplement with work on money to reinforce addition. Start with a review of nickels, dimes and pennies. Discuss how to represent values with coin combinations. This can be part of daily routine using calendar date as number to represent with coins.. • Use Daily routines during Unit 1+2

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				Tier 1 Lesson 85 Nickels, dimes, pennies
Enduring Understandings	Essential Questions	Standards	Timeline	Notes and Resources
Unit 2 Addition within 200 (includes money) Resource; MX Unit 2				
- There are many ways to solve addition problems. Some are more efficient than others. - Place value can help us add larger numbers. - There are patterns in numbers that allow us to easily add and subtract 10 or multiples of ten.	1. What strategies can we use to add larger numbers? 2. How can place value help us add larger numbers? 3. Why is it easy to add and subtract decade numbers?	OA.1 Use Addition and subtraction to solve problems with in 100 OA.2 Fluently add and subtract with 20 using mental strategies. OA 3 Identify numbers as odd or even. NBT 1 Understand the digit of a 3 digit number NBT2 Count with 1000 by 1s, 5s, 10s NBT 3 Read and write numbers to 1000 NBT 4 Compare 2 three digit numbers NBT 5 Fluently add and subtract with 100 NBT 6 Add up to 4 2 digit numbers NBT 7 Add and subtract within 1000 NBT 8 Mentally add 10 or 100 to a given number NBT 9 Explain why addition and subtraction strategies work	15 lessons 23 days Mid Oct. – Mid Nov.	Math Practice Focus 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 6. Attend to precision. 7. Look for and make use of structure. **Fact Focus:** Addition Doubles to 20 (even numbers), 10 +n and multiples of 10 + n, Make a ten strategy with 9s. **Fact Fluency:** Assess facts to 10, doubles to 20. Notes: **Allow students to invent ways to add larger numbers** before introducing the algorithms. Use math talk to share strategies. Facilitate so students understand others' strategies. Look for similarities. - Teach students to use the open numberline for addition. - Quarters can be introduced. Adding combinations of coins like a quarter and 2 dimes will fit in with two-digit addition **Tier 1 Correlation** Lessons 19-35 Place Value

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				Lessons 36-38 and 46-51 Multi-digit addition
Enduring Understandings	Essential Questions	Standards	Timeline	Notes and Resources
Unit 3 Length and Shapes Resource: MX Unit 3				
• Shapes can be defined by their attributes. Some attributes are more important than others. • Shapes can be divided into equal shares in many ways. • The length measurement of an object is the number of same size length units that span it with no gaps or overlaps. • The larger unit lengths will result in a smaller measurement and vice versa.	1. How are shapes with the same name alike and how are they different? 2. How can we break shapes into equal shares and what are these shapes called? 3. How do we measure length? 4. How does the unit length affect the measurement of an object?	NBT 4 Compare three digit numbers NBT.5 Fluently add and subtract with 100 using strategies based on place value, properties of operations, and the relationship between addition and subtraction. NBT 6 Add up to 4 two digit numbers MD 1 Measure the length of an object. MD 2 Measure the length of an object twice, using length units of different lengths… describe how the measurement relates to the size of the unit chosen. MD 4 Measure to determine how much longer one object is… MD 5 Use addition and subtraction within 100 to solve word problems involving lengths MD 9 Generate measurement data by measuring lengths …Show the measurements by making a line plot.	9 lessons 16 days End of Nov. thru end of Dec.	**Math Practice Focus** 5. Use appropriate tools strategically. 6. Attend to precision. **Fact Focus**: Near Doubles (2+3, 3+4, 4+5, 5+6, 6+7, 7+8, 8+9), review 9+ facts **Fact Fluency:** Assess near doubles, and 9+2, 9+3, 9+4, 9+5. Can supplement with Tier 1 materials or do a measurement project for the holidays. **Tier I Correlation** Lesson 66-78 Measure and estimate length Lesson 79-80 Problem solving with length Lesson 92 Data line plots

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		G 1 Recognize and draw shapes having specified attributes, identify triangles, quadrilaterals, pentagons, hexagons, and cubes.		
Enduring Understandings	Essential Questions	Standards	Timeline	Notes and Resources
Unit 4a (Part 1) Subtract 2 digit numbers. Resource: MX Unit 4				
• We subtract to find the difference between two numbers • Place value can help us subtract. • Sometimes it is necessary to represent numbers in a different way to make it easier to subtract (ungroup tens and ones) • We can check subtraction solutions with addition because they are inverse operations.	1. When do we use subtractions? 2. How can place value help us subtract larger numbers? 3. How can do we know when to ungroup hundreds and tens to subtract? 4. How do I know if a subtraction answer is correct?	OA.1 Use Addition and subtraction to solve problems with in 100 NBT 1 Understand the digits of a 3 digit number NBT 5 Fluently add and subtract with 100 using strategies based on place value, properties of operations, and the relationship between addition/subtraction. NBT 7 Add and subtract within 1000 NBT 8 Mentally add or subtract 10 or 100 to a given number MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. MA. 7.a 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.	11 lessons 17 days Beg. Jan thru end Jan.	Math Practices (see Unit 2) • Eliminate Lesson 1 and 2 (Time and Money) • Allow student to solve subtraction word problems with larger numbers by inventing strategies before teaching any algorithms. Teach Subtraction in this order: • 2 digit – 2 digit • 3 digit – 2 digit • 100 -- 2 digit • 200 – 2 digit • zeros in the tens and ones place Also eliminate lesson 8 and 10. **Fact Focus:** Make a ten strategy for sums larger than ten. Study remaining facts (see below), and their switch partners.

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| | | MD 8   Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately | | **Fact Fluency:** Assess 7+4, 7+5, 7+6, 7+9, 8+3, 8+4, 8+5, 8+6, 8+7. (note some are near doubles). |
| | | | | Tier 1 Correlation Lesson 39-45 2 digit subtraction |

Midyear Test / Analysis / Intervention

Unit 4b.   Part 2 Word Problems
Resource: MX Unit 4 Lesson 4.12-4.19

Enduring Understandings	Essential Questions	Standards	Timeline	Notes and Resources
• To solve problems you need to make sense of them. • There can be different strategies to solve a problem. Some are more effective and efficient than others are. • Problem solving requires perseverance. • Problems solutions should be evaluated to determine if they are reasonable.	1. How do I know where to begin when solving a problem? 2. How do I decide what strategy will work best? 3. What do I do when I get stuck? 4. How do I know when a result is reasonable?	OA.1 Use addition and subtraction to solve problems with in 100 OA.2 Fluently add and subtract with 20 using mental strategies. OA.3 Identify numbers as odd or even. NBT 1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones NBT 2 Count within 1000; skip-count by 5s, 10s, and 100s. . 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. NBT 6 Add up to four two-digit numbers using strategies based on place value and properties of operations.	8 lessons 15 days February	**Math Practices** 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 6. Attend to precision. Notes • Eliminate lesson 15 **Fact Focus:** Subtraction facts within 10. Note-Review subtraction as difference noticing "one apart" and "two apart" facts and as inverse of addition so 10-4 can be thought of as 4+___=10. **Fact Fluency:** Assess subset of subtraction facts to 10 (to include -1, -2, doubles, one aparts, two aparts)

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		NBT 7 Add and subtract within 1000. 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. NBT 9 Explain why addition and subtraction strategies work.		**Tier I Correlation** Lesson 5-7 Word Problems and multi-step Lesson 13-14 Subtraction fact strategies.
Enduring Understandings	Essential Questions	Standards	Timeline	Notes and Resources
Unit 5 Time, Graphs, and Word Problems Resource: MX Unit 5				
• Time is measured in many different size units. • We can use graphs to organize information and make comparisons. • We can use models to solve comparison problems.	1. How do we measure time? 2. How can we use pictures to make numerical information easy to interpret? 3. What models can we use to represent problems involving comparisons	OA 1 Use addition and subtraction within 100 to solve one- and two-step word problems MD 7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. MA 7.a. 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. 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	11 lessons 20 days March	**Math Practices** 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. **Fact Focus:** Review partners of 10 for subtraction (10-n). Subtraction doubles to 20 (4-2, 6-3, 8-4, 10-5, 12-6, 14-7, 16-8, 18-9, 20-10). **Fact Fluency:** All subtraction facts to 10 Subtraction doubles to 20.

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		problems,[1] using information presented in graph.		The language used in some comparison problems very difficult for students to understand. **Tier 1 Correlation** Lessons 81-84 Time Lesson 94-98 Graphs
Unit 6 Arrays, Equal Shares, Adding or Subtracting Lengths **Resource: MX Unit 7 (Skip Unit 6)**
• Arrays are a way of representing both repeated addition and skip counting. • Arrays should be identified in rows and then columns.	1. How is repeated addition related to kip counting. 2. How are arrays and repeated addition related? 3. How can we a model repeated addition equation with an array?	OA.1 Use addition and subtraction to solve problems with in 100 OA 3 Determine whether a group of objects (up to 20) has an odd or even number of members OA 4 Use addition to find the total number of objects arranged in rectangular arrays NBT.5 Fluently add and subtract within 100 NBT.6 Add up to four two-digit numbers MD 1 Measure the length of an object MD 5 Use addition and subtraction within 100 to solve word problems involving lengths,	6 lessons 15 days early April to late April	**Math Practices** 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 5. Use appropriate tools strategically. 6. Attend to precision. **Notes:** • Lesson 1 is too difficult. Start with lesson 2. • Use open number lines instead of one in the book. • Supplement with Tier 1 materials.

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[1] See Glossary, Table 1.

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| | | MD 6 Represent whole numbers as lengths from 0 on a number line diagram
G 1 Recognize and draw shapes having specified attributes… Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
G 2 Partition a rectangle into rows and columns of same-size squares
G 3 Partition circles and rectangles into two, three, or four equal shares, Recognize that equal shares of identical wholes need not have the same shape. | | Lesson 104-108 Arrays and partitioning

Tier 1 Correlation
Lessons 104-108 Partition Rectangles
Lesson79-80   Solve problems involving length. |
| | | | | **Fact Focus:** n – 9 where n>10 (17-9, 16-9, 15-9, 14-9, 13-9, 12-9, 11-9)

Fact Fluency: 15-9, 14-9, 13-9, 12-9, 11-9 |

| **Unit 7   Three-digit Addition and Subtraction** |
| **Go back to MX Unit 6** |

• There are many ways to solve addition problems. Some are more efficient than others. • Place value can help us add larger numbers. • There are patterns in numbers that allow us to easily add and subtract 10 or multiples of ten.	1. How do I add and subtract larger numbers? 2. How can place value help me add and subtract larger numbers?	NBT 1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; NBT 2 Count within 1000; skip-count by 5s, 10s, and 100s. NBT 3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. 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. NBT 5 Fluently add and subtract within 100 using strategies based on place value, properties of operations,	15 lessons 22 days early May June	**Math Practices** 6. Attend to precision 7. Make use of structure Fact focus: Partners of 11, 12, 13 Fact Fluency: All subtraction facts **Tier I Correlation** Lesson 53-65 3 digit addition and subtraction

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		and/or the relationship between addition and subtraction. NBT 7 Add and subtract within 1000 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. NBT 9 Explain why addition and subtraction strategies work, using place value and the properties of operations MD 8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately		
Review and End of Year Testing			**Early to Mid June**	

Second Grade Fact Fluency Program

Summary of Initiative   There is a distinction between solving facts using strategies and obtaining fact fluency.   We need to be working on both. To this end, SPECIFIC FACTS WILL BE A FOCUS during each unit. These facts will be studied in classrooms for patterns and common structure. There has been an effort to assign facts to each unit that correspond to content whenever possible.   Students will be accountable to "know" these facts by the end of the unit following their study. During this follow up they will be sent home and practiced like spelling words. It is suggested that each student have a set of flashcards, kept at school. Every two weeks or at the end of each unit the FOCUS FACTS will be sent home to practice. Parents should keep flash cards in a bag or box at home and continually review old facts.

Finding ways to motivate students to practice focus facts until they become automatic will be our challenge next year.   Let's be creative and build in some rewards. We can also try and share routines for teaching Focus Facts. Materials/games/practice will be developed and shared.

Definitions:

FACT FOCUS: These facts will be a focus of study during the unit and should be worked into routines and centers. They will become automatic in the next unit.

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FACT FLUENCY Map: These facts should come to automaticity during the unit. These should be sent home to practice like spelling words. Students will demonstrate fluency.

Unit	Fact Fluency	Fact Focus
1	Addition facts to Ten	Addition Facts to Ten
2	Addition doubles to 20, 10+n facts	Addition doubles to 20
3	Addition near doubles and 9+n facts	Addition near doubles to 20; 9+2…9+5
4a	Addition Make a ten facts	Assess 7+4, 7+5, 7+6, 7+9, 8+3, 8+4, 8+5, 8+6, 8+7.
4b	Subtraction fact within 10	Subtraction facts within ten
5	Subtraction doubles to 20 Review 10-n facts	Subtraction doubles to 20; Review 10-n facts
6	Subtract 9 from teen number Subtraction where difference is nine (17-8, 16-7, 15-6, 14-5, 13-4, 12-3, 11-2)	11-9, 12-9, 13-9, 14-9, 15-9 17-8, 16-7, 15-6, 14-5, 13-4, 12-3, 11-2
7	Partners of 11, 12, and 13 and related subtraction facts; also 15-7 and 14-6	All facts are assessed

End of Year Notes from June 2014:   This grade level is the most in need of work on the scope and sequence. There are many areas that are not addressed enough and other areas where the Math Expression lessons have been problematic. This would be my recommendation for summer work on curriculum mapping and improving the scope and sequence.

Need to be addressed include: Time and Money, Fact fluency, mental math strategies for addition and subtraction within 100, understanding of odds and even numbers, more work on arrays and building a foundation for multiplication and fractions.

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