

Glen Ridge Public Schools –Mathematics Curriculum



Course Title: Math 2, Everyday Mathematics
The University of Chicago School Mathematics Project

Subject: Mathematics

Grade Level: 2

Duration: 34-36 weeks

Prerequisite: N/A

Elective or Required: NA/

Mathematics Mission Statement:

Mathematics is an integral part of our lives. Students must be actively involved in their mathematics education through the use of modeling and demonstrating the ability to persevere through problem solving. The mathematics curricula will emphasize critical thinking skills through a balance of logic and reasoning, attention to precision by utilizing patterns and structure, and bridging these ideas to cross-curricular learning. Students will be engaged and challenged in a student-centered learning environment that is developmentally appropriate and will communicate mathematical ideas, both in a verbal and written form. Through effectively applying hands-on manipulatives, basic computation skills and the use of technical writing to justify their processes, students will critique the work of themselves and others.

Course Description:

Second Grade Everyday Mathematics curriculum provides a balanced mathematics curriculum that is based on real-world problem solving opportunities. The curriculum covers all Standards for Mathematical Content required for second grade, including **Numbers and Numeration** (understanding the meanings, uses and representations of numbers; equivalent names for numbers; common numerical relations), **Operations and Computation** (computing accurately; making reasonable estimates; understanding meanings of operations), **Data and Chance** (selecting and creating appropriate graphical representations of collected or given data; analyzing and interpreting data; understanding and applying basic concepts of probability), **Measurement and**

Reference Frames (understanding the systems and processes of measurement; using appropriate techniques, tools, units, and formulas in making measurements; using and understanding reference frames), **Geometry** (investigating characteristics and properties of two- and three- dimensional geometric shapes, applying transformations and symmetry in geometric situations), and **Patterns, Functions and Algebra** (understanding patterns and functions, using algebraic notation to represent and analyze situations and structures). By using a variety of small- and whole-group instruction, independent practice, games, and hands-on explorations, students are encouraged to think about problem solving in a logical way. Technology is integrated throughout the curriculum to enhance instruction and engage learners. In addition, there are many opportunities and tools for assessment, including verbal assessments, written assessments, online assessment tools, and student explorations.

Author: Theresa Messineo

Date Submitted: Summer 2017

Course Name: Everyday Mathematics: Grade 2

Unit 1: Establishing Routines

Approximate # Of Weeks: 3 weeks

Essential Questions:

1. What are some tools that have markings similar to a number line?
2. Why is it important to make sense of others' mathematical thinking?
3. Why is it important to use mathematical tools correctly?
4. Where can you find patterns in mathematics?
5. Why is it important to count, add, and subtract correctly?
6. When might it be helpful to solve a problem in more than one way?
7. When is the relationship between ones, tens, and hundreds important in mathematics?
8. Why is it important to explain your strategy and say why they work?
9. Why is it important to explain what numbers and symbols mean? ($<$, $>$, $=$)

Upon completion of this unit students will be able to:

- Explore counts and represent whole numbers as lengths from 0 on a number line. (2.NBT. 2- 4 and 2.MD.6)
- Practice partnership principles while solving addition and subtraction stories and representing whole-number sums and differences on a number line. (2.OA.2, 2.NBT.3, 2.NBT.4, 2.NBT.7, 2.MD.6)
- Count tallies and calculate the values of coin combinations. (2.NBT.2, 2.NBT.3, 2.MD.8)
- Make a class number scroll from 0-1000 using place value strategies. (2.NBT.2, 2.NBT.3, 2.NBT.8)
- Use addition and subtraction to write equivalent names for numbers. Reinforce place-value by skip counting on calculators. (2.OA.2, 2.NBT.2, 2.NBT.5)
- Build fact fluency by finding combinations of 10. (2.OA.2 and 2.NBT.3)
- Recognize the quarter. (2.NBT.2)
- Explore even and odd numbers using concrete and visual models. (2.OA.3)
- Skip count on calculators and number grids and look for place-value patterns in their counts. (2.NBT.2)
- Discuss the meaning of ($<$, $>$, $=$) symbols and use the symbols to record comparisons of numbers, money amounts, and addition and subtraction expressions. (2.OA. 2, 2.NBT.4, 2.MD.8)

Interdisciplinary Standards (njcccs.org)

- Standard 9.1: 21st Century Life & Career Skills
- Standard 5.1: Science Practices
- Standard 6.3: Active Citizenship in the 21st Century

Activities – include 21st Century Technologies:

- Online activities: ie: everydaymathonline.com, EM online home connection,
- e-presentations, EM Facts Workshop Game (provides online practice of basic facts and computation)
- SMARTBoard lessons
- Everyday Math computer games
- Use calculators to teach alternate names for numbers, skip counting, number patterns
- IXL-Math
- Solve Broken calculator problems

Enrichment Activities:

- Create a Math Vocabulary Bulletin Board for Unit 1 that will be added to for each math unit throughout the year.
- Literacy Connection: Read: **(Lesson 1. 3)** *Lots of Ladybugs! Counting by Fives*, by Michael Dahl, Picture Window Books, 2005; **(Lesson 1. 9)** *Even Steven and Odd Todd*, by Kathryn Cristaldi, Scholastic Inc. 1996; *One Hundred Hungry Ants*, by Elinor J. Pinczes, Houghton Mifflin Harcourt, 1999; *12 Ways to Get to 11*, by Eve Merriam, Aladdin Paperbacks, 1996; *Math Counts Pattern*, by Henry Pluckrose, Children's Press, 1995.
- Make a number line
- Solve number line puzzles
- Find equivalent coin combinations and fewest coin combinations
- Make a number scroll with numbers larger than 1000
- Create class books that correlate to trade books. Each student writes one page for the book. Send book home to families (with original book) for comments to be written in a class journal.
- EM Math Games: Number-Line Squeeze, Addition, Top-It, Coin Top-It, Money Exchange Game, Penny-Nickel Exchange, Penny Plate, Two-Fisted Penny Addition, Number-Grid Game, Number Top-It
- Explore number-grid patterns, make a class number scroll; students make individual number scrolls
- Making 124 (illustrativemathematics.org)
- Largest Number Game (illustrativemathematics.org)
- Looking at Numbers Every Which Way (illustrativemathematics.org)
- Ordering 3-digit Numbers
- Choral Counting

Methods of Assessments/Evaluation:

- ✓ math journals
- ✓ Math Games
- ✓ self-assessment checklist
- ✓ oral and whiteboard assessments
- ✓ homework, class work, independent work
- ✓ Thumbs Up/Thumbs Down
- ✓ Pair/Share
- ✓ record sheets for individual and class progress (Teacher observation)
- ✓ real-time data to inform instruction
- ✓ closure assessments masters
- ✓ Beginning-of-Year Assessment, unit assessments
- ✓ Rubrics
- ✓ Unit Assessments
- ✓ Open Ended Questions
- ✓ Verbal Assessment
- ✓ Observation (Teacher/Small/Whole Group)
- ✓ Green/Yellow/Red Cards
- ✓ anecdotal notes (RTI)

Resources/Including Online Resources

- Online Textbook Information:
 - EM at Home
 - Fact Workshop Game
 - eToolkit
- Teacher Webpage
- EM Facts Workshop Game: provides online practice of basic facts and computation
- Online math websites: ie: superkids.com; mathplayground.com; aplusmath.com; primarygames.com, fastmath.com, etc.

Everyday Mathematics: Grade 2

Unit 2: Fact Strategies

Approximate # of Weeks: 3 weeks

Essential Questions:

1. How does place value help to solve problems?
2. Where else can you find patterns in mathematics?
3. How can shortcuts (e.g. +1, +0, +9) help in mathematics?
4. How does knowing doubles facts help to solve and learn other facts?
5. How do mathematical operations relate to each other?
6. Why is it important to make a plan before attempting to solve a problem?
7. When might it be helpful to solve your problems in more than one way?
8. Why are patterns in mathematics important?

Upon completion of this unit students will be able to:

- Explore place value concepts as they play an exchange game with money and practice grouping by 10s using \$1, \$10 and \$100 bills (2.NBT.1, 1a, 2.NBT.3, 7, 9, 2.MD.8)
- Write and solve addition number stories. (2.OA.1, 2.OA.2)
- Explore doubles and combinations of 10 to build fact fluency. (2.OA.2)
- Use place value as a strategy to add within 20 (2.OA.2 and 2.NBT.9)
- Use doubles +1 and doubles +2 as an addition strategy (2.OA.2 and 2.NBT.9)
- Write number stories to explain number models. (2.OA.1, 2.OA.2, 2.NBT.9)
- Identify even and odd numbers and write number models to express even and odd numbers (2.OA.2 and 2.OA.3)
- Generate equivalent names for numbers (2.OA.2, 2.NBT.3, 2.NBT.5)
- Use skip counting, and/or adding and subtracting to solve a variety of problems. (2.NBT.2 and 2.NBT.5)

Interdisciplinary Standards (njcccs.org)

- Standard 5.1: Science Practices
- Standard 6.1.P.A.3: Demonstrate appropriate behavior when collaborating with others.
- Standard 8.1: Computer and Literacy Information
- Standard 9.1: 21st Century Life & Career Skills
- Standard 9.2: Career Awareness, Exploration, and Preparation

Activities – include 21st Century Technologies:

- Online activities: ie: everydaymathonline.com, EM online home connection, e-presentations
- EM Facts Workshop Game (provides online practice of basic facts and computation)
- SMARTboard lessons (clickers)
- IXL-Math
- Webpage
- Calculators

Enrichment Activities:

- Add to Math Vocabulary Word Wall
- Literacy Connection: **(Lesson 2.2)** *Math for all Seasons*, by Gregory Tang, Scholastic Inc. 2005; **(Lesson 2.3)** *Two of Everything, A Chinese Folktale*, by Lily Toy, Albert Whitman & Company, 1993; **(Lesson 2.8)** *Elevator Magic*, by Stuart J. Murphy, HarperCollins, 1997 **(Lesson 2.9)** *One Odd Day and My Even Day* by Doris Fisher, Sylvan Dell Publishing, 2007
- EM Facts Workshop Game: provides online practice of basic facts and computation
- Online math websites: ie: superkids.com; mathplayground.com; plusmath.com; primarygames.com, fastmath.com, etc.
- Everyday Math computer games
- EM Math Games: The Exchange Game, Spinning For Money, Fishing for 10, The Number-Grid Game, Two-Fisted Penny Addition, Roll and Record Doubles, Evens and Odds, Name That Number
- Find combinations of 100 (Activity Card 20)
- Create addition number stories (Activity Card 21)
- Make Doubles with a calculator (Activity Card 22)
- Explore the Addition Facts Table (MM p.30-31)
- Use helper doubles facts for larger numbers (MM p.34)
- Checking the turn around rule for larger numbers. (MM p.36)
- Dividing shapes (MM p.TA 9 or 10)
- Explore Even and Odd addends and patterns they create. (Activity Card 30)
- Many names for numbers (number collections) (Activity Card 31)
- Write number sentences for Name That Number (MM p. 50)
- Two-Rule frames and arrows (Activity Card 33)

Methods of Assessments/Evaluation:

- ✓ math journals
- ✓ Math Game
- ✓ self-assessment checklist
- ✓ oral and whiteboard assessments
- ✓ homework, class work, independent work
- ✓ Thumbs Up/Thumbs Down

- ✓ Pair/Share
- ✓ record sheets for individual and class progress (Teacher observation)
- ✓ real-time data to inform instruction
- ✓ closure assessments masters
- ✓ Unit assessments
- ✓ Rubrics
- ✓ Verbal Assessment
- ✓ Observation (Teacher/Small/Whole Group)
- ✓ Anecdotal Records
- ✓ Green/Yellow/Red Cards

Resources/Including Online Resources

- Online Textbook Information:
 - EM at Home
 - Fact Workshop Game
 - eToolkit
- Teacher Webpage
- EM Facts Workshop Game: provides online practice of basic facts and computation
- Online math websites: ie: superkids.com; mathplayground.com; aplusmath.com; primarygames.com, fastmath.com, etc.

Course Name: Everyday Mathematics: Grade 2

Unit 3: More Fact Strategies

Approximate # Of Weeks: 3 weeks

Essential Questions:

1. How can using a variety of strategies help to build fluency with subtraction facts?
2. How does the inverse relationship of addition and subtraction facts help to solve problems and solve for missing addends?
3. How does the distance model of subtraction help to determine the best strategy for solving subtraction problems (counting-up vs. counting-back)?
4. Why do we look for patterns in math?
5. Why do we check answers to see if they make sense?
6. What are problems that complements of 10 could help you solve?
7. What are other ways to represent numbers?
8. How do problem solving strategies differ? How are they alike?
9. How does clearly communicating mathematical thinking help you to explain coin combinations, exchanges and making change?

Upon completion of this unit students will be able to:

- Know doubles and combinations of 10 and apply strategies to solve all addition facts. (2.OA.2)
- Write subtraction number stories and generate related addition and subtraction facts. (2.OA.1-2, 2.NBT.5, 2.NBT.9)
- Generate fact families using related numbers on Fact Triangles. (2. OA.2 and 2.NBT.5)
- Add within 100 using a number grid, number line, or counters and use the inverse relationship between addition and subtraction to write fact families and solve addition and subtraction facts. (2.OA.2, 2.NBT.3, 2.NBT.5)
- Use the counting-up and counting-back strategies for subtraction. (2.OA.2)
- Explain why -0 and -1 fact strategies work using properties of addition and subtraction (2.OA.2, 2.NBT.5, 2.NBT.9)
- Know doubles and combinations of 10 and apply strategies to solve all addition facts. (2.OA.2 and 2.OA.2)
- Solve problems involving pennies and dimes. (2.OA.1, 2.OA.2, 2.MD.8)
- Use same-size square tiles to partition a rectangle into rows and columns and count to find the total number of them (2.G.2)
- Use concrete models to add and subtract within 100 when solving “What’s My Rule?” problems. (2.NBT.7)

Interdisciplinary Standards (njcccs.org)

- Standard 5.1: Science Practices
- Standard 6.1.P.A.3: Demonstrate appropriate behavior when collaborating with others.

- Standard 6.3: Active Citizenship in the 21st Century
- Standard 8.1: Computer and Literacy Information
- Standard 9.1: 21st Century Life & Career Skills
- Standard 9.2: Career Awareness, Exploration, and Preparation

Activities – include 21st Century Technologies:

- Online activities: ie: everydaymathonline.com, EM online home connection,
- e-presentations, EM Facts Workshop Game (provides online practice of basic facts and computation)
- SMARTBoard lessons
- Everyday Math computer games
- Solve Frames-and-Arrows problems involving money
- IXL-Math

Enrichment Activities:

- Add to Math Vocabulary Word Wall
- Create a classroom store for students. Allow time for students to be both buyer and seller to practice counting back change.
- EM Math Games; Salute!, Penny Plate, The Difference Game, The Number-Grid Difference Game, Subtraction Top-It, Name That Number, Roll and Record Doubles, The Exchange Game, Evens and Odds, Spinning for Money
- Explore dice subtraction (Activity Card 35)
- Find subtraction mystery number (Activity Card 38)
- Find Missing Addends for larger numbers (Activity Card 39)
- Count up to solve subtraction problems. (MM pp.74 and TA3)
- Working With Even Numbers-to identify output numbers that follow a pattern. (Activity Card 41)
- Going Back Through Ten-use this strategy apply to working with larger numbers (MM p.81)
- Use Going Back Through Ten strategy for writing subtraction number stories (MM p.83)
- Making Change (Activity Card 46 & MM p.85)

Methods of Assessments/Evaluation:

- ✓ math journals
- ✓ Math Games
- ✓ self-assessment checklist
- ✓ oral and whiteboard assessments
- ✓ homework, class work, independent work
- ✓ Thumbs Up/Thumbs Down
- ✓ Pair/Share
- ✓ record sheets for individual and class progress (Teacher observation)
- ✓ real-time data to inform instruction
- ✓ closure assessments masters

- ✓ Open-ended Questions
- ✓ Rubrics
- ✓ Unit Assessment
- ✓ Verbal Assessment
- ✓ Exit slips
- ✓ Observation (Teacher/Small/Whole Group)
- ✓ Anecdotal Records
- ✓ Green/Yellow/Red Cards

Resources/Including Online Resources

- Online Textbook Information:
 - EM at Home
 - Fact Workshop Game
 - eToolkit
- Teacher Webpage
- EM Facts Workshop Game: provides online practice of basic facts and computation
- Online math websites: ie: superkids.com; mathplayground.com; aplusmath.com; primarygames.com, fastmath.com, etc.

Course Name: Everyday Mathematics: Grade 2

Unit 4: Place Value and Measurement

Approximate # of Weeks: 3 weeks

Essential Questions:

- When might you need to know the exact time?
- How do clocks use a *reference frame* or a system for locating numbers in a given context (a.m./p.m.)
- How might base-10 blocks be used to show numbers?
- Why is it helpful to represent numbers in different ways?
- How do different representations of numbers help to compare 3-digit numbers?
- How does understanding underlying place value concepts help to better explain computational algorithms?
- What are examples of standard units?
- Why are units important when you report measurements?
- Are some tools better at measuring things than others?
- What is an array? How is it constructed? How does it relate to multiplication?

Upon completion of this unit students will be able to:

- Tell time to the nearest hour and half hour (2.MD.7)
- Tell time to the nearest 5 minutes (2. NBT.2 and 2.MD.7)
- Tell time using a.m. and p.m. (2.MD.7)
- Discuss place value and represent 3-digit numbers using base-10 blocks and expanded form. (2.NBT.1, 1a, 1b, and 2.NBT.3)
- Use place value and expanded form to compare 3-digit numbers. (2.NBT.1, 2.NBT.3, 2.NBT.4)
- Make sense of 3-digit numbers represented by base-10 blocks by making trades or counting. (2.NBT.1, 1a, 3)
- Use base-0 blocks to model addition and subtraction of multidigit numbers it is necessary to compose or decompose tens or hundreds (2.NBT.1, 2.NBT.3, 2.NBT.7)
- Measure objects with a foot-long foot. (2.MD.1-3, 9)
- Recognize the inch as a standard unit of length. (2.MD.1 and 2.MD.9)
- Recognize the centimeter as a standard unit of length. (2.MD.1 and 2.MD.2)
- Match subtraction facts with strategies
- Measure a path in inches and centimeters
- Explore arrays

Interdisciplinary Standards (njcccs.org)

- Standard 5.1: Science Practices

- Standard 6.1.P.A.3: Demonstrate appropriate behavior when collaborating with others.
- Standard 6.3: Active Citizenship in the 21st Century
- Standard 9.1: 21st Century Life & Career Skills
- Standard 9.2: Career Awareness, Exploration, and Preparation, Exploration, and Preparation

Activities – include 21st Century Technologies:

- Online activities: ie: everydaymathonline.com, EM online home connection,
- e-presentations, EM Facts Workshop Game (provides online practice of basic facts and computation)
- SMARTBoard lessons
- IXL-Math

Enrichment Activities:

- Add to Math Vocabulary Word Wall
-
- **(Lesson 4.3)** *Tuesday*, by David Wiesner, Clarion 1991 **(Lesson 4.4)** *A Place for Zero: A Math Adventure*, by Angelina Sparagna LoPresti, Charlesbridge Publishing 2003; **(Lesson 4.8)** *Inch By Inch*, by Leo Lionni, HarperCollins Publishers, 1995, **(Lesson 4.8)** *How Big is a Foot*, by Rolf Myler, Dell Yearling, 1991,
- EM Facts Workshop Game: provides online practice of basic facts and computation
- Everyday Math Games: Evens and Odds, Addition Top-It, Number Top-It, The Digit Game, Target to 50, Target to 200, The Exchange Game
- Solving Time Problems (MM p.92)
- Listing My Activities; create a daily activity list w/elapsed time (MM p.95)
- Writing a.m. and p.m. Number Stories (Activity Card 49)
- Creating 3-digit Numbers (Activity Card 50)
- Finding Mystery Numbers (Activity Card 52)
- Playing Target to 200 (MM G19-G20)
- Estimating and Measuring with the Foot-Long Foot-further exploring estimating (Activity Card 54)
- Estimating and Measuring—using the vocabulary of “about” (Card 56)
- Estimating with Centimeters (Activity Card 58)
- Exploring Length Units-enrich understanding of linear measurement by measuring a crooked path using different units.

Methods of Assessments/Evaluation:

- ✓ math journals
- ✓ Math Games
- ✓ self-assessment checklist
- ✓ oral and whiteboard assessments

- ✓ homework, class work, independent work
- ✓ Thumbs Up/Thumbs Down
- ✓ Pair/Share
- ✓ record sheets for individual and class progress (Teacher observation)
- ✓ real-time data to inform instruction
- ✓ closure assessments masters
- ✓ unit assessments
- ✓ Rubrics
- ✓ Poster/Display
- ✓ Unit Assessment
- ✓ Verbal Assessment
- ✓ Observation (Teacher/Small/Whole Group)
- ✓ Anecdotal Records

Resources/Including Online Resources

- Online Textbook Information:
 - EM at Home
 - Fact Workshop Game
 - eToolkit
- Teacher Webpage
- EM Facts Workshop Game: provides online practice of basic facts and computation
- Online math websites: ie: superkids.com; mathplayground.com; aplusmath.com; primarygames.com, fastmath.com, etc.

Course Name: Everyday Mathematics: Grade 2

Unit 5: Addition and Subtraction

Approximate # of Weeks: 3 weeks

Essential Questions:

- How can automaticity of basic facts help with solving multidigit number problems?
- Why is it important to fluidly skip count in a variety of number applications such as, addition, subtraction and money combinations?
- How can multiples of 10 and of 100 help us to recognize patterns and help us solve addition and subtraction problems?
- How can the use of an open number line assist in visualizing the way numbers increase and decrease as we count up and count back?

Upon completion of this unit students will be able to:

- Develop fact power by using mental strategies to add two 1-digit numbers (2.OA.2)
- Recognize coin equivalencies and make different combinations of coins for the same amount of money (2.NBT.2 and 2.MD.8)
- Make coin combinations to pay for items and make change by counting up (2.NBT.2, 5, 7, and 2.MD.8)
- Make purchases and practice making change. (2.NBT.2, 7 and 2.MD.8)
- Match analog and digital clock notations ((2.OA.4 and 2.MD.7)
- Construct shapes (2.G.1)
- Develop strategies for mentally adding and subtracting 10 and 100. (2.NBT.2, 5, 7, 8, 9)
- Use open number lines as a tool for solving number stories. ((2.OA.1, 2.NBT.5, 2.NBT.7, 2.NBT.8, 2.MD.6)
- Solve change-to-more number stories. (2.OA.1, 2.NBT.5, 2.NBT.7)
- Solve Part-and-Total number stories. (2.OA.1, 2.OA.2, 2.NBT.5, 2.NBT.7)
- Discuss selected strategies (from 2 choices) for solving addition problems and revise answers. (2.NBT.5, 2.NBT.9, 2.MD.8)

Interdisciplinary Standards (njcccs.org)

- Standard 5.1: Science Practices
- Standard 6.1.P.A.3: Demonstrate appropriate behavior when collaborating with others.
- Standard 6.3: Active Citizenship in the 21st Century
- Standard 8.1: Computer and Literacy Information
- Standard 9.1: 21st Century Life & Career Skills
- Standard 9.2: Career Awareness, Exploration, and Preparation

Activities – include 21st Century Technologies:

- Online activities: ie: everydaymathonline.com, EM online home connection,
- e-presentations, EM Facts Workshop Game (provides online practice of basic facts and computation)
- SMARTBoard lessons
- Everyday Math computer games: practice math skills without internet connection
- IXL-Math

Enrichment Activities:

- Add to Math Vocabulary Word Wall
- Literacy Connection: (**Lesson 5.2**) *Betcha!* by Stuart J. Murphy, Scholastic Inc. 1997; (**Lesson 5.3**) *The \$1.00 Word Riddle Book*, by Marilyn Burns, Math Solutions, 1990; (**Lesson 5.5**) *The Greedy Triangle*, by Marilyn Burns Scholastic Inc. 1995; *Shapes, Shapes, Shapes*, by Tana Hoban, Greenwillow Books, 1996.
- EM Facts Workshop Game: provides online practice of basic facts and computation
- Everyday Math Games: Beat the Calculator, Spinning For Money, Dime-Nickel Grab, Salute!, Target, Addition Top-It, Clock Concentration, Addition/Subtraction Spin, Number Top-It
- Play Beat the Calculator with Extended Facts (multidigit numbers)
- Write Number Stories with Money-create a class book
- Solve a Coin Puzzle-create your own (MM p.123)
- Calculate the Value of a Name (Activity Card 68)
- Working with Pattern Block Puzzles-extend understanding of 2-D shapes (MM p.129)
- Adding and Subtracting 10s and 100s-to further develop mental math (Activity Card 72)
- Use Open Number Lines with Larger Numbers (MM p.135)
- Write Change-To-More Stories (Activity Card 75)
- Writing Missing-Part Number Stories. (Activity Card 76)
- Finding Changes in Temperature-to extend understanding of change situations. (MM p.143)

Methods of Assessments/Evaluation:

- ✓ math journals
- ✓ Math Games
- ✓ self-assessment checklist
- ✓ oral and whiteboard assessments
- ✓ homework, class work, independent work
- ✓ Thumbs Up/Thumbs Down
- ✓ Pair/Share
- ✓ record sheets for individual and class progress (Teacher observation)
- ✓ real-time data to inform instruction

- ✓ closure assessments masters
- ✓ Rubrics
- ✓ Unit Assessment
- ✓ Open-ended Questions
- ✓ Verbal Assessment
- ✓ Exit slips
- ✓ Observation (Teacher/Small/Whole Group)
- ✓ Anecdotal Records

Resources/Including Online Resources

- Online Textbook Information:
 - EM at Home
 - Fact Workshop Game
 - eToolkit
- Teacher Webpage
- EM Facts Workshop Game: provides online practice of basic facts and computation
- Online math websites: ie: superkids.com; mathplayground.com; aplusmath.com; primarygames.com, fastmath.com, etc.

Course Name: Everyday Mathematics: Grade 2

Unit 6: Whole Number Operations and Number Stories

Approximate # of Weeks: 2 weeks

Essential Questions:

- How do charts and graphs help us to understand data?
- How do equal-sharing problems (arrays) help us to understand multiplication?
- How can using concrete objects, such as number grids, counters, pictures, doodles, or tallies, help to solve real-life problems?
- How can using compliments of 10 help when adding three or more numbers?
- What are the “clue” words that indicate addition or subtraction?

Upon completion of this unit students will be able to:

- Represent and interpret data and understand place value(2.NBT.2, 2.MD.6, 2.MD.10)
- Solve comparison number stories; involving addition and subtraction (2.OA.1, 2.NBT.5, 2.NBT.7, 2.MD.5)
- Choose diagrams to use for solving number stories. (2.OA.1, 2.NBT.3, 2.NBT.4, 2.NBT.5, 2.NBT.7, 2.MD.2, 2.MD.5)
- Solve animal number stories involving addition and subtraction related to length (2.OA.1, 2.NBT.3-7, 2.MD.2, 2.MD.5)
- Solve two-step number stories. (2.OA.1, 2.NBT.5, 2.NBT.7)
- Make ballpark estimates and invent and record their own strategies for solving addition problems. (2.NBT.5, 7, 9)
- Use base-10 blocks to find partial sums and build readiness for partial-sums addition. (2.NBT.1, 5, 7, 9)
- Recognize partial-sums addition (2.NBT.1, 3, 5, 7, 9)
- Represent and solve problems using addition and subtraction; compare strategies and revise work. (2.OA.1, 2.NBT.5, 2.NBT.7)
- Build arrays, measure and compare lengths and create shapes. (2.OA.4, 2.NBT.2, 2.MD.1, 2.MD.4, 2.G.1)

Interdisciplinary Standards (njcccs.org)

- Standard 5.1: Science Practices
- Standard 6.1.P.A.3: Demonstrate appropriate behavior when collaborating with others.
- Standard 8.1: Computer and Literacy Information
- Standard 9.1: 21st Century Life & Career Skills
- Standard 9.2: Career Awareness, Exploration, and Preparation

Activities – include 21st Century Technologies:

- Online activities: ie: everydaymathonline.com, EM online home connection,
- e-presentations, EM Facts Workshop Game (provides online practice of basic facts and computation)
- SMARTBoard lessons
- Everyday Math computer games: practice math skills without internet connection
- IXL-Math

Enrichment Activities:

- Add to Math Vocabulary Word Wall
- Literacy Connection: **(Lesson 6.1)** *The Grapes of Math*, by Greg Tang, Scholastic Inc. 2004; **(Lesson 6.3)** *Actual Size*, by Steve Jenkins, Perfection Learning Corporation, 2014; **(Lesson 6.5)** *Where the Sidewalk Ends*, by Shel Silverstein, HarperCollins Publisher, 2004; **(Lesson 6.9)**, *A Remainder of One*, by Elinor J. Pinczes, Houghton Mifflin Harcourt, 2002
- Everyday Math Games: The Exchange Game, Salute!, Beat the Calculator, Array Bingo
- Collect data for class: Birthday Month; students make tally mark chart and bar graph to show findings
- Find everyday arrays around the room; illustrate and write the corresponding number sentence
- Use a situation diagram to solve addition and subtraction stories
- Use a variety of strategies to solve problems: ie: draw a picture, act out the problem, make a table, chart, or list
- Write Comparison Number Stories (MM p. 161)
- Write Number Stories to Match Number Models (MM p. 166)
- Match Number Models (MM p. 168)
- Write a Two-Step Number Story (Activity Card 78)
- Addition Strategy Poster -make a poster of various strategies to solve 2-digit numbers (Activity Card 79)
- Comparing Addition Number Stories (MM p. 174)
- Comparing Addition Strategies-students use partial sums in comparison to another strategy (Activity Card 82)

Methods of Assessments/Evaluation:

- ✓ math journals
- ✓ Math Games
- ✓ self-assessment checklist
- ✓ oral and whiteboard assessments
- ✓ homework, class work, independent work
- ✓ Thumbs Up/Thumbs Down

- ✓ Pair/Share
- ✓ record sheets for individual and class progress (Teacher observation)
- ✓ real-time data to inform instruction
- ✓ closure assessments masters
- ✓ unit assessments
- ✓ Rubrics
- ✓ Poster/Display
- ✓ Verbal Assessment
- ✓ Exit slips
- ✓ Observation (Teacher/Small/Whole Group)
- ✓ Anecdotal Records

Resources/Including Online Resources

- Online Textbook Information:
 - EM at Home
 - Fact Workshop Game
 - eToolkit
- Teacher Webpage
- EM Facts Workshop Game: provides online practice of basic facts and computation
- Online math websites: ie: superkids.com; mathplayground.com; aplusmath.com; primarygames.com, fastmath.com, etc.

Course Name: Everyday Mathematics: Grade 2

Unit 7: Number Operations and Measurement Data

Approximate # of Weeks: 2 weeks

Essential Questions:

- How does skip counting help us to understand number patterns?
- What is the definition of “median” and how do we find a median of a set of numbers?
- How does the “turn-around” rule of addition and other patterns in math help to solve multidigit problems?
- How do compliments of 10 help us with mentally solving addition and subtraction problems?
- How can calculators help us explore number patterns?
- Why is it important to be able to measure to the “nearest” inch/centimeter?
- In what ways do graphs and charts help us to understand data?

Upon completion of this unit students will be able to:

- Find differences between 2-digit numbers and multiples of 10 (2.OA.2, 2.NBT.1, 1a, 2.NBT.5, 2.NBT.9))
- Apply place value concepts to solve addition and subtraction problems. (2.OA.1, 2.OA.2, 2.NBT.6)
- Solve addition problems with three or more addends. (2.NBT.5, 6, 9)
- Use customary length units and measure to the nearest yard. (2.MD.1,2,3,4)
- Choose appropriate tools and use appropriate units estimate and measure lengths. (2.MD.1, 3, 4)
- Measure lengths to the nearest centimeter and nearest inch. (2.MD.1-3 and 2.MD.9)
- Represent and interpret data using a line plot. (2.NBT.5, 2.MD.6, 2.MD.9)
- Represent and interpret data using a frequency table. (2.NBT.3, 2.NBT.5, 2,MD.2, 2.MD.6, 2.MD.9)
- Measure and estimate lengths in standard units. (2.MD.1-3, 2.MD.9, 2.MD.10)
- Reason with shapes and their attributes. (2.G.1)

Interdisciplinary Standards (njcccs.org)

- Standard 5.1: Science Practices
- Standard 6.1.P.A.3: Demonstrate appropriate behavior when collaborating with others.
- Standard 6.3: Active Citizenship in the 21st Century
- Standard 8.1: Computer and Literacy Information
- Standard 9.1: 21st Century Life & Career Skills
- Standard 9.2: Career Awareness, Exploration, and Preparation

Activities – include 21st Century Technologies:

- Online activities: ie: everydaymathonline.com, EM online home connection,
- e-presentations, EM Facts Workshop Game (provides online practice of basic facts and computation)
- SMARTBoard lessons
- Everyday Math computer games
- IXL-Math
- Math/CS-Related Software

Enrichment Activities:

- Add to Math Vocabulary Word Wall
- Literacy Connection: **(Lesson 7.1)** *The Grapes of Math*, by Greg Tang Scholastic Inc. 2004; **(Lesson 7.6)** *Probably Pistachio*, by Stuart J. Murphy, HarperCollins Publishers, 2001
- Everyday Math Games: Hit the Target, Hit the Target with Other Numbers, Basketball Addition, Beat the Calculator, Addition/Subtraction Spin
- Adding Four 2-digit Numbers (Activity Card 88)
- Using Yards or Meters to Measure a Path-apply understanding of measuring distances
- Making Up and Solving Number Stories
- Making a Line Plot-to apply knowledge of collecting data (Activity Card 92)
- Questions for Arm Span and Line Plot-write questions about a line plot to extend understanding of line plots (Activity Card 94)
- Draw a Bar Graph-to apply understanding of representing data (MM p. 207)

Methods of Assessments/Evaluation:

- ✓ math journals
- ✓ Math Games
- ✓ self-assessment checklist
- ✓ oral and whiteboard assessments
- ✓ homework, class work, independent work
- ✓ Thumbs Up/Thumbs Down
- ✓ Pair/Share
- ✓ record sheets for individual and class progress (Teacher observation)
- ✓ real-time data to inform instruction
- ✓ Open-ended Questions
- ✓ unit assessments
- ✓ Rubrics
- ✓ Unit Assessments
- ✓ Verbal Assessment
- ✓ Exit slips
- ✓ Observation (Teacher/Small/Whole Group)
- ✓ Anecdotal Records

Resources/Including Online Resources

- Online Textbook Information:
 - EM at Home
 - Fact Workshop Game
 - eToolkit
- Teacher Webpage
- EM Facts Workshop Game: provides online practice of basic facts and computation
- Online math websites: ie: superkids.com; mathplayground.com; aplusmath.com; primarygames.com, fastmath.com, etc.

Course Name: Everyday Mathematics: Grade 2

Unit 8: Geometry and Arrays

Approximate # of Weeks: 3 weeks

Essential Questions:

- How do geometric models describe spatial relationships?
- How are geometric shapes and objects classified?
- How do parallel and congruent lines help us to discuss relationships between geometric shapes?
- When are rows and columns used in everyday life?
- How does creating identical rows and columns help to represent or count a number?
- What is the relationship of equal groups to multiplication and division?

Upon completion of this unit students will be able to:

- Describe the attributes of 2-dimensional shapes. (2.G.1)
- Identify shapes that have certain attributes and reason based on those attributes. (2.G.1)
- Build and compare various polygons. ((2.G.1)
- Draw quadrilaterals based on given attributes. (2.G.1)
- Sort and compare 3-D shapes based on their attributes. (2.G.1)
- Use manipulatives to partition rectangles into same size squares. (2.G.1)
- Solve number stories about equal groups and arrays. (2.OA.1, 2.OA.4, 2.NBT.2)
- Recognize various ways of representing a number using arrays. (2.OA.4, 2.NBT.2)
- Reason with shapes and their attributes to be able to build and partition various shapes.(2.G.1, 2.G.3)

Interdisciplinary Standards (njcccs.org)

- Standard 5.1: Science Practices
- Standard 6.1.P.A.3: Demonstrate appropriate behavior when collaborating with others.
- Standard 6.3: Active Citizenship in the 21st Century
- Standard 8.1: Computer and Literacy Information
- Standard 9.1: 21st Century Life & Career Skills
- Standard 9.2: Career Awareness, Exploration, and Preparation

Activities – include 21st Century Technologies:

- Online activities: ie: everydaymathonline.com, EM online home connection,
- e-presentations, EM Facts Workshop Game (provides online practice of basic facts and computation)
- SMARTBoard lessons
- IXL-Math
- Math/CS-Related Software

Enrichment Activities:

- Add to Math Vocabulary Word Wall
- Literacy Connection: **(Lesson 8.1, 8.2)** *Shapes, Shapes, Shapes*, by Tana Hoban, Greenwillow Books, 1996; **(Lesson 8.1)** *The Greedy Triangle*, by Marilyn Burns, Scholastic Inc, 200; **(Lesson 8.2)** *Grandfather Tang's Story*, by Ann Tompert, Dragonfly Books, 1997; **(Lesson 8.3)** *Shape Up!*, by David A. Adler, Holiday House, 2008
- **(Lesson 8.5)** *Three Pigs, One Wolf and Seven Magic Shapes*, by Grace Maccarone, Cartwheel, 1998; **(Lesson 8.7)** *Fraction Action*, by Loreen Leed, Holiday House, 1996; **(Lesson 8.8)** *Each Orange Had 8 Slices: a Counting Book*, Paul Giganti, Greenwillow Books, 1999; **(Lesson 8.10)** *One Hundred Hungry Ants*, by Elinor J. Pinczes, Houghton Mifflin Harcourt, 2002
- Everyday Math Games; Subtraction Top-It, Shape Capture, Target, The Number-Grid Difference Game, Beat the Calculator, Basketball Addition, Array Concentration, Array Bingo
- Solve Shape Riddles (Activity Card 99)
- Compare Shapes-use a Venn diagram to extend work with shapes (MM p.TA31)
- Describe Faces and Cubes-apply understanding of 3-D shapes (MM p.220)
- Partitioning Rectangles without Tools-creating arrays (MM p.223)
- Partitioning Polygons-deepening understanding of partitioning (MM. 230)
- Solve Equal-Groups and Array Riddles-making sense of and solving challenging riddles (MM p. 235)
- Explore Square Numbers-further explore arrays and discuss patterns they notice (Activity Card 105)

Methods of Assessments/Evaluation:

- ✓ math journals
- ✓ Math Games
- ✓ self-assessment checklist
- ✓ oral and whiteboard assessments
- ✓ homework, class work, independent work
- ✓ Thumbs Up/Thumbs Down
- ✓ Pair/Share
- ✓ record sheets for individual and class progress (Teacher observation)

- ✓ real-time data to inform instruction
- ✓ closure assessments masters
- ✓ unit assessments
- ✓ Rubrics
- ✓ Unit Assessments
- ✓ Exit slips
- ✓ Observation (Teacher/Small/Whole Group)
- ✓ Anecdotal Records

Resources/Including Online Resources

- Online Textbook Information:
 - EM at Home
 - Fact Workshop Game
 - eToolkit
- Teacher Webpage
- EM Facts Workshop Game: provides online practice of basic facts and computation
- Online math websites: ie: superkids.com; mathplayground.com; aplusmath.com; primarygames.com, fastmath.com, etc.

Course Name: Everyday Mathematics: Grade 2

Unit 9: Equal Shares and Whole-Number Operations

Approximate # of Weeks: 3 weeks

Essential Questions:

- Can a shape be partitioned into equal shares in more than one way?
- How can using math vocabulary help to explain and discuss various partitioning strategies?
- What else can be divided into equal shares besides objects?
- Do all numbers have many names?
- What are different ways to represent numbers using base-10 blocks ?
- What is the relationship between renaming and trading when multidigit solving subtraction problems?
- Why do we sometimes estimate the cost of things in real life?
- How could it help you to know how to make change using your head?

Upon completion of this unit students will be able to:

- Divide shapes and use fraction vocabulary to name the shares. (2.G.3)
- Recognize equal shares of different shapes and divide the shapes. (2.MD.6, 2.G.3)
- Demonstrate the ability to make equal shares and revise work as needed. (2.G.3)
- Measure lengths to the nearest half inch. (2.MD.1, 4, 6)
- Write multidigit numbers in expanded form and compare them. (2.NBT.1-4 and 2.NBT.1a)
- Use base-10 blocks to solve subtraction problems. (2.NBT.1, 2.NBT.1a, 2.NBT.1b, 2.NBT.3, 2.NBT.5, 2.NBT.7, 2.NBT.9)
- Use expand-and-trade subtraction to subtract multidigit numbers. (2.NBT.1, 2.NBT.1a, 2.NBT.3, 2.NBT.5, 2.NBT.7, 2.NBT.9)
- Find coin and dollar combinations with equivalent values. (2.NBT.2 and 2.NBT.7)
- Use dollar and cent notation appropriately. (2.MD.8)
- Use mental math, make reasonable estimations and revise work when needed. (2.OA. 1, 2.NBT.2, 2.NBT.6)
- Solve number stories about 2 equal groups. (2.OA.1-4)
- Skip count and add to solve problems involving multiples of 10 and 5. (2.OA.1, 2.NBT..2, 2.NBT.5,

Interdisciplinary Standards (njcccs.org)

- Standard 5.1: Science Practices
- Standard 6.1.P.A.3: Demonstrate appropriate behavior when collaborating with

others.

- Standard 6.3: Active Citizenship in the 21st Century
- Standard 8.1: Computer and Literacy Information
- Standard 9.1: 21st Century Life & Career Skills
- Standard 9.2: Career Awareness, Exploration, and Preparation

Activities – include 21st Century Technologies:

- Online activities: ie: everydaymathonline.com, EM online home connection,
- e-presentations, EM Facts Workshop Game (provides online practice of basic facts and computation)
- SMARTBoard lessons
- IXL-Math
- Math/CS-Related Software

Enrichment Activities:

- Add to Math Vocabulary Word Wall
- **(Lesson 9.1)** *Ed Emberley's Picture Pie: A Cut and Paste Drawing Book*, by Ed Emberley, Little Brown, 2006; **(Lesson 9.4)** *Inchworm and a Half*, by Elinor Pinczes, Houghton Mifflin, 2006 **(Lesson 9.8)** *Pigs Go to Market: Fun with Math and Shopping*, by Amy Axelrod, Scholastic Inc. 1999
- Everyday Math Games; Array Concentration, Shape Capture, Number Top-It, Beat the Calculator, Hit The Target
- Naming Equal Parts Found in Literature-apply understanding of names for equal parts (Activity Card 111),
- Showing Fractions for One Half-equivalent fractions for $\frac{1}{2}$ (MM p.246)
- Measuring a Crooked Path (MM p. 258)
- Exploring Place Value (MM p. 261)
- Subtracting Multidigit Numbers-subtracting 3- and 4-digit numbers (Activity Card 116)
- Exploring Subtraction Strategies-writing 2- and 3- digit subtraction problems using a variety of strategies (Activity Card 118)
- Planning a Picnic-students plan and shop for a picnic (MM p.268)
- A Paper-Folding Problem-predicting and practicing doubles (MM p.276)

Methods of Assessments/Evaluation:

- ✓ math journals
- ✓ Math Games
- ✓ self-assessment checklist
- ✓ oral and whiteboard assessments
- ✓ homework, class work, independent work
- ✓ Thumbs Up/Thumbs Down
- ✓ Pair/Share
- ✓ record sheets for individual and class progress (Teacher observation)
- ✓ real-time data to inform instruction

- ✓ closure assessments masters
- ✓ unit assessments
- ✓ Rubrics

- ✓ Verbal Assessment
- ✓ Exit slips
- ✓ Observation (Teacher/Small/Whole Group)
- ✓ Anecdotal Records

Resources/Including Online Resources

- Online Textbook Information:
 - EM at Home
 - Fact Workshop Game
 - eToolkit
- Teacher Webpage
- EM Facts Workshop Game: provides online practice of basic facts and computation
- Online math websites: ie: superkids.com; mathplayground.com; aplusmath.com; primarygames.com, fastmath.com, etc.