SUBJECT MATTER: Mathematics

Grades: __PreK__

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
Counting and Cardinality	Number names and counting sequence Why do we count?	**The student will be able to:** 1. Know number names and the count sequence up to 10. 2. Sing and count forward/backward to and from 10 with number songs and finger plays. 3. Order numbers 0-10. Vocabulary: before, after, number words zero-ten, ones	Observations Performance tasks Teaching Strategies GOLD	Calendar activities Mouse Count by Ellen StollWalsh Count classmates Sing: "The Ants Go Marching" 6 Sticks by M. Coxe	PK.CC. MA.1 PK.CC.MA.2
	Connecting numerals with their quantities How do we count objects?	**The student will be able to**: 1. Identify numerals to 10 by name and connect each to counted objects. 2. Count concrete objects up to 10 accurately using one-to-one correspondence. Vocabulary: how many, number words zero-ten, count	Observations Performance tasks Teaching Strategies GOLD	Dr. Jean: "0 is Where It All Begins" Number Bingo Number Bugs Apple Tree Counting Popcorn Counting bears Fish Buttons HWTS: "Counting, Counting"	PK.CC.MA.3 PK.CC.MA.4
	Quantities How do we know a number is more, less, or equal to another number?	**The student will be able to**: 1. Make sets of objects (1-10) and compare the parts (more, less or equal to). Vocabulary: more, less, same, equal to	Observations Performance tasks Teaching Strategies GOLD	Manipulatives Weather Graph Themed Unit Graphs	PK.CC.MA.5
Operations and Algebraic Thinking	Understands addition as putting together and subtraction as taking apart and taking from	**The student will be able to**: 1. Combine and separate up to 5 objects and describe the parts. 2. Understand addition as putting together through manipulatives and music.	Observations Performance tasks Teaching Strategies GOLD	Ten, Nine, Eight by M. Bangs "Five Little Monkeys" "Five Little Pumpkins" "Five Green and Speckled Frogs"	PK.OA.MA.1

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
	Understands simple patterns What does it mean to "put together"? What does it mean to "take away"? What is a pattern?	3. Understand subtraction as taking away from through manipulatives and music. 4. Duplicate and extend simple patterns using concrete objects Vocabulary: put together, add, join, take away, subtract, pattern, repeat		Dr. Jean: "The Finger Pokey" Rooster's Off to See the World by E. Carle Quack and Count by K. Baker	
Measurement and Data	Describes and compares measurable attributes of length, area, weight, and capacity How can we compare two objects?	**The student will be able to**: 1. Describe the attributes of length, area, weight, and capacity using appropriate vocabulary (long, short, tall, heavy, light, big, small, wide, narrow). 2. Compare and order a small set of objects according to size, length, weight, area, or volume. Vocabulary: compare, long, short, tall, heavy, light, big, small, wide, narrow	Observation Performance tasks Teaching Strategies GOLD	How Many Bugs in a Box by D.A. Carter Sand and water table Who Sank the Boat? by P. Allen Blocks Balance Scale Measuring cups Water containers Just a Little Bit by L.M. Munsinger	PK.MD.MA.1 PK.MD.MA.2
	Sort, categorize, and classify objects How can the objects be grouped?	**The student will be able to**: 1. Describe objects by color, size, and shape. 2. Recognize and sort objects by their attributes. 3. Classify objects into categories and count the number of objects in each category. 4. Make picture/bar graphs and discuss the results. Vocabulary: sort, graph, picture graph, bar graph, more than, less than, most, fewest	Observations Performance tasks Teaching Strategies GOLD	M&Ms Vehicle counters Farm animal counters Bug counters I Spy… Graphs/charts	PK.MD.MA.3
	Money Why do we need money?	**The student will be able to**: 1. Accurately identify coins and dollars from a group of objects. 2. Understand that coins represent money. Vocabulary: money, coins	Observations Performance tasks	Play/real money Coin sorting Dr. Jean: "Found a Penny"	PK.MD.MA.4

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
			Teaching Strategies GOLD		
Geometry	Explore and describe spatial relationships How can we describe where an object is?	**The student will be able to**: 1. Follow simple directions related to positions of objects. 2. Use and respond appropriately to positional words. Vocabulary: up, down, top, bottom, beside, inside, next to, close to, above, below, apart	Observations Performance tasks Teaching Strategies GOLD	Tops and Bottoms by Janet Stevens Simon Says Rosie's Walk by P. Hutchins Up, Down, and Around by K. Ayers N.B. Westcott Waddle, Waddle, Quack, Quack, Quack by B. Skalak	PK.G.MA.1
	Identify and describe shapes What are shapes? How are shapes different?	**The student will be able to**: 1. Understand that objects have a shape with a definite name. 2. Identify and name basic shapes (square, circle, triangle, rectangle). 3. Find and identify shapes within a picture. 4. Describe objects by color, size, and shape. Vocabulary: circle, square, rectangle, triangle, color, shape, size, same, different	Observations Performance tasks Teaching Strategies GOLD	Shape bingo Geoboards Pattern blocks/tangrams HWTS: "Math Shapes" Dr. Jean: "Do You Spy a Circle" Dr. Jean: "Here We Go Shapes a Loo" The Shapes of Things by D. Dodds Color Zoo by L. Eklert Changes, Changes by P. Hutchins	PK.G.MA.2
	Analyze, compare, create, and compose shapes How can we make new shapes with different materials?	**The student will be able to**: 1. Use various materials to create three-dimensional shapes.	Observations Performance tasks Teaching Strategies GOLD	Toothpick and marshmallow structures Block building Pattern blocks Playdough Close, Closer, Closest by S. Rotner & R. Olivio	PK.G.MA.3

Kindergarten Scope and Sequence – Math

MONTH	POSSIBLE INSTRUCTIONAL STRATEGIES	CURRICULUM BENCHMARKS	COMMON CORE STANDARDS	ASSESSMENT
September: Routines, graphing, sorting, positions and basic shapes.	**Scott Foresman:** 2-1, 2-2, 2-3, 2-4 **Investigations Routines:** Unit 1: Investigations 1-3 Attendance Routine, Attendance Stick, Calendar, Counting Jar, Describing Buttons, Attribute Block Match-up, Counting Jar Recording, Sorting, Today's Question	**Students will be able to** classify objects into categories and count the number of objects in each category.	K.CC.1, K.CC.3, K.CC.4a, K.CC4b, K.CC.4c, K.CC.5, K.G.1, K.G.2, K.MD.3	
	Scott Foresman: 1-1, 1-2, 1-3, 1-4 **Investigations:** Unit 5: Investigation 1 Shape Pictures, Circles and Rectangles, Triangles and Squares, Clay Shapes, Shapes on a Geoboard, Book of Shapes	**Students will be able to** identify and describe shapes using relative position terms.	K.G.1, K.G.2	
	Scott Foresman: 1-5, 1-6, 1-7, 1-8, 1-9 **Investigations:** Unit 7: Investigation 2, Session 2.3, 2.4 Boxes/Bottles/Cans, Same and Different **Science Connection:** Students connect young plants or animals with their parents.	**Students will be able to** classify, count and sort by attributes of objects.	K.G.3	

Kindergarten Scope and Sequence - Math

October: Numbers to 5, introduction to measurement (compare and order length).	**Scott Foresman:** 3-1, 3-2, 3-3, 3-4, 3-5, 3-6, 3-7, 3-8, 3-9 **Investigations:** Unit 2: Investigation 1, Investigation 2 Counting Book, Grab & Count, Counting Jar, Roll & Record	**Students will be able to** count and compare groups of objects up to 5. **Students will be able to** describe and compare measureable attributes of one or more objects.		
November: Patterns, numbers to 10, revisit measurement.	**Scott Foresman:** 2-5, 2-6, 2-7 **Investigations:** Unit 3: Investigation 1, Investigation 2, Investigation 3, Cube Trains, Pattern Block Snakes, Break the Train	**Students will be able to** demonstrate knowledge of patterns by identifying and creating patterns.		
	Scott Foresman: 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9 **Investigations:** Unit 4: Investigation 1, Investigation 2, Investigation 3, Investigation 4, Measuring with Cubes, Weight: Heavier or Lighter, Collect 10 Together, Roll & Record 2, Quick Images: 10 Frames, Racing Bears, Double Compare, Toss the Chips	**Students will be able to** count and compare groups of objects up to 10. **Students will be able to** describe and compare measureable attributes of one or more objects.		

Kindergarten Scope and Sequence - Math

December: Numbers to 20 (basic introduction)	**Scott Foresman:** 5-1, 5-2, 5-3, 5-4, 5-5 **Investigations:** Unit 4: Investigation 1, Investigation 2, Investigation 3, Investigation 4, Measuring with Cubes, Weight: Heavier or Lighter, Collect 10 Together, Roll & Record 2, Quick Images: 10 Frames, Racing Bears, Double Compare, Toss the Chips	**Students will be able to** count and compare groups of objects up to 20.		
January: Numbers to 20 (more in-depth)	**Refer to Scott Foresman: 5-1 through 5-5 to scaffold Investigations:** Unit 4: Investigation 1, Investigation 2, Investigation 3, Investigation 4, Measuring with Cubes, Weight: Heavier or Lighter, Collect 10 Together, Roll & Record 2, Quick Images: 10 Frames, Racing Bears, Double Compare, Toss the Chips	**Students will be able to** compose and decompose numbers 11-20 to gain foundations for place value.		
February: Geometry	**Scott Foresman:** 8-1, 8-2, 8-3, 8-4, 8-5, 8-6, 8-7 **Investigations:** Unit 5, Investigation 1, Investigations 2, Investigation 3, Revisit Investigation 1 activities, Fill the Hexagons, Ways to Make a Hexagon, Combining Shapes	**Students will be able to** identify and describe shapes using relative position terms. **Students will be able to** analyze, compare, create and compose 2D and 3D shapes.		

Kindergarten Scope and Sequence - Math

March: Addition Readiness and Addition	**Scott Foresman:** 9-1, 9-2, 9-3, 9-4, 9-5 **Investigations:** Unit 6, Investigation 1 – 5 Toss the Chips, Counting on the Number Line, Racing Bears, Modeling Story Problems	**Students will be able to** compose and decompose numbers 11-20 to gain foundations for place value.		
	Scott Foresman: 10-1, 10-2, 10-3, 10-4, 10-5, 10-6, 10-7 **Investigations:** Unit 6, Investigation 1 – 5 Toss the Chips, Counting on the Number Line, Racing Bears, Modeling Story Problems	**Students will be able to** understand addition as putting together and adding to through the use of manipulatives and solving word problems.		
April: Subtraction	**Scott Foresman:** 11-1, 11-2, 11-3, 11-4, 11-5, 11-6, 11-7 **Investigations:** Unit 6, Investigation 1 – 5 Toss the Chips, Counting on the Number Line, Racing Bears, Modeling Story Problems	**Students will be able to** understand subtraction as taking apart and taking from through the use of manipulatives and solving word problems.		
May/June: Number Sense to 100, Skip Counting by 10	**Scott Foresman:** 12-1, 12-2, 12-3, 12-4, 12-5, 12-6	**Students will be able to** state the number names and understand the count sequence to 100.		
	Scott Foresman: 12-4, 12-5	**Students will be able to** skip count to 100 by tens.		

SUBJECT MATTER: Mathematics Grades: _Kindergarten___

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
Counting and Cardinality	Why do we count?	**Students will be able to:** 1. Know number names and the count sequence up to 5. 2. Sing and count forward/backward to and from 5 with number songs and finger plays. 3. Count to tell the number of objects. 4. Identify whether a number of objects in one group is greater than, less than, or equal to the number of objects in another group. **Vocabulary:** Before, between, after, ones, digit, more, less, forward, backward, greater, fewer, same (equal), number words	Anecdotal Observations Class discussion Practice pages Classwork Homework Assignments Calendar Activities Teaching Strategies-GOLD	Songs, poems, finger plays Attendance stick Today's Question Chart Counting Jar Calendar Counting stories and read aloud Use number line and one hundreds chart to count by ones and tens Annos Counting Book *by Mitsumasa Anno* Mouse Count *by Ellen Stoll Walsh* http://songsforteaching.com/numberscounting.htm www.k-5mathteachingresources.com	K.CC.2, K.CC.4, K.CC.6
Graphing and Sorting	How do we sort objects? What are attributes?	**Students will be able to:** 1. Classify objects into categories and count the number of objects in each category. 2. Describe objects by color, size, and shape. 3. Make picture/bar graphs using data collected. 4. Verbally discuss the results of a graph. **Vocabulary:** Graph, sort, describe, attribute, picture graph, real graph, bar graph, most, fewest, more than, less than	Anecdotal Observations Class discussion Practice pages Classwork Homework Assignments Teaching Strategies-GOLD	**Scott Foresman**: 1-5, 1-6, 1-7, 1-8, 2-1, 2-2, 2-3, 2-4 Graphs/Charts **Investigations:** Describing and Sorting Buttons Attribute Block Match-up I Spy *by Walter Wick and Jean Marzollo* Color Farm *by Lois Ehlert* Shapes, Shapes, Shapes *by Tana Hoban* www.k-5mathteachingresources.com	K.MD.3, K.G.2

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
Positions and Basic Shapes	What are the different shapes in our world? How are shapes the same and different?	**Students will be able to:** 1. Understand that all objects have a shape with a specific name. 2. Identify and describe shapes using relative position terms. 3. Classify, count and sort by attributes of objects. 4. Correctly name shapes. 5. Describe objects by color, size, and shape. **Vocabulary:** Inside, outside, over, under, top, middle, bottom, left, right, describe	Anecdotal Observations Class discussion Practice pages Classwork Homework Assignments Teaching Strategies-GOLD	**Scott Foresman**: 1-1. 1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 1-8, 1-9, **Investigations Activities**: Unit 5: Investigation 1, Unit 7: Investigation 2, Sessions 2.3, 2.4: Shape Pictures, Triangles & Squares, Clay Shapes, Shapes on a Geoboard, Book of Shapes, Boxes/Bottles/Cans, Same and Different Tops and Bottoms *by Janet Stevens* Maisy at the Fair *by Lucy Cousins* www.k-5mathteachingresources.com http://www.apples4theteacher.com/math.html#geometrygames http://www.zoodles.com/free-online-kids-games	K.G.1, K.G.2, K.G.3
Numbers to 5	Why do we count? How do we compare numbers?	**Students will be able to:** 1. Count and compare groups of objects up to 5. 2. Write numbers 0-5. 3. Order numbers 0-5. 4. Represent a number of objects with a written numeral. **Vocabulary:** Before, between, after, ones, digit, more, less, forward, backward, compare, greater, fewer, same (equal), number words (zero-five)	Anecdotal Observations Class discussion Practice pages Classwork Homework Assignments Teaching Strategies-GOLD	**Scott Foresman:** 3-1, 3-2, 3-3, 3-4, 3-5, 3-6, 3-7, 3-8, 3-9 **Investigations:** Unit 2: Investigation 1 & 2: Counting Book, Grab & Count, Counting Jar, Roll & Record www.k-5mathteachingresources.com Counting stories and read aloud Use number line and one hundreds chart to count by ones and tens Calendar **Handwriting without Tears** http://songsforteaching.com/numberscounting.htm	K.CC.2, K.CC.3, K.CC.4, K.CC.5, K.CC.6, K.CC.7
Introduction to Measurement	How do we tell which object is longer? How do we tell which object is heavier?	**Students will be able to:** 1. Describe and compare measureable attributes of one or more objects. 2. Compare and order length of objects. **Vocabulary:** Measure, length, weight, longer, shorter, heavy, light, estimate, about	Anecdotal Observations Class discussion Practice pages Classwork Homework Assignments Teaching Strategies-GOLD	Attendance Stick Grab & Count Cube Trains Chrysanthemum *by Kevin Henkes* Strega Nona *by Tomie dePaola* www.k-5mathteachingresources.com http://www.zoodles.com/free-online-kids-games	K.MD.1, K.MD.2
Patterns	What is a pattern?	**Students will be able to:** 1. Demonstrate knowledge of patterns by identifying and creating patterns. **Vocabulary:** Repeat, pattern	Anecdotal Observations Class discussion Practice pages Classwork Homework Assignments Teaching Strategies-GOLD	**Scott Foresman:** 2-5, 2-6, 2-7 **Investigations:** Unit 3: Investigations 1-3 Cube Trains, Pattern Block Snakes,Break the Train If You Give a Mouse a Cookie www.k-5mathteachingresources.com	Common Core Mathematical Practice #8 Teaching Strategies-GOLD

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
Numbers to 10	Why do we count? How do we compare numbers?	**Students will be able to:** 1. Count and compare groups of objects up to 10. 2. Write numbers 0-10. 3. Order numbers 0-10. 4. Represent a number of objects with a written numeral. **Vocabulary:** Before, between, after, ones, digit, more, less, forward, backward, compare, greater, fewer, same (equal), number words (zero-ten)	Anecdotal Observations Class discussion Practice pages Classwork Homework Assignments Teaching Strategies-GOLD	**Scott Foresman**: 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9 **Investigations:** Unit 4, Collect 10 Together, Roll & Record 2, Quick Images, 10 Frames, Racing Bears, Double Compare, Toss the Chips **Handwriting without Tears** Ten Black Dots *by Donald Crews* The Doorbell Rang *by Pat Hutchings* Ten, Nine, Eight *by Molly Bang* The Very Hungry Caterpillar *by Eric Carle* The Rainbow Fish *by Marcus Pfister* www.k-5mathteachingresources.com http://songsforteaching.com/numberscounting.htm	K.CC.2, K.CC.3, K.CC.4, K.CC.5, K.CC.6, K.CC.7
Measurement	How do we tell which object is longer? How do we tell which object is heavier?	**Students will be able to:** 1. Describe and compare measureable attributes of one or more objects. 2. Compare and order length and weight of objects. **Vocabulary:** Measure, length, weight, longer, shorter, heavy, light, estimate, about	Anecdotal Observations Class discussion Practice pages Classwork Homework Assignments Teaching Strategies-GOLD	**Scott Foresman**: 6-1, 6-2, 6-3, 6-9 **Investigations:** Unit 4: Investigations 1-4 Measuring with Cubes Weight: Heavier or Lighter Double Compare The Enormous Watermelon *by Brenda Parks* www.k-5mathteachingresources.com http://www.zoodles.com/free-online-kids-games	K.MD.1, K.MD.2, K.MD.3
Numbers to 20	Why do we count? How do we compare numbers?	**Students will be able to:** 1. Count and compare groups of objects up to 20, using objects in the classroom. 2. Write numbers 0-20. 3. Order numbers 0-20. 4. Represent a number of objects with a written numeral, orally or through matching. 5. Compose and decompose numbers 11-20 to gain foundations for place value **Vocabulary:** Before, between, after, ones, digit, more, less, forward, backward, compare, greater, fewer, same (equal), number words (zero-twenty)	Anecdotal Observations Class discussion Practice pages Classwork Homework Assignments Teaching Strategies-GOLD	**Scott Foresman:** 5-1, 5-2, 5-3, 5-4, 5-5 **Investigations**: Unit 4: Investigations 1-4 Measuring with Cubes, Weight: Heavier or Lighter, Collect 10 Together, Roll & Record 2, Quick Images, 10 Frames, Racing Bears, Double Compare, Toss the Chips, Representing Number on 10 Frames **Handwriting without Tears** Bears at the Beach: Counting 10 to 20 *by Niki Yektai* www.k-5mathteachingresources.com http://songsforteaching.com/numberscounting.htm	K.CC.2, K.CC.3, K.CC.4, K.CC.5, K.CC.6, K.CC.7, K.NBT.1

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
Geometry	What are the different shapes in our world? How are shapes the same and different?	**Students will be able to:** 1. Identify and describe shapes. 2. Identify and describe shapes using relative position terms. 3. Analyze, compare, create and compose two- and three-dimensional shapes. 4. Compose simple shapes to form larger shapes. **Vocabulary:** Triangle, square, circle, rectangle, hexagon, spheres, cones, cubes, cylinders, solid figure, plane (flat) figures, face, corner, slide, flip, turn	Anecdotal Observations Class discussion Practice pages Classwork Homework Assignments Teaching Strategies-GOLD	**Scott Foresman:** 8-1, 8-2, 8-3, 8-4, 8-5, 8-6, 8-7 **Investigations**: Unit 5: Investigations 1-3 Fill the Hexagons, Ways to Make a Hexagon, Combining Shapes Shapes, Shapes, Shapes *by Tana Hoban* www.k-5mathteachingresources.com http://www.apples4theteacher.com/math.html#geometrygames http://www.zoodles.com/free-online-kids-games	K.G.1, K.G.2, K.G.2, K.G.4, K.G.5, K.G.6
Addition Readiness and Addition	What happens when we combine groups?	**Students will be able to:** 1. Understand addition as putting together. 2. Represent addition with objects, fingers, mental images, drawings, sounds, etc. 3. Solve addition word problems by using objects or drawings to represent the problem. 4. Fluently add within 5. 5. Find the number that makes 10 when added to a given number from 1-9. 6. Compose and decompose numbers 11-20 to gain foundations for place value. 7. Distinguish between greater than and less than. **Vocabulary:** More than, join, add, sum, addition sentence, plus, equals, count on, addend, number line, ten-frame	Anecdotal Observations Class discussion Practice pages Classwork Homework Assignments Teaching Strategies-GOLD	**Scott Foresman:** 9-1, 9-2, 9-3, 9-4, 9-5, 10-1, 10-2, 12-3, 10-4, 10-5, 10-6, 10-7 **Investigations**: Unit 6: Investigations 1-5 Toss the Chips, Counting on the Number Line, Racing Bears, Modeling Story Problems, Math Journals Ways to Make 10 Ten Frames Fish Eyes *by Lois Ehlert* Stone Soup *by Heather Forest* The Very Hungry Caterpillar *by Eric Carle* Ten Flashing Fireflies *by Philemon Sturges* Mouse Count *by Ellen Stoll Walsh* www.k-5mathteachingresources.com http://www.learn-with-math-games.com/index.html http://illuminations.nctm.org/activitydetail.aspx?id=75 http://www.thinkfinity.org http://www.helpingwithmath.com/	K.CC.6, K.CC.7, K.OA.1, K.OA.2, K.OA.3, K.OA.4, K.OA.5, K.NBT.1

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
Subtraction Readiness and Subtraction	What happens when we take groups apart?	**Students will be able to:** 1. Understand subtraction as taking apart and taking from through the use of manipulatives and solving word problems. 2. Represent subtraction with objects, fingers, mental images, drawings, sounds, etc. 3. Solve subtraction word problems by using objects or drawings to represent the problem. 4. Fluently subtract within 5. 5. Compose and decompose numbers 11-20 to gain foundations for place value. 6. Distinguish between greater than and less than. **Vocabulary:** Fewer than, separate, subtract, subtraction sentence, minus, equals, count back, take away, number line, ten-frame	Anecdotal Observations Class discussion Practice pages Classwork Homework Assignments Teaching Strategies-GOLD	**Scott Foresman:** 11-1, 11-2, 11-3, 11-4, 11-5, 11-6, 11-7 **Investigations**: Unit 6: Investigations 1-5 Toss the Chips, Counting on the Number Line, Racing Bears, Modeling Story Problems, Math Journals The Rainbow Fish *by Marcus Pfister* The Very Hungry Caterpillar *by Eric Carle* www.k-5mathteachingresources.com http://www.learn-with-math-games.com/index.html http://illuminations.nctm.org/activitydetail.aspx?id=75 http://www.thinkfinity.org http://www.helpingwithmath.com/	K.CC.6, K.CC.7, K.OA.1, K.OA.2, K.OA.3, K.OA.4, K.OA.5, K.NBT.1
Number Sense to 100 Data Projects	Why do we count? How do we compare numbers?	**Students will be able to:** 1. State the number names. 2. Match numbers on a hundreds chart. 3. Understand the count sequence to 100. 4. Count to 100 by ones and tens. 5. Count groups of ten and count on to find how many. 6. Count forward beginning from a given number within the known sequence. 7. Compose and decompose numbers into tens and ones 8. Create surveys to compare data **Vocabulary:** Before, between, after, tens, digit, ones, hundreds, ten-frame	Anecdotal Observations Class discussion Practice pages Classwork Homework Assignments Teaching Strategies-GOLD	**Scott Foresman:** 12-1, 12-2, 12-3, 12-4, 12-5, 12-6 **Investigations:** Unit 7: Investigation 3 Counting on the Number Line (on-going daily routine) Counting Days in School (on-going) Ten-frames, classroom materials, songs, games, etc. 100 Hungry Ants *by Elinor J. Pinczes* The King's Commisioners *by Aileen Friedman* www.k-5mathteachingresources.com http://illuminations.nctm.org/activitydetail.aspx?id=75 http://www.helpingwithmath.com/ http://www.learn-with-math-games.com/index.html	K.CC.1, K.CC.2, K.CC.3, K.CC.4, K.CC.5, K.CC.6, K.NBT.1, K.MD.3

Ware Public Schools Kindergarten Mathematics Pacing Guide

September	***October***	***November***	***December***	***January***	***February***	***March***	***April***	***May***	***June***
Counting and Cardinality	Numbers to 5	Patterns	Numbers to 20 (Basic Intro)	Numbers to 20 (More in-depth)	Geometry	Addition Readiness & Addition	Subtraction	Number Sense to 100, Skip Counting by 10	Number Sense to 100, Skip Counting by 10
Graphing and Sorting	Introduction to Measurement	Numbers to 10						Review addition & subtraction	Data Projects
Positions & Basic Shapes		Measurement							Review all concepts

SUBJECT MATTER: Math Grade: __1__

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
Daily Math Meeting/ Calendar *** Ongoing throughout the year**	How do we make sense of data? Why do we break numbers apart by tens and ones?	**Students will be able to:** 1. Analyze and interpret data using a variety of graphs and tables. 2. Understand base ten system and place values. 3. Identify and understand the value of U.S. coins and their equivalent values. 4. Skip count 0-120 by 2's, 5's and 10's. 5. Count, write, and understand the value of numbers 1-120.	Anecdotal Observation Class discussion Practice pages Homework Assignment Unit test	Weather graph, temperature graph, and tooth graph. Days in school. Days of school counting using coin exchange. Days of school counting using 10 frames.	1.MD.4 1.NBT.1, 1.NBT.2, 1.NBT.3, 1.NBT.4, 1.NBT.5, 1.NBT.6, 1.OA.5
Addition and Subtraction to 12	How can we find the missing number in a math sentence? How are addition and subtraction related? How does understanding that addition and	**Students will be able to:** 1. Demonstrate an understanding of the concepts of addition and subtraction. 2. Use numbers to solve mathematical problems. 3. Determine whether or not a word problem requires addition or subtraction. 4. Combine and separate sets of objects. 5. Distinguish between greater than and less than. 6. Identify the inverse match of an addition or subtraction problem. 7. Solve addition and subtraction facts.	Anecdotal Observation Class discussion Practice pages Homework Assignment Unit test	Making 5 and 10 (five frames and ten frames) Number lines Fact triangles *Anno's Counting Book* by Mitsumasa Anno *One Duck Stuck* by Phyllis Root *More, Fewer, Less* by Tana	1.OA.1, 1.OA.2,1.OA.31.OA.4, 1.OA.5 1.OA.6, 1.OA.7 1.OA.8, 1.OA.MA.9

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
	subtraction are related help us to solve math problems? What strategies do we use to figure out how much or how many we have? How can different sets of numbers be different?	Vocabulary: Less, greater, least, between, greatest, less than (<), equal to (=), change, more than, fewer than, join, add, sum addition sentence, plus, equals, subtract, difference , subtraction sentence, minus , count on , addend, number line, double, count back, related facts, fact family, add, join, in all, take away, subtract, more, compare,		Hoban *Animals on Board* by Stuart J. Murphy Scott Foresman – Addison Wesley Math 1.4-1.7, 1.9-1.12, 2.1-2.12, 3.1-3.4, 3.6-3.8, 4.1, 4.2, 4.4-4.6, 4.8 Investigations **U1**, **U3, U5, U6, U7, U8, U9** www.k-5mathteachingresources.com www.mathisfun.com/algebra/introduction.html www.aaastudy.com/add26ax1.htm http://www.mathplayground.com/AlgebraEquations.html	

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
Geometry and Fractions	Where are geometric shapes found in everyday objects?	**Students will be able to:** 1. Describe objects in their environment. 2. Make shapes. 3. Identify plane shapes. 4. Draw plane shapes. 5. Compare shapes to one another. 6. Identify how shapes can be broken apart to make smaller shapes and describe by halves of, fourth of, and quarter of. 7. Divide a circle or rectangle into fractional parts and describe the action (halves, quarters, fourths) Vocabulary: Equal parts, fraction, whole halves, one half ½, thirds, fourths, one fourth ¼, cube, cone, rectangular prism, sphere, cylinder, solid figure, flat surface, face, corner, plane shape, triangle, rectangle, circle, square, side, equal, halves, thirds, fourths, unequal,	Anecdotal Observation Class discussion Practice pages Homework Assignment Unit test	*The Wing on a Flea* by Ed Emberley *Color Zoo* by Lois Ehlert *Shapes, Shapes, Shapes* by Tana Hoban Tangram Animals A to Z *Let's Fly a Kite* by Stuart J. Murphy *Autumn Leaves* by Ken Robbins *The Greedy Triangle* by Marilyn Burns Eating Fractions by Bruce McMillan Shape of Me and Other Stuff by Dr. Seuss Scott Foresman- Addison Wesley Math 5.1, 5.3 -5.5, 5.10-5.13 Investigations **U1-U8**	1.G.1, 1.G.2, 1.G.3

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
				www.k-5mathteachingresources.com http://www.mathplayground.com http://www.mathcats.com/explore/polygonplayground.html	
Time	How does the digital clock represent time? How does the clock face represent time?	**Students will be able to:** 1. Identify the hour hand and the minute hand on a clock and tell time to the hour. 2. Tell and write times in hours and half-hours using analog and digital clocks. Vocabulary: hour, hour hand, minute hand, o'clock, half hour, analog, digital, clock	Anecdotal Observation Class discussion Practice pages Classwork Homework Assignments Unit test	Read It! Draw It! Solve It! Dale Seymour Publications Clocks and More Clocks by Pat Hutchins Scott Foresman- Addison Wesley Math 6.2-6.4 Investigations **U4**(2.5) **U5** 1.1, 1.5A, 1.6, 3A.1 **U6** (1.8, 2.6) **U7** (1.8) **U8** (3.1) **U9** (2.3A) www.k-5mathteachingresources.com http://kids.aol.com/KOL/2/HomeworkHelp/Archive/homework-help-jr-	1.MD.3

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
				measurement http://zoodles.com/free-online-kids-games/first-1st-grade	
Money	What are the different coins in the U.S? What is the value of each coin?	**Students will be able to:** 1. Identify U.S. coins. 2. Understand the value of U.S. coins 3. Use appropriate notation(eg. 69c) 4. Use the value of coins in the solutions of problems.	Anecdotal Observation Class discussion Practice pages Classwork Homework Assignments Unit test	*Alexander, Who Used to Be Rich Last Sunday* by Judith Viorst *A Chair for My Mother* by Vera B. Williams *Penny Pot* Stuart J. Murphy and Lynne Woodcock Cravath Welcome Books: Dimes, Dollar, Nickels, Pennies, Quarters and Spending and Saving *Monster Money Book* by Loreen Leedy Scott Foresman- Addison	1.MD.MA.5

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
				Wesley Math 9.1-9.4, 9.6 Investigations	
Counting to 120	Starting at any number, how can we use the pattern of counting to recite numbers up to 120?	**Students will be able to:** 1. Skip count 0-120 by 2's, 5's, and 10's. 2. Count, write, and understand the value of numbers 0-120. 3. Orally count on from any given number within 0-120 range. Vocabulary: before, after, between, skip counting, pattern, tens, ones, pattern	Anecdotal Observation Class discussion Practice pages Classwork Homework Assignments Unit test	Hundred chart *The M&M's Counting to One Hundred Book* by Barbara Barbieri McGrath *100 Hungry Ants* by Elinor J. Pinczes *100 Days of School* by Trudy Harris Scott Foresman- Addison Wesley Math 7.1-7.8 Investigations **U1-U8** www.k-5mathteachingresources.com http://mrsgebauer.com/mathsites.html http:www.mathwire.com/numbersense/placevalue.html	1.NBT.1, 1.NBT.2, 1.OA.5
Place Value	Why do we break numbers apart by tens and ones?	**Students will be able to:** 1. Identify the number of tens and ones in any two digit number. 2. Compare two two-digit numbers using the terms and symbols for greater than,	Anecdotal Observation Class discussion Practice pages	Read It! Draw It! Solve It! Dale Seymour Publications From One to One Hundred by	1.NBT.2, 1.NBT.3, 1.NBT.4, 1.NBT.5, 1.NBT.6,

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
	How does the position of a digit in a number affect the value of the number?	less than, or equal to. 3. Add two-digit by one-digit numbers using concrete and pictorial models. 4. Explain how they add on to any given two-digit number by ten. 5. Subtract multiples often from any two-digit number using concrete and pictorial models. Vocabulary: Ones, tens, hundreds, digit, expanded form, standard form, number word, mental math, before, after, between, order, least, greatest, tens, ones, greater than (>), less than (<), equal to (=)	Classwork Homework Assignments Unit test	Teri Sloat Every Buddy Counts by Stuart J. Murphy The Blast Off Kid by Laura Driscoll Scott Foresman- Addison Wesley Math 8.1-8.10 Investigations **U6**(1.1-1.7) **U8** www.k-5mathteachingresources.com	
Addition and Subtraction to 20	How can we find the missing number in a math sentence? How are addition and subtraction related? How does understanding that	**Students will be able to:** 1. Demonstrate an understanding of the concepts of addition and subtraction. 6. Use numbers to solve mathematical problems. 7. Determine whether or not a word problem requires addition or subtraction. 8. Combine and separate sets of objects. 9. Distinguish between greater than and less than.	Anecdotal Observation Class discussion Practice pages Classwork Homework Assignments Unit test	Scott Foresman- Addison Wesley Math 11.1-11.11 Investigations **U1**, **U3, U5, U6, U7, U8, U9**	1.OA.1, 1.OA.2, 1.OA.3,1.OA.4, 1.OA.5, 1.OA.6, 1.OA.7, 1.OA.8, 1.OA.MA.9

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
	addition and subtraction are related help us to solve math problems? What strategies do we use to figure out how much or how many we have? How can different sets of numbers be different?	10. Identify the inverse match of an addition or subtraction problem. 11. Solve addition and subtraction facts. Vocabulary: More than, fewer than, join, add, sum addition sentence, plus, equals, subtract, difference , subtraction sentence, minus , count on , addend, number line, double, count back, related facts, fact family, add, join, in all, take away, subtract, more, compare,		www.k-5mathteachingresources.com www.mathisfun.com **www.aaastudy.com/add26ax1.htm** **http://www.mathplayground.com**	
Two Digit Addition and Subtraction	What strategy could you use to add two-digit numbers?	**Students will be able to:** 1. Add and subtract groups of tens. 2. Solve two-digit number addition and subtraction facts without regrouping. 3. Add and subtract two digit numbers without regrouping. Vocabulary: ones digit, tens digit, estimate, more, less, add, sum, two-digit number, table, data, subtract, difference, number sentence, fact	Observation Class discussion Practice pages Classwork Homework Assignments Unit test	Scott Foresman- Addison Wesley Math 12.1-12.3, 12.6-12.8 Investigations **U8**(4A.1-4A.5)	1.NBT.3, 1.NBT.4, 1.NBT.5, 1.NBT.6,

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
				www.k-5mathteachingresources.com www.mathisfun.com www.aaastudy.com/add26ax1.htm http://www.mathplayground.com	
Graphs	How do we make sense out of data?	**Students will be able to:** 1. Gather data from others and themselves. 2. Interpret data to answer questions. 3. Represent and interpret collected data on a multitude of graphic organizers. 4. Draw conclusions and make predictions based on information gathered from data. Vocabulary: Picture graph, bar graph, graph, tally mark, change, equal share, more likely, less likely, chart, data, tally mark, record	Observation Class discussion Practice pages Classwork Homework Assignments Unit test	Scott Foresman- Addison Wesley Math 8.12-8.14 Investigations **U4**(1.1-1.4, 2.1-2.5, 3.4) www.k-5mathteachingresources.com	1.MD.4
Measurement	How do we measure objects? How do we compare objects by length?	**Students will be able to:** 1. Compare lengths of objects using standard and non-standard units.	Observation Class discussion Practice pages Classwork Homework	Scott Foresman- Addison Wesley Math 10.1-10.4	1.MD.1, 1.MD.2

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
		Vocabulary: length	Assignments Unit test	Investigation **U5** (1.1-1.6, 2.1-2.5) www.k-5mathteachingresources.com	

Ware Public Schools First Grade Pacing Guide

September	October	November	December	January	February	March	April	May	June
Making 5 and 10	Addition and Subtraction to 12	Addition and Subtraction to 12	Addition and Subtraction to 12	Time	Counting to 120	Place Value	Addition and Subtraction to 20	Graphs	Measurement of length
Addition and Subtraction to 12			Geometry and Fractions	Money	Place Value	Addition and Subtraction to 20	Two Digit Addition and Subtraction	Measurement of Length	

SUBJECT MATTER: Math Grades: __2__

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
Understanding Addition and Subtraction	How does knowing our facts help us solve math problems?	**Students will be able to:** 1. Practice (both orally and in writing) facts for addition and subtraction within 20 2. Use fact families and/or fact triangles to practice facts for addition and subtraction within 20 3. Find the missing part of a number sentence **4.** Choose an operation to solve a one- or two-step story problem **Vocabulary** Addition, subtraction, related facts, add, join, in all, take away, more, compare, plus, minus, addend, sum, addition, altogether, subtraction sentence, separate, related, fact, fact family, add on, count on, count back, digits	Anecdotal Observations Class Discussion Practice Pages Homework Assignments Unit Test	Manipulatives Scott Foresman - Addison Wesley Math 1.1-1.12 Investigations Unit 1.3 Combinations of 10, Unit 1.4 Addition and Subtraction Each Orange Slice Has 8 Slices by Paul Giganti, Jr. Mission: Addition by Loreeen Leedy Animals on Board by Stuart J. Murphy	2.OA.2

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
				http://mrsgebauer.com/mathsites.html www.k-5mathteachingresources.com http://www.dpi.state.nc.us/docs/acre/standards/common-core-tools/unpacking/math/2nd.pdf	
Fact Strategies for Addition and Subtraction	Algebra Why do we use different strategies to hep us add and subtract?	**Students will be able to:** 1. Solve addition and subtraction problems up to 20 using strategies learned • Double Facts to 18 • Double Plus 1 • Make 10 to Add 9 • Make 10 to add 7 or 8 • Count Back • Commutative Property of Addition **Vocabulary** Addition, subtraction, related facts, add, join, in all, take away, more, compare, plus, minus,	Anecdotal Observations Timed Quizzes Class Discussion Practice Pages	Manipulatives Scott Foresman - Addison Wesley Math 2.1-2.12 Investigations Unit 1.4 Addition and Subtraction	2.OA.2 2.NBT.9

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
		addend, sum, addition, altogether, subtraction sentence, separate, related, fact, fact family, add on, count on, count back, double plus 1	Homework Assignments Unit Test	Mastering Math Facts Animals on Board by Stuart J. Murphy Manipulatives Double the Ducks by Stuart J. Murphy www.k-5mathteachingresources.com http://mrsgebauer.com/mathsites.html http://www.dpi.state.nc.us/docs/acre/standards/common-core-tools/unpacking/math/2nd.pdf	

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
Place Value to 100	Why do we call some numbers even and some numbers odd? Why do numbers have place value?	**Students will be able to:** 1. Use place value charts and base ten blocks to represent up to three digit numbers 2. Use >, =, and < symbols to record the results of comparing two two-digit numbers, using place value charts. 3. Find numbers before, after, and between 4. Skip count on the hundred chart 5. Use manipulatives and drawings to show that any group contains either an even or odd number of objects **Vocabulary** ordinal numbers, ones, tens, hundreds, before, after, between, three-digit number, greater than >, less than <, equal to =, even , odd, number word, digits	Anecdotal Observations Class Discussion Practice Pages Homework Assignments Unit Test	Manipulatives Scott Foresman - Addison Wesley Math 3.1-3.3, 3.7-3.9 Investigations Unit 8.1 Adding Even and Odd Numbers http://illuminations.nctm.org/LessonDetail.aspx?ID=U58 www.k-5mathteachingresources.com http://www.dpi.state.nc.us/docs/acre/standards/common-core-	2.NBT.1 2.NBT.2 2.NBT.3 2.NBT.4 2.OA.2

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
				tools/unpacking/math/2nd.pdf	
Money	How much money do we have have (need)?	**Students will be able to:** 1. Identify and count dollar, dime, nickel, quarter, and penny 2. Demonstrate dollar and cent value with manipulatives 3. Compare sets of coins 4. Show the same monetary amount with different coin configurations **Vocabulary** Price, change, coin, cent, dime, nickel, quarter, dollar, greatest value, least value, decimal point (.) * higher groups may include half dollar	Anecdotal Observations Class Discussion Practice Pages Homework Assignments Unit Test	Manipulatives Scott Foresman - Addison Wesley Math 3.12-3.16, 3.18 Investigations Unit 1.2 Counting And Coins http://mrsgebauer.com/mathsites.html http://www.apples4theteacher.com/math.html#moneygames www.k-5mathteachingresources.com http://www.dpi.state.nc.us/docs/acre/standards/common-core-tools/unpacking/math/2nd.pd	2.MD.8

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
				f Tightwad Tod by Daphne Skinner Pigs Will Be Pigs by Amy Axelrod	
Mental Math Addition	How does knowing our facts help us solve math problems?	**Students will be able to:** 1. Mentally add 10 or 100 to any given number **Vocabulary** Mental math, more, ones digit, tens digit, more, less, hundreds, in all, plus, equals, addends, altogether, addition, add on, count on	Anecdotal Observations Class Discussion Practice Pages Homework Assignments Unit Test	Manipulatives Scott Foresman - Addison Wesley Math 4.1-4.3 http://mrsgebauer.com/mathsites.html www.k-5mathteachingresources.com http://www.dpi.state.nc.us/docs/acre/standards/common-core-tools/unpacking/math/2nd.pdf	2.NBT.8

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
Two-Digit Addition	Why is it important to follow an order when adding or subtracting multiple digit numbers?	**Students will be able to:** 1. Add two-digit numbers with and without regrouping 2. Use the number grid chart up to 1,000 to add by 10 or 100 from any given number 3. Add up to four sets of two- digit numbers **Vocabulary** Ones digit, tens digit, more, revise, add, regroup, two-digit number, number sentence	Anecdotal Observations Class Discussion Practice Pages Homework Assignments Unit Test	Manipulatives Scott Foresman - Addison Wesley Math 5.1-5.6 Investigations Unit 6.1 Working with Tens and Ones Unit 6.2 Working with 100 Unit 6.3 Adding to and Subtracting from 100 Unit 8.4 Addition A Collection for Kate by Barbara deRubertis The Long Wait by Annie Cobb Betcha! By Stuart J. Murphy http://mrsgebauer.com/mathsites.html www.k-5mathteachingresources.com http://www.dpi.state.nc.us/do	2.NBT.5 2.NBT.6 2.NBT.9

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
				cs/acre/standards/common-core-tools/unpacking/math/2nd.pdf	
Numbers to 1,000	Why do numbers have place value?	**Students will be able to:** 1. Skip count up to 1,000 by 5's, 10's, and 100's, beginning at any multiple of 5, and 10 or 100 2. Count hundreds, tens, and ones 3. Read and write numbers to 1,000 using base-ten numerals, number names, and expanded form 4. Change numbers by hundreds and tens 5. Use >, =, and < symbols to record the results of comparing two three-digit numbers, using place value chart **Vocabulary** ordinal numbers, ones, tens, hundreds, before, after, between, three-digit number, greater than >, less than <, equal to =, even , odd, expanded form, expanded notation, standard form, number word, thousands, word form	Anecdotal Observations Class Discussion Practice Pages Homework Assignments Unit Test	Manipulatives Scott Foresman - Addison Wesley Math 10.1-10.6 Investigations Unit 3.3 Counting by 2's, 5's, and 10's Unit 3.4 Place Value Unit 6.4 Making 100 with Equal Groups From One to One Hundred by Teri Sloat How Much, How Many, How Far, How Heavy, How Long, How Tall is 1,000 by Helen Nolan Every Buddy Counts by Stuart J. Murphy The Blast of Kid by Laura Driscoll Just Enough Carrots by Stuart J. Murphy	2.NBT.1 2.NBT.2 2.NBT.3 2.NBT.4

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
				Stay in Line by Teddy Slater Counton Pablo by Barbara deRubertis Spunky Monkeys on Parade by Stuart J. Murphy http://illuminations.nctm.org/LessonDetail.aspx?ID=U58 www.k-5mathteachingresources.com http://www.dpi.state.nc.us/docs/acre/standards/common-core-tools/unpacking/math/2nd.pdf	
Mental Math Subtraction	How does knowing our facts help us solve math problems?	**Students will be able to:** 1. Mentally subtract by 10 or 100 from any given number **Vocabulary** Mental math, less, ones digit, tens digit,	Anecdotal Observations Class Discussion	Manipulatives Scott Foresman - Addison Wesley Math 4.5-4.6 www.k-5mathteachingresources.com http://www.dpi.state.nc.us/docs/acre/standards/common-	2.NBT.8

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
		hundreds digit, subtract, difference	Practice Pages Homework Assignments Unit Test	core-tools/unpacking/math/2nd.pdf	
Two-digit Subtraction	Why is it important to follow an order when adding or subtracting multiple digit numbers?	**Students will be able to:** 1. Subtract two-digit numbers with and without regrouping 2. Use the number grid chart up to 1,000 to subtract by 10 or 100 from any given number 3. Use addition to check subtraction **Vocabulary** Ones digit, tens digit, less, revise, subtract, regroup, two-digit number, difference, number sentence	Anecdotal Observations Class Discussion Practice Pages Homework Assignments Unit Test	Manipulatives Scott Foresman - Addison Wesley Math 6.1-6.7 Investigations Unit 6.1 Working with Tens and Ones Unit 6.2 Working with 100 Unit 6.3 Adding to and Subtracting from 100 Unit 8.3 Subtraction A Collection for Kate by Barbara deRubertis The Long Wait by Annie Cobb Betcha! By Stuart J. Murphy www.k-5mathteachingresources.com	2.NBT.5 2.NBT.9

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
				http://www.dpi.state.nc.us/docs/acre/standards/common-core-tools/unpacking/math/2nd.pdf	
Adding and Subtracting 3- Digit Numbers	Why is it important to follow an order when adding or subtracting multiple digit numbers?	**Students will be able to:** 1. Add two three- digit numbers with and without regrouping. 2. Subtract three-digit numbers with or without regrouping. **Vocabulary** Three digit number, regrouping	Anecdotal Observations Class Discussion Practice Pages Homework Assignments Unit Test	Manipulatives Scott Foresman - Addison Wesley Math 11.2-11.4, 11.10-11.11 www.k-5mathteachingresources.com http://www.dpi.state.nc.us/docs/acre/standards/common-core-tools/unpacking/math/2nd.pdf	2.NBT.6 2.NBT.5 2.NBT.7 2.NBT.8 2.NBT.9
Geometry and Fractions	What are attributes of geometric figures? How can shapes be combined or separated to form	**Students will be able to:** 1. Identify flat surfaces, vertices, and edges in a solid figure 2. Relate plane shapes to solid figures by tracing the flat surfaces of solid figures 3. Use pattern blocks to make new shapes	Anecdotal Observations Class Discussion	Manipulatives Scott Foresman - Addison Wesley Math 7.1-7.2, 7.4-7.5, 7.9-7.13 Investigations Unit 2.1 Features of 2-Dimensional and 3-	2.G.1 2.G.2 2.G.3

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
	new shapes?	4. Identify congruency in plane shapes 5. Identify equal parts 6. Identify fractions of a set 7. Identify the fractional parts of a shape divided into thirds, fourths and halves **Vocabulary** Equal, halves, thirds, fourths, unequal, fraction, trapezoid, parallelogram, hexagon, side, angle, congruent, solid figure, cube, plane shape, circle, rectangle, trapezoid, parallelogram, hexagon, side, angle, triangle	Practice Pages Homework Assignments Unit Test	Dimensional Shapes Unit 2.2 What is a Rectangle? Unit 2.3 Symmetry Unit 7.1 One-Half Unit 7.2 Halves, Thirds, and Fourths Math by All Means by Marilyn Burns Geometry Grade 2 Eating Fractions by Bruce McMillan Give Me Half by Stuart J. Murphy The Hershey's Milk Chocolate Fractions Book by Jerry Pallotta Shapes, Shapes, Shapes by Tana Hoban The Gready Triangle by Marilyn Burns When a Line Ends…A Shape Begins by Rhonda Gowler Greene www.k-5mathteachingresources.com http://www.dpi.state.nc.us/docs/acre/standards/common-core-tools/unpacking/math/2nd.pd	

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
				f	
Time, Data, and Graphs	What time is it? Why do you need to know the difference between A.M. and P.M.? How can we represent the information we collected?	**Students will be able to:** 1. Demonstrate time to 5-minute intervals in both analog and digital format on clocks 2. Count by fives up to 60, noting 15,30, 45 and 60 in common terms as quarter and half 3. Use a calendar 4. Identify equivalent times 5. Create picture graphs and bar graphs with up to four categories of given information 6. Convert a standard number line into a line plot by displaying data on top of each number **Vocabulary** Tally marks, record, survey, data, pictograph, bar graph, line graph, predict, organzed list, table, line plots, time, analog time, digital time	Anecdotal Observations Class Discussion Practice Pages Homework Assignments Unit Test	Manipulatives Scott Foresman - Addison Wesley Math 8.1, 8.6-8.10, 8.12-8.13, 8.16 Investigations Unit 4.1 Working with Categorical Data Unit 4.2 Pocket and Teeth Data http://www.mathisfun.com/time-clocks.html www.apples4theteacher.com/math/time/ Pepper's Journal by Stuart J. Murphy It's All About Time, Max by Kitty Richards Clocks and More Clocks by Pat Hutchins What Time is It? By Sheila Keenan The Best Vacation Ever by Stuart J. Murphy	2.MD.7 2.MD.9 2.MD.10

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
				Lemonade for Sale by Stuart J. Murphy Fair is Fair! by Jennifer Dussling www.k-5mathteachingresources.com http://www.dpi.state.nc.us/docs/acre/standards/common-core-tools/unpacking/math/2nd.pdf	
Measurement	How do we determine which is the best tool (i.e. ruler, yardstick, measuring tape) to use to measure an object? Why do units matter when measuring the length of an object? How can we use one measuring tool to determine how much longer one object is	**Students will be able to:** 1. Measure various lengths from very short to very long and have the students pick the unit of measurement (inches, centimeters, feet, meters) that would make the most sense and explain why it was picked. 2. Solve addition and subtraction word problems for length 3. Determine the difference between two lengths within 100, students will use the number line to determine the difference. 4. Measure the same object using two different units of measurement and discuss why the number representing the lengths are different.	Anecdotal Observations Class Discussion Practice Pages Homework Assignments Unit Test	Manipulatives Scott Foresman - Addison Wesley Math 9.2,9.4 http://mrsgebauer.com/mathsites.html http://funbrain.com/funbrain/measure/ www.k-5mathteachingresources.com http://www.dpi.state.nc.us/docs/acre/standards/common-core-tools/unpacking/math/2nd.pdf	2.MD.1 2.MD.2 2.MD.3 2.MD.4

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
	than another? How can number lines and rulers be used to find sum and difference?	**Vocabulary** Length, ruler, inches, centimeter, yard, meterstick, feet, foot, yardstick		The Best Bug Parade by Stuart J. Murphy Length by Henry Pluckrose Keep Your Distance by Gail Herman Measuring Penny by Loreen Leedy	
Using Addition to Understand Multiplication	Arrays Repeated Addition How does an array show repeated addition?	**Students will be able to:** 1. Determine whether a group of objects (up to 20) is odd or even by pairing objects or counting by 2 and write a corresponding equation to show the sum of 2 equal addends. 2. Build arrays up to five rows/5 columns and write corresponding equations using repeated addition. **Vocabulary** Skip counting, array, row, column, rmultiples	Anecdotal Observations Class Discussion Practice Pages Homework Assignments Unit Test	Manipulatives Scott Foresman - Addison Wesley Math 12.1-12.4 www.k-5mathteachingresources.com Reese's Pieces Count by Fives by Jerry Pallotta http://www.dpi.state.nc.us/docs/acre/standards/common-core-tools/unpacking/math/2nd.pdf	2.OA.4

Ware Public Schools Second Grade Pacing Guide

September	October	November	December	January	February	March	April	May	June
Understanding Addition and Subtraction	Place Value to 100	Mental Math: Addition	Numbers to 1,000	Mental Math: Subtraction	Adding and Subtraction Three-Digit Numbers	Geometry and Fractions	Time, Data, and Graphs	Measurement	Using Addition to Understand Multiplication
Fact Strategies for Addition and Subtraction	Money	Two-Digit Addition		Two- Digit Subtraction					

Ware Public Schools: Third Grade Mathematics Pacing Guide

September	October	November	December	January	February	March	April	May	June
2.NBT.3 Read and write numbers through 1,000, in numeral, word, and expanded form. **3.OA.8** One and two step problems with addition and subtraction, any unknown. **3.NBT.1** Use place value to round whole numbers to the nearest 10 or 100. **3.NBT.2** Fluently add and subtract within 1,000 using a variety of strategies.	**3.OA.1** Product = number of groups x size of groups. **3.OA.5** Commutative property. **3.OA.2** Quotient as set size or number of sets. **3.OA.3** Multiply and divide to solve word problems (equal groups, arrays, measurements) within 100, shown with drawings and equations.	**3.OA.3** Multiply and divide to solve word problems (equal groups, arrays, measurements) within 100, shown with drawings and equations. **3.OA.5** Associative property. ***Thanksgiving Break*** **3.OA.9** Identify patterns in *addition tables*, connect to repeated addition.	**3.OA.5** Distributive property. **3.MD.5** Recognize area as an attribute of 2-D shapes. **3.MD.6** Measure area by counting square units. **3.M.7** Connect area to addition and multiplication.	**3.OA.4** Solve for an unknown, all operations. **3.OA.6** Division as unknown factor, inverse operations. **3.OA.8** Solve problems using all four operations and assess reasonableness of answers. **3.NBT.2** Fluently add and subtract within 1,000, using and explaining algorithms. **3.MD.1** Tell time to the nearest minute. ***Emphasis on problem solving this month***	**3.G.2** Partition shapes into parts with equal areas and represent as a fraction. **3.NF.1** Understand numerator and denominator and connect fraction notation to × and ÷. ***Winter Break*** **3.NF.2** Represent fractions on number lines. **3.NF.3** Recognize and generate simple equivalent fractions and compare fractions.	**3.MD.1** Solve problems involving elapsed time. **3.MD.2** Measure and estimate liquid volume and mass and use to solve problems using the four operations. **3.MD.3** Draw scaled picture graphs and bar graphs. Answer comp. questions about the data. **3.MD.4** Generate measurement data and display on line plot marked with fractional intervals of whole, halves, and fourths.	**3.OA.7** Know all multiplication and division facts within 100 by memory. **3.OA.8** 2 step equations with letters as variables for all four operations. **3.OA.9** Identify patterns in *multiplication tables*, connect to distributive property. **3.NBT.3** Multiply one digit whole numbers by multiples of ten.	**3.G.1** Describe and analyze groups and subgroups of 2-D shapes. **3.MD.8** Distinguish between area and perimeter, solve problems regarding perimeter of polygons.	*Preview of fourth grade content.* *Additional reinforcement if necessary.* *Re-address "power standards."* ***Power Standards:*** *NBT.1 to 3* *OA.1* *OA.3 to 5* *OA.7to 9* *MD.2* *MD.4* *MD.7b* *MD.8* *G.1*
	3.OA.7: Know all multiplication and division facts by memory. ***This standard should be addressed throughout the year. ***								

Ware Public Schools: Third Grade Mathematics Pacing Guide

SUBJECT MATTER: Mathematics Grade: 3

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
Unit 1: Place Value, Addition, and Subtraction	How does understanding place value help you solve addition and subtraction problems? In what situations would rounding numbers be useful? What examples can be used to show the relationship between addition and subtraction?	Students will be able to read and write numbers to 1,000 using base ten numerals, number names, and expanded form. Students will be able to use place value understanding to round whole numbers to the nearest 10 or 100. Students will be able to fluently add and subtract within 1000 using • strategies and algorithms based on place value • properties of operations • the relationship between addition and subtraction. Students will be able to solve two step word problems using addition and subtraction. Students will be able to solve one and two step addition and subtraction word problems that include an unknown quantity (ex: 45 - ? = 35)	Anecdotal Observation Class Discussion Practice Pages Homework Assignments Unit Test	Pacing: 4 Weeks Scott Foresman-Addison Wesley Math: 1.4, 1.10, 2.1, 2.2, 2.4, 2.5, 2.6, 2.9, 2.10, 3.2, 3.6 *See appendix for additional resources. **Students will not add or subtract using the traditional algorithm until later. The focus at this point is on using place value strategies.	2.NBT.3 3.NBT.1 3.NBT.2 3.OA.8
Unit 2: Foundations of	How are repeated addition and multiplication	Students will understand that in multiplication the product equals the number of equal groups times the amount in each group (ex: interpret	Anecdotal Observation	Pacing: 4 Weeks	3.OA.1

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
multiplication and division	related? How can you use what you know about repeated subtraction, equal sharing, and forming equal groups to solve division problems? What strategies aid in mastering multiplication and division facts?	5x7 as the total number of objects in five groups of seven objects each). Students will understand and apply the commutative property of multiplication. (ex: 6x4 = 4x6) Students will understand division as sharing equally among a number of groups (ex: 56 ÷ 7 can be interpreted as 56 items split evenly into seven groups). Students will be able to use multiplication and division within 100 to solve word problems involving: • equal groups • arrays • measurement quantities Students will begin learning their multiplication and division math facts.	Class Discussion Practice Pages Timed Quizzes Homework Assignments Unit Test	Scott Foresman-Addison Wesley Math: 5.1, 5.2, 5.5-5.7, 5.9-5.11, 6.1-6.5, 7.1, 7.6-7.10, 7.12 "Times Tables The Fun Way" Program Mastering Math Facts Cuisenaire Rods and manipulatives for arrays 100s Charts Flashcards *See appendix for additional resources.	3.OA.5 3.OA.2 3.OA.3 3.OA.7

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
Unit 3: Expanding concepts of multiplicati on	What are the mathematical properties that govern multiplication and how are they used? How does skip counting and number patterns help you learn multiplication facts? What clues in a word problem help you decide which operation(s) to use?	Students will understand and apply the associative property of multiplication. ex: 3x5x2 = (3x5) x2 or 3 x (5x2) Students will be able to identify patterns in the addition table and multiplication table and explain those using properties of operations. Students will be able to solve multiplication and division problems by using drawings to represent the problem. Students will be able to solve multiplication and division equations that use a variable for the unknown quantity. Students will continue to learn their multiplication and division math facts.	Anecdotal Observation Class Discussion Practice Pages Timed Quizzes Homework Assignments Unit Test	Pacing: 4 Weeks Scott Foresman-Addison Wesley Math: 5.3, 5.8, 6.7-6.11, 7.3, 7.12, 7.13 “Times Tables The Fun Way” Mastering Math Facts Cuisenaire Rods and manipulatives for arrays 100s Charts Flashcards *See appendix for additional resources.	3.OA.3 3.OA.5 3.OA.9 3.OA.7

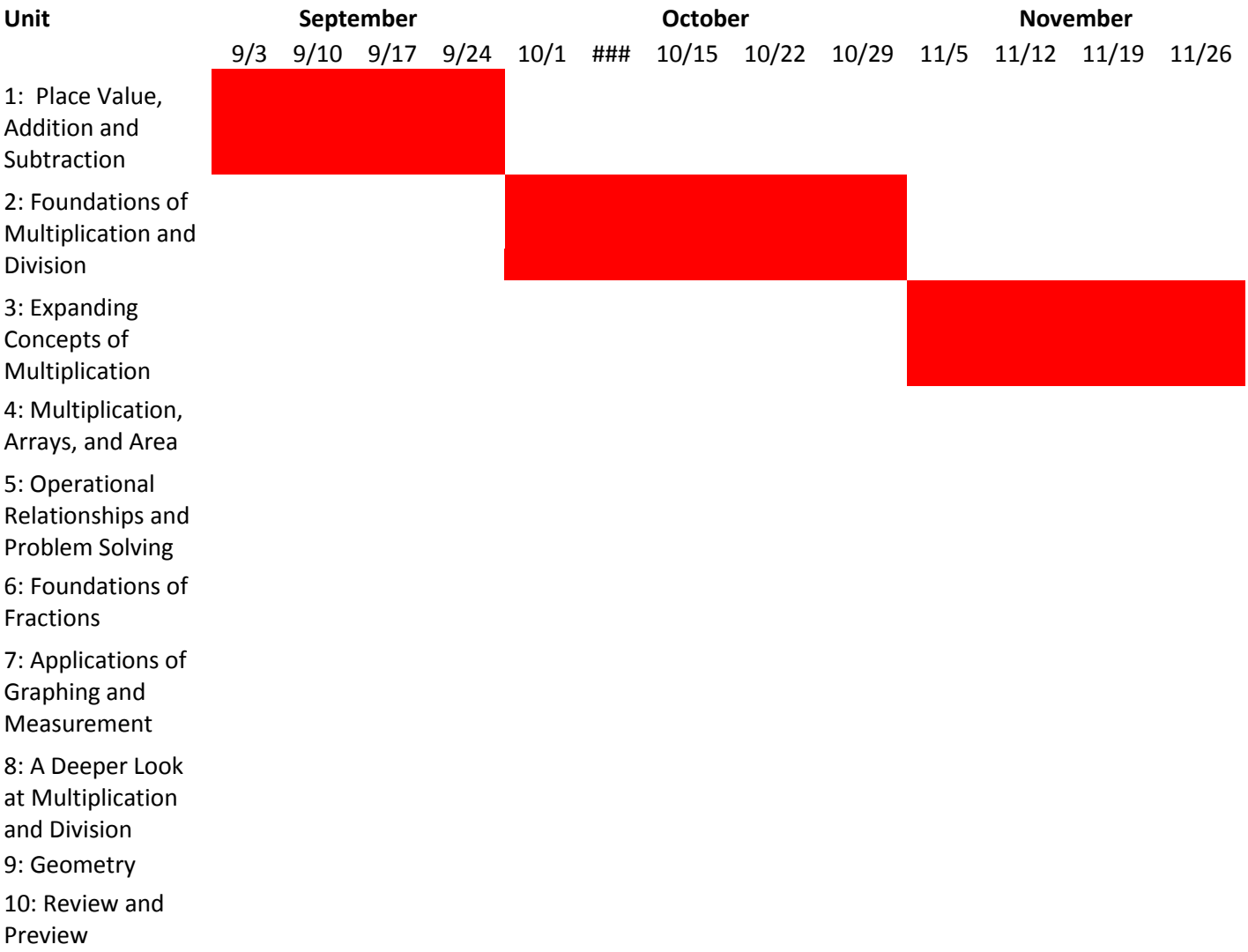
Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
Unit 4: Multiplication, Arrays, and Area.	What are the mathematical properties that govern multiplication and how are they used? How are multiplication and area related and how does multiplication help you find the area of rectangles and rectilinear figures?	Students will understand and apply the distributive property of multiplication (knowing 8x5=40 and 8x2=16 then 8x7=56). Students will know what area is and how to find the area of a rectangle and of rectilinear figures using a variety of strategies: • counting unit squares • concrete models (tiling) • multiplying side lengths. Students will understand the relationship between multiplication and area.	Anecdotal Observation Class Discussion Practice Pages Timed Quizzes Homework Assignments Unit Test	Pacing: 3 Weeks Scott Foresman-Addison Wesley Math: 8.12 “Times Tables The Fun Way” Mastering Math Facts Cuisenaire Rods, square tiles, grid paper and other manipulatives for arrays *See appendix for additional resources.	3.OA.5 3.MD.5 3.MD.6 3.MD.7 3.OA.7

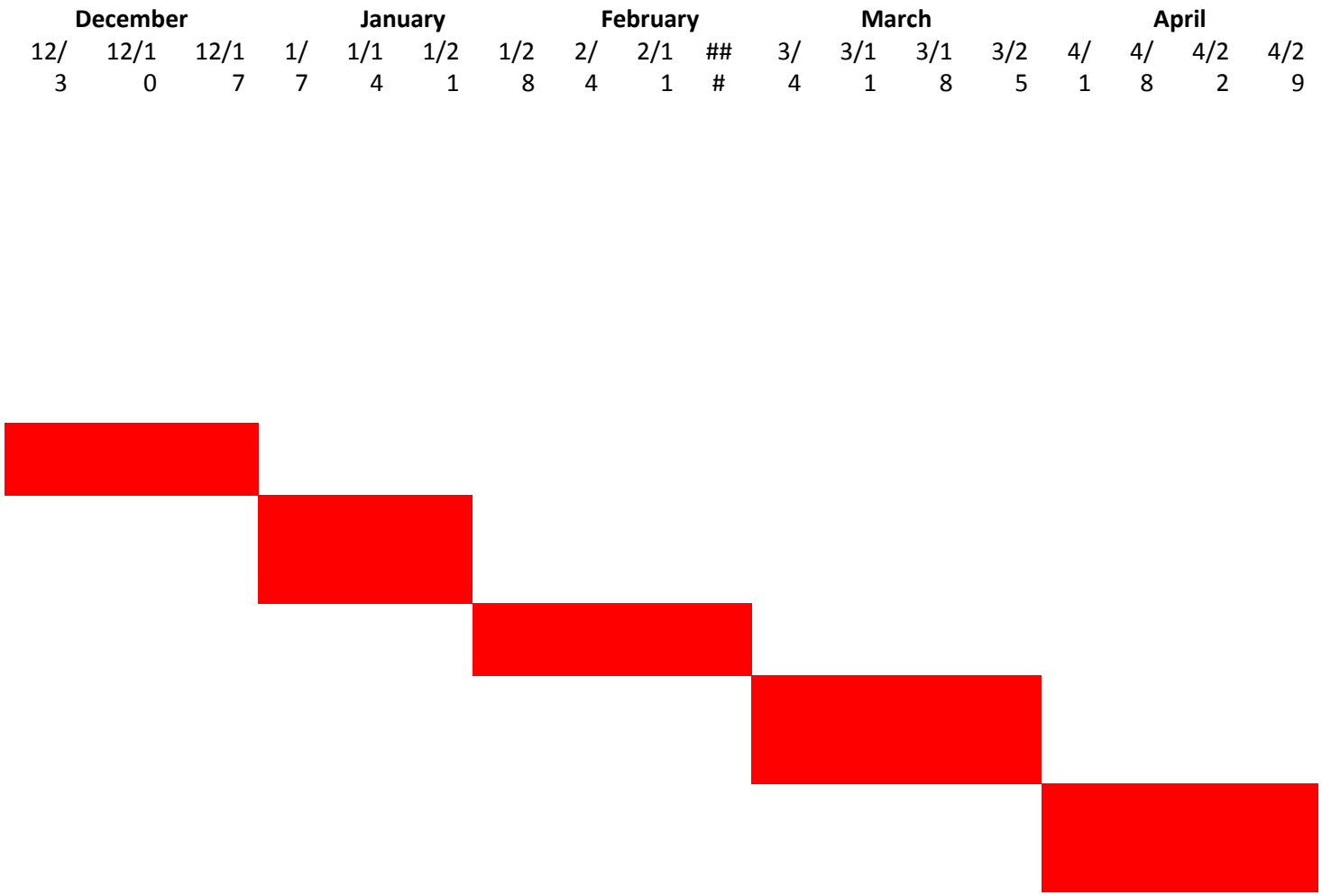
Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
Unit 5 **Operational relationship and problem solving**	How can you solve a problem when there is an unknown? How are the four mathematical operations related to each other? What are the advantages and disadvantages of estimating?	Students will understand the inverse relationship between multiplication and division and be able to solve multiplication and division problems with an unknown whole number in any location within the equation. Students will use their knowledge of multiplication facts to solve related division equations. Students will determine whether or not an answer to an equation (any operation) is reasonable through mental math and estimation. Students will use a variety of place value strategies to add and subtract within 1,000 (this does not include the traditional algorithm). Students will tell and write time to the nearest minute using analog clocks.	Anecdotal Observation Class Discussion Practice Pages Timed Quizzes Homework Assignments Unit Test	Pacing: 3 Weeks Scott Foresman-Addison Wesley Math: 7.5 Cuisenaire Rods, base ten blocks, and other manipulatives Analog clocks Mastering Math Facts *See appendix for additional resources.	3.OA.4 3.OA.6 3.OA.8 3.NBT.2 3.MD.1 3.OA.7
Unit 6: Foundations of fractions	How can you use models and drawings to show your understanding of	Students will divide shapes into equal parts and name the area of the parts in fraction form.	Anecdotal Observation	Pacing: 4 Weeks Scott Foresman-Addison	3.G.2 3.NF.1 3.NF.2

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
	fractional parts? How do you explain the meaning of a fraction and its numerator and denominator, and use your understanding to represent and compare fractions? How can you represent a fraction on a number line (how is a whole represented on a number line)?	Students will develop an understanding of fractions as equal parts of a whole and express fractions as fair sharing, parts of a whole, and parts of a set. Students will identify and locate fractions on a number line between 0 and 1. Students will recognize and generate simple equivalent fractions and explain why they are equivalent. Students will express whole numbers as fractions and identify fractions that are equal to whole numbers (3 = 3/1, 4/4 = 1). Students will compare two fractions with and without visual fraction models.	Class Discussion Practice Pages Timed Quizzes Homework Assignments Unit Test	Wesley Math: 9.1-9.4, 9.6-9.8 Fraction Strips, circles, Cuisenaire Rods and other manipulatives Mastering Math Facts *See appendix for additional resources.	3.NF.3 3.OA.7
Unit 7: Applications of Graphing and Measurement	When would it be appropriate to use an estimation for liquid volume or mass? Why and how can we represent the same	Students will solve problems using elapsed time. Students will measure and estimate liquid volume and mass and use to solve problems using the four operations.	Anecdotal observations Class Participation Student created bar graphs and picture graphs	Pacing: 4 weeks Scott Foresman-Addison Wesley Math: 4.3, 4.6-4.7, 4.11-4.12, 9.13, 12.1-12.2, 12.4-12.5	3.MD.1 3.MD.2 3.MD.3 3.MD.4

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
	data in a number of ways? Why do we analyze data? How can graphic representation of data help solve problems?	Students will draw scaled picture graphs and bar graphs. Students will then answer comprehension questions about the data. Students will generate measurement data and display on line plot marked with fractional intervals of whole, halves, and fourths.	Practice pages Homework assignments Unit Test	Measuring manipulatives *See appendix for additional resources.	
Unit 8: **A Deeper Look at Multiplication and Division**	How do we choose the best method for solving an equation? What are variables, and what can they represent? How do we analyze and understand patterns and relations?	Students will know all multiplication and division facts (within 100) by memory. Students will solve 2 step equations with letters as variables for all four operations. Students will identify patterns in multiplication tables and connect to the distributive propery of multiplication. Students will multiply one digit whole numbers by multiples of ten.	Anecdotal observations Class Participation Mastering Math Facts Practice pages Homework Assignments Unit Test	Pacing: 4 weeks Scott Foresman-Addison Wesley Math: 11.1, 11.5-11.9, 11.12-11.14 Mulitplication tables *See appendix for additional resources.	3.OA.7 3.OA.8 3.OA.9 3.NBT.3

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
	How do I decided which strategy and/or operation to use when solving a problem?				
Unit 9: Geometry	What are the ways to describe shapes? Why do similarities and differences exist between shapes? How can objects be compared using descriptors from geometry? What is the difference between area and perimeter?	Students will describe and analyze groups and subgroups of 2-D shapes. Students will distinguish between area and perimeter and solve problems regarding perimeter of polygons.	Anecdotal observations Class Participation Practice Pages Homework Assignments Unit Test	Pacing: 4 weeks Scott Foresman-Addison Wesley Math: 8.6-8.12 Pattern blocks, rulers and other manipulatives *See appendix for additional resources.	3.G.1 3.M.8


Unit
September
October
November
9/3
9/10
9/17
9/24
10/1
###
10/15
10/22
10/29
11/5
11/12
11/19
11/26
1: Place Value, Addition and Subtraction
2: Foundations of Multiplication and Division
3: Expanding Concepts of Multiplication
4: Multiplication, Arrays, and Area
5: Operational Relationships and Problem Solving
6: Foundations of Fractions
7: Applications of Graphing and Measurement
8: A Deeper Look at Multiplication and Division
9: Geometry
10: Review and Preview


December
January
February
March
April
12/3
12/10
12/17
1/7
1/14
1/21
1/28
2/4
2/11
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3/4
3/11
3/18
3/25
4/1
4/8
4/22
4/29

May					**June**	
5/6	5/13	5/20	5/27	6/3	6/10	###

Third Grade Math Teaching Resources

Operations and Algebraic Thinking		
3.OA.1	Array Picture Cards	http://www.k-5mathteachingresources.com/support-files/arraypicturecards.pdf
3.OA.2	Sharing or Grouping	http://www.k-5mathteachingresources.com/support-files/Sharing-or-Grouping.pdf
	All About Multiplication	http://illuminations.nctm.org/LessonDetail.aspx?id=U109
3.OA.3	Building Arrays	http://www.k-5mathteachingresources.com/support-files/buildingarrays.pdf
	Number Story Arrays 1	http://www.k-5mathteachingresources.com/support-files/number-story-arrays-set1.pdf
	Number Story Arrays 2	http://www.k-5mathteachingresources.com/support-files/x5x10wordproblems.pdf
	Multiplication Word Problems	http://www.k-5mathteachingresources.com/support-files/3rd-gd-multiplication-word-problems.pdf
	Equal Rows in a Marching Band	http://www.k-5mathteachingresources.com/support-files/equalrowsinamarchingband.pdf
	Sharing Marbles Equally	http://www.k-5mathteachingresources.com/support-files/sharingmarbles.pdf
3.OA.4	Missing Numbers (Multiplication)	http://www.k-5mathteachingresources.com/support-files/missingnumbersmultiplication.pdf
	What is the Missing Number? (Division)	http://www.k-5mathteachingresources.com/support-files/whatisthemissingnumberdivision.pdf
3.OA.5	Split a Factor	http://www.k-5mathteachingresources.com/support-files/Split-a-Factor.pdf
	Decompose a Factor	http://www.k-5mathteachingresources.com/support-files/Decompose-a-Factor.pdf
	The Product Game	http://illuminations.nctm.org/LessonDetail.aspx?id=U100
	Multiply and Conquer	http://illuminations.nctm.org/LessonDetail.aspx?id=L858
	SMART Notebook Smartboard Lessons	G3M009
3.OA.6	Division as Unknown Factor Problems	http://www.k-5mathteachingresources.com/support-files/division-as-unknown-factor.pdf

	Multiplication/Division Number Stories	http://www.k-5mathteachingresources.com/support-files/multiplicationdivisionstories3oa6.pdf
3.OA.7	Cuisenaire Multiplication	http://www.k-5mathteachingresources.com/support-files/cuisenaire-multiplication.pdf
	Cuisenaire Rectangles	http://www.k-5mathteachingresources.com/support-files/cuisenaire-rectangles.pdf
	Division Squares	http://www.k-5mathteachingresources.com/support-files/divisionsquares.pdf
	Division Spin (Divide by 2)	http://www.k-5mathteachingresources.com/support-files/divisionspindivideby2.pdf
	Division Spin (Divide by 10)	http://www.k-5mathteachingresources.com/support-files/divisionspindivideby10final.pdf
	I Have/Who Has	http://www.k-5mathteachingresources.com/support-files/ihavewhohas.pdf
	I Have/Who Has (x2 & x10)	http://www.k-5mathteachingresources.com/support-files/ihavewhohasx10andx2.pdf
	I Have/Who Has (x2 & x5)	http://www.k-5mathteachingresources.com/support-files/ihavewhohasx5andx2.pdf
	I Have/Who Has (x3 & x5)	http://www.k-5mathteachingresources.com/support-files/ihavewhohasx3andx5.pdf
	Multiples Game	http://www.k-5mathteachingresources.com/support-files/multiples2.pdf
	Multiplication 4 in a Row (3,4,5,6)	http://www.k-5mathteachingresources.com/support-files/multifourinarow2.pdf
	Multiplication Number Wheel	http://www.k-5mathteachingresources.com/support-files/multiplicationnumberwheel.pdf
	Multiplication Bump (x2)	http://www.k-5mathteachingresources.com/support-files/multiplicationbumpx2.pdf
	Multiplication Bump (x10)	http://www.k-5mathteachingresources.com/support-files/multiplicationbumpx10.pdf
	Multiplication Bump (x100)	http://www.k-5mathteachingresources.com/support-files/multiplicationbumpx100.pdf
	Multiplication Challenge	http://www.k-5mathteachingresources.com/support-files/multiplicationchallenge.pdf
	The Product Is	http://www.k-5mathteachingresources.com/support-files/theproductis3oa7.pdf
	The Answer Is	http://www.k-5mathteachingresources.com/support-files/theansweris3oa7.pdf
	Multiply It	http://www.k-5mathteachingresources.com/support-files/Multiply-It.pdf
	Six Sticks	http://www.k-5mathteachingresources.com/support-files/Six-sticks.pdf

	Six and Seven as Factors	http://illuminations.nctm.org/LessonDetail.aspx?id=U150
	SMART Notebook Smartboard Lessons	G3M007, G3M008, G3M012
3.OA.8	Two Step Word Problems 1	http://www.k-5mathteachingresources.com/support-files/3rdgrademultistepproblems.pdf
	Two Step Word Problems 2	http://www.k-5mathteachingresources.com/support-files/twostepwordproblemssetset2.pdf
	SMART Notebook Smartboard Lessons	G3M005
3.OA.9	Odd and Even Sums	http://www.k-5mathteachingresources.com/support-files/oddandevensums.pdf
	Odd and Even Products	http://www.k-5mathteachingresources.com/support-files/oddandevenproducts.pdf
	Roll a Rule	http://www.k-5mathteachingresources.com/support-files/rollarule.pdf
	Using Number Patterns to Describe Multiples	http://www.k-5mathteachingresources.com/support-files/usingnumberpatternstodescribemultiples.pdf
	Increasing and Decreasing Number Patterns	http://www.k-5mathteachingresources.com/support-files/increasinganddecreasingnumberpatterns3oa9.pdf
	Two Step Number Problems	http://www.k-5mathteachingresources.com/support-files/twostepnumberpatterns3.oa9.pdf
	Patterns in the Multiplication table	http://www.k-5mathteachingresources.com/support-files/patternsinthemultiplicationtable.pdf
	Multiplication: It's in the Cards	http://illuminations.nctm.org/LessonDetail.aspx?id=U110
	Patterns that Grow	http://illuminations.nctm.org/LessonDetail.aspx?id=U103
Number and Operations in Base Ten		
3.NBT.1	Round Up or Down?	http://www.k-5mathteachingresources.com/support-files/round-up-or-down.pdf
	Round to the Nearest Ten	http://www.k-5mathteachingresources.com/support-files/roundtothenearest10game.pdf
	Round to the Nearest 100	http://www.k-5mathteachingresources.com/support-files/roundtothenearest100game.pdf
	SMART Notebook Smartboard Lessons	G3M001, G3M003

3.NBT.2	3 Digit Addition Split	http://www.k-5mathteachingresources.com/support-files/3-digit-addition-split.pdf
	Doubling to 1,000	http://www.k-5mathteachingresources.com/support-files/doublingto1000.pdf
	Difference Add	http://www.k-5mathteachingresources.com/support-files/differenceadd.pdf
	SMART Notebook Smartboard Lessons	G3M006
3.NBT.3	Multiples of Ten Multiply	http://www.k-5mathteachingresources.com/support-files/multiplesoftenmultiply.pdf
	SMART Notebook Smartboard Lessons	G3M011
Number and Operations - Fractions		
3.NF.1	Cuisenaire Fractions	http://www.k-5mathteachingresources.com/support-files/cuisenaire-fractions.pdf
	Fraction Barrier Game	http://www.k-5mathteachingresources.com/support-files/fractionbarriergame.pdf
	Fraction Barrier Game Grid	http://www.k-5mathteachingresources.com/support-files/fractionbarriergamegrid.pdf
	Exploring Fraction Kits	http://www.k-5mathteachingresources.com/support-files/exploringfractionkits.pdf
	Equal Parts on the Geoboard	http://www.k-5mathteachingresources.com/support-files/equalpartsonthegeoboardpdf.pdf
	Geoboard Fourths	http://www.k-5mathteachingresources.com/support-files/geoboardfourths.pdf
	Geoboard Eighths	http://www.k-5mathteachingresources.com/support-files/congruenteighths.pdf
	Fractions with Color Tiles	http://www.k-5mathteachingresources.com/support-files/fractionswithcolortiles.pdf
	Find one Half of a Group	http://www.k-5mathteachingresources.com/support-files/findonehalfofagroup.pdf
	Finding Fractions of a Group	http://www.k-5mathteachingresources.com/support-files/findingfractionsofagroup.pdf
	Fraction Posters	http://www.k-5mathteachingresources.com/support-files/fractionposters.pdf
	Eggsactly With Fractions (fractions of a set)	http://illuminations.nctm.org/LessonDetail.aspx?id=U112

	Fun with Pattern Block Fractions	http://illuminations.nctm.org/LessonDetail.aspx?id=U113
3.NF.2	Fraction Number Lines	http://www.k-5mathteachingresources.com/support-files/fraction-number-lines.pdf
	Fun With Fractions	http://illuminations.nctm.org/LessonDetail.aspx?id=U152
3.NF.3	Pizza for Dinner	http://www.k-5mathteachingresources.com/support-files/pizza-for-dinner-3nf3a.pdf
	Build a Hexagon	http://www.k-5mathteachingresources.com/support-files/buildahexag.pdf
	Creating Equivalent fractions	http://www.k-5mathteachingresources.com/support-files/creatingequivalentfractions.pdf
	Who Ate More?	http://www.k-5mathteachingresources.com/support-files/who-ate-more-3nf3d.pdf
	Fun With Fractions	http://illuminations.nctm.org/LessonDetail.aspx?id=U152
	SMART Notebook Smartboard Lessons	G3M013
Geometry		
3.G.1	2D Shape Sort	http://www.k-5mathteachingresources.com/support-files/2dshapesort.pdf
	Comparing Quadrilaterals	http://www.k-5mathteachingresources.com/support-files/comparingquadrilaterals.pdf
	SMART Notebook Smartboard Lessons	G3M016, G5M019
3.G.2	Geoboard Fourths	http://www.k-5mathteachingresources.com/support-files/geoboardfourths.pdf
	Congruent Eighths	http://www.k-5mathteachingresources.com/support-files/congruenteighths.pdf
	Fractions with Color Tiles	http://www.k-5mathteachingresources.com/support-files/fractionswithcolortiles.pdf
Measurement and Data		
3.MD.1	Elapsed Time Ruler	http://www.k-5mathteachingresources.com/support-files/elapsedtimerulersample1.pdf

	Elapsed Time Word Problems	http://www.k-5mathteachingresources.com/support-files/elapsedtimewordproblems.pdf
	SMART Notebook Smartboard Lessons	G3M024
3.MD.2	Volume and Mass Word Problems	http://www.k-5mathteachingresources.com/support-files/capacity-mass-word-problems.pdf
	Estimating Weight	http://www.k-5mathteachingresources.com/support-files/estimatingweight.pdf
	More of Less than a Liter?	http://www.k-5mathteachingresources.com/support-files/moreorlessthanaliter.pdf
	Capacity Lineup	http://www.k-5mathteachingresources.com/support-files/capacitylineup.pdf
3.MD.3	Button Bar Graph	http://www.k-5mathteachingresources.com/support-files/buttonbargraph.pdf
	Button Pictograph	http://www.k-5mathteachingresources.com/support-files/buttonpictograph.pdf
	Jake's Survey	http://www.k-5mathteachingresources.com/support-files/jakessurvey.pdf
	Collecting and Representing Data	http://www.k-5mathteachingresources.com/support-files/collectingandrepresentingdata.pdf
	SMART Notebook Smartboard Lessons	G3M025
3.MD.4	Measuring to the Nearest Half Inch	http://www.k-5mathteachingresources.com/support-files/measuring-to-the-nearest-half-inch.pdf
	Measuring to the Nearest Quarter Inch	http://www.k-5mathteachingresources.com/support-files/measuring-to-the-nearest-quarter-inch.pdf
	Measuring Strips Line Plot	http://www.k-5mathteachingresources.com/support-files/measuringstripslineplot.pdf
3.MD.5	Exploring Area	http://www.k-5mathteachingresources.com/support-files/exploringarea.pdf
	Area on the Geoboard	http://www.k-5mathteachingresources.com/support-files/areaonthegeobaord.pdf
3.MD.6	Rectangles with Color Tiles	http://www.k-5mathteachingresources.com/support-files/rectangles-with-color-tiles.pdf
	Comparing Rectangles	http://www.k-5mathteachingresources.com/support-files/comparing-rectangles.pdf
	Rectangular Area Cards	http://www.k-5mathteachingresources.com/support-files/rectangulareareacards.pdf

3.MD.7	Developing a Formula for the Area of a Rectangle	http://www.k-5mathteachingresources.com/support-files/developingaformulaforthe areaofarectangle.pdf
	Area Word Problems	http://www.k-5mathteachingresources.com/support-files/area-word-problems-3md7.pdf
	Designing a Flower Bed	http://www.k-5mathteachingresources.com/support-files/designingaflowerbed.pdf
	Area of Irregular Figures	http://www.k-5mathteachingresources.com/support-files/areaofirregularfigures.pdf
	Measuring Perimeter	http://www.k-5mathteachingresources.com/support-files/measuringperimeter.pdf
	Perimeter on the Geoboard	http://www.k-5mathteachingresources.com/support-files/perimeteronthegeoboard.pdf
	Perimeter with Color Tiles	http://www.k-5mathteachingresources.com/support-files/perimeterwithcolortiles.pdf
	Designing a Rabbit Enclosure	http://www.k-5mathteachingresources.com/support-files/designingarabbitenclosure.pdf
	The Perimeter Stays the Same	http://www.k-5mathteachingresources.com/support-files/theperimeterstaysthesame.pdf
	The Area Stays the Same	http://www.k-5mathteachingresources.com/support-files/theareastaysthesame.pdf
	Perimeter Word Problems	http://www.k-5mathteachingresources.com/support-files/perim-word-problems.pdf
	Four Square Galore! (area in real life)	http://illuminations.nctm.org/LessonDetail.aspx?id=L860
	SMART Notebook Smartboard Lessons	G3M023
3.MD.8	SMART Notebook Smartboard Lessons	G3M023

*Smartboard lessons can be found in the Notebook Software on the Ware Public School Computers.

- Click “Notebook Software” -> “resources” -> “team content” -> then click the drop down menu to select lessons.
- Lessons that begin with “G3” are found under third grade content and “G5” are found under fifth grade content.

Grade 3 Common Core Resources: Investigations Program

These third grade lessons, games, practice sheets, and resources are compiled from the 2008 Investigations Curriculum.

Investigations Unit 2: Surveys and Line Plots

Bar Graphs:

- 3.MD.3 - Session 1.4 – Comparing with Bar Graphs (page 49)
- 3.MD.3 - Session 1.5, Activity 3 – Interpreting Bar Graphs (page 59)

Measurement:

- 3.MD.4 - Session 3.1, Activity 1 and Math Workshop 2 – Is Your Foot a Foot Long? (page 124)
- 3.MD.4 - Session 3.4, Activity 2 – Representing and Describing the Pattern Block Data (page 150)
    - This activity utilizes measurement data, but links back to line plots as students represent the data set on a line plot.

Investigations Unit 3: Collections and Travel Stories

These lessons might best be used as a review if needed or for struggling learners. The lessons in this unit involve addition strategies of numbers up to a total of 400 and subtraction strategies based around 100. For more advanced students, the lessons from Unit 8 might be more beneficial.

Addition Using Place Value Strategies:

- 3.NBT.2 - Session 2.1: How Many Stickers? (page 68)
- 3.NBT.1 & 2 - Session 2.2: Combining Collections (page 75)
    - This session focuses on solving addition problems of two and three-digit numbers up to 400. It also includes a section on estimation to assess the reasonableness of answers (3.OA.8)
- 3.OA.8 - Session 2.4, 1A – Collections Story Problems (page 86)
    - This is a story problem worksheet that could be used as an assessment.
- 3.NBT.2 - Session 2.6, Activity 1 – Introducing Collections Match (page 95)
    - This is a game involving addition of two, three-digit numbers.
- 3.NBT.2 - Session 2.7, Activity 1 – Addition Strategies (page 100)
    - This is a worksheet that could be used as an assessment.

Subtraction Using Place Value Strategies:

- 3.NBT.2 - Session 3.3 – How Far From 100? (page 122)
    - This is a game where students use number cards to make two and three-digit numbers as close to 100 as possible. They then calculate the difference from 100.
- 3.NBT.2 - Session 3.4 – Travel Problems – Crossing Over 100 (page 128)
    - Using an unmarked number line to solve subtraction problems.
- 3.NBT.2 & 3.OA.8 - Session 3.5 – Finding the Difference Between Two Numbers (page 136)
- 3.NBT.2 & 3.OA.8 - Session 3.6, Activity 1 – How Far Did They Travel? (page 142)
    - This is a worksheet that could be used as an assessment.
- 3.NBT.2 - Session 3.7 – The Trip Home (page 147)
- 3.NBT.2 - Investigation 4 – Subtraction Stories
    - This investigation continues to emphasize subtraction using place value strategies. It involves comparison problems.

Investigations Unit 5: Equal Groups: 3.OA

In this instance, the entire unit is relevant to the OA Common Core standards. See below for a list of topics covered in this unit.

Multiplication:

- Investigation 1, 4 Sessions – Things that Come in Groups
- Investigation 2, 6 Sessions – Skip Counting and 100 Charts
- Investigation 3, 6 Sessions – Arrays

Division:

- Investigation 4, 7 Sessions – Understanding Division

Investigations Unit 7: Finding Fair Shares

Fractions:

- 3.NF.1 - Session 1.1 – Making Fair Shares
- 3.NF.1 - Session 1.6 – Sharing Four Brownies
    - Some parts of this session involve mixed numbers. Third grade CC standards do not require students to learn about mixed numbers.
- 3.NF.3a & b - Session 2.1 – Making Cookie Shares
    - This lesson uses pattern blocks to show fraction equivalencies. Focus this session on fraction equivalencies. Do not focus on addition of fractions. Students begin adding and subtracting fractions in grade 4.

Investigations Unit 8: How Many Hundreds? How Many Miles?

These lessons involve addition and subtraction of up to two, three-digit numbers, including money. For more advanced students, this may be the best place to begin addressing the OA and NBT Common Core standards. Students who struggle with addition and subtraction strategies may benefit from beginning with unit 3.

Addition and Subtraction Using Place Value Strategies – Continuation of Unit 3

- 3.NBT.1 & 2 - Session 1.1, Activity 1 and 2 – Paper Clip Problems (page 31)
- 3.OA.8 - Session 1.3, Discussion 1 – Estimating Your Answer (page 41)
    - This lesson focuses on estimating answers to subtraction problems with three-digit numbers.
- 3.NBT.2 & 3.OA.8 - Session 1.4, Discussion 1, Activity 2a and 2b – Practicing Addition and Subtraction (page 48)
    - Discussion 1 focuses on estimating answers to a subtraction problem.
    - Activity 2a is a worksheet focused on related subtraction problems.
    - Activity 2b is a worksheet that involves two-step, multi-operation word problems involving addition and subtraction in the hundreds.
- 3.NBT.2 - Session 2.1 – Making an Easier Problem (page 64)
    - This session focuses on addition strategies.
- 3.NBT.2 - Session 2.3 – Categorizing Addition Strategies (page 79)
    - This session focuses on addition strategies.
- 3.NBT.2 - Session 2.5, Activity 2 – Addition Strategies (page 94)
    - This is an activity that requires students to show how to solve a three by three-digit addition problem in two ways. This could be used as an assessment.
- 3.NBT.2 - Session 3.1 – Collections Compare (page 102)
    - Mixed addition and subtraction.
- 3.NBT.2 - Session 3.2 – Travel Problems (page 109)
    - Mixed addition and subtraction.
- 3.NBT.2 & 3.OA.8 - Session 3.3 – Subtraction Strategies (page 116)
- 3.NBT.2 & 3.OA.8 - Session 3.4 – Money Problems (page 123)
    - Subtraction involving money.
- 3.NBT.1-2 & 3.OA.8 - Session 3.5 – Subtracting Whole Dollars (page 128)
    - Subtraction involving money.
- 3.NBT.2 - Session 3.6 – Strategies for Subtraction (page 132)

SUBJECT MATTER: Mathematics Grade: 4

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
Unit 1: Place Value and Multiplication	Why is our number system called "base ten?" Why is it important to have number systems, especially as numbers get larger? How do we categorize things numerically?	Students will understand that in a number each place value represents ten times more than the place value to the right and apply this to mathematical concepts. Students will read and write numbers in standard, expanded, and word form. Students will understand the value of each digit in the context of a number (ex: in 763, the 6 = 60, but in 637, the six represents 600). Students will understand that numbers can be represented in many ways (ex: 285 can be represented as 28 tens + 5 ones OR 2 hundreds, 8 tens, and five ones) Students will compare two multi digit numbers using <, >, and =. Students will round multi-digit whole numbers to any place.	Anecdotal Observation Class Discussion Practice Pages Homework Assignments Informal & Formal Assessments, Including Projects	Scott Foresman-Addison Wesley Math 1.1-1.3, 1.5, 1.6, 2.14, 5.3, 5.4, 5.11, 5.12, 6.3, 6.10. 7.3, 7.4, 7.6, 7.10, 7.15, 8.14, 9.14, 10.13, 12.2 *See appendix for additional resources.	4.NBT.1 4.NBT.2 4.NBT.3 4.OA.1 4.OA.2

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
		Students will understand multiplication as a comparison (ex: a as in n times as much as b) and identify equations and statements for multiplicative comparison (ex: Sally has five times as many pencils as Mary. If Sally has five pencils, how many does Mary have?) Students will multiply and divide to solve word problems, including those involving multiplicative comparison and variables in any part of an equation.			
Unit 2: Fractions	How do models help us understand fractions? How can we prove that fractions are both the same and different? How do I explain how changing the size of the whole affects the size or amount of a fraction?	Students will identify equivalent fractions and understand why a fraction is equivalent to another fraction by using fraction models. Students will understand that any number over itself equals one whole (ex: 2/2=1) and using the identity property of multiplication we can make equivalent fractions (1/2 x 2/2 = 2/4). Students will compare fractions with unlike denominators by comparing the wholes using <, >, and =. (At this point students are not using the algorithm to solve, but using fraction models, including grids, strips, pattern blocks,	Anecdotal Observation Class Discussion Practice Pages Homework Assignments Informal & Formal	Scott Foresman-Addison Wesley Math 4.1, 4.2, 4.4, 4.5, 9.6, 9.8-9.10, 9.14, 10.3, 10.7, 10.9-10.11, 10.13, 11.1, 11.2, 11.9 Manipulatives *See appendix for additional resources.	4.NF.1 4.NF.2 4.MD.1

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
	Can everything be measured?	and number lines). Students will know relative sizes of measurement units within a measurement system. Students will be able to convert from one measurement to another within the same system (ex: 1yd = 3ft = 36in) and record in a table.	Assessments, Including Projects		
Unit 3: Division and Factors	How do we use the array model to explain multiplication? How are skip counting and multiples of numbers related? How does reasoning relate to mathematical operations?	Students will multiply a four-digit whole number by a one-digit number using strategies based on place value (ex: area model, distributive property, arrays). Students will know what area is and be able to apply the concept of area to rectangles and rectilinear figures. Students will divide up to four-digit dividends with one-digit divisors using strategies based on place value (ex: models, multiplication, area/array models, decomposition, etc.). Students will identify the factor pairs for whole	Anecdotal Observation Class Discussion Practice Pages Homework Assignments Informal & Formal Assessments,	Scott Foresman-Addison Wesley Math 2.1, 2.2, 2.5, 2.6, 2.7, 4.1, 4.2, 4.4, 4.5, 5.3, 5.4, 5.5, 5.6, 5.12, 6.3, 6.5, 7.3-7.8, 7.15, 8.10, 8.11, 10.7, 10.9, 10.10, 11.10, 11.11, 11.9 *See appendix for additional resources.	4.NBT.5 4.MD.3 4.NBT.6 4.OA.4

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
	How can we use what we know about equal sharing, and forming equal groups to solve division problems?	numbers between 1 and 100. Students will determine when a whole number between 1 and 100 is a multiple of a given one-digit number. Students will begin to understand divisibility rules.	Including Projects		
Unit 4: Operations of Fractions	When is it helpful to break things into parts? How do we show relationships between numbers/fractions? How are models used to show how fractional parts are combined or separated?	Students will understand addition (composing) and subtraction (decomposing) of fractions. Students will break a fraction apart (decompose) into a sum of fractions in more than one way (ex: 3/8 = 1/8+1/8+1/8 OR 1/8+2/8) and record as an equation. Students will add and subtract mixed numbers with like denominators by converting the mixed numbers to an improper fraction or by using properties of operations and the relationship between addition and subtraction (using manipulatives and visual models to support learning).	Anecdotal Observation Class Discussion Practice Pages Homework Assignments Informal & Formal Assessments,	Scott Foresman-Addison Wesley Math 2.11, 2,12, 2.14, 4.15, 5.11, 5.12, 6.10, 7.6, 7.10, 7.15, 8.14, 9.6, 9.8-9.10, 9.14, 10.2-10.4, 10.13, 11.1, 11.4, 12.2 Manipulatives *See appendix for additional resources.	4.NF.3a-c 4.NF.4a-b

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
	When are fractions and whole numbers used in real life?	Students will understand that a fraction can be decomposed into its parts (ex: 3/6 = 1/6 + 1/6 + 1/6 OR 3 x 1/6). Students will relate multiplication of fractions to repeated addition of fractions • ex: 3 x 2/5 = 6 x 1/5 • OR 2/5 + 2/5 + 2/5 = 6/5 = 1 1/5	Including Projects		
Unit 5: Geometry	What is the difference between a point, ray, line, and line segment? How are angles measured? Where in the real world are there angles?	Students will draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines and identify these in 2-D figures. Students will understand that angles are two rays connected by an endpoint and are measured with reference to a circle and angles are measured in degrees. Students will measure and sketch angles in whole number degrees using a protractor. Students will add angles together and	Anecdotal Observation Class Discussion Practice Pages Homework Assignments Informal & Formal Assessments,	Scott Foresman-Addison Wesley Math 8-3 Protractors, Rulers *See appendix for additional resources.	4.G.1 4.MD.5 4.MD.6 4.MD.7

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
		recognize that this forms another angle. Students will solve real world and mathematical problems using addition and subtraction to find unknown angles.	Including Projects		
Unit 6 – Factors and Multiples	How can we show how numbers are related to each other? How are place value models for addition and subtraction related to the standard algorithm? Why is fluency and computing important in life?	Student will find all factor pairs for a whole number in the range of 1 to 100. Students will determine whether a given whole number in the range of 1-100 is a multiple of a given one-digit number. Students will determine whether a number is prime or composite. Students will add and subtract multi-digit whole numbers using the standard algorithm. Students will multiply a whole number up to four digits by one digit and multiply two, two-digit numbers using strategies based on place value and properties of operations.	Anecdotal Observation Class Discussion Practice Pages Homework Assignments Informal & Formal Assessments, Including Projects	Scott Foresman-Addison Wesley Math 2.1, 2.2, 2.5, 2.6, 2.7, 5.3, 5.4, 5.5, 5.6, 5.12, 6.3, 6.5, 7.1, 7.3, 7.4, 7.13, 7.15 *See appendix for additional resources.	4.OA.4 4.NBT.4 4.NBT.5

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
		Students will illustrate multiplication using arrays, equations, or area models. Students will know multiplication and related division facts through 12x12.			
Unit 7 – Fractions and Decimals	How do we show relationships between numbers? How are fractions and decimals alike and different? How are decimals and place value related? Why do measurements need both numbers and units?	Students will solve word problems that involve the multiplication of a fraction by a whole number using visual fraction models and equations to represent the problem. Students will understand equivalent fractions with denominators of 10 as equivalent fractions with denominators of 100 and use this technique to add two fractions with denominators of 10 and 100. (ex: 3/10 = 30/100, 3/10 + 4/100 = 34/100) Students will use decimal notation for fractions with denominators with 10 or 100. Students will compare two decimals to hundredths by reasoning about their size and	Anecdotal Observation Class Discussion Practice Pages Homework Assignments Informal & Formal Assessments, Including Projects	Scott Foresman Math 1.14, 2.3, 2.10, 2.11, 2.14, 4.1-4.5, 4.15, 5.2, 5.5, 5.6, 5.11, 5.12, 6.10, 7.6, 7.10, 7.15, 8.14, 9.14, 10.1, 10.7, 10.9, 10.11, 10.13, 11.1, 11.2, 11.9, 11.11, 11.20 Manipulatives *See appendix for additional resources.	4.NF.4c 4.NF.5 4.NF.6 4.NF.7 4.NF.3d 4.MD.2

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
	How can there be more than one way to measure something?	record these comparisons using <, >, = symbols. Students will solve word problems involving the addition and subtraction of fractions referring to the same whole with like denominators by using visual fraction models and equations. Students will solve word problems using the four operations (involving distances, intervals of time, liquid volumes, masses of objects, money, including problems involving simple fractions or decimals and problems that require expressing measurements given in a larger unit in terms of a smaller unit). Students will represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.			
Unit 8: 2-D Figures and their Attributes	How are plane shapes identified and described using geometric vocabulary? How can any	Students will classify 2-D figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size. Students will recognize and identify right	Anecdotal Observation Class Discussion	Scott Foresman-Addison Wesley Math 4.1, 4.2, 4.4, 4.5, 8.2, 8.3, 8.4, 8.7, 8.10, 8.11, 8.14, 10.7-10.10, 11.9-11.11 Rulers *See appendix for additional	4.G.3 4.G.2 4.MD.3

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
	geometric shape be transformed into another shape? What types of problems can be solved with measurements?	triangles. Students will recognize a line of symmetry for a 2-D figure. Students will recognize line-symmetric figures and draw lines of symmetry. Students will apply the area and perimeter models for rectangles in real world and mathematical problems.	Practice Pages Homework Assignments Informal & Formal Assessments, Including Projects	resources.	
Unit 9: Number Patterns	How can numbers be manipulated? How does reasoning relate to mathematical operations? How can math help us make sense of the world around us?	Students will create a number or shape pattern that follows a rule and identify other features in the pattern that may not be apparent from the rule itself (ex: rule: add 3, begin at 1, the terms in the sequence alternate between odd and even). Students will make a line plot to display a data set of measurements in fractions of a unit. Students will solve problems involving addition and subtraction of fractions by using information in line plots (ex: from a line plot, find and interpret the difference in length	Anecdotal Observation Class Discussion Practice Pages Homework Assignments Informal &	Scott Foresman-Addison Wesley Math 4.7, 4.14, 4.15, 7.13 Rulers *See appendix for additional resources.	4.OA.5 4.MD.4

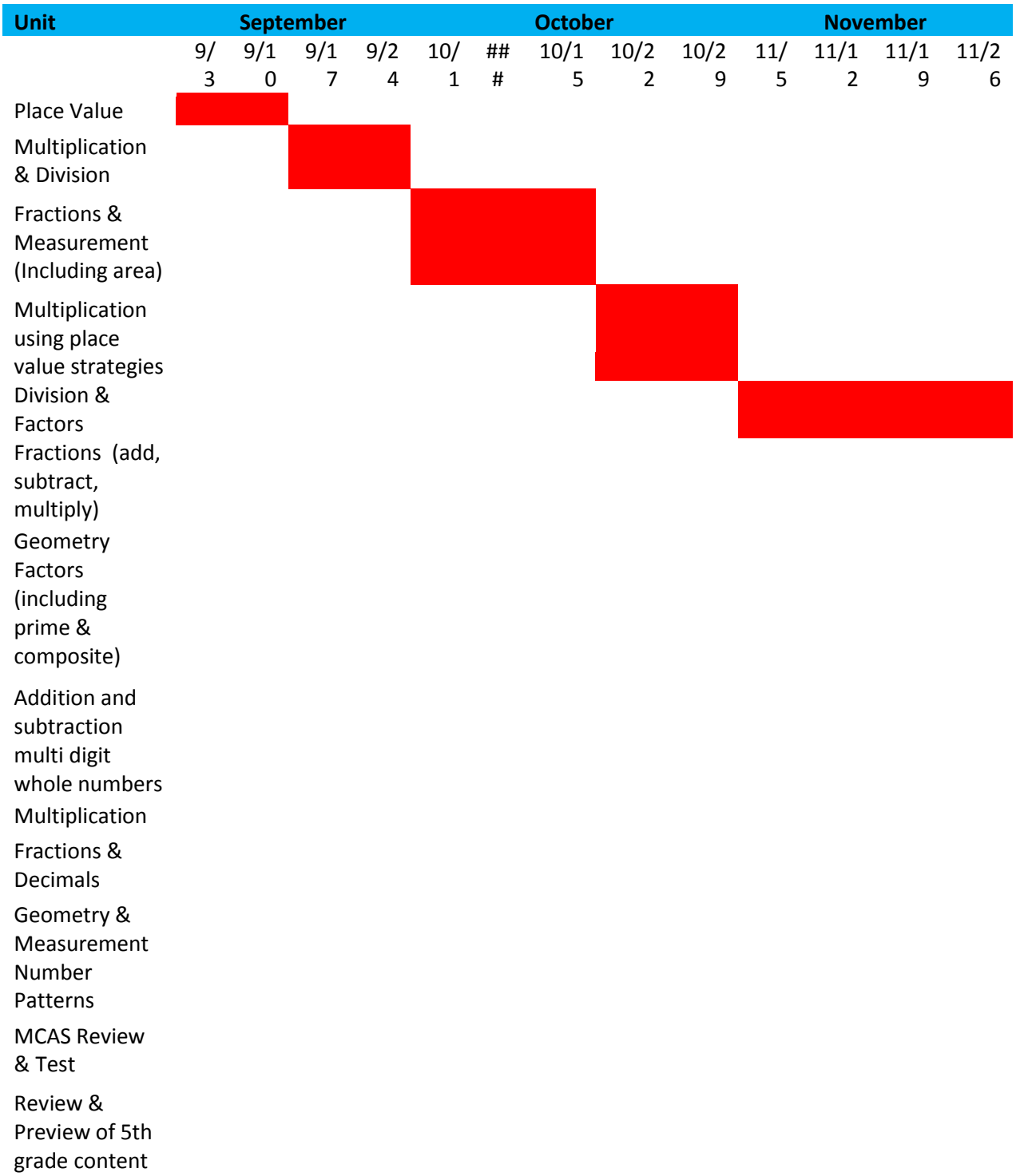
Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Common Core Standards
		between the longest and shortest specimens in an insect collection).	Formal Assessments, Including Projects		
Unit 10 – Review, Preview, & Synthesis of Learned Concepts	Where do we see math vocabulary used in everyday life?	Students will review content learned throughout the year as reinforcement. Students will preview fifth grade material. Students will continue to solve real world and mathematical word problems involving all four operations, fractions, decimals, geometric figures, measurement, and visual representations.	Anecdotal Observation Class Discussion Practice Pages Homework Assignments Cumulative Assessment	Scott Foresman-Addison Wesley Math 5.10-5.12, 7.5, 7.6, 9.14, 10.13 Manipulatives *See appendix for additional resources.	Review 4.OA.3* **Will be addressed throughout the year in all math content areas.*

Ware Public Schools: Ware, MA: Fourth Grade Mathematics Pacing Guide

Revised 6/28/12

September	October	November	December	January	February	March	April	May	June
4.NBT.1 A digit in one place represents ten times what it represents in the place to its right. **4.NBT.2** Read, write, and compare multi digit whole numbers. **4.NBT.3** Round multi-digit whole numbers to any place. **4.OA.1** Multiplication as a comparison. **4.OA.2** Multiply or divide to solve word problems involving multiplicative comparison using various strategies.	**4.NF.1** Recognize, generate, and explain equivalent fractions. **4.NF.2** Compare two fractions with different numerators and different denominators. **4.MD.1** Know relative sizes of measurement units and convert from a larger unit to a smaller unit. **4.NBT.5** Multiply a whole number of up to four digits by a one digit number using strategies based on place value. **4.MD.3** Apply the area formula for rectangles.	**4.NBT.6** Find whole number quotients and remainders (up to three digit dividends and one-digit divisors) using various strategies. **4.OA.4** Find all factor pairs for a whole number in the range 1-100 *(no prime or composite numbers yet).* ***Thanksgiving Break*** **4.NBT.6** Find whole number quotients and remainders (up to four digit dividends and one-digit divisors) using various strategies.	**4.NF.3a** Understand addition and subtraction of fractions. **4.NF.3b** Decompose a fraction into a sum of fractions with the same denominator in multiple ways. **4.NF.3c** Add and subtract mixed numbers with like denominators. **4.NF.4a** Understand a fraction a/b as a multiple of 1/b. **4.NF.4b** Understand a multiple of a/b as a multiple of 1/b and use this understanding to multiply a fraction by a whole number.	**4.G.1** Draw points, lines, line segments, rays, angles, and perpendicular and parallel lines. Identify these in 2-D figures. **4.MD.5** Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint and understand the concepts of angle measurement. **4.MD.6** Measure and sketch angles using a protractor. **4.MD.7** Recognize angle measure as additive. Find unknown angles in a diagram.	**4.OA.4** Find all factor pairs for a whole number in the range 1-100. Determine whether a given whole number in the range of 1-100 is prime or composite). ***Winter Break*** **4.NBT.4** Fluently add and subtract multi-digit whole numbers using the standard algorithm.	**4.NBT.5** Multiply a whole number of up to 4 digits by a 1 digit number or 2 digits by 2 digits using various strategies. Know x and / facts through 12x12. **4.NF.4c** Solve word problems involving x of a fraction by a whole number. **4.NF.5** = fractions with denominators of 10 or 100. Add fractions. **4.NF.6** Use decimal notation for fractions with denominators of 10 or 100. **4.NF.7** Compare two decimals to hundredths. **4.NF.3d** Solve word problems involving + and – of fractions. **4.MD.2** Measurement word problems.	**4.G.3** Recognize a line of symmetry for a 2-D figure. **4.G.2** Classify 2-D figures based on their attributes. **4.MD.3** Apply the area and perimeter formulas for rectangles.	**4.OA.5** Generate a number or shape pattern that follows a given rule. **4.MD.4** Make a line plot to display a data set of measurements in fractions of a unit and solve problems by using the information presented in the plots.	*Preview of fifth grade content.* *Additional reinforcement if necessary.* *Re-address "power standards."* ***Power Standards:*** *NBT.1 to 6* *NF.1 to 2* *NF.3a-d* *NF.4 to 7* *OA.1 to 2* *OA.5* *MD.1 to 4* *G.2*

4.OA.3: Solve Multi-step word problems posed with whole numbers and having whole number answers using the four operations, including problems in which remainders must be interpreted.***This standard should be addressed throughout the year. ***


Unit
September
October
November
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9/10
9/17
9/24
10/1
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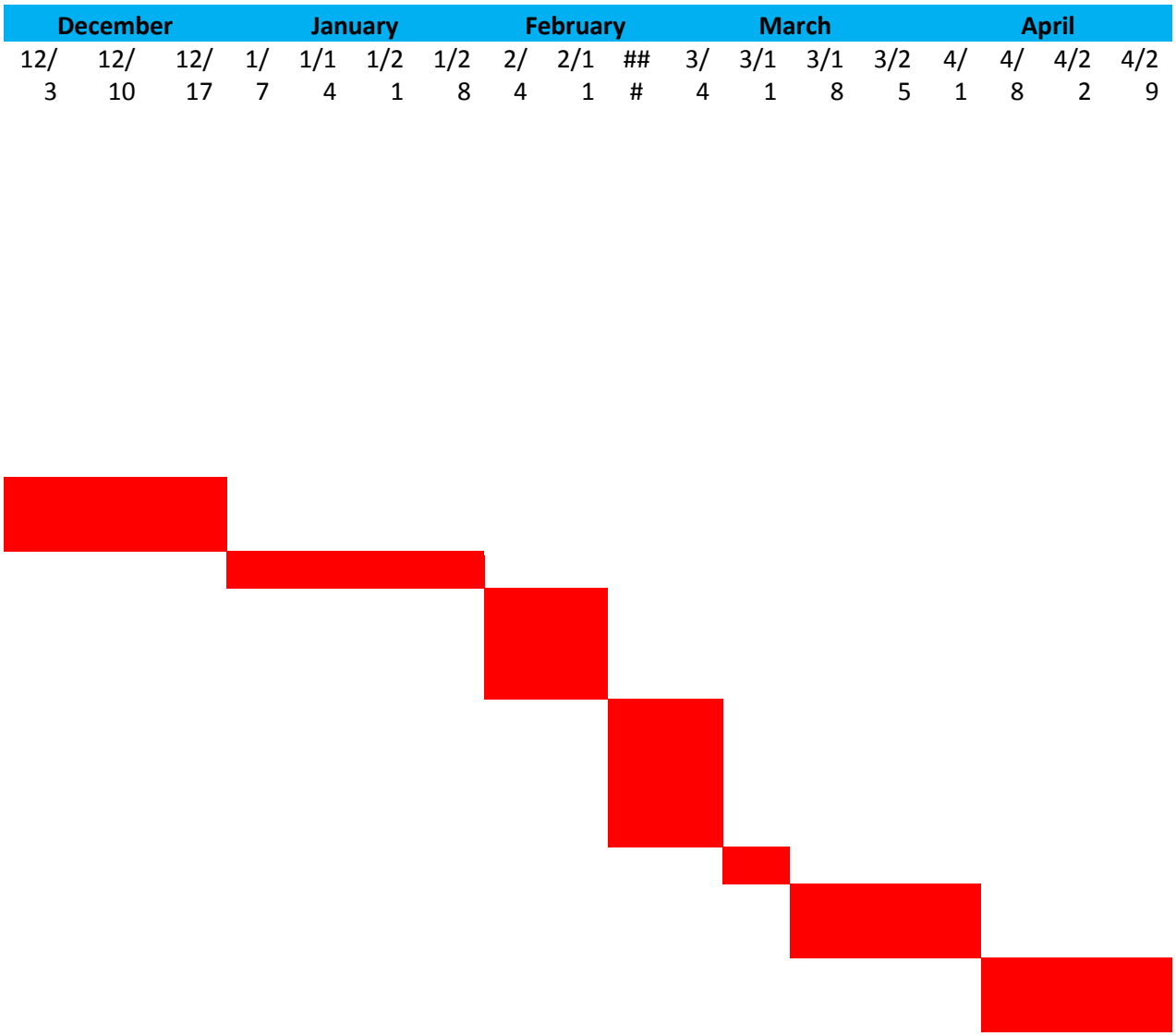
10/15
10/22
10/29
11/5
11/12
11/19
11/26
Place Value
Multiplication & Division
Fractions & Measurement (Including area)
Multiplication using place value strategies
Division & Factors
Fractions (add, subtract, multiply)
Geometry Factors (including prime & composite)
Addition and subtraction multi digit whole numbers
Multiplication
Fractions & Decimals
Geometry & Measurement
Number Patterns
MCAS Review & Test
Review & Preview of 5th grade content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May
June
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6/3
6/10
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Fourth Grade Math Teaching Resources

Operations and Algebraic Thinking		
4.OA.1	Representing Multiplicative Comparison Problems	http://www.k-5mathteachingresources.com/support-files/representing-multiplicative-comparison-problems.pdf
4.OA.2	Sample Multiplicative Comparison Problems	http://www.k-5mathteachingresources.com/support-files/multiplicativecomparisonproblems.pdf
4.OA.3	Multistep Word Problems	http://www.k-5mathteachingresources.com/support-files/4oa3multistepwordproblems.pdf
	Interpreting Remainders	http://www.k-5mathteachingresources.com/support-files/interpretingremainders4.oa3.pdf
	Primary Krypto	http://illuminations.nctm.org/ActivityDetail.aspx?ID=173
	SMART Notebook Smartboard Lessons	G4M008
4.OA.4	Finding Multiples	http://www.k-5mathteachingresources.com/support-files/findingmultiples.pdf
	Prime Number Hunt	http://www.k-5mathteachingresources.com/support-files/primenumberhunt.pdf
	Common Multiples	http://www.k-5mathteachingresources.com/support-files/commonmultiples.pdf
	Least Common Multiple	http://www.k-5mathteachingresources.com/support-files/leastcommonmultiples.pdf
	Find the Factor	http://www.k-5mathteachingresources.com/support-files/findthefactor4.oa4.pdf
	What are Numbers Divisible By?	Investigations Curriculum: “Packages and Groups” Investigation 3, Session 7, factor pairs (page 51)
	What are All the Factors of 100?	Investigations Curriculum: “Landmarks in the Thousands” Investigation 1, Session 1, factors of 100 (page 6)
	The Product Game	http://illuminations.nctm.org/LessonDetail.aspx?ID=L272
	Factorize!	http://illuminations.nctm.org/ActivityDetail.aspx?ID=64
	Factor Findings	http://illuminations.nctm.org/LessonDetail.aspx?id=L872
	The Factor Trail Game	http://illuminations.nctm.org/LessonDetail.aspx?id=L719

	SMART Notebook Smartboard Lessons	G5M013
4.OA.5	Square Numbers	http://www.k-5mathteachingresources.com/support-files/square-numbers.pdf
	Triangular Numbers	http://www.k-5mathteachingresources.com/support-files/triangular-numbers.pdf
	Petals around the Rose	http://illuminations.nctm.org/LessonDetail.aspx?id=L576
	Patterns that Grow	http://illuminations.nctm.org/LessonDetail.aspx?id=U103
	High Temperatures	http://illuminations.nctm.org/LessonDetail.aspx?id=L171
	What Comes Nex_?	http://illuminations.nctm.org/LessonDetail.aspx?id=L286
	SMART Notebook Smartboard Lessons	G4M010, G4M015
Number and Operations in Base Ten		
4.NBT.1	SMART Notebook Smartboard Lessons	G4M001 (place value – appropriate for all NBT standards)
4.NBT.2	Numeral, Word, and Expanded Form	http://www.k-5mathteachingresources.com/support-files/numeral-word-expanded-form.pdf
4.NBT.3	Round to the Nearest Ten	http://www.k-5mathteachingresources.com/support-files/roundtothenearest10game.pdf
	Round to the Nearest 100	http://www.k-5mathteachingresources.com/support-files/roundtothenearest100game.pdf
	SMART Notebook Smartboard Lessons	G4M007
4.NBT.4	Addition and Subtraction Number Stories	http://www.k-5mathteachingresources.com/support-files/additionandsubtractionnumberstories4nbt4.pdf
	SMART Notebook Smartboard Lessons	G4M002
4.NBT.5	Multiplication Distributive Split	http://www.k-5mathteachingresources.com/support-files/multiplication-distributive-split.pdf
	Multiplication Number Story	http://www.k-5mathteachingresources.com/support-files/multiplicationnumberstory4nbt5.pdf

	Breaking Apart a Factor	http://www.k-5mathteachingresources.com/support-files/breakingapartafactor5.nbt1.pdf
	Multiplication Bump (x100)	http://www.k-5mathteachingresources.com/support-files/multiplicationbumpx100.pdf
	Make the Largest Product	http://www.k-5mathteachingresources.com/support-files/makethelargestproduct.pdf
	Make the Smallest Product	http://www.k-5mathteachingresources.com/support-files/makethesmallestproduct.pdf
	Multiplication Clusters	Investigations Curriculum: "Arrays and Shares" Investigation 3, Session 1, one by two digit multiplication strategies (page 44)
	Multiplying 2-Digit Numbers	Investigations Curriculum: "Packages and Groups" Investigation 2, Session 1, one by two and two by two digit multiplication strategies (page 18)
	Multiply and Conquer!	http://illuminations.nctm.org/LessonDetail.aspx?id=L858
	SMART Notebook Smartboard Lessons	G4M003
4.NBT.6	Division Split (1-digit divisor)	http://www.k-5mathteachingresources.com/support-files/division-split-with-1-digit-divisor.pdf
	Remainders	http://www.k-5mathteachingresources.com/support-files/remainders.pdf
	Estimate the Quotient	http://www.k-5mathteachingresources.com/support-files/Estimate-the-Quotient.pdf
	Looking More Closely at Division Problems	Investigations Curriculum: "Packages and Groups" Investigation 3, Session 3, division strategies (page 41)
	The Quotient Café	http://illuminations.nctm.org/ActivityDetail.aspx?ID=224
	SMART Notebook Smartboard Lessons	G4M004
Number and Operations - Fractions		
4.NF.1	Creating Equivalent Fractions	http://www.k-5mathteachingresources.com/support-files/creatingequivalentfractions.pdf
	Fraction Wall Game	http://www.k-5mathteachingresources.com/support-files/fractionwallgame.pdf
	Equivalent Fractions	http://illuminations.nctm.org/ActivityDetail.aspx?ID=80
	SMART Notebook Smartboard Lessons	G4M012
4.NF.2	Birthday Fractions	http://www.k-5mathteachingresources.com/support-files/birthday-fractions-4nf2.pdf

	Pattern Block Fractions	http://www.k-5mathteachingresources.com/support-files/pattern-block-fractions-4nf2.pdf
	Who Ate More?	http://www.k-5mathteachingresources.com/support-files/whoatemore4nf2.pdf
	Fraction Compare	http://www.k-5mathteachingresources.com/support-files/fractioncompare4nf2.pdf
	Fraction Cards	http://www.k-5mathteachingresources.com/support-files/fractioncards.pdf
	Fraction Track Game	http://illuminations.nctm.org/ActivityDetail.aspx?ID=18
	Exploring the Value of a Whole (comparing fractions with different wholes)	http://illuminations.nctm.org/LessonDetail.aspx?ID=L347
4.NF.3	Adding Fractions With Like Denominators	http://www.k-5mathteachingresources.com/support-files/addinglikefractions.pdf
	Adding Fractions Using Pattern Blocks	http://www.k-5mathteachingresources.com/support-files/addingfractionsusingpatternblocks4nf3a.pdf
	The Chocolate Bar Problem	http://www.k-5mathteachingresources.com/support-files/the-chocolate-bar-problem.pdf
	Decomposing Fractions	http://www.k-5mathteachingresources.com/support-files/decomposingfractions4nf3b.pdf
	Mixed Number Word Problems (like denominators)	http://www.k-5mathteachingresources.com/support-files/mixed-numbers-word-problems-same-denominator.pdf
	Adding Mixed Numbers	http://www.k-5mathteachingresources.com/support-files/addingmixednumbers4nf3.pdf
	Subtracting Mixed Numbers	http://www.k-5mathteachingresources.com/support-files/subtractingmixednumbers4nf3.pdf
	Fraction Word Problems (like denominators)	http://www.k-5mathteachingresources.com/support-files/fraction-word-problems-like-denominator.pdf
	Addition Word Problems with Fractions	http://www.k-5mathteachingresources.com/support-files/fractionwordproblem3.pdf
	Subtraction Word Problems with Fractions	http://www.k-5mathteachingresources.com/support-files/fractionwordproblem4.pdf
	Fraction Models	http://illuminations.nctm.org/ActivityDetail.aspx?ID=11

	SMART Notebook Smartboard Lessons	G4M013, G4M014
4.NF.4	Models for Fraction Multiplication	http://www.k-5mathteachingresources.com/support-files/models-for-fraction-multiplication-4nf4a.pdf
	Whole Number x Fraction Word Problems	http://www.k-5mathteachingresources.com/support-files/wholenumberxfractionwordproblems.pdf
4.NF.5	Sums of 1	http://www.k-5mathteachingresources.com/support-files/sumsof1.pdf
4.NF.6	Decimals in Money	http://www.k-5mathteachingresources.com/support-files/decimalsinmoney.pdf
	Representing Decimals with Base 10 Blocks	http://www.k-5mathteachingresources.com/support-files/representingdecimalswithbase10blocks.pdf
	Decimal Riddles	http://www.k-5mathteachingresources.com/support-files/decimalriddles.pdf
	Metric Relationships	http://www.k-5mathteachingresources.com/support-files/metric-relationships.pdf
	A Meter of Candy	http://illuminations.nctm.org/LessonDetail.aspx?id=L861
	SMART Notebook Smartboard Lessons	G4M011 (this covers decimals to the thousandths, for this standard only to hundredths is necessary)
4.NF.7	Comparing Decimals	http://www.k-5mathteachingresources.com/support-files/comparingdecimals.pdf
	Decimal Sort	http://www.k-5mathteachingresources.com/support-files/decimalsort4.nf7.pdf
Geometry		
4.G.1	Geoboard Line Segments	http://www.k-5mathteachingresources.com/support-files/geoboard-line-segments.pdf
	Angles on the Geoboard	http://www.k-5mathteachingresources.com/support-files/anglesonthegeoboard.pdf
	Angle Barrier Game	http://www.k-5mathteachingresources.com/support-files/anglebarriergame.pdf
	SMART Notebook Smartboard Lessons	G4M017, G5M022
4.G.2	Right Triangles on the Geoboard	http://www.k-5mathteachingresources.com/support-files/right-triangles-on-the-geoboard.pdf
	Isosceles Triangles on the Geoboard	http://www.k-5mathteachingresources.com/support-files/isosceles-triangles-on-the-geoboard.pdf

	Constructing Quadrilaterals	http://www.k-5mathteachingresources.com/support-files/constructingquadrilaterals.pdf
	Quadrilateral Criteria	http://www.k-5mathteachingresources.com/support-files/quadrilateralcriteria.pdf
	Classifying Triangles 1	http://www.k-5mathteachingresources.com/support-files/classifyingtriangles1.pdf
	Classifying Triangles 2	http://www.k-5mathteachingresources.com/support-files/classifyingtriangles2.pdf
	Triangles on the Geoboard	http://www.k-5mathteachingresources.com/support-files/trianglesonthegeoboard.pdf
	Rectangles and Parallelograms	http://illuminations.nctm.org/LessonDetail.aspx?id=L350
	Shape Up (characteristics of geometric figures)	http://illuminations.nctm.org/LessonDetail.aspx?id=L813
	Geometry in the World of Art	http://illuminations.nctm.org/LessonDetail.aspx?id=U154
4.G.3	Symmetry on the Geoboard	http://www.k-5mathteachingresources.com/support-files/symmetryonthegeoboard.pdf
	Symmetry in Shapes	http://www.k-5mathteachingresources.com/support-files/symmetryinshapes.pdf
	Symmetry in Regular Polygons	http://www.k-5mathteachingresources.com/support-files/symmetryinregularpolygons.pdf
	Symmetrical Coin Designs	http://www.k-5mathteachingresources.com/support-files/symmetricalcoindesigns.pdf
	More Symmetrical Coin Designs	http://www.k-5mathteachingresources.com/support-files/symmetricalcoindesigns2.pdf
	Patterns with Mirror Symmetry	Investigations Curriculum: “Mathematical Thinking at Grade 4” Investigation 4, Session 1, symmetry (page 66)
	Symmetrical Geoboard Patterns	Investigations Curriculum: “Mathematical Thinking at Grade 4 Investigation4, Session 5, symmetry (page 83)
	Geometry in the World of Art	http://illuminations.nctm.org/LessonDetail.aspx?id=U154
Measurement and Data		
4.MD.1	Measurement Conversion Word Problems	http://www.k-5mathteachingresources.com/support-files/conversionwordproblems.pdf

	Measurement Concentration	http://www.k-5mathteachingresources.com/support-files/measurementconcentration4thgd.pdf
	Metric Relationships	http://www.k-5mathteachingresources.com/support-files/metric-relationships.pdf
	Capacity Creatures	http://www.k-5mathteachingresources.com/support-files/Capacity-creature.pdf
	SMART Notebook Smartboard Lessons	G4M019
4.MD.2	Measurement Word Problems	http://www.k-5mathteachingresources.com/support-files/4thgrademeasproblems.pdf
	Elapsed Time Ruler 1	http://www.k-5mathteachingresources.com/support-files/elapsedtimerulersample1.pdf
	Elapsed Time Ruler 2	http://www.k-5mathteachingresources.com/support-files/elapsedtimerulersample2.pdf
	24 Hour Number Line	http://www.k-5mathteachingresources.com/support-files/24hournumberline.pdf
	Water, Water (volume, gallons)	http://illuminations.nctm.org/LessonDetail.aspx?id=L289
	Coin Box (money review)	http://illuminations.nctm.org/ActivityDetail.aspx?ID=217
4.MD.3	A Dinner Party	http://www.k-5mathteachingresources.com/support-files/adinnerparty.pdf
	Fencing a Garden	http://www.k-5mathteachingresources.com/support-files/fencingagarden.pdf
	Designing a Zoo Enclosure	http://www.k-5mathteachingresources.com/support-files/designingazooenclosure.pdf
	Interactive Geometry Dictionary - Area	http://illuminations.nctm.org/ActivityDetail.aspx?ID=21
	Creating a Blueprint	http://illuminations.nctm.org/LessonDetail.aspx?ID=L652
	SMART Notebook Smartboard Lessons	G4M020, G4M021
4.MD.4	Length of Ants Line Plot	http://www.k-5mathteachingresources.com/support-files/lengthofantslineplot.pdf
	Objects in My Desk Line Plot	http://www.k-5mathteachingresources.com/support-files/objectsinmydesklineplot.pdf
4.MD.5	Angles in Names	http://www.k-5mathteachingresources.com/support-files/anglesinnames.pdf

4.MD.6	Predicting and Measuring Angles	http://www.k-5mathteachingresources.com/support-files/predictingandmeasuringangles.pdf
	Angle Barrier Game	http://www.k-5mathteachingresources.com/support-files/anglebarriergame.pdf
	Angles in Triangles	http://www.k-5mathteachingresources.com/support-files/anglesintriangles.pdf
	Angles in Quadrilaterals	http://www.k-5mathteachingresources.com/support-files/anglesinquadrilaterals.pdf
	SMART Notebook Smartboard Lessons	G4M017, G5M022
4.MD.7	Unknown Angle Word Problems	http://www.k-5mathteachingresources.com/support-files/anglewordproblems.pdf
	How Many Degrees?	http://www.k-5mathteachingresources.com/support-files/hiwmanydegrees.pdf
	Angles in a Right Triangle	http://www.k-5mathteachingresources.com/support-files/anglesinarighttriangle.pdf
	Pattern Block Angles	http://www.k-5mathteachingresources.com/support-files/Pattern-Block-Angles.pdf

*Investigations Curriculum Resources are from the fourth grade Investigations Curriculum c. 1996

**Smartboard lessons can be found in the Notebook Software on the Ware Public School Computers.

- Click “Notebook Software” -> “resources” -> “team content” -> then click the drop down menu to select lessons.
- Lessons that begin with “G4” are found under fourth grade content and “G5” are found under fifth grade content.