FIRST GRADE CURRICULUM MAP

MATHEMATICS

OFFICE OF CURRICULUM AND INSTRUCTION

To: First Grade Teachers

From: Jodi Albers

Date: July 19, 2017

***Re*:** First Grade Math Expressions Curriculum Map

Dear Teachers,
This is a draft of the Math Expressions curriculum map that correlates the Common Core State Standards in Mathematics. Please note: this is a draft. Your suggestions and feedback should be given to your Math Expressions Lead Teacher so appropriate changes can be made.
This document is divided into the following sections:

- Instructional Focus
- Mathematical Practices
- Scope and Sequence
- Curriculum Map

Instructional Focus

This summary provides a brief description of the critical areas of focus, required fluency for the grade level, major emphasis clusters, and examples of major within-grade dependencies.
The Common Core State Standards for Mathematics begin each grade level from kindergarten through eighth grade with a narrative explaining the Critical Areas for that grade level. The Critical Areas are designed to bring focus to the standards by outlining the essential mathematical ideas for each grade level.

Mathematical Practices

The Common Core State Standards for Mathematics define what students should understand and be able to do in their study of mathematics. The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. The Standards for Mathematical Practice are included first in this document because of their importance and influence in teaching practice.

Scope and Sequence

This table provides the unit sequence and pacing for Math Expressions.

Curriculum Map – By Unit

The curriculum map provides the alignment of the grade level Math Expressions units with state-adopted standards as well as unit specific key elements such as learning progressions, essential questions learning targets, and Assessments.

A special thank you to the First Grade Math Expressions Lead Teachers who created these documents for the Red Clay Consolidated School District.

Sincerely,
Jodi Albers
Red Clay Consolidated School District
Department of Curriculum and Instruction
(302) 552-3820
jodi.albers@redclay.k12.de.us

2017 – 2018 Math Expressions Lead Teachers

Kindergarten Team

Michelle Finegan, Richardson Park Learning Center
Jackie Gallagher, Highlands Elementary School
Christine Saggese, Cooke Elementary School
Beth Ann Turner, Forest Oak Elementary School

First Grade Team

Samantha Ches, Shortlidge Academy
Sara Edler, Marbrook Elementary School
Brandy Wilkins, Lewis Dual Language Elementary School

Second Grade Team

Gabriele Adiarte, Mote Elementary School
Sherri Brooks, Richey Elementary School
Stephanie Fleetwood, Linden Hill Elementary School

Third Grade Team

Sarah Bloom, Brandywine Springs Elementary School
Karen Cooper, North Star Elementary School
Kathleen Gormley, Highlands Elementary School
Kathryn Hudson, Cooke Elementary School
Amy Starke, Heritage Elementary School

Fourth Grade Team

Amber Tos, Baltz Elementary School

Fifth Grade Team

Jennifer Greevy, Forest Oak Elementary School
Erin McGinnley, Warner Elementary School
Stacie Zdrojewski, Richey Elementary School

Instructional Focus

In Grade 1, instructional time should focus on four critical areas: (1) developing understanding of addition, subtraction, and strategies for addition and subtraction within 20; (2) developing understanding of whole number relationships and place value, including grouping in tens and ones; (3) developing understanding of linear measurement and measuring lengths as iterating length units; and (4) reasoning about attributes of, and composing and decomposing geometric shapes.

1. Students develop strategies for adding and subtracting whole numbers based on their prior work with small numbers. They use a variety of models, including discrete objects and length-based models (e.g., cubes connected to form lengths), to model add-to, take-from, put-together, take-apart, and compare situations to develop meaning for the operations of addition and subtraction, and to develop strategies to solve arithmetic problems with these operations. Students understand connections between counting and addition and subtraction (e.g., adding two is the same as counting on two). They use properties of addition to add whole numbers and to create and use increasingly sophisticated strategies based on these properties (e.g., "making tens") to solve addition and subtraction problems within 20. By comparing a variety of solution strategies, children build their understanding of the relationship between addition and subtraction.

2. Students develop, discuss, and use efficient, accurate, and generalizable methods to add within 100 and subtract multiples of 10. They compare whole numbers (at least to 100) to develop understanding of and solve problems involving their relative sizes. They think of whole numbers between 10 and 100 in terms of tens and ones (especially recognizing the numbers 11 to 19 as composed of a ten and some ones). Through activities that build number sense, they understand the order of the counting numbers and their relative magnitudes.

3. Students develop an understanding of the meaning and processes of measurement, including underlying concepts such as iterating (the mental activity of building up the length of an object with equal-sized units) and the transitivity principle for indirect measurement.[1]

4. Students compose and decompose plane or solid figures (e.g., put two triangles together to make a quadrilateral) and build understanding of part-whole relationships as well as the properties of the original and composite shapes. As they combine shapes, they recognize them from different perspectives and orientations, describe their geometric attributes, and determine how they are alike and different, to develop the background for measurement and for initial understandings of properties such as congruence and symmetry.

Key Areas of Focus for K-2:
Addition and subtraction—concepts, skills, and problem solving

Required Fluency:
1.OA .6 Add and subtract within 10.

[1] Students should apply the principle of transitivity of measurement to make indirect comparisons, but they need not use this technical term.

Major Emphasis Clusters:

Operations and Algebraic Thinking

- Represent and solve problems involving addition and subtraction.
- Understand and apply properties of operations and the relationship between addition and subtraction.
- Add and subtract within 20.
- Work with addition and subtraction equations.

Number and Operations in Base Ten

- Extend the counting sequence.
- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

Measurement and Data

- Measure lengths indirectly and by iterating length units

Standards for Mathematical Practices

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important "processes and proficiencies" with longstanding importance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council's report *Adding It Up*: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one's own efficacy).

Connecting the Standards for Mathematical Practice to the Standards for Mathematical Content

The Standards for Mathematical Practice describe ways in which developing student practitioners of the discipline of mathematics increasingly ought to engage with the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle and high school years. Designers of curricula, assessments, and professional development should all attend to the need to connect the mathematical practices to mathematical content in mathematics instruction. The Standards for Mathematical Content are a balanced combination of procedure and understanding. Expectations that begin with the word "understand" are often especially good opportunities to connect the practices to the content. Students who lack understanding of a topic may rely on procedures too heavily. Without a flexible base from which to work, they may be less likely to consider analogous problems, represent problems coherently, justify conclusions, apply the mathematics to practical situations, use technology mindfully to work with the mathematics, explain the mathematics accurately to other students, step back for an overview, or deviate from a known procedure to find a shortcut. In short, a lack of understanding effectively prevents a student from engaging in the mathematical practices. In this respect, those content standards which set an expectation of understanding are potential "points of intersection" between the Standards for Mathematical Content and the Standards for Mathematical Practice. These points of intersection are intended to be weighted toward central and generative concepts in the school mathematics curriculum that most merit the time, resources, innovative energies, and focus necessary to qualitatively improve the curriculum, instruction, assessment, professional development, and student achievement in mathematics.

Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

2. Reason abstractly and quantitatively

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to *decontextualize*—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to *contextualize*, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

3. Construct viable arguments and critique the reasoning of others.

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

4. Model with mathematics

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

5. Use appropriate tools strategically

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

6. Attend to precision

Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

7. Look for and make use of structure

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7 × 8 equals the well-remembered 7 × 5 + 7 × 3, in preparation for learning about the distributive property. In the expression $x2 + 9x + 14$, older students can see the 14 as 2 × 7 and the 9 as 2 + 7. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.

8. Look for and express regularity in repeated reasoning

Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x2 + x + 1)$, and $(x - 1)(x3 + x2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

Scope and Sequence

Date	Unit	Days
August 29	**Pre-Test**	
August 30 – September 26	**Unit 1**	**17**
	Big Idea 1: Numbers Through 10 (Lessons 1-2)	5
	Big Idea 2: Pattern with Partners Through 10 (Lessons 3-9)	10
September 23	**Quick Quiz 2**	
	Unit Review	2
September 27 – November 3	**Unit 2**	**26**
	Bid idea 1: Represent Addition Situations (Lessons 1-4)	6
	Big Idea 2: Solve Addition Equations (Lessons 5-9)	6
	Big Idea 3: Solve Subtraction Equations (Lessons 10-13)	6
	Big Idea 4: Equation Exploration (Lessons 14-16)	6
	Unit Review	
November 3	**Unit 2 Assessment Form A**	2
November 6 – December 8	**Unit 3**	**20**
	Big Idea 1: Counting On with Addition Situations (Lessons 1-5)	7
	Big Idea 2: Counting On with Subtraction Situations (Lessons 6-8)	5
	Big Idea 3: Mixed Story Problems (Lessons 9-12)	6
December 5	**Quick Quiz 3**	
	Unit Review	2
December 11 – January 25	**Unit 4**	**25**
	Big Idea 1: Tens and Teens (Lessons 1-6)	8
	Big Idea 2: Place Value to 100 (Lessons 7-12)	7
	Big Idea 3: Addition Strategies (Lessons 13-18)	8
	Unit Review	2
January 25	**Unit 4 Assessment Form A**	
January 29 – February 23	**Unit 5**	**18**
	Big Idea 1: Teen Solution Methods (Lessons 1-6)	8
	Big Idea 2: Find Patterns and Relationships (Lessons 7-11)	8
February 20	**Quick Quiz 2**	
	Unit Review	2
February 26 – March 23	**Unit 6**	**20**
	Big Idea 1: Represent and Compare Data (Lessons 1-5)	9
	Big Idea 2: Compare Problem Types (Lessons 6-9)	9
March 20	**Quick Quiz 2**	
	Unit Review	2
March 27– May 4	**Unit 7**	**22**
	Big Idea 1: Tell and Write Time (Lessons 1-5)	6
	Big Idea 2: Shapes and Equal Shares (Lessons 6-11)	10
	Big Idea 3: Measure and Order by Length (Lessons 12-14)	4
	Unit Review	2
May 4	**Unit 7 Test Form A**	

May 7 – May 30	Unit 8	17
	Big Idea 1: Add 2-Digit Numbers (Lessons 1-6)	15
May 23	**Quick Quiz 1**	
	Unit Review	2
June 5	**Post Test**	
	Total Days	165

Unit 1: Partners and Number Patterns through 10

August 30 – September 26

Learning Progressions:

Last year, my students…	In my class, students will…	Next year, my students will…
• represented a situation or numerical problem with groups of objects, a drawing, or fingers. • modeled the situation by composing two addend groups or decomposing a total group. • counted the resulting total or addend. • worked toward fluency for addition and subtraction within 5.	• represent a situation or numerical problem with groups of objects, a drawing, or fingers. • model the situation by composing two addends groups or decomposing a total group. • use subitizing with 5-groups to omit the counting of one addend. • work toward fluency for addition and subtraction within 10.	• model a situation by composing two addend groups or decomposing a total group. • use subitizing with 10-groups to omit the counting of one addend. • work toward fluency for addition and subtraction within 20.

Unit 1: Common Core State Standards

Content
CC.1.OA.1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
CC.1.OA.3. Apply properties of operations as strategies to add and subtract.
CC.1.OA.5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
CC.1.OA.6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).
CC.1.OA.8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = _ – 3, 6 + 6 = _.

Practices
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.
Beginning of Year Pre-test (August 28-29)
Unit 1: Big Idea 1: Numbers Through 10 (Lessons 1-2) Number of days: 5
Daily Routine: Counting tens and ones
Quick Practice: Count 1-10 on Number Parade; Five Crows in a Row
Vocabulary: more, less, 5-group, plus, plus sign, equals sign, equation
Essential Questions: How do stair steps help us to understand one more, one less patterns?
Learning Targets: Visualize and represent numbers 1-10; add and subtract within 5.
Assessments: After Lesson 2, give Quick Quiz 1.
Unit 1: Big Idea 2: Pattern with Partners Through 10 (Lessons 3-9) Number of days: 10
Daily Routine: Counting tens and ones
Quick Practice: Five Crows in a Row; Count 1-10 on the Number Parade; Count on; Giant Number Cards 6-10
Vocabulary: partner, total, circle drawing, break-apart, Math Mountain, add, subtract, pattern, doubles, partner trains, switch the partners, difference
Essential Questions: How does finding partners of numbers help us to add and subtract?
Learning Targets: Add and subtract within 10.
Assessments: After Lesson 9, give **Quick Quiz 2. (September 23)**, Unit Assessment

Unit 2: Addition and Subtraction Strategies

September 27 – November 3

Learning Progressions:

Last year, my students…	In my class, students will…	Next year, my students will…
• represented a situation or numerical problem with groups of objects, a drawing, or fingers. • modeled the situation by composing two addend groups or decomposing a total group. • counted the resulting total or addend. • worked toward fluency for addition and subtraction within 5.	• represent a situation or numerical problem with groups of objects, a drawing, fingers, or equations. • model the situation by composing two addend groups or decomposing a total group. • work toward fluency for addition and subtraction within 10.	• model the situation by composing two addend groups or decomposing a total group. • work toward fluency for addition and subtraction within 20.

Unit 2: Common Core State Standards

Content

CC.1.OA.1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

- CC.1.OA.3. Apply properties of operations as strategies to add and subtract.
- CC.1.OA.5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
- CC.1.OA.6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).
- CC.1.OA.7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false.
- CC.1.OA.8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.

Practices

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.

Unit 2: Big Idea 1: Represent Addition Situations (Lessons 1-4)

Number of days: 6

Daily Routine: Counting Tens and Ones, Greater and Less

Quick Practice: Number Patterns, Doubles to 10, Partners of 10

Vocabulary: Add, partners, pus sign, total, circle drawing, equal, equal sign (=), not equal sign (≠), equation

Essential Questions: How can you determine if an equation is true?

Learning Targets: Use addition to solve story problems and visualize equality. Use = to write addition equations and determine if addition equations are true. Represent and solve addition story problems and determine if addition equations are true.

Assessments: After Lesson 4, give Quick Quiz 1 and Fluency Check 1.

Unit 2: Big Idea 2: Solve Addition Equations (Lessons 5-9)

Number of days: 6

Daily Routine: Counting Tens and Ones, Greater and Less

Quick Practice: Partners of 10, Number Patterns, After or the Same (+1 or + 0), Add and Subtract 0.

Vocabulary: count all, count on, unknown total,

Essential Questions: How can you use the counting on strategy to solve addition equations?

Learning Targets: Find the total in addition equations. Count on from the greater number to add. Solve addition equations.

Assessments: After Lesson 9, give Quick Quiz 2 and Fluency Check 2.

Unit 2: Big Idea 3: Solve Subtraction Equations (Lessons 10-13)

Number of days: 6

Daily Routine: Counting Tens and Ones, Greater and Less

Quick Practice: Count on from the greater number, Number Patterns, Add and Subtract 0, After or Before? (+1 or -1)

Vocabulary: minus, minus sign (-), subtract, proof drawing, subtraction story problem,

Essential Questions: How can you prove a subtraction equation is true?

Learning Targets: Represent and solve subtraction problems, and write subtraction equations.

Assessments: After Lesson 13, give Quick Quiz 3 and Fluency Check 3

Unit 2: Big Idea 4: Equation Exploration (Lessons 14-16) Number of days: 6
Daily Routine: Counting Tens and Ones, Greater and Less
Quick Practice: Before or the Same? (-1 or -0), After or Before (+1 or -1)
Vocabulary: vertical forms
Essential Questions: How can we use addition to solve subtraction equations?
Learning Targets: Relate addition and subtraction and solve vertical forms. Write and solve addition and subtraction equations and vertical forms. Use the Common Core Content Standards and Practices in a variety of real world problem solving situations.
Assessments: After lesson 16 give Quick Quiz 4, Fluency Check 4, **Unit 2 Test November 3**

Unit 3: Unknown Numbers in Addition and Subtraction

November 6 – December 8

Learning Progressions:

Last year, my students…	In my class, students will…	Next year, my students will…
• represented a situation or numerical problem with groups of objects, a drawing, or fingers. • modeled the situation by composing two addend groups or decomposing a total group. • counted the resulting total or addend. • worked toward fluency for addition and subtraction within 5.	• model the situation by composing two addend groups or decomposing a total group. • model an addition or subtraction involving an unknown addend. • use circle drawings, Math Mountains, and equations to represent an unknown addend problem. • work toward fluency for addition and subtraction within 10.	• model a situation by composing two addend groups or decomposing a total group. • work toward fluency for addition and subtraction within 20.

Unit 3: Common Core State Standards

Content

CC.OA.1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

CC.1.OA.4.Understand subtraction as an unknown-addend problem. For example, subtract 10 – 8 by finding the number that makes 10 when added to 8. Add and subtract within 20.

CC.1.OA.5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2)

CC.1.OA.6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).

CC.1.OA.7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.

CC.1.OA.8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the

equations 8 + ? = 11, 5 = _ – 3, 6 + 6 = _.
Practices
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.
Unit 3: Big Idea 1: Counting On with Addition Situations (Lessons 1-5) Number of days: 7
Daily Routine: Counting Tens and Ones; Number Partners
Quick Practice: Teen Number Flashes; Before or the Same; Count On to Find the Unknown Partner
Vocabulary: story problem, label
Essential Questions: How do Math Mountains help us find unknown partners?
Learning Targets: relate partners and totals and find an unknown partner; solve story problems with unknown partners; solve equations with unknown partners; identify and find unknown partners
Assessments: After Lesson 5, give Quick Quiz 1 and Fluency Check 5.
Unit 3: Big Idea 2: Counting On with Subtraction Situations (Lessons 6-8) Number of days: 5
Daily Routine: Counting Tens and Ones; Number Partners
Quick Practice: Count On to Find the Unknown Partner, Teen Secret Code Cards; Count On to Subtract
Vocabulary: difference, subtraction story problem
Essential Questions: How can counting on and finding unknown partners help us to solve subtraction problems?
Learning Targets: Solve subtraction story problems and equations; Create and solve subtraction story problems
Assessments: After Lesson 8, give Quick Quiz 2 and Fluency Check 6.
Unit 3: Big Idea 3: Mixed Story Problems (Lessons 9-12) Number of days: 6
Daily Routine: Counting Tens and Ones; Number Partners
Quick Practice: Teen Secret Code Cards; Count On to Subtract
Vocabulary: none
Essential Questions: How is the relationship between addition and subtraction equations helpful in solving problems?
Learning Targets: Model and relate addition and subtraction situations. Solve for unknown partners or totals in story problems and equations.
Assessments: After Lesson 12, give **Quick Quiz 3 (December 5)**, Fluency Check 7, Unit Assessment.

Unit 4: Place Value Concepts

December 11 – January 25

Learning Progressions:

Last year, my students…	In my class, students will…	Next year, my students will…
• used objects or drawings to represent numbers 11 to 19. • modeled the situation by composing two addend groups or decomposing a total group. • counted the resulting total or addend.	• represent 2-digit numbers using concrete objects, place value cards, or drawings. • compare 2-digit numbers using place value cards and drawings. • model 2-digit addition using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.	• represent 2- and 3-digit numbers using math drawings. • model 2-digit addition using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

Unit 4: Common Core State Standards

Content

CC.1.OA.1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

CC.1.OA.3. Apply properties of operations as strategies to add and subtract.

CC.1.OA.5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

CC.1.OA.6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).

• CC.1.OA.8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.

CC.1.NBT.1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

CC.1.NBT.2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:

- 10 can be thought of as a bundle of ten ones — called a “ten.”

The numbers from 11 to 19 are composed of a ten and one, two, three, four, five,

- six, seven, eight, or nine ones.
- The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

CC.1.NBT.3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.

CC.1.NBT.4. Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, 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 and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

CC.1.NBT.5. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

Practices

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.

Unit 4: Big Idea 1: Tens and Teens (Lessons 1-6)

Number of days: 8

Daily Routine: Counting Tens and Ones; Partner Houses

Quick Practice: Listen for Patterns; Name the Number; The Lion's Den

Vocabulary: decade number, tens, ones, digit, teen number, 10-stick, compare, is equal to(=), is greater than, is less than, teen total, make a ten, Make a Ten Strategy, doubles, doubles plus 1, doubles plus 2, doubles minus 1, doubles minus 2

Essential Questions: How can teen numbers be represented? How can story problems with teen totals be solved?

Learning Targets: Explore teen numbers; compare teen numbers; add and solve story problems to find teen totals; add with doubles

Assessments: After Lesson 6, give Quick Quiz 1 and Fluency Check 8.

Unit 4: Big Idea 2: Place Value to 100 (Lessons 7-12)

Number of days: 7

Daily Routine: Counting Tens and Ones; Partner Houses

Quick Practice: The Lion's Den; Name the Number; Show Tens and Ones; Flash Tens and Ones Count to 100

Vocabulary: number word, 10-group, tens digit, one digit, compare, is greater than, is less than, is equal to

Essential Questions: What do the digits represent in a 2-digit number? How can a 1-digit number be added to a 2-digit number? How can we compare two 2-digit numbers?

Learning Targets: Understand Tens and Ones; Add with Groups of Ten; Use Place Value to Compare Numbers

Assessments: After Lesson 12, give Quick Quiz 2 and Fluency Check 9.

Unit 4: Big Idea 3: Addition Strategies (Lessons 13-18) Number of days: 8
Daily Routine: Counting Tens and Ones; Partner Houses
Quick Practice: Count to 100; Show Tens and Ones, One More Tiger; One Less Tiger
Vocabulary:
Essential Questions: How can we add ones or tens to decade numbers? What addition strategies can we use?
Learning Targets: Add ones or tens to decade numbers; count on to the next decade and compare 2-digit numbers; add with tens and ones
Assessments: After Lesson 18, give Quick Quiz 3 and Fluency Check 10. **Unit 4 Test (January 25)**

Unit 5: Place Value Situations

January 29 – February 23

Learning Progressions:

Last year, my students…	In my class, students will…	Next year, my students will…
• used objects or drawings to represent numbers 11-19. • modeled the situation by composing to addend groups or decomposing a total group. • counted the resulting total or addend.	• represent two digit numbers using concrete objects, place value cards, or drawings. • use reasoning to mentally find 10 more or 10 less. • model adding and subtracting multiples of 10 using concrete models or drawings and strategies based on place value, and/or the relationship between addition and subtraction.	• represent two and three digits numbers using manipulative materials, place value cards and math drawings. • model two-digit addition and subtraction using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. • use reasoning to mentally add 10 or 100 and subtract 10 or 100.

Unit 5: Common Core State Standards

Content
CC.1.OA.1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
CC. 1.OA.2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
CC.1.OA.3. Apply properties of operations as strategies to add and subtract.
CC. 1.OA.4.Understand subtraction as an unknown-addend problem.
CC.1.OA.5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
CC.1.OA.6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).
CC.1.OA.8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.
CC 1.NBT.1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
CC 1.NBT.2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:

The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).
CC 1.NBT.4. Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, 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 and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.
CC 1.NBT.5. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.
• CC1.NBT.6. Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), 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 and explain the reasoning used.
Practices
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.
Unit 5: Big Idea 1: Teen Solution Methods (Lessons 1-6) Number of days: 8
Daily Routine: Counting Tens and Ones, Mountains and Equations
Quick Practice: Add Within 10, Unknown Partners within 10.
Vocabulary: Unknown partner, addend
Essential Questions: How can using the "make a ten" strategy help you solve teen addition and subtraction problems? What strategies can you use to solve problems with various unknowns?
Learning Targets: Solve and write addition and subtraction problems to find teen totals and unknown partners. Solve teen addition and subtraction problems with various unknowns. Create and solve story problems to find unknown partners and teen totals. Solve problems with three addends.
Assessments: After Lesson 6, give Quick Quiz 1 and Fluency Check 11.
Unit 5: Big Idea 2: Find Patterns and Relationships (Lessons 7-11) Number of days: 8
Daily Routine: Counting Tens and Ones, Mountains and Equations
Quick Practice: Unknown partners within 10, The Beetle Rhyme,
Vocabulary: 10 group, hundred, column, row, grid
Essential Questions: What is the relationship between 10-partners and 100-partners? How can understanding tens and ones help you add and subtract 2-digit numbers? What do two digit numbers represent?
Learning Targets: Count large quantities of objects by tens and ones. Count and write numbers to 120 and find ten more and ten less than a given number. Add tens to 2-digit numbers and subtract tens from decade numbers. Add and subtract decade numbers. Use the Common Core Content Standards and Practices in a variety of real world problem solving situations.
Assessments: After Lesson 11, give **Quick Quiz 2 (February 20)**, Fluency Check 12, Unit Assessment.

Unit 6: Comparison and Data

February 26– March 23

Learning Progressions:

Last year, my students…	In my class, students will…	Next year, my students will…
• used objects for sorting and classifying. • represented addition and subtraction with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, or equations.	• use objects, drawings, and equations with a symbol for the unknown number to represent a problem. • make matching drawings or draw comparison bars to represent comparison situations.	• generate data by measuring lengths. • use drawings and equations with a symbol for the unknown number to represent a problem.

Unit 6: Common Core State Standards

Content

CC.OA.1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

CC.OA.2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

CC.1.MD.4. Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Practices

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.

Unit 6: Big Idea 1: Represent and Compare Data (Lessons 1-5)

Number of days: 9

Daily Routine: Counting Tens and Ones; Add and Subtract Within 10

Quick Practice: Compare 2-Digit Numbers; Count to 120 Starting at Any Number; Subtract Tens
Vocabulary: data
Essential Questions: How can we use adding and subtracting to sort data?
Learning Targets: Organize, represent, and interpret categorical data
Assessments: After Lesson 5, give Quick Quiz 1 and Fluency Check 13.
Unit 6: Big Idea 2: Compare Problem Types (Lessons 6-9) Number of days: 9
Daily Routine: Counting Tens and Ones; Add and Subtract Within 10
Quick Practice: Compare 2-Digit Numbers; Count to 120 Starting at Any Number; Subtract Tens
Vocabulary: comparison bars
Essential Questions: What do comparison bars represent?
Learning Targets: Solve Compare Problems
Assessments: After Lesson 9, give **Quick Quiz 2 (March 20),** Fluency Check 14, Unit Assessment.

Unit 7: Geometry, Measurement and Equal Shares

March 27 – May 4

Learning Progressions:

Last year, my students…	In my class, students will…	Next year, my students will…
• described several measurable attributes of a single object. • used terms such as above, below, beside, in front of, behind and next to. • used informal language to describe similarities, differences and attributes.	• understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. • use both analog and digital clocks. • understand that decomposing into more equal shares creates smaller shares.	• use rulers, yardsticks, meter sticks, and measuring tapes to measure. • use inches, feet, centimeters and meters to estimate length. • recognize that equal shares of identical wholes need not have the same shape.

Unit 7: Common Core State Standards

Content

CC1.MD.1. Order three objects by length; compare the lengths of two objects indirectly by using a third object.
• CC1.MD.2. Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.
CC1.D.3. Tell and write time in hours and half-hours using analog and digital clocks.
CC1.G.1. Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.
• CC1.G.2. Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.
• CC1.G.3. Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

Practices
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.
Unit 7: Big Idea 1: Tell and Write Time (Lessons 1-5) Number of days: 6
Daily Routine: Counting Tens and Ones, Add and Subtract Teen Numbers
Quick Practice: Double the Bubble, Count to 120
Vocabulary: clock, hour, minute, hour hand, minute hand, half-hour
Essential Questions: How can I tell what time it is?
Learning Targets: Show, tell and write time in hours and half hours.
Assessments: After Lesson 5, give Quick Quiz 1 and Fluency Check 15.
Unit 7: Big Idea 2: Shapes and Equal Shares (Lessons 6-11) Number of days: 10
Daily Routine: Counting Tens and Ones, Add and Subtract Teen Numbers
Quick Practice: Tell Time, Compare two-digit numbers, subtract tens
Vocabulary: rectangle, square, side, corner, square corner, triangle, circle, halves, fourths, quarters, equal shares, half of, fourth of, quarter of, trapezoid, cube, rectangular prism, cone, cylinder, sphere, face, edge, vertex
Essential Questions: Why do I need to know how to distinguish attributes of shapes? What is a composite shape? How can I decompose a shape? How can I partition a circle or a rectangle?
Learning Targets: Distinguish between defining and non-defining attributes of squares and other rectangles, triangles and circles. Partition circle and rectangles into two or four equal shares. Compose two-dimensional shapes and compose new shapes from the composite shape. Identify attributes of three-dimensional shapes and compose rectangular prisms. Compose three dimensional shapes and compose new shapes from the composite shapes.
Assessments: After Lesson 11, give Quick Quiz 2 and Fluency Check 16.
Unit 7: Big Idea 3: Measure and Order by Length (Lessons 12-14) Number of days: 4
Daily Routine: Counting Tens and Ones, Add and Subtract Teen Numbers
Quick Practice: Tell Time, Subtract tens,
Vocabulary: compare, order, longer, longest, shorter, shortest
Essential Questions: How can I order three objects by length?
Learning Targets: Compare and order objects by length. Measure objects with same size length units. Use the Common Core Content Standards and Practices in a variety of real world problem solving situations.

Assessments: After Lesson 14, give Quick Quiz 3 and Fluency 17. **Unit 7 Test (May 4)**
*******The paper clips do not line up for the questions on the quick quiz or unit test. Use the quiz and test included in the district assessment guide.*******

Unit 8: Two-Digit Addition

May 7 – May 30

Learning Progressions:

Last year, my students…	In my class, students will…	Next year, my students will…
• used objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations to represent addition and subtraction.	• use 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.	• use 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.

Unit 8: Common Core State Standards

Content

CC.1.NBT.3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.

CC.1.NBT.6. Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), 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 and explain the reasoning used.

CC.1.NBT.4. Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, 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 and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

Practices

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.

Unit 8: Big Idea 1: Add 2-Digit Numbers (Lessons 1-6)

Number of days: 15

Daily Routine: Counting Tens and Ones; Telling Time

Quick Practice: Partner Pairs

Vocabulary: group, New Group Below method, New Group Above method, Proof Drawing, Show All Totals method
Essential Questions: How can we add 2-digit numbers?
Learning Targets: Add 2-digit numbers
Assessment: After Lesson 6, give **Quick Quiz 1 (May 23)** and Fluency Check 18. **End of Year Test (May 31 - June 5)** • **Question 10: may have up to two small errors and still earn the point.**