

Glen Ridge Public Schools –Mathematics Curriculum



Course Title: Everyday Mathematics
The University of Chicago School Mathematics Project

Subject: Mathematics

Grade Level: One

Duration: 34-36 weeks

Prerequisite: n/a

Elective or Required: n/a

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:

The first grade mathematics curriculum prepares students to emphasize conceptual understanding while building a mastery of basic skills. Throughout the course of the year, students will explore many strands of mathematics. These will include the areas of number and numeration, operations and computation, data and chance, measurement and reference frames, geometry, patterns, functions and algebra. The students will become competent mathematicians through both classroom lessons, as well as investigations, games, construction, and other hands-on activities.

The first grade units will emphasize the concept of counting; reading and writing, and modeling whole numbers; investigating whole number place value; exploring fractions; using ordinal numbers. The students will learn addition and subtraction facts and explore fact families. Informal work with properties of numbers and operations will begin as well as values of coin combinations. The program will include collecting, organizing, and displaying data using tally charts, tables, line plots, and graphs as well as exploring concepts of chance. In addition, the students will experience activities involving tools to measure length and weight; using clocks, calendars, timelines, and thermometers. Geometry is also highlighted as the students explore 2- and 3- dimensional shapes. Exploring attributes, patterns, sequences, relations, and functions; finding missing numbers and rules in Frames-and-Arrows and "What's My Rule?" are also a part of the first grade mathematics program. The Everyday Mathematics program explores a broad mathematics spectrum preparing students to achieve their maximum potential in mathematics.

Author: Helene Maia

Date Submitted: Summer 2017

Grade One Mathematics

Unit 1: Counting

Approximately 4 Weeks

Essential Questions:

- How do dot patterns relate to numbers?
- How can you compare numbers on a number line?
- Are there different ways to add?
- How do we write numbers to 15?
- How do we count numbers to 15?
- How do we compare numbers to 15?
- How can tally marks represent a number?
- How can I interpret data?
- Can I solve simple number stories?
- Do number grids go forward and backward?

Upon completion of this unit students will be able to:

- Solve simple number stories involving addition and subtraction within 10. (1.OA.1)
- Find a new number by counting up and back a number of spaces from a given number (< 20) on a number grid or number line. (1.OA.5)
- Use addition and subtraction within 10 to solve simple number stories. (1.OA.6)
- Count up by 1s on a number grid or number line (starting at any number < 100) and count a number of objects (< 20), including tally marks. (1.NBT.1)
- Tell which two numbers (< 15) is larger, using a number line if necessary. (1.NBT.3)
- Read the number of data points in each category of a tally chart. (1.MD.4)

Interdisciplinary Standards (njcccs.org)

Standard 9.1 21st-Century Life & Career Skills

All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

Standard 9.3 - Career Awareness, Exploration, and Preparation

All students will apply knowledge about and engage in the process of career awareness, exploration, and preparation in order to navigate the globally competitive work environment of the information age.

Standard 8.1 – Computer and Information Literacy

All students will use computer applications to gather and organize information and to solve problems.

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 program online
- *Monster Squeeze*: Comparing numbers
- *Penny-Dice Game*: Counting
- *Bunny Hop*: Counting
- *Top It*: Comparing Numbers
- *Rock, Paper, Scissors*: Recording data with tally marks
- *Rock, Paper, Scissors, Pencil*: Recording data with tally marks
- *Rolling For 50*: Using the number grid

Enrichment Activities:

- Add to math vocabulary and word wall
- Math Masters
- Open Response and Reengagement: Counting Strategies (lesson 1.4)
- Activity Card 1: Making Dice
- Activity Card 2: Making Dot Patterns
- Activity Card 3: Number Detective
- Activity Card 4: Comparing and Ordering
- Activity Card 5: Making Counting Books
- Activity Card 6: How Many Do You See?
- Literature Link: **The Water Hole** by Graeme Base (use with Activity Card 7)
- Activity Card 8: Flipping and Comparing
- Activity Card 9: Tallying Pennies
- Activity Card 10: Matching Numbers and Tally Marks
- Activity Card 11: Creating Designs
- Literature Link: **Color Zoo** by Lois Ehlert (use with Activity Card 12)
- Activity Card 13: Dice Number Stories

Methods of Assessments/Evaluation:

- Everyday Math Individual Profile of Progress Recording Sheet
- Everyday Math Assessment check-ins
- Unit assessments
- Daily Activities/Routines
- Readiness, Enrichment and Extra Activities
- Class Checklists
- Class Recording Sheets
- Exit Slips
- Teacher/Student chosen Portfolio work
- Math Journals
- Open Response Activities
- Rubrics
- Teacher Observations
- Hands on activities/manipulatives
- Anecdotal Notes
- Classroom work
- Teacher created assessments
- Circle Time Discussions
- Whiteboard informal assessments
- Online games (i.e. scholastic, Math Seeds, Everyday Mathematics Program Math games)
- Math center activities
- Home Link activities

Resources/Including Online Resources

- Online Textbook Information
- Teacher Webpage
- SMARTBoard lessons
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Grade 1 Mathematics

Unit 2: Introducing Addition

Approximately 4 Weeks

Essential Questions:

- **What counting strategies help to find sums?**
- **How does the turn around rule help?**
- **What is a number story?**
- **What is a number model?**
- **How does place value help me to solve problems?**
- **Why is it to put a label on math problems?**
- **What is a Ten Frame**

Upon completion of this unit students will be able to:

- Solve and interpret number models for change-to-more and change-to-less stories within 10. (1.OA.1)
- Observe that adding the same two numbers in a different order results in the same sum. (1.OA.3)
- Use a counting strategy to find the sum of two numbers. (1.OA.5)
- Add and subtract within 10, including finding pairs of numbers that add to 10. (1.OA.6)
- Represent number stories using number models that include a symbol for the unknown value. (1.OA.8)
- Count and represent a number of objects (< 20) with a written numeral. (1.NBT.1)
- Answer simple questions about a tally chart. (1.MD.4)

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- *Monster Squeeze*: Comparing Numbers
- *Ten-Frame Top-It*: Comparing numbers represented on ten frames
- *Penny Plate*: Finding pairs of numbers that add to 10
- *Subtraction Bingo*: Finding differences
- *Rock, Paper, Scissors*: Recording data with tally marks
- *High Roller*: Adding numbers
- *Top-It*: Comparing Numbers
- *Bunny Hop*: Counting
- *Rolling for 50*: Using the number grid

Enrichment Activities:

- Add to math vocabulary and word wall
- Math Masters
- Open Response and Reengagement: 10 Apples (lesson 2.5)
- Activity Card 14: Counting Up 5

- Activity Card 15: 10 Speed
- Activity Card 16: Sharing 10 Grapes
- Activity Card 17: Picking 10 Apples
- Activity Card 18: Counting Our Classroom
- Activity Card 19: Subtracting to Solve Number Stories
- Activity Card 20: Addition Memory
- Activity Card 21: Making Unit Books
- Activity Card 22: Labeling Units
- Activity Card 23: Whose Number Is This
- Activity Card 24: Rolling Number Sentences
- Activity Card 25: Mystery Number Challenge
- Activity Card 26: Mystery Number Bingo

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- Whiteboard informal assessments
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- Home Link activities

Resources/Including Online Resources

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Grade One Mathematics

Unit 3: Number Stories

Approximately 4 Weeks

Essential Questions:

- **How do I solve a number story?**
- **What are parts-and-total diagrams with unknowns?**
- **What are doubles facts?**
- **How do I measure length?**

- **How can I make a math problem that matches a picture?**
- **What is addition?**
- **What is subtraction?**
- **How does a number line help me add/subtract?**
- **How can a tool such as a calculator help count?**

Upon completion of this unit students will be able to:

- Solve parts-and-total-number stories within 10. (1.OA.1)
- Explain what the turn around-rule means. (1.OA.3)
- Use counting on a number line or number grid to solve addition and subtraction problems. ((1.OA.5)
- Add and subtract on the number line to solve simple number stories and extend number patterns. (1.OA.6)
- Find the unknown number of hops between two numbers. (1.OA.8)
- Use skip counting to add and subtract on the number line and extend number patterns within 100. (1.NBT.1)
- Compare the value of two numbers (< 20). (1.NBT.3)
- Identify the shortest and longest out of two or three objects. (1.MD.1)

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- *High Roller*: Adding Numbers
- *Penny Dice*: Counting
- *Subtraction Bingo*: Finding differences
- *Bunny Hop*: Counting
- *Rolling for 50*: Using the Number Grid
- *Penny Plate*: Finding pairs of numbers that add to 10

Enrichment Activities:

- Add to math vocabulary and word wall
- Math Masters
- Open Response and Reengagement: Birds in a Tree (lesson 3.4)
- Activity Card 27: Filling in Parts-and-Total Diagrams with Unknowns
- Literature Link: **12 Ways to Get to 11** by *Eve Merriam* (use with Activity Card 28: Making Number Story Books)
- Activity Card 29: Checking Out Library Books
- Activity Card 30: Matching Pairs
- Activity Card 31: Ordering Objects by Length
- Activity Card 32: Matching Larger Pairs
- Activity Card 33: Counting Chair Legs
- Activity Card 34: Counting on the Number Line
- Literature Link: **Two Ways to Count to 10** by *Ruby Dee* (use with Activity Card 35: Reading about Skip Counting)
- Activity Card 36: Coloring Number Sentences
- Activity Card 37: What Is My Number?
- Activity Card 38: Creating Frames and Arrows from Skip Counts

Methods of Assessments/Evaluation:

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Grade One Mathematics

Unit 4: Length and Addition

Approximately 4 Weeks

Essential Questions:

- How do I estimate and measure?
- How do I decide which unit of measurement to use?
- How can I measure length by using non-standard units?
- How do I choose the appropriate tool and unit when measuring?
- What is a bar graph?
- How do I interpret a bar graph?
- What are doubles?
- How are combinations of 10 helpful in adding and subtraction?
- What strategies do I use to add three numbers?

Upon completion of this unit students will be able to:

- Solve and write number models for number stories within 10. (1.OA.1)
- Solve number stories with three addends by first finding a combination of 10 or a double from two of the addends. (1.OA.2)
- Recognize that a fact and its turn-around fact have the same sum and add three numbers by first finding a combination of 10 or a double from two of the addends. ((1.OA.3)
- Find and record facts within 10, including combinations of 10 and doubles facts. (1.OA.6)
- Use a number grid to find 10 more or 10 less than a number. (1.NBT.5)
- Directly order three objects by length. (1.MD.1)
- Measure the length of an object with multiple paper clips or pencils. (1.MD.2)
- Answer questions about the total number of data points in one or several categories of a tally chart or bar graph. (1.MD.4)

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Standard 6.3 Active Citizenship in the 21st Century

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- *Domino Top-It*: Finding and comparing sums
- *Ten-Frame Top-It*: Comparing numbers represented on ten frames
- *Roll and Record Doubles*: Finding addition doubles
- *High Roller*: Adding numbers
- *Fishing for 10*: Making combinations of 10
- *What's Your Way?*: Finding 10 more or 10 less than a number

Enrichment Activities:

- Add to math vocabulary and word wall
- Math Masters
- Open Response and Reengagement: Measuring a Marker (lesson 4.4)
- Activity Card 38: Which is Longer?
- Activity Card 39: Longest Shoelaces
- Activity Card 41: Exploring Optical Illusions
- Activity Card 42: Measuring Line Lengths
- Activity Card 43: Measuring with Cubits and Hand Spans
- Activity Card 44: Measurement Hunt
- Activity Card 45: Geoboard Shapes with Defining Attributes
- Activity Card 46: Building with Base-10 Blocks

- Activity Card 47: Collecting Data in a Tally Chart
- Activity Card 48: Making a Bar Graph
- Activity Card 49: Finding Doubles Patterns
- Activity Card 50: Fact Wizard
- Activity Card 51: Adding Larger Numbers
- Activity Card 52: Adding Dice Rolls to 20

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Grade One Mathematics

Unit 5: Place Value and Comparisons

Approximately 4 Weeks

Essential Questions:

- **What is place value?**
- **What is the relationship between 10's and 1's?**
- **What are the meanings of the symbols $<$, $>$, $=$?**
- **How can I use number models with relationships to represent and solve number stories?**
- **What strategies can I use to solve comparison number stories?**
- **How do I add/subtract two digit numbers?**

Upon completion of this unit students will be able to:

- Understand that a difference can be found with both subtraction and addition. (1.OA.4)
- Explain the meaning of the equal sign and identify true and false number sentences containing addition and subtraction facts within 10. (1.OA.7)
- Identify the two-digit number represented by base - 10 blocks. (1.NBT.2)
- Use $>$, $=$, and $<$ to record comparisons of numbers. (1.NBT.3)
- Add a two-digit and a one-digit number using tools. (1.NBT.4)
- Find the difference between two-digit multiples of ten using tools. (1.NBT.6)
- Measure a path with base - 10 cubes. (1.MD.2)

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- *The Digit Game*: Comparing 2-digit numbers based on place value
- *Penny-Dime Exchange*: Exchanging ones for tens
- *Top It with Relation Symbols*: Comparing numbers with relation symbols
- *Addition Top-It*: Solving addition facts and using relation symbols
- *Before and After*: Finding numbers that are 1 less or 1 more than a given number
- *Base- 10 Exchange*: Exchanging ones for tens
- *The Difference Game*: Finding Differences
- *Stop and Go*: Adding and subtracting 2-digit numbers

Enrichment Activities:

- Add to math vocabulary and word wall
- Math Masters
- Open Response and Reengagement: Adding Animal Weights (lesson 5.12)
- Activity Card 54: Guessing My 2-Digit Number
- Literary Connection: **The Warlord's Beads** by Virginia Walton Pilegard (use with Activity Card 55: Reading about Place Value)
- Activity Card 56: Base-10 Block Challenge
- Activity Card 57: Trading Dimes for Pennies
- Literacy Connection: **Just Enough Carrots** by Stuart J. Murphy (Use with Activity Card 58: More, Less, and Same)
- Activity Card 59: Balancing Number Sentences
- Activity Card 60: Fixing Number Sentences
- Activity Card 61: Fill My Number Grid
- Activity Card 62: Path Challenge!
- Activity Card 63: Making Tape Paths
- Activity Card 64: Deciding Which is Taller
- Activity Card 65: Finding Paths to the Treasure
- Activity Card 66: Catch a Crooked Path
- Activity Card 67: Building a Number Sentence Challenge
- Literacy Connection: **Alfie the Alligator: A Teaching Rhyme About Comparing Numbers** by Sandy Turley (use with Activity Card 68: What Would Alfie Do?)
- Activity Card 69: Comparing Animal Weights

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Grade One Mathematics

Unit 6: Addition Fact Strategies

Approximately 4 Weeks

Essential Questions:

- **Why is telling time important?**
- **What tools, strategies, and properties of operations should I use to solve number stories with two or three addends?**
- **What are near doubles?**
- **What is the making -10 strategy for adding and subtracting within 20?**
- **What is equivalence?**
- **How does place value relate to pennies, dimes, and dollars?**

Upon completion of this unit students will be able to:

- Apply the commutative and associative properties of addition to solve problems. (1.OA.3)
- Use doubles facts and combinations of 10 to help them solve other addition and subtraction facts within 20. (1.OA.6)
- Find equivalent names for numbers. (1.OA.7)
- Tell the value of each digit in a two-digit number. (1.NBT.2)
- Add within 100 using tools. (1.NBT.4)
- Subtract two-digit multiples of 10 from other two-digit multiples of 10 using tools. (1.NBT.6)
- Tell time to the hour on an hour-hand-only analog clock. (1.MD.3)

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- *Roll and Record Doubles*: Finding addition doubles
- *Addition Top-It*: Solving addition facts and using relation symbols
- *Domino Top-It*: Finding and comparing sums
- *Fishing for 10*: Making combinations of 10
- *Ten-Frame Top-It*: Comparing numbers represented on ten frames
- *The Difference Game*: Reinforcing subtraction facts
- *The Digit Game with 3-Digit Numbers*: Comparing numbers based on place value
- *Penny-Dime-Dollar Exchange*: Making place-value exchanges
- *Penny-Dime Exchange*: Exchanging ones for tens
- *Base-10 Exchange*: Exchanging ones for tens

Enrichment Activities:

- Add to math vocabulary and word wall
- Math Masters
- Open Response and Reengagement: Pencils for the Writing Club (lesson 6.8)
- Activity Card 70: Ordering Times of Daily Activities
- Activity Card 71: Setting the Time for Daily Activities
- Activity Card 72: Science and Social Studies Number stories
- Activity Card 73: Adding with Egg Cartons
- Activity Card 74: Geoboard Shapes with Nondefining Attributes
- Activity Card 75: Egg Carton Addition with 3 Pennies
- Activity Card 76: Drawing Doubles Pictures
- Activity Card 77: Recording Near Doubles
- Activity Card 78: Making 100
- Activity Card 79: My Reference Book I Spy
- Literature Link: **Seaweed Soup** by *Stuart J. Murphy* (use with Activity Card 80: Creating Number Stories)
- Activity Card 81: Musical Name-Collection Boxes
- Activity Card 82: Finding Equivalent Names for 10
- Activity Card 83: Coin Scoop

Methods of Assessments/Evaluation:

- Everyday Math Individual Profile of Progress Recording Sheet
- Everyday Math Assessment check-ins
- Unit assessments
- Daily Activities/Routines
- Readiness, Enrichment and Extra Activities
- Class Checklists
- Class Recording Sheets
- Exit Slips
- Teacher/Student chosen Portfolio work
- Math Journals
- Open Response Activities
- Rubrics
- Teacher Observations
- Hands on activities/manipulatives
- Anecdotal Notes
- Classroom work
- Teacher created assessments
- Circle Time Discussions
- Whiteboard informal assessments
- Online games (i.e. scholastic, Math Seeds, Everyday Mathematics Program Math games)

- Math center activities
- Home Link activities

Resources/Including Online Resources

- Online Textbook Information
- Teacher Webpage
- SMARTBoard lessons
- Everyday Math computer games: practice math skills without internet connection
- IXL math program
- Everyday Mathematics Program:
 - Teacher's Lesson Guide (Volumes 1 and 2)
 - eToolkit
 - ePresentations
 - Math Masters
 - Minute Math+
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 - Assessment Handbook
 - Assessment and Reporting Tools
 - Home Connection Handbook
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 - My Reference Book
 - Activity Cards

Grade One Mathematics

Unit 7: Subtraction Fact Strategies and Attributes of Shapes

Approximately 4 Weeks

Essential Questions:

- **What is a fact family?**
- **What is the “think addition” strategy?**
- **How do I use a fact triangle?**
- **How does knowing the attributes of various shapes help us?**
- **What are defining and nondefining attributes of 2-dimensional shapes?**

Upon completion of this unit students will be able to:

- Use the turn-around rule to generate fact families. (1.OA.3)
- Think addition to find the difference between two numbers. (1.OA.4)
- Use think addition, counting up, and counting back strategies to solve subtraction facts. (1.OA.6)
- Find an unknown rule (including a number and an operation) relating two numbers and describe that relationship with a number sentence. (1.OA.8)
- Show time to the hour on an analog clock with both the hour and minute hands. (1.MD.3)
- Name defining attributes of 2-dimensional shapes. (1.G.1)

Interdisciplinary Standards (njcccs.org)

Standard 9.1 21st-Century Life & Career Skills

All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

Standard 6.3 Active Citizenship in the 21st Century

All students will acquire the skills needed to be active, informed citizens who value diversity and promote cultural understanding by working collaboratively to address the challenges that are inherent in living in an interconnected world.

Standard 5.1 Science Practices

All students will understand that science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

- A. Use mathematical, physical, and computational tools to build conceptual-based or evidence-based models and to pose theories.
- B. Generate Scientific Evidence through Active Investigations: Students master the conceptual, mathematical, physical, and computational tools that need to be applied when constructing and evaluating claims.

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 program online
- *Beat the Calculator*: Using mental addition
- *Subtraction Bingo*: Subtracting facts
- *Salute!*: Adding and subtracting facts
- *Top-It with Subtraction*: Subtracting facts using relation symbols
- *Roll and Record Doubles*: Adding doubles facts
- *Shaker Addition Top-It*: Adding facts
- *The Difference Game*: Subtracting facts
- *Stop and Go*: Adding and subtracting 2-digit numbers
- *Attribute Train*: Comparing attributes
- *Penny-Dime-Dollar Exchange*: Making place-value exchanges
- *What's Your Way?*: Finding 10 more and 10 less than a number
- *Tric-Trac*: Adding facts
- *Time Match*: Telling time

Enrichment Activities:

- Add to math vocabulary and word wall
- Math Masters
- Open Response and Reengagement: Desks and Chairs (lesson 7.9)
- Activity Card 84: Fact Family Swap
- Activity Card 85: Strategy Draw
- Activity Card 86: What's My Attribute Rule?
- Literature Link: **Windows, Rings, and Grapes-A Look at Different Shapes** by *Brian P. Cleary* (use with Activity Card 87: Reading about Shapes)
- Literature Link: **It's a Shape!** by *Marianne Waering Penn* (use with Activity Card 87: Reading about Shapes)

- Activity Card 88: Dividing Shapes
- Activity Card 89: Recording Salute!
- Activity Card 90: Attribute-Train Puzzles
- Activity Card 91: Comparing Attributes
- Activity Card 92: Growing Polygons
- Activity Card 93: Calculating Elapsed Time

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- Open Response Activities
- Rubrics
- Teacher Observations
- Hands on activities/manipulatives
- Anecdotal Notes
- Classroom work
- Teacher created assessments
- Circle Time Discussions
- Whiteboard informal assessments
- Online games (i.e. scholastic, Math Seeds, Everyday Mathematics Program Math games)
- Math center activities
- Home Link activities

Resources/Including Online Resources

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- Teacher Webpage
- SMARTBoard lessons
- Everyday Math computer games: practice math skills without internet connection
- IXL math program
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- Teacher's Lesson Guide (Volumes 1 and 2)
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Grade One Mathematics

Unit 8: Geometry

Approximately 4 Weeks

Essential Questions:

- **What are the attributes of 2-dimensional shapes?**
- **What are halves?**
- **What are fourths?**
- **How do I make a composite shape?**
- **How is a 3D shape different than a plane shape?**
- **What is time to the half hour?**
- **How do number patterns help us?**

- **What strategies do I use to compute sums and differences mentally?**

Upon completion of this unit students will be able to:

- Solve addition and subtraction facts within 10. (1.OA.6)
- Apply place-value understanding to solve number-grid puzzles. (1.NBT.2)
- Mentally find 10 more or 10 less than a two-digit number. (1.NBT.5)
- Tell time to the half-hour on digital and analog clocks. (1.MD.3)
- Represent and answer questions about data in bar graphs and tally charts. (1.MD.4)
- Name defining attributes of two- and three- dimensional shapes. (1.G.1)
- Make composite shapes from two-dimensional shape. (1.G.2)
- Partition shapes into two and four equal shares and name the shares. (1.G.3)

Interdisciplinary Standards (njcccs.org)

Standard 9.1 21st-Century Life & Career Skills

All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

Standard 8.2 – Technology Education

All students will develop an understanding of the nature and impact of technology, engineering, technological design, and the designed world as they relate to the individual, society, and the environment.

Standard 6.3 Active Citizenship in the 21st Century

All students will acquire the skills needed to be active, informed citizens who value diversity and promote cultural understanding by working collaboratively to address the challenges that are inherent in living in an interconnected world.

Standard 5.1 Science Practices

All students will understand that science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.

- A. Use mathematical, physical, and computational tools to build conceptual-based or evidence-based models and to pose theories.
- B. Generate Scientific Evidence through Active Investigations: Students master the conceptual, mathematical, physical, and computational tools that need to be applied when constructing and evaluating claims.

Activities – include 21st Century Technologies:

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- 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 program online
- *I Spy*: Describing and Identifying shapes
- *Time Match*: Telling Time
- *Make My Design*: Creating composite shapes
- *Addition Top-It*: Solving addition facts and using relation symbols
- *Penny-Dime-Dollar Exchange*: Exchanging ones for tens and tens for hundreds
- *Before and After*: Finding numbers that are 1 less or 1 more than a given number

Enrichment Activities:

- Add to math vocabulary and word wall
- Math Masters
- Open Response and Reengagement: Sharing Paper Squares(lesson 8.4)
- Activity Card 94: Comparing 2-Dimensional Shapes
- Literature Link: **Round is a Mooncake: A Book of Shapes** by Roseanne Thong
- Literature Link: **Rabbit and Hare Divide an Apple** by Harriet Ziefert (use with Activity Card 95: Dividing an Apple)
- Literature Link: **The Little Mouse, the Red Ripe Strawberry, and the Big Hungry Bear** by Don and Audrey Wood (use with Activity Card 96: Sharing Food)
- Literature Link: **Picture Pie: A Circle Drawing Book** by Ed Emberly (use with Activity Card 97: Making Rectangle Designs)
- Activity Card 98: Making an Equal Shares Book
- Activity Card 99: Shape Challenges with Triangles
- Activity Card 100: Comparing 3-Dimensional Shapes
- Activity Card 101: My New Shape
- Activity Card 102: Sorting by Strategies
- Activity Card 103: Building with 3-Dimensional Shapes
- Activity Card 104: Ordering Clocks by Times

- Activity Card 105: Data with 4 Categories
- Activity Card 106: Asking and Answering Questions about Data
- Activity Card 107: Solving Number Codes
- Activity Card 108: Adding and Subtracting 9's

Methods of Assessments/Evaluation:

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- Hands on activities/manipulatives
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- Classroom work
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- Circle Time Discussions
- Whiteboard informal assessments
- Online games (i.e. scholastic, Math Seeds, Everyday Mathematics Program Math games)
- Math center activities
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Resources/Including Online Resources

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Grade One Mathematics

Unit 9: Two-Digit Addition and Subtraction and Review

Approximately 4 Weeks

Essential Questions:

- How can I measure length by using non-standard units?
- What unit do I use to measure?
- Why is it important to label the unit of measure?
- How do I recognize what strategy to use for a specific problem?
- What information and strategies would you use to solve a multi-step word problem?
- How are place value patterns repeated in large numbers?
- How does understanding place value help to solve double digit addition and subtraction problems?

Upon completion of this unit students will be able to:

- Determine whether equations involving addition and subtraction are true or false. (1.OA.7)

- Identify the number of tens and ones in a two-digit number and the value of the digit in each place. (1.NBT.2)
- Use place-value understanding to record comparisons of two-digit numbers using relation symbols. (1.NBT.3)
- Add within 100 and explain their strategies. (1.NBT.4)
- Subtract multiples of 10 from multiples of 10 within 100 and explain their strategies. (1.NBT.6)
- Measure the length of an object with same-size units. (1.MD.2)
- Construct composite shapes from two- and three-dimensional shapes. (1.G.2)
- Partition shapes into two or four equal shares, describe the shares, and understand that making more equal shares results in smaller shares. (1.G.3)

Interdisciplinary Standards (njcccs.org)

Standard 9.1 21st-Century Life & Career Skills

All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

Standard 9.3 - Career Awareness, Exploration, and Preparation

All students will apply knowledge about and engage in the process of career awareness, exploration, and preparation in order to navigate the globally competitive work environment of the information age.

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 program online
- *Beat the Calculator:* Using mental addition
- *Animal Weight Top-It:* Adding 2-digit numbers
- *Tric Trac:* Adding within 10
- *Stop and Go:* Adding and subtracting 2-digit numbers
- *Top-It With School Store Cards:* Comparing numbers using addition
- *The Digit Game:* Comparing 2-digit numbers based on place value
- *Time Match:* Telling time
- *Make My Design:* Creating composite shapes
- *I Spy:* Describing and identifying shapes

Enrichment Activities:

- Add to math vocabulary and word wall
- Math Masters
- Open Response and Reengagement: Shopping at the School Store (lesson 9.3)
- Activity Card 109: Making a Digit Ruler
- Activity Card 110: Measure and Compare
- Activity Card 111: Spending Money at the School Store
- Activity Card 112: Planning Gardens
- Activity Card 113: More Broken Calculator Problems
- Activity Card 114: Making Change
- Activity Card 115: Make Your Own Vending Machine
- Activity Card 116: Animal Growth Stories
- Activity Card 117: Spending 50 cents
- Activity Card 118: Writing Numbers in Expanded Form
- Activity Card 119: Constructing Regular Polyhedrons
- Activity Card 120: More Equal Sharing Problems

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