

Glen Ridge Public Schools –Mathematics Curriculum



Course Title: Mathematics

Subject: Mathematics

Grade Level: 3

Duration: 36 weeks

Prerequisite: NA

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:

The Everyday Math program for third grade provides in-depth instructional lessons that focus on the following five domains: operations and algebraic thinking, number and operations in base ten, number and operations-fractions, measurement and data, and geometry. Students are expected to demonstrate automaticity with multiplication facts through 9x9 by the end of the course. Each unit is comprised of different techniques to help students attain the skills needed to gain that automaticity. Students are guided through a hands-on approach and introduced to a variety of strategies used to assist in learning facts, solving problems, and becoming critical thinkers. Games are an important tool used in the program to reinforce skills being taught in each unit. Students work cooperatively to formulate ideas, test out ideas, and reach decisions. They also explain their thinking and find ways to revise their thought process.

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Date Submitted: Summer 2017

Mathematics

Unit 1: Math Tools, Time, and Multiplication

Approximate # Of Weeks: 4 weeks

Essential Questions:

1. How do numbers influence our everyday lives?
2. What tools help us solve problems and how?
3. How do representations help our problem solving process?

Upon completion of this unit students will be able to:

- use number-grid patterns for computation (3.NBT.2; SMP6,7)
- review and use a variety of math tools (3.MD.1,2; 3.NBT.2; 3.G.1; SMP5,6)
- use open number lines to round numbers (3.NBT.1,2; SMP1,6)
- tell time to the nearest minute (3.MD.1; SMP1,5,6)
- use mathematical models to measure elapsed time (3.MD.1; SMP1,4)
- represent and interpret data on a scaled bar graph (3.MD.3; SMP2,6)
- use drawings and number models to represent and solve multiplication number stories (3.OA.1,3,7; SMP2,3,4,6)
- solve division number stories (3.OA.2,3,6; SMP1,4)
- develop strategies for 2s, 5s, and 10s facts (3.OA.1,6,7; 3.NBT.2; SMP2,3,8)
- compare mass (3.MD.2; SMP2,4,5)
- divide wholes into equal shares (3.NF.2; SMP2,4,5)
- estimate and measure mass (3.MD.2; SMP1,5,6)

Interdisciplinary Standards (njcccs.org)

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

Activities – include 21st Century Technologies:

In addition to the math journal activities, Everyday Math provides hands-on activity cards for extra practice. These activities involve manipulatives, cooperative group work, and discussion.

- iPad/tablet apps
 - FactorMan
 - Computer Carl
- Make a clock booklet
- Activity Card #1: Find Differences on the Number Grid
- Activity Card #3: Find the Mystery Number
- Activity Card #6: Rounding to the Nearest 10
- Activity Card #8: Telling and Writing Time to the Minute
- Graph data on Math Masters p.20
- Activity Card #12: Representing Equal Groups and Arrays

- Explore equal shares on Math Masters p.25
- Incorporate a pan balance into mass activities
- Physically separate a whole into equal parts and distribute
- Find one moment each day to write down the time
- Activity Card #14: Finding Elapsed Time
- Activity Card #18: Measuring Masses of Objects
- http://www.abcya.com/telling_time.htm
- www.multiplication.com
- www.xtramath.org
- Online Games and Manipulatives based on the 5 domains
 - http://www.willoughby-eastlake.k12.oh.us/classroom/technology/c_3_grade_math_core.htm

- **Read Aloud Books**
 - *Pigs on a Blanket*
 - *Get Up and Go!*
 - *Nine O'Clock Lullaby*
 - *The Doorbell Rang*
 - *If You Were a Pound or a Kilogram*
 - *How Tall, How Short, How Far Away?*
 - *How Long or How Wide? A Measuring Guide*
 - *On the Scale, a Weighty Tale*
 - *Game Time!*
 - *A Remainder of One*
 - *Me Counting Time: From Seconds to Centuries*
- **Games**
 - Number-Grid Difference
 - Hit the Target
 - Spin and Round
 - Multiplication Draw

Enrichment Activities:

Everyday Math provides worksheets and hands-on activity cards with specific enrichment activities.

- Activity Card #2: Finding Differences in Multiple Ways
- Find the difference of 3-digit numbers on Math Masters p.8
- Use a calculator to work with negative numbers
- Activity Card #5: Estimating Sums and Differences
- Activity Card #7: Making a Clock Booklet
- Activity Card #9: Conducting a Survey
- Activity Card #11: Writing Equal Groups or Array Number Stories
- Explore remainders on Math Masters p.24
- Find patterns with paper folding on Math Masters p.28
- Activity Card #13: Writing Elapsed Time Number Stories
- Solve equal group riddles on Math Masters p.35
- Estimate masses on Math Masters p.38

Methods of Assessments/Evaluation:

- Study Island
- Thumbs up/thumbs down
- Whiteboards
- Unit Test
- Math Journals
- Math Boxes
- Math games
- Unit self-assessments
- Center activities
- Think/Pair/Share
- Smart Response assessments
- KWL charts
- Exit slip

Resources/Including Online Resources

- Online Textbook Information
- Teacher Webpage
- Math Journal
- Home Links
- Student Reference Book
- United Streaming
- Youtube Tutorials
- Brain Pop
- Smart Exchange
- iPad/tablet apps
- Math Masters
- Activity Cards
- Manipulative Toolkit- number cards, clocks, counters, dice, pan balance
- www.multiplication.com
- www.xtramath.org
- http://www.abcya.com/telling_time.htm
- Online Games and Manipulatives based on the 5 domains
 - http://www.willoughby-eastlake.k12.oh.us/classroom/technology/c_3_grade_math_core.htm

Mathematics

Unit 2: Number Stories and Arrays

Approximate # Of Weeks: 4 weeks

Essential Questions:

1. What do the four main math operations mean?
2. How do we use mathematical strategies to help us solve problems?
3. How do we decode multi-step problems to better understand the question?

Upon completion of this unit students will be able to:

- use basic addition and subtraction to solve problems with larger numbers (3.NBT.2; SMP6,7)
- use diagrams or pictures to help solve number stories (3.OA.3,7,8; 3.NBT.2; SMP1,4)
- use situation diagrams and other representations to help solve number stories (3.OA.3,7,8; 3.NBT.2; SMP1,4)
- make sense of and solve two-step number stories (3.OA.7,8; 3.NBT.2; SMP1,4,6)
- solve number stories using two operations (3.OA.3,7,8; 3.NBT.2; SMP1,4)
- solve problems involving multiples of equal groups (3.OA.1,3,5,7,9; SMP1,6,8)
- make sense of multiplying by 0 and 1 (3.OA.1,7)
- solve array problems (3.OA.1,2,3,4,7; SMP2,3,4)
- solve division numbers stories using mathematical representations (3.OA.2,3,4; SMP1,2)
- solve division number stories with remainders (3.OA.2,3,7; 3.NF.1; 3.G.2; SMP1,2,3)
- explore even and odd number patterns (3.OA.2,3,7; SMP2,7,8)
- review Frames and Arrows with four operations (3.OA.7; 3.NBT.2; SMP3,7)
- explore fraction circles (3.NF.1; SMP2,7,8)
- explore area (3.OA.3,7; 3.MD.5,6; SMP2,7,8)
- explore liquid volume (3.MD.2; SMP2,7,8)

Interdisciplinary Standards (njcccs.org)

- Standard 9.1 – 21st Century Life & Career Skills
- Standard 8.2 – Technology Education
- Standard 6.3 – Active Citizenship in the 21st Century
- Standard 5.1 – Science Practices

Activities – include 21st Century Technologies:

In addition to the math journal activities, Everyday Math provides hands-on activity cards for extra practice. These activities involve manipulatives, cooperative group work, and discussion.

- iPad/tablet apps
 - Screen Chomp
- www.xtramath.org
- www.multiplication.com
- http://www.abcya.com/number_patterns.htm
- Solve extension facts on Math Masters p.46
- Solve number stories on Math Masters p.48
- Activity Card #21: Writing and Solving Number Stories
- Activity Card #22: Writing Sticker Stories
- Activity Card #23: Writing Multiplication Stories
- Activity Card #26: Drawing Arrays for Fact Triangles
- Activity Card #28: Sharing Equally
- Activity Card #31: Solving Frames-and-Arrows Problems
- Find the area of letters on Math Masters p.73
- Online Games and Manipulatives based on the 5 domains
 - http://www.willoughby-eastlake.k12.oh.us/classroom/technology/c_3_grade_math_core.htm
- **Read Aloud Books**
 - *Amanda Bean's Amazing Dream*
 - *One Hundred Hungry Ants*
 - *The Grapes of Math*
 - *A Remainder of One*
 - *Math-terpieces*
 - *Each Orange Had 8 Slices: A Counting Book*
 - *Betcha!*
 - *Coyotes All Around*
 - *Alexander, Who used to Be Rich Last Sunday*
- **Games**
 - Addition Top-It
 - Subtraction Top-It
 - Salute!
 - Multiplication Draw
 - Roll to 1,000
 - Array Bingo
 - Division Arrays

Enrichment Activities:

Everyday Math provides worksheets and hands-on activity cards with specific enrichment activities.

- Solve extension facts mentally on Math Masters p.45
- Activity Card #19: Writing Two Number Models to Fit One Story
- Activity Card #20: Writing Numbers Stories to Math Diagrams
- Solve multi-step stories on Math Masters p.54 &55
- Find patterns in multiplying on Math Masters p.57
- Activity Card #25: Building and Predicting with Arrays
- Dividing strips on Math Masters p.63

- Activity Card #29: Modeling Division with Base-10 Blocks
- Activity Card #30: Solving Two-Rule Frames and Arrows
- Estimate area with cm cubes on Math Masters p.72

Methods of Assessments/Evaluation:

- Study Island
- Thumbs up/thumbs down
- Whiteboards
- Unit Test
- Math Journals
- Math Boxes
- Math games
- Unit self-assessments
- Center activities
- Think/Pair/Share
- Smart Response assessments
- KWL charts
- Exit slip

Resources/Including Online Resources

- Online Textbook Information
- Teacher Webpage
- Math Journal
- Home Links
- Student Reference Book
- United Streaming
- Youtube Tutorials
- Brain Pop
- Smart Exchange
- iPad/tablet apps
- Math Masters
- Activity Cards
- Manipulative Toolkit- number cards, clocks, dice, pan balance, counters, base-10 blocks
- www.multiplication.com
- www.xtramath.org
- http://www.abcya.com/number_patterns.htm
- Online Games and Manipulatives based on the 5 domains
 - http://www.willoughby-eastlake.k12.oh.us/classroom/technology/c_3_grade_math_core.htm

Mathematics

Unit 3: Operations

Approximate # Of Weeks: 4 weeks

Essential Questions:

1. How do we explore the four operations further?
2. What method works best for you?
3. How does multiplication make mathematical processes go faster?
4. How are multiplication and repeated addition related?

Upon completion of this unit students will be able to:

- find missing numbers and rules for tables (3.OA.4,7; 3.NBT.2; SMP7,8)
- make estimates for mental math (3.OA.8; 3.NBT.1,2; SMP1,6)
- use partial sums addition (3.OA.8; 3.NBT.1,2; SMP1,2,6)
- use column addition (3.OA.8; 3.NBT.2; SMP2,3)
- use count up subtraction (3.OA.8; 3.NBT.2; SMP1,2)
- use expand and trade subtraction (3.OA.8; 3.NBT.1,2; SMP 1,2,5)
- measure area (3.MD.5,6; SMP2,6)
- partition rectangles (3.MD.5; SMP 2,6)
- represent data on a scaled bar graph (3.MD.3; SMP2,6)
- create scaled picture graphs (3.NBT.2; 3.MD.3; SMP4,6)
- discover multiplication squares (3.OA.1,7; SMP6,7)
- discover turn-around rule (3.OA.1,3,5,7,9; SMP6,7,8)
- develop the adding-a-group strategy (3.OA.1,3,5,7; SMP2,3,7)
- develop the subtracting-a-group strategy (3.OA.1,3,5,7; SMP2,7)
- use four operations to generate equivalent names of numbers (3.OA.7; 3.NBT.2; SMP1,2)

Interdisciplinary Standards (njcccs.org)

- Standard 9.1 – 21st Century Life & Career Skills
- Standard 9.3 – Career Awareness, Exploration, and Preparation
- Standard 8.2 – Technology Education
- Standard 6.3 – Active Citizenship in the 21st Century
- Standard 5.1 – Science Practices

Activities – include 21st Century Technologies:

In addition to the math journal activities, Everyday Math provides hands-on activity cards for extra practice. These activities involve manipulatives, cooperative group work, and discussion.

- iPad/tablet apps
 - Sushi Monster
 - Let's Do the Math
 - Thinking Blocks Multiplication

- o Math Fight
- www.multiplication.com
- www.xtramath.org
- http://www.abcya.com/clear_it_addition.htm
- http://www.abcya.com/clear_it_multiplication.htm
- Activity Card #35: Practicing “What’s My Rule?” Problems
- Activity Card #36: Estimating Partial Sums
- Activity Card #37: Adding with Column Addition
- Use an open number line for subtraction on Math Masters p.88
- Activity Card #40: Practicing Expand-and-Trade Subtraction
- Draw a picture graph on Math Master p.98
- Activity Card #46: Rolling and Recording Squares
- Display the turn-around rule on Math Masters p.104
- Solve problems by adding a group on Math Masters p.106
- Practice subtracting a group on Math Masters p.108
- Activity Card #50: Creating Name-Collection Boxes
- Online Games and Manipulatives based on the 5 domains
 - o http://www.willoughby-eastlake.k12.oh.us/classroom/technology/c_3_grade_math_core.htm
- **Read Aloud Books**
 - o *Sea Squares*
 - o *Spaghetti and Meatballs for All!*
 - o *Betcha!*
 - o *Elevator Magic*
 - o *The Best of Times*
- **Games**
 - o Roll to 1,000
 - o Shuffle to 100
 - o Shuffle to 1,000
 - o Array Bingo
 - o Multiplication Draw
 - o Name That Number

Enrichment Activities:

Everyday Math provides worksheets and hands-on activity cards with specific enrichment activities.

- Activity Card #34: Creating “What’s My Rule?” Problems
- Shuffle to 1,000 (scoring sheet on Math Masters G11)
- Use multiple addition strategies for one problem on Math Masters p.85
- Activity Card #38: Counting Up Efficiently
- Activity Card #39: Exploring Subtraction Strategies
- Partitioning polygons on Math Masters p.22&23
- Activity Card #43: Collecting and Representing Data
- Activity Card #45: Writing Multiplication-Squares Number Stories
- Explore the turn-around rule on Math Masters p.103

- Activity Card #47: Adding a Group to Helper Facts
- Activity Card #48: Subtracting a Group from Helper Facts
- Write equivalent names on Math Masters p.111

Methods of Assessments/Evaluation:

- Study Island
- Thumbs up/thumbs down
- Whiteboards
- Unit Test
- Math Journals
- Math Boxes
- Math games
- Unit self-assessments
- Center activities
- Think/Pair/Share
- Smart Response assessments
- KWL charts
- Exit slip

Resources/Including Online Resources

- Online Textbook Information
- Teacher Webpage
- Math Journal
- Home Links
- Student Reference Book
- United Streaming
- Youtube Tutorials
- Brain Pop
- Smart Exchange
- iPad/tablet apps
- Math Masters
- Activity Cards
- Manipulative Toolkit- counters, dice, number cards, number line, base-10 blocks, cm cubes
- www.multiplication.com
- www.xtramath.org
- http://www.abcya.com/clear_it_addition.htm
- http://www.abcya.com/clear_it_multiplication.htm
- Online Games and Manipulatives based on the 5 domains
 - http://www.willoughby-eastlake.k12.oh.us/classroom/technology/c_3_grade_math_core.htm

Mathematics

Unit 4: Measurement and Geometry

Approximate # Of Weeks: 4 weeks

Essential Questions:

1. How do we measure items?
2. How can I identify and describe polygons?
3. How can I find the area of rectangles?

Upon completion of this unit students will be able to:

- measure to the nearest half inch and centimeter (3.MD.4; SMP5,6)
- generate measurement data and represent the data on a line plot (3.MD.4; SMP4,6)
- measure distances around objects to the nearest half inch (3.NF.2; 3.MD.4,8; SMP5)
- review characteristics of polygons (3.G.1; SMP7,8)
- classify quadrilaterals (3.G.1; SMP2,7)
- identify and measure perimeters of rectangles and polygons (3.MD.4,8; 3.G.1; SMP5,6,7)
- distinguish between perimeter and area (3.MD.4,5,6,7,8; SMP5,6)
- find the area of a rectangle by using composite units (3.MD.5,6,7,8; SMP6,7)
- write number sentences for the area of rectangles (3.MD.5,6,7; SMP1,2,7)
- develop strategies for finding area and perimeter (3.MD.5,6,7,8; SMP6,7)
- find the area of rectilinear figures (3.OA.7,8; 3.MD.5,7; SMP4,6,7)

Interdisciplinary Standards (njcccs.org)

- Standard 9.1 – 21st Century Life & Career Skills
- Standard 8.2 – Technology Education
- Standard 6.3 – Active Citizenship in the 21st Century

Activities – include 21st Century Technologies:

In addition to the math journal activities, Everyday Math provides hands-on activity cards for extra practice. These activities involve manipulatives, cooperative group work, and discussion.

- iPad/tablet apps
 - Tiny Chicken
 - Geometry Stash
 - Geoboard
 - Tiggly Safari
 - Dragon Shapes
- www.multiplication.com
- www.xtramath.org
- http://www.mathplayground.com/ASB_Kangaroo_Hop.html

- <http://www.mathplayground.com/PartyDesigner/PartyDesigner.html>
- Activity Card #51: Measuring Objects
- Activity Card #53: Making a Line Plot
- Activity Card #57: Constructing Polygons with Straws and Twist Ties
- Activity Card #58: Playing Shading Shapes
- Find the perimeter of polygons on Math Masters p.130
- Activity Card #59: Reading About Area and Perimeter
- Measure area with composite units on Math Masters p.136
- Find the area of rectangles on Math Masters p.138
- Playing The Area and Perimeter Game, scoring sheet Math Masters p. G16
- Activity Card #61: Finding the Area of a Rectilinear Figure
- Online Games and Manipulatives based on the 5 domains
 - http://www.willoughby-eastlake.k12.oh.us/classroom/technology/c_3_grade_math_core.htm
- **Read Aloud Books**
 - *Measuring Penny*
 - *How Tall, How Short, How Far Away*
 - *The Greedy Triangle*
 - *Mummy Math*
 - *Two Short, Two Long*
 - *Spaghetti and Meatballs for All*
 - *Grandfather Tang's Story: A Tale Told with Tangrams*
 - *If You Were an Inch or a Centimeter*
 - *Jump, Kangaroo, Jump!*
 - *Sir Cumference and the Isle of Immeter: A Math Adventure*
 - *Chickens on the Move*
 - *Millions to Measure*
- **Games**
 - Name That Number
 - What's My Polygon Rule?
 - Multiplication Draw
 - Shading Shapes
 - The Area and Perimeter Game

Enrichment Activities:

Everyday Math provides worksheets and hands-on activity cards with specific enrichment activities.

- Measure with different rulers on Math Masters p. 118
- Activity Card #52: Making Line Plot of Hand Spans
- Activity Card #56: Exploring Polygon Attributes
- Explore quadrilaterals in tangrams on Math Masters p.128
- Find all rectangles with a perimeter of 20 centimeters, use Math Masters p.TA19
- Find all rectangles with an area of 20 sq. centimeters, use Math Masters p.TA19
- Explore area with composite units on Math Masters p.135
- Activity Card #60: Investigating Area and Perimeter
- Find and compare areas with Math Masters p.141

- Decompose same-size rectilinear figures on Math Masters p.147

Methods of Assessments/Evaluation:

- Study Island
- Thumbs up/thumbs down
- Whiteboards
- Unit Test
- Math Journals
- Math Boxes
- Math games
- Unit self-assessments
- Center activities
- Think/Pair/Share
- Smart Response assessments
- KWL charts
- Exit slip

Resources/Including Online Resources

- Online Textbook Information
- Teacher Webpage
- Math Journal
- Home Links
- Student Reference Book
- United Streaming
- Youtube Tutorials
- Brain Pop
- Smart Exchange
- iPad/tablet apps
- Math Masters
- Activity Cards
- Manipulative Toolkit- ruler, pattern blocks, cm cubes, geoboard, rubber bands, number cards, measuring tape, base-10 blocks
- www.multiplication.com
- www.xtramath.org
- http://www.mathplayground.com/ASB_Kangaroo_Hop.html
- <http://www.mathplayground.com/PartyDesigner/PartyDesigner.html>
- Online Games and Manipulatives based on the 5 domains
 - http://www.willoughby-eastlake.k12.oh.us/classroom/technology/c_3_grade_math_core.htm

Mathematics

Unit 5: Fractions and Multiplication Strategies

Approximate # Of Weeks: 4 weeks

Essential Questions:

1. What is a fraction?
2. What are different types of fractions?
3. How can solving fraction number stories be applied to the real world?
4. How do you find/identify equivalent fractions?
5. What strategies can we use to solve harder multiplication facts?

Upon completion of this unit students will be able to:

- Represent fractions using pictures and words (3.NF.1; 3.MD.6,8; 3.G.2; SMP1,2,3)
- Represent fraction equivalents (3.NF.3;3a,3b; SMP2)
- Add a group to a given helper fact (3.OA.1,7; SMP7)
- Use known multiplication facts, called helper facts, to solve harder problems (3.OA.1,4,5,7,9; 3.G.2; SMP,4)
- Use doubling to solve number stories involving area (3.OA.3,5,7,9; 3.MD.7,7a,7b,7c,7d;SMP3,7)
- Use doubling strategy to solve multiplication facts (3.OA.1,5,7,9; 3.MD.7, 7b,7c,7d; SMP2,7,8)
- Identify and explain arithmetic patterns using properties of operations (3.OA.7,9; 3.NBT.2; SMP5,7)
- Identify missing factors (3.OA.4,6,7; SMP1,3,7)
- Use square products to find products of near squares (3.OA.5,7,0; SMP1,7)
- Make sense of and solve a number story (3.OA.2,3,5,7; 3.MD.7,7b,7c,7d; SMP1,2,7)
- Compare solutions and explanations for solving a number story (3.OA.2,3,5,7; 3.MD.7,7b,7c,7d; SMP1,2,7)
- Revise work used to solve a number story (3.OA.2,3,5,7; 3.MD.7,7b,7c,7d; SMP1,2,7)
- Decompose factors to solve multiplication facts (3.OA.2,3,5,7; 3.MD.7,7b,7c,7d; SMP1,2,7)

Interdisciplinary Standards (njcccs.org)

- Standard 9.1 – 21st Century Life & Career Skills
- Standard 8.2 – Technology Education
- Standard 6.3 – Active Citizenship in the 21st Century

Activities – include 21st Century Technologies:

In addition to the math journal activities, Everyday Math provides hands-on activity cards for extra practice. These activities involve manipulatives, cooperative group work, and discussion.

- iPad/tablet apps
 - BrainNook-3rd Grade Math (Fractions)
 - Chicken Coop Fraction Games
- Partitioning halves of different wholes on Math Masters p. 155
- Exploring numerators and denominators on Math Masters p.158
- *Fraction Memory* (Fraction Cards on Activity Sheets p.19-21)
- Activity Card #64: Identifying Helper Facts
- Doubling the area of rectangle on Math Masters p. 165-166
- Cutting a rectangle in half to find area on Math Masters p. 170-171
- Activity Card #65: Finding More Patterns on the Number Grid
- Activity Card #67: Sorting Fact Triangles
- Activity Card #69: Sketching Square and Near-Square Arrays
- Activity Card #70: Matching Facts to Strategies
- http://www.abcya.com/fraction_fling.htm
- <https://www.coolmath4kids.com/math-help/fractions>
- www.multiplication.com
- www.xtramath.org
- Online Games and Manipulatives based on the 5 domains
 - http://www.willoughby-eastlake.k12.oh.us/classroom/technology/c_3_grade_math_core.htm
- **Read Aloud Books**
 - *Apple Fractions*
 - *Pizza Counting*
 - *Fraction Fun*
 - *Give Me Half!*
 - *Eating Fractions*
 - *Polar Bear Math*
 - *Full House*
 - *If You Were a Quart or a Liter*
 - *Who Sank the Boat?*
 - *Anno's Magic Seeds*
 - *The King's Chessboard*
 - *Counting on Frank*
 - *Room for Ripley*
 - *Me and the Measure of Things*
- **Games**
 - Fraction Memory
 - Multiplication Draw
 - Salute!
 - The Area and Perimeter Game

Enrichment Activities:

Everyday Math provides worksheets and hands-on activity cards with specific enrichment activities.

- Completing the whole on Math Masters p.154
- Comparing fractional amounts on Math Masters p. 157
- Looking for patterns in fractions on Math Journal p.157
- Calculating the number of mosaic tiles on Math Masters p. 161
- Exploring factor patterns on Math Masters p. 164
- Solving an allowance problem on Math Masters p. 169
- Exploring a pattern on Math Masters p. 173
- Activity Card #66: Extending Fact Families
- Activity Card #68: Making Near-Squares Strategy Posters
- Extending the break-apart strategy on Math Masters p. 181

Methods of Assessments/Evaluation:

- Study Island
- Thumbs up/thumbs down
- Whiteboards
- Unit Test
- Math Journals
- Math Boxes
- Math games
- Unit self-assessments
- Center activities
- Think/Pair/Share
- Smart Response assessments
- KWL charts
- Exit slip

Resources/Including Online Resources

- Online Textbook Information:
- Teacher Webpage
- Online Textbook Information
- Teacher Webpage
- Math Journal
- Home Links
- Student Reference Book
- United Streaming
- Youtube Tutorials
- Brain Pop
- Smart Exchange
- iPad/tablet apps
- Math Masters
- Activity Cards
- Manipulative Toolkit- fraction circles, pattern-block squares, ruler, number cards, centimeter cubes, dice, counters, 10-sided dice

- http://www.abcya.com/fraction_fling.htm
- <https://www.coolmath4kids.com/math-help/fractions>
- www.multiplication.com
- www.xtramath.org
- Online Games and Manipulatives based on the 5 domains
 - http://www.willoughby-eastlake.k12.oh.us/classroom/technology/c_3_grade_math_core.htm

Mathematics

Unit 6: More Operations

Approximate # Of Weeks: 4 weeks

Essential Questions:

1. How can I use strategies to solve multidigit subtraction?
2. What strategies can we use to build fact fluency?
3. What information and strategies would you use to solve multi-step word problems?
4. How can we solve multiplication and division number stories?

Upon completion of this unit students will be able to:

- Use trade-first method to solve subtraction problems (3.OA.8; 3.NBT.2; SMP1,2,6)
- Build fact fluency (3.OA.7; SMP1,6)
- Use square products as helper facts to find products of near squares (3.OA.5,7; SMP5,6,7)
- Solve multiplication and division number stories (3.OA.2,3,4,6,7; SMP1,4)
- Multiply with larger factors (3.OA.4,5,7,8,9; 3.MD.7c; SMP2,3,7)
- Solve number sentences with parentheses (3.OA.7,8; 3.NBT.2; SMP1,7,8)
- Write two-step number stories to fit a number sentence (3.OA.8; SMP3,5,7)
- Analyze other's work for writing number stories (3.OA.8; SMP3,5,7)
- Use order of operations to solve multistep problems (3.OA.7,8; 3.NBT.2; SMP3,5,7)
- Solve two-step number stories and represent them with equations (3.OA.7,8; 3.NBT.2; SMP1,2,4)

Interdisciplinary Standards (njcccs.org)

- Standard 9.1 – 21st Century Life & Career Skills
- Standard 8.2 – Technology Education
- Standard 6.3 – Active Citizenship in the 21st Century

Activities – include 21st Century Technologies:

In addition to the math journal activities, Everyday Math provides hands-on activity cards for extra practice. These activities involve manipulatives, cooperative group work,

and discussion.

- iPad/tablet apps
 - FactorMan
 - Subtraction!!
 - Multiplication!!
- www.multiplicaton.com
- www.xtramath.org
- Dragon Shapes Activity Card #71: Practicing Subtraction
- Solving Baseball Multiplication number stories on Math Masters p. 91
- Activity Card #70: Matching Facts to Strategies
- Activity Card #72: Practicing Facts with a Fact Wheel
- Practicing with number stories on Math Masters p. 200
- Applying strategies to *Multiplication Top-It* on Math Masters p. 203
- Practicing with parentheses on Math Masters p. 206
- More practice with Order of Operations on Math Masters p. 211
- Solving two-step number stories on Math Masters p. 215
- www.multiplication.com
- www.xtramath.org
- Online Games and Manipulatives based on the 5 domains
 - http://www.willoughby-eastlake.k12.oh.us/classroom/technology/c_3_grade_math_core.htm
- **Read Aloud Books**
 - *A Fair Bear Share*
 - *Ed Emberley's Picture Pie: A cut and Paste Drawing Book*
 - *Dinosaur Deals*
 - *Racing Around*
 - *Math Potatoes: Mind-Stretching Brain Food*
- **Games**
 - Salute!
 - Baseball Multiplication
 - Beat the Calculator
 - Fraction Memory
 - Multiplication Draw
 - Multiplication Top-It
 - Name That Number
 - What's My Polygon Rule?

Enrichment Activities:

Everyday Math provides worksheets and hands-on activity cards with specific enrichment activities.

- Activity Card #39: Exploring Subtraction Strategies
- Playing *Baseball Multiplication* (with Tens) on Math Masters p.G19
- Applying strategies to multiplying by 11 on Math Masters p. 193
- Finding rules on Math Masters p. 196

- Finding perimeters of rectilinear figures on Math Masters p. 198
- Activity Card #76: Writing and Solving Number Stories
- Applying strategies to multiplying by 12 on Math Masters p. 202
- Describing dot patterns with number sentences on Math Masters p. 205
- Investigating order of operations on Math Journal 2 p. 12
- Writing two-step number stories on Math Masters p. 214

Methods of Assessments/Evaluation:

- Study Island
- Thumbs up/thumbs down
- Whiteboards
- Unit Test
- Math Journals
- Math Boxes
- Math games
- Unit self-assessments
- Center activities
- Think/Pair/Share
- Smart Response assessments
- KWL charts
- Exit slip

Resources/Including Online Resources

- Online Textbook Information:
- Teacher Webpage
- Math Journal
- Home Links
- Student Reference Book
- United Streaming
- Youtube Tutorials
- Brain Pop
- Smart Exchange
- iPad/tablet apps
- Math Masters
- Activity Cards
- Manipulative Toolkit- base-10 blocks, number cards, counters, 10-sided dice, full and half-length straws, ruler, pattern-blocks, fraction circles, pan balance, set of
- www.multiplication.com
- www.xtramath.org
- Online Games and Manipulatives based on the 5 domains
 - http://www.willoughby-eastlake.k12.oh.us/classroom/technology/c_3_grade_math_core.htm

Mathematics

Unit 7: Fractions

Approximate # Of Weeks: 4 weeks

Essential Questions:

1. What tools and units are used to measure the attributes of an object?
2. What strategies can we use to solve real-world problems involving time, mass, volume, and length?
3. How can we compare fractions?
4. How can we use what we know about fractions to name fractions of a set?

Upon completion of this unit students will be able to:

- Estimate and measure liquid volumes (3.MD.2; SMP5,6)
- Solve number stories involving time, mass, volume, and length (3.OA.2,3,7; 3.NBT.2,3; 3.MD.1; 3.MD.2; SMP1, SMP3, SMP4)
- Name and compare fractions using fraction number strips (3.NF.1,3,3a,3b,3c; SMP2,5)
- Name fractions on a number line (3.NF.1,3,3a,3b,3c,3d; 3.G.2, SMP2,6,8)
- Identify fractions greater than, less than, and equal to one on a number line (3.NF.1, 3.NF.2,2a,2b; 3.NF.3,3c,3d; SMP2,5,6)
- Use visual models to compare fractions (3.NF.2,2a,2b; 3.NF.3,3a,3b,3d; SMP2, SMP6, SMP8)
- Determine rule for comparing fractions with the same numerator (3.NF.3,3d; SMP1, SMP7, SMP8)
- Locate fractions on a number line (3.NF.2,2a,2b; 3.NF.3,3a,3c; SMP2,3,5)
- Make and justify fraction comparisons (3.NF.2,2a,2b; 3.NF.3,3a,3b,3d;3.G.2; SMP2,3,5)
- Solve fraction number stories (3.NF.1,2,2b,3,3c,3d; 3.G.2; SMP2,4,5)
- Name fractions of sets of objects (3.OA.2; 3.NF.1; SMP2,4)

Interdisciplinary Standards (njcccs.org)

- Standard 9.1 – 21st Century Life & Career Skills
- Standard 8.2 – Technology Education
- Standard 6.3 – Active Citizenship in the 21st Century
- Standard 5.1 – Science Practices

Activities – include 21st Century Technologies:

In addition to the math journal activities, Everyday Math provides hands-on activity cards for extra practice. These activities involve manipulatives, cooperative group work, and discussion.

- iPad/tablet apps
 - Everyday Mathematics® Equivalent Fractions

- o Fractions - by Brainiaccamp
- Estimating liquid volume on Math Masters p. 223
- Justifying equal parts on Math Masters p. 226-227
- Solving problems using a bar graph on Math Masters p. 232
- Comparing fractions using fraction strips on Math Masters on p. 236
- Activity Card #81: Finding the Hidden Fraction
- Recognizing fractions greater than 1 on Math Masters p. 242
- Comparing fractional distances on Math Masters p. 245
- Locating equivalent fractions on Math Masters p. 254
- Activity Card #84: Justifying Fraction Comparisons with Tools
- Solving art class fraction stories on Math Journal p. 229
- Using fractions to name parts of sets on Math Masters p. 264
- <https://www.brainpop.com/games/battleshipnumberline/>
- www.multiplication.com
- www.xtramath.org
- Online Games and Manipulatives based on the 5 domains
 - o http://www.willoughby-eastlake.k12.oh.us/classroom/technology/c_3_grade_math_core.htm
- **Read Aloud Books**
 - o *Fraction Fun*
 - o *Working with Fractions*
 - o *Fraction Action*
- **Games**
 - o Fraction Memory
 - o Salute!
 - o Baseball Multiplication
 - o Fraction Top-It
 - o The Area and Perimeter Game
 - o Beat the Calculator

Enrichment Activities:

Everyday Math provides worksheets and hands-on activity cards with specific enrichment activities.

- Activity Card #77: Estimating and Measuring Liquid Volumes
- Estimating the number of seats in an auditorium on Math Masters p. 225
- Activity Card #80: Writing and Solving Metric-Measure Stories
- Creating more fraction strips on Math Masters p. 235
- Solving fraction-strip problems on Math Masters p. 238
- Identifying fractions on number lines on Math Masters p. 241
- Activity Card #82: Comparing and Ordering Fractions
- Partitioning a number line on Math Masters p. 253
- Activity Card #83: Extending Fraction Comparisons
- Solving more fraction number stories on Math Masters p. 260
- Solving a fraction puzzle on Math Masters p. 263

Methods of Assessments/Evaluation:

- Study Island
- Thumbs up/thumbs down
- Whiteboards
- Unit Test
- Math Journals
- Math Boxes
- Math games
- Unit self-assessments
- Center activities
- Think/Pair/Share
- Smart Response assessments
- KWL charts
- Exit slip

Resources/Including Online Resources

- Online Textbook Information:
- Teacher Webpage
- Math Journal
- Home Links
- Student Reference Book
- United Streaming
- Youtube Tutorials
- Brain Pop
- Smart Exchange
- iPad/tablet apps
- Math Masters
- Activity Cards
- Manipulative Toolkit- benchmark beakers, dropper, counters, fraction circles, pattern-block squares, toolkit clocks, metric masses, ruler, tape measure, 10-sided dice
- <https://www.brainpop.com/games/battleshipnumberline/>
- www.multiplication.com
- www.xtramath.org
- Online Games and Manipulatives based on the 5 domains
 - http://www.willoughby-eastlake.k12.oh.us/classroom/technology/c_3_grade_math_core.htm

Mathematics

Unit 8: Multiplication and Division

Approximate # Of Weeks: 4 weeks

Essential Questions:

1. How do we measure accurately to the nearest $\frac{1}{4}$ inch?
2. How do we use what we know about multiplication facts to solve extended facts?
3. What is relationship between multiplication and division?
4. How do we use what we know about multiplication/division to solve number stories involving money?
5. How can we identify and describe solid figures?

Upon completion of this unit students will be able to:

- Measure to the nearest $\frac{1}{4}$ inch (3.NF.1,3,3c; 3.MD.4;SMP5,SMP6)
- Solve extended multiplication and division facts (3.OA.3,6,7; 3.NBT.2,3;SMP2,6,7)
- Find factors of counting numbers (3.OA.2,3,4,6,7; 3.NBT.3; SMP4,7,8)
- Use clues to make conjectures and arguments about the total number of chairs in a room (3.OA.2, 3.OA.3; SMP1,3,4)
- Find products for a given factor (3.OA.4,6,7; SMP7,8)
- Solve equal-sharing situations with \$10 and \$1 bills (3.OA.2,3,7; 3.NF.1; SMP1,4)
- Identify attributes of prisms (3.G.1; SMP2,6,7)

Interdisciplinary Standards (njcccs.org)

- Standard 9.1 – 21st Century Life & Career Skills
- Standard 8.2 – Technology Education
- Standard 6.3 – Active Citizenship in the 21st Century
- Standard 5.1 – Science Practices

Activities – include 21st Century Technologies:

In addition to the math journal activities, Everyday Math provides hands-on activity cards for extra practice. These activities involve manipulatives, cooperative group work, and discussion.

- iPad/tablet apps
 - iTooch 3rd Grade Math
 - Factor POP
- <https://www.funbrain.com/games/measure-it>
- <http://www.abcya.com/measuring.htm>
- www.multiplicaton.com
- www.xtramath.org
- Completing a story with measures on Math Masters p. 273

- Playing *Roll to 1,000* with multiplication (Recording Sheet on Math Masters p. G7)
- Playing *Find Factors* (Game Board on Math Masters p. G23)
- Identifying multiples on Math Masters p. 285
- Activity Card #89: Sharing Money with a Partner
- Playing *Fraction Number-Line Squeeze* (Number line cut from Math Masters p. TA50)
- Constructing a pentagonal prism on Math Masters p. 295
- Online Games and Manipulatives based on the 5 domains
 - http://www.willoughby-eastlake.k12.oh.us/classroom/technology/c_3_grade_math_core.htm
- **Read Aloud Books**
 - *Measuring Penny*
 - *An Inchworm and a Half*
 - *Sam's Sneaker Squares*
 - *Keep Your Distance*
 - *Cubes, Cones, Cylinders, and Spheres*
 - *Measurement Mania: Games and Activities*
 - *Captain Invisible and the Space Ships*
 - *Mummy Math: An Adventure in Geometry*
 - *Sir Cumference and the Sword in the Cone: A Math Adventure*
- **Games**
 - Roll to 1,000 with Multiplication
 - Array Bingo
 - Finding Factors
 - Factor Bingo
 - Speed Factor Bingo
 - Beat the Calculator
 - Fraction Number-Line Squeeze

Enrichment Activities:

Everyday Math provides worksheets and hands-on activity cards with specific enrichment activities.

- Activity Card #85: Drawing a Path to Buried Treasure
- Solving a Number Story with Extended Facts on Math Masters p. 277
- Activity Card #86: Finding Factor Pairs
- Activity Card #87: Playing *Speed Factor Bingo*
- Activity Card #88: Buying Tickets
- Activity Card #93: Completing the Whole
- Activity Card #94: Creating a Net

Methods of Assessments/Evaluation:

- Study Island
- Thumbs up/thumbs down
- Whiteboards
- Unit Test

- Math Journals
- Math Boxes
- Math games
- Unit self-assessments
- Center activities
- Think/Pair/Share
- Smart Response assessments
- KWL charts
- Exit slip

Resources/Including Online Resources

- Online Textbook Information:
- Teacher Webpage
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- Home Links
- Student Reference Book
- United Streaming
- Youtube Tutorials
- Brain Pop
- Smart Exchange
- iPad/tablet apps
- Math Masters
- Activity Cards
- Manipulative Toolkit- fraction circles, ruler, pattern-block template, tape measure, dice, base-10 blocks, number cards, different colored counters, dropper, benchmark beakers, geoboards, rubber bands, pattern blocks 18 straws (6 each of 2in., 4in., and 6 in. length)
- <https://www.funbrain.com/games/measure-it>
- <http://www.abcya.com/measuring.htm>
- www.multiplication.com
- www.xtramath.org
- Online Games and Manipulatives based on the 5 domains
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Mathematics

Unit 9: Multidigit Operations

Approximate # Of Weeks: 3 weeks

Essential Questions:

1. What strategies can we use to build fact fluency?
2. How can we use our knowledge of multiplication/division to solve number stories involving multiples of 10?
3. What strategies can we use to mentally solve multiplication problems involving larger factors?
4. How can we use our knowledge of area to help us solve multidigit multiplication problems?

Upon completion of this unit students will be able to:

- Solve multiplication facts with automaticity (3.OA.1,4,7; SMP6,7,8)
- Solve number stories involving multiplying and dividing with multiples of 10 (3.OA.3,5,7,9; 3.NBT.3; 3MD.2; SMP1,6,7)
- Mentally multiply problems involving larger factors (3.OA.3,5,7,9; 3.NBT.3; 3.MD.2; SMP1,6,7)
- Solve multidigit multiplication problems by partitioning areas (3.OA.3,5,7,9; 3.NBT.3; 3.MD.7,7b,7c,7d; SMP2,6,7)

Interdisciplinary Standards (njcccs.org)

- Standard 9.1 – 21st Century Life & Career Skills
- Standard 8.2 – Technology Education
- Standard 6.3 – Active Citizenship in the 21st Century

Activities – include 21st Century Technologies:

In addition to the math journal activities, Everyday Math provides hands-on activity cards for extra practice. These activities involve manipulatives, cooperative group work, and discussion.

- iPad/tablet apps
 - iTooch 3rd Grade Math
- www.multiplication.com
- www.xtramath.org
- Online Games and Manipulatives based on the 5 domains
 - http://www.willoughby-eastlake.k12.oh.us/classroom/technology/c_3_grade_math_core.htm
- **Read Aloud Books**
 - *One Grain of Rice*
 - *Sunshine Makes the Seasons*

- **Games**
 - Product Pile-UP
 - Beat the Calculator
 - Multiplication Top-It with Extended Facts
 - Factor Bingo
 - Finding Factors
 - Fraction Memory
 - Fraction Top-It
 - Fraction Number-Line Squeeze
 - Name That Number

Enrichment Activities:

Everyday Math provides worksheets and hands-on activity cards with specific enrichment activities.

- Activity Card #95: Writing *A Guide to Playing Math Games*
- Solving Multistep Number Stories on Math Masters p. 304
- Using mental math to multiply in literature using *One Grain of Rice*
- Write a daily schedule using 24-hour notation
- Breaking apart two factors on Math Masters p. 314
- Finding length-of-day trends on Math Masters p. 319-320

Methods of Assessments/Evaluation:

- Study Island
- Thumbs up/thumbs down
- Whiteboards
- Unit Test
- Math Journals
- Math Boxes
- Math games
- Unit self-assessments
- Center activities
- Think/Pair/Share
- Smart Response assessments
- KWL charts
- Exit slip

Resources/Including Online Resources

- Online Textbook Information:
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- Student Reference Book
- United Streaming
- Youtube Tutorials
- Brain Pop
- Smart Exchange

- iPad/tablet apps
- Math Masters
- Activity Cards
- Manipulative Toolkit- number cards, counters, base-10 blocks, toolkit clock, pan balance with standard masses
- www.multiplication.com
- www.xtramath.org
- Online Games and Manipulatives based on the 5 domains
 - http://www.willoughby-eastlake.k12.oh.us/classroom/technology/c_3_grade_math_core.htm