Frelinghuysen Township School District

Math Curriculum

Frelinghuysen Township School District
Math Curriculum

Frelinghuysen Township School District Mission Statement

Frelinghuysen Township School District is a small and caring community. Its mission is:

- **To provide all students a superior individualized education**
- **To create strategic partnerships with parents and the community to meet students' needs**
- **To provide a compassionate, safe and supportive environment**
- **To support innovative practices by effectively leveraging technology**
- **To develop confident students who will be productive, contributing members of a constantly changing global society**

Curricular Overview

The Math Curriculum was created for Frelinghuysen School District using our current resources, the New Jersey Student Learning Standards and an analysis of the needs of our students.

The curriculum is based on a philosophy which emphasizes using goals to drive the learning plan. This ensures that instruction is focused and driven by specific learning outcomes. Units are organized into themes and goals, with pacing guides and suggested resources for teachers to use to guide daily instruction. Differentiation is included to reach all learners through specific activities and interdisciplinary connections are highlighted to produce a comprehensive curriculum.

Frelinghuysen Township School seeks to provide our students with a well-rounded curriculum supported by best practices in education to guide our students throughout their entire educational journey. This curriculum was created with the intention of keeping with our mission of developing productive students through a superior, individualized education that effectively leverages technology in a safe and supportive school community.

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Board of Education adoption: August, 2019

Frelinghuysen Township School District
Math Curriculum

Kindergarten

Unit 1: Number and Operations

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
• K.CC.A.1. • K.CC.A.2. • K.CC.A.3. • K.CC.B.4a. • K.CC.B.4b. • K.CC.B.4c. • K.CC.B.5. • K.CC.C.C.6. • K.CC.C.7. • K.NBT.A.1. • K.OA.A.1. • K.OA.A.2. • K.OA.A.3. • K.OA.A.4. • K.OA.A.5.	8.1.2.A.4-Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums). 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.2.E.1-Use digital tools and online resources to explore a problem or issue.	• CRP1. Act as a responsible and contributing citizen and employee. • CRP2. Apply appropriate academic and technical skills. • CRP4. Communicate clearly and effectively and with reason. • CRP6. Demonstrate creativity and innovation. • CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. • CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Model and count 1 and 2 with objects. • Represent 1 and 2 objects with the number names and written numerals. • Model and count 3 and 4 with objects. • Represent 3 and 4 objects with the number names and written numerals. • Model and count up to 5 objects. • Represent up to 5 objects with the number name and written numeral. • Use objects or drawing to decompose 5 into pairs in more than one way. • Know that each successive number refers to a quantity that is one larger • Solve problems by using the strategy make a model • Represent 0 objects with a number name and a written numeral • Use matching and counting strategies to compare sets with the same number of objects • Use matching and counting strategies to	• How can you show and count 1 and 2 with objects? • How can you count and write 1 and 2 with words and numbers? • How can you show and count 3 and 4 with objects? • How can you count and write 3 and 4 with words and numbers? • How can you show and count up to 5 objects? • How can you count and write up to 5 with words and numbers? • How can you use two sets of objects to show 5 in more than one way? • How do you know that the order of numbers is the ssame as a set of objects that is one larger? • How can you solve problems using the strategy make a model? • How can you identify and write 0 with words and numbers?

compare sets when the number of objects in one set is greater than the number of objects in the other set. ● Use matching and counting strategies to compare sets when the number of objects in one set is less than the number of objects in the other set. ● Make a model to solve problems using a matching strategy. ● Use a counting strategy to compare sets of objects. ● Model and count 6 with objects. ● Represent up to 6 objects with a number name and a written numeral. ● Model and count 7 with objects. ● Represent up to 7 objects with a number name and a written numeral. Model and count 6 with objects. ● Model and count 8 with objects. ● Represent up to 8 objects with a number name and a written numeral. ● Model and count 9 with objects. ● Represent up to 9 objects with a number name and a written numeral. ● Solve problems by using the strategy draw a picture. ● Model and count 10 with objects. ● Represent up to 10 objects with a number name and a written numeral ● Use a drawing to make 10 from a given number. ● Count forward to 10 from a given number ● Solve problems by using the strategy make a model. ● Use counting strategies to compare sets of objects ● Compare two numbers between 1 and 10 ● Use expressions to represent addition within 5 ● Use expressions to represent addition ● Solve problems by using the strategy act it out ● Use objects and drawings to solve addition word problems within 5 ● Use a drawing to find 10 from a given number and record the equation ● Solve addition word problems within 5 and record the equation	● How can you use matching and counting to compare sets with the same number of objects? ● How can you compare sets when the number of objects in one set is greater than the number of objects in the other set? ● How can you compare sets when the number of objects in one set is less than the number of objects in the other set? ● How can you make a model to solve problems using a matching strategy? ● How can you use a counting strategy to compare sets of objects? ● How can you show and count 6 objects? ● How can you count and write up to 6 with words and numbers? ● How can you show and count 7 objects? ● How can you count and write up to 7 with words and numbers? ● How can you show and count 8 objects? ● How can you count and write up to 8 with words and numbers? ● How can you show and count 9 objects? ● How can you count and write up to 9 with words and numbers? ● How can you solve problems using the strategy draw a picture? ● How can you show and count 10 objects? ● How can you count and write up to 10 with words and numbers? ● How can you use a drawing to make 10 from a given number? ● How can you count forward to 10 from a given number? ● How can you solve problems using the strategy make a model? ● How can you use counting strategies to compare sets of objects? ● How can you compare two numbers between 1 and 10 ● How can you show addition as adding to? ● How can you show addition as putting together? ● How can you solve problems using the strategy act it out? ● How can you use objects and drawings to solve addition word problems?

• Solve addition word problems within 10 and record the equation • Decompose numbers within 5 into pairs in more than one way and record each decomposition with an equation • Decompose 6 and 7 into pairs in more than one way and record each decomposition with an equation. • Decompose numbers within 8 into pairs in more than one way and record each decomposition with an equation • Decompose numbers within 9 into pairs in more than one way and record each decomposition with an equation • Decompose numbers within 10 into pairs in more than one way and record each decomposition with an equation • Use expressions to represent subtraction within 5 • Use expressions to represent subtraction • Solve problems by using the strategy act it out • Use objects and drawings to solve subtraction word problems within 5 • Solve subtraction word problems within 5 and record the equation • Solve subtraction word problems within 10 and record the equation • Understand addition as putting together or adding to and subtraction as taking apart or taking from to solve word problems • Use objects to decompose the numbers 11 and 12 into tens and ones and some further ones • Represent 11 and 12 objects with number names and written numerals • Use objects to decompose the numbers 13 and 14 into tens and ones and some further ones • Represent 13 and 14 objects with number names and written numerals • Use objects to decompose 15 into ten ones and some further ones and represent 15 with a number name and a written numeral • Solve problems by using the strategy draw a picture	• How can you use a drawing to find the number that makes a 10 from a given number? • How can you solve addition word problems and complete the addition sentence? • How can you solve addition word problems and complete the addition sentence? • How can you model and write addition sentences for number pairs for sums to 5? • How can you model and write addition sentences for number pairs for each sum of 6 and 7? • How can you model and write addition sentences for number pairs for sums to 8? • How can you model and write addition sentences for number pairs for sums to 9? • How can you model and write addition sentences for number pairs for sums to 10? • How can you show subtraction as taking from? • How can you show subtraction as taking apart? • How can you solve problems using the strategy act it out? • How can you use objects and drawings to solve subtraction word problems? • How can you solve subtraction word problems and complete the equation? • How can you solve word problems using addition and subtraction? • How can you use objects to show 11 and 12 as tens and ones and some more ones? • How can you count and write 11 and 12 with words and numbers? • How can you use objects to show 13 and 14 as tens and ones and some more ones? • How can you count and write 13 and 14 with words and numbers? • How can you use objects to show 15 as tens and some more ones and show 15 as a number? • How can you solve problems using the strategy draw a picture? • How can you use objects to show 16 and 17 as tens and ones and some more ones?

• Use objects to decompose the numbers 16 and 17 into tens and ones and some further ones • Represent 16 and 17 objects with number names and written numerals • Use objects to decompose the numbers 18 and 19 into tens and ones and some further ones • Represent 18 and 19 objects with number names and written numerals • Model and count 20 with objects • Represent up to 20 objects with a number name and a written numeral. • Count forward to 20 from a given number • Solve problems by using the strategy make a model • Know the count sequence when counting to 50 by ones • Know the count sequence when counting to 100 by ones • Know the count sequence when counting to 100 by tens • Use sets of tens to count to 100	• How can you count and write 16 and 17 with words and numbers? • How can you use objects to show 18 and 19 as tens and ones and some more ones? • How can you count and write 18 and 19 with words and numbers? • How can you show and count 20 objects? • How can you count and write up to 20 with words and numbers? • How can you count forward to 20 from a given number? • How can you solve problems using the strategy make a model? • How does the order of numbers help you to count to 50 by ones? • How does the order of numbers help you to count to 100 by ones? • How can you count to 100 by tens on a hundred chart? • How can you use sets of tens to count to 100?

ASSESSMENT

Formative	Summative	Benchmark
• Exit Slips • Journals • Oral reading • Graphic Organizers • Class discussion • Response to reading • Interactive online games • Open-ended response questions & comprehension questions • Running records • Teacher observation • Classwork Practice • Discussion Trifolds • Mid Chapter checkpoints • Lesson Quick Checks • Show what you know • Show and Share • Digital Personal Math Trainer • Practice and Homework pages	• Chapter Review/Test • Chapter Test • Alternate Assessments • Performance Tasks • Projects • Choice Boards	• Unit pre and post assessments that align to text series **Alternative** • Portfolio • Performance assessments

Frelinghuysen Township School District
Math Curriculum

LEARNING PLAN

Pacing Guide: 28 Weeks

Recommended Learning Activities

- Complete Chapters 1-8 in Go Math Series!
  - Whole group guided video instruction (Listen and Draw/Model and Draw/Unlock the Problem)
  - Share and Show
  - On Your Own
  - Problem Solving Applications
  - Checks for Understanding
  - Practice and Homework
- Vocabulary Reader: Fall Festival!
- Complete Real World Project: My Number Story
- Vocabulary Builder for Chapters 1-8
- Play Chapter Games: Bus Stop, Counting to Blast off, Number Line Up, Spin and Count, Pairs that Make 7, Spin for More, Sweet and Sour Path, Who has More?
- Play Chapter Vocabulary Games: Number Words, Bingo, Picture It, Memory, Guess the Word
- Complete STEM Activities: Our Senses, Recycling Paper, Rocks, Living and Nonliving, Aquarium Design, Many Animals, Plants Grow and Change, Night Sky

Integrated Accommodations and Modifications

Special Education, ELL and 504

- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented

- Flexible grouping
- Differentiated activities (centers)
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study

Interdisciplinary Connections

ELA
Science
Social Studies
Technology
Character education
Career Education

21st Century Skills and Career Education

- Problem Solving
- Critical Thinking
- Communication
- Collaborative learning
- Productivity
- Real world applications

Instructional and Supplemental Materials

- GoMath Student and eStudent Edition
- GoMath Teacher and eTeacher Edition
- Chapter Resources (Reteach/Enrich) Teacher and Student edition

- Connecting cubes
- Ten frame
- White board, markers, erasers
- Dice
- Counters, 2-color counters
- Colored pencils
- Markers
- Pencils
- Paperclips
- Number cards
- Number cubes
- Large foam dice
- Crayons
- Pipe cleaners
- Pony beads
- Plastic cups
- Tape
- 100s chart
- Graphic Organizers from eTeacher resources
- Chapter vocabulary cards
- Go Digital Tools: Interactive Student Edition, iTools, HMH Mega Math, Animated Math Models, Math on the Spot Videos, Personal Math Trainer, Multimedia Glossary
- Grab and Go Activity Cards, Games, and Literature books
- Listen to PD Podcast: One-to-One Correspondence, Equalities and inequalities, readiness for Addition and Subtraction, Conservation of Number, The Power of Ten, Principle of Cardinality, Readiness for Regrouping, Representations and Translations, Models of Subtraction, Explore Plane Shapes
- Lesson Transparency: Chapter 1-8 Teacher Edition, Chapter 1-8 Student Edition
- Kahoot games
- Abcya math games
- Math fact flash cards
- Numbers in the teens (They start with 1) https://www.youtube.com/watch?v=1W5aYi3lkho
- Numbers in the Teens (Have a group of 10)https://www.youtube.com/watch?v=uedvwH6Ay18
- Cowboy Count https://www.youtube.com/watch?v=3txltaYkTyE
- I can Show Numbers in so many Ways https://www.youtube.com/watch?v=lAQ2HTqTl2w
- Alligator Chomp https://www.youtube.com/watch?v=nvLNhTnDO4I&t=5s
- Let's Get Fit https://www.youtube.com/watch?v=0TgLtF3PMOc&t=39s
- Exercise and Count by 5 https://www.youtube.com/watch?v=amxVL9KUmq8
- https://www.mathgames.com/kindergarten
- **www.ixl.com/math/kindergarten**
- https://www.education.com/games/kindergarten/math
- http://www.coolkindergarten.com/math/
- SumDog
- Sheppard Software
- Teacher Pay Teacher Resources

Leveled Texts

Advanced:

- Alexander, Who Used to Be Rich Last Sunday by Judith Viorst
- The Greedy Triangle by Marilyn Burns
- Round Trip by Ann Jonas
- The Grapes of Math by Greg Tang
- Math Fables by Greg Tang
- Go Figure! And Why Pi?
- 7x9=Trouble! By Brian Karas

Intermediate:

- Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins
- Zero the Hero by Joan Holub
- The Chicken Problem by Jennifer Oakley
- This Plus That: Life's Little Equations by Amy Rosenthal
- Sir Cumference and All the King's Tens by Cindy Neuthwander

Beginner:

- Counting Crocodiles by Judy Sierra
- Two of Everything by Lily Toy Hong
- Lifetime: The Amazing Numbers in Animal Lives by Lois Schaefer
- How Many Jelly Beans by Andrea Memors
- How Many Seeds in a Pumpkin? By Margaret McNamara
- Each Orange Had 8 Slices: A Counting Book by Paul Giganti, Jr.
- Fannie in the Kitchen by Deborah Hopkinson
- Ten Apples Up On Top! By Dr. Seuss

Kindergarten

Unit 2: Geometry

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
• K.G.A.1. • K.G.A.2. • K.G.A.3. • K.G.B.4. • K.G.B.5. • K.G.B.6.	8.1.2.A.4-Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums). 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.2.E.1-Use digital tools and online resources to explore a problem or issue.	• CRP1. Act as a responsible and contributing citizen and employee. • CRP2. Apply appropriate academic and technical skills. • CRP4. Communicate clearly and effectively and with reason. • CRP6. Demonstrate creativity and innovation. • CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. • CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Identify and name two-dimensional shapes including circles. • Describe attributes of circles • Identify and name two-dimensional shapes including squares • Describe attributes of squares • Identify and name two-dimensional shapes including triangles • Describe attributes of triangles • Identify and name two-dimensional shapes including rectangles • Describe attributes of rectangles • Identify and name two-dimensional shapes including hexagons • Describe attributes of hexagons • Use the words alike and different to compare two-dimensional shapes by attributes • Solve problems by using the strategy draw a picture • Analyze and compare three-dimensional shapes by attributes • Identify, name, and describe three-	• How can you identify and name circles? • How can you describe circles? • How can you identify and name squares? • How can you describe squares? • How can you identify and name triangles? • How can you describe triangles? • How can you identify and name rectangles? • How can you describe rectangles? • How can you identify and name hexagons? • How can you describe hexagons? • How can you use the words alike and different to compare two-dimensional shapes? • How can you solve problems using the strategy draw a picture? • How can you show which shapes stack, roll, or slide? • How can you identify, name, and describe spheres? • How can you identify, name, and describe cubes?

dimensional shapes including spheres. ● Identify, name, and describe three-dimensional shapes including cubes. ● Identify, name, and describe three-dimensional shapes including cylinders. ● Identify, name, and describe three-dimensional shapes including cones ● Solve problems by using the strategy use logical reasoning ● Model two- and three-dimensional shapes by building and drawing ● Use the terms above and below to describe shapes in the environment ● Use the terms beside and next to to describe shapes in the environment. ● Use the terms in front of and behind to describe shapes in the environment	● How can you identify, name, and describe cylinders? ● How can you identify, name, and describe cones? ● How can you solve problems using the strategy use logical reasoning? ● How can you model shapes in the real world? ● How can you use the terms above and below to describe shapes in the environment? ● How can you use the terms beside and next to to describe shapes in the environment? ● How can you use the terms in front of and behind to describe shapes in the environment?

ASSESSMENT

Formative	Summative	Benchmark
● Exit Slips ● Journals ● Oral reading ● Graphic Organizers ● Class discussion ● Response to reading ● Interactive online games ● Open-ended response questions & comprehension questions ● Running records ● Teacher observation ● Classwork Practice ● Discussion Trifolds ● Mid Chapter checkpoints ● Lesson Quick Checks ● Show what you know ● Show and Share ● Mid Chapter Checkpoints ● Digital Personal Math Trainer ● Practice and Homework pages	● Weekly Tests/Balanced Tests ● Unit Assessments ● Alternate Assessments ● Performance Tasks ● Projects ● Choice Boards ● Benchmark Assessments	● Unit pre and post assessments that align to text series **Alternative** ● Portfolio ● Performance assessments

LEARNING PLAN

Pacing Guide: 5 Weeks

Recommended Learning Activities

- Complete Chapters 9 and 10 in Go Math Series!
  - Whole group guided video instruction (Listen and Draw/Model and Draw/Unlock the Problem)

- Share and Show
- On Your Own
- Problem Solving Applications
- Checks for Understanding
- Practice and Homework

- Vocabulary Reader: School Fun
- Complete Real World Project: Alike and Different
- Vocabulary Builder for Chapters 9 and 10
- Play Chapter Games: Number Picture, Follow the Shapes,
- Play Chapter Vocabulary Games: Shapes, Picture It
- Complete STEM Activities: Matter, Solving Problems

Integrated Accommodations and Modifications

Special Education, ELL and 504

- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented

- Flexible grouping
- Differentiated activities (centers)
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study

Interdisciplinary Connections

ELA
Science
Social Studies
Technology
Character education
Career Education

21st Century Skills and Career Education

- Problem Solving
- Critical Thinking
- Communication
- Collaborative learning
- Productivity
- Real world applications

Instructional and Supplemental Materials

- GoMath Student and eStudent Edition
- GoMath Teacher and eTeacher Edition
- Chapter Resources (Reteach/Enrich) Teacher and Student edition
- Connecting cubes
- White board, markers, erasers
- Dice
- Counters, 2-color counters
- Colored pencils
- Markers
- Pencils
- Paperclips
- Number cards

- Number cubes
- Large foam dice
- Crayons
- 2-D shapes
- 3-D shapes
- Toothpicks
- Playdoh
- Tangrams
- Marshmallows
- Graphic Organizers from eTeacher resources
- Chapter vocabulary cards
- Go Digital Tools: Interactive Student Edition, iTools, HMH Mega Math, Animated Math Models, Math on the Spot Videos, Personal Math Trainer, Multimedia Glossary
- Grab and Go Activity Cards, Games, and Literature books
- Lesson Transparency: Chapter 9 and 10 Teacher Edition, Chapter 9 and 10 Student Edition\
- Kahoot games
- Abcya math games
- Shape cards
- https://www.mathgames.com/kindergarten
- **www.ixl.com/math/kindergarten**
- https://www.education.com/games/kindergarten/math
- Sumdog
- Sheppard Software
- Teacher Pay Teacher Resources

Leveled Texts

Advanced:

- Alexander, Who Used to Be Rich Last Sunday by Judith Viorst
- The Greedy Triangle by Marilyn Burns
- Round Trip by Ann Jonas
- The Grapes of Math by Greg Tang
- Math Fables by Greg Tang
- 7x9=Trouble! By Brian Karas

Intermediate:

- Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins
- Zero the Hero by Joan Holub
- The Chicken Problem by Jennifer Oakley
- This Plus That: Life's Little Equations by Amy Rosenthal
- Sir Cumference and All the King's Tens by Cindy Neuthwander

Beginner:

- Counting Crocodiles by Judy Sierra
- Two of Everything by Lily Toy Hong
- Lifetime: The Amazing Numbers in Animal Lives by Lois Schaefer
- How Many Jelly Beans by Andrea Memors
- How Many Seeds in a Pumpkin? By Margaret McNamara
- Each Orange Had 8 Slices: A Counting Book by Paul Giganti, Jr.
- Fannie in the Kitchen by Deborah Hopkinson
- Ten Apples Up On Top! By Dr. Seuss

Kindergarten

Unit 3: Measurement and Data

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
• K.MD.A.1. • K.MD.A.2. • K.MD.B.3.	8.1.2.A.4-Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums). 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.2.E.1-Use digital tools and online resources to explore a problem or issue.	• CRP1. Act as a responsible and contributing citizen and employee. • CRP2. Apply appropriate academic and technical skills. • CRP4. Communicate clearly and effectively and with reason. • CRP6. Demonstrate creativity and innovation. • CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. • CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Directly compare the lengths of two objects • Directly compare the heights of two objects • Solve problems by using the strategy draw a picture • Directly compare the weights of two objects • Describe several measurable attributes of a single object • Classify and count objects by color • Classify and count objects by shape • Classify and count objects by size • Make a graph to count objects that have been classified into categories • Read a graph to count objects that have been classified into categories/	• How can you compare the lengths of two objects? • How can you compare the heights of two objects? • How can you solve problems using the strategy draw a picture? • How can you compare the weights of two objects? • How can you describe several ways to measure one object? • How can you classify and count objects by color? • How can you classify and count objects by shape? • How can you classify and count objects by size? • How can you make a graph to count objects that have been classified into categories? • How can you read a graph to count objects that have been classified into categories?

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Math Curriculum

ASSESSMENT

Formative	Summative	Benchmark
• Exit Slips • Journals • Oral reading • Graphic Organizers • Class discussion • Response to reading • Interactive online games • Open-ended response questions & comprehension questions • Running records • Teacher observation • Classwork Practice • Discussion Trifolds • Mid Chapter checkpoints • Lesson Quick Checks • Show what you know • Show and Share • Digital Personal Math Trainer • Practice and Homework pages	• Weekly Tests/Balanced Tests • Unit Assessments • Alternate Assessments • Performance Tasks • Projects • Choice Boards • Benchmark Assessments	• Unit pre and post assessments that align to text series **Alternative** • Portfolio • Performance assessments

LEARNING PLAN

Pacing Guide: 3 Weeks

Recommended Learning Activities

- Complete Chapters 11 and 12 in Go Math Series!
  - Whole group guided video instruction (Listen and Draw/Model and Draw/Unlock the Problem)
  - Share and Show
  - On Your Own
  - Problem Solving Applications
  - Checks for Understanding
  - Practice and Homework
- Vocabulary Reader: Plants all Around
- Complete Real World Project: How Tall Am I?
- Vocabulary Builder for Chapters 11 and 12
- Play Chapter Games: Connecting Cube Challenge, At the Farm
- Play Chapter Vocabulary Games: Measurement, Guess the Word
- Complete STEM Activities: Light, Magnets

Integrated Accommodations and Modifications

Special Education, ELL and 504	Gifted and Talented
• Repeat/modify directions • Visual models • Assistive technology • Extended time • Preferred/flexible seating	• Flexible grouping • Differentiated activities (centers) • Games • Assistive technology • Problem solving strategies

• Differentiated activities (centers) • Shortened assignments • Sensory integration activities • Flexible grouping • Games • Kinesthetic Activity • Role Play	• Tiered choice activities • Kinesthetic Activities • Role Play • Critical thinking strategies • Accelerated learning • Independent study

Interdisciplinary Connections

ELA Science Social Studies Technology Character education Career Education	21st Century Skills and Career Education • Problem Solving • Critical Thinking • Communication • Collaborative learning • Productivity • Real world applications

Instructional and Supplemental Materials

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- White board, markers, erasers
- Dice
- Counters, 2-color counters
- Colored pencils
- Markers
- Pencils
- Paperclips
- Number cards
- Number cubes
- Large foam dice
- Crayons
- Graph paper
- Graphic Organizers from eTeacher resources
- Chapter vocabulary cards
- Go Digital Tools: Interactive Student Edition, iTools, HMH Mega Math, Animated Math Models, Math on the Spot Videos, Personal Math Trainer, Multimedia Glossary
- Grab and Go Activity Cards, Games, and Literature books
- Listen to PD Podcast: Analyze and Represent Change, Explore Length
- Lesson Transparency: Chapter 11 and 12 Teacher Edition, Chapter 11 and 12 Student Edition
- Kahoot games
- Abcya math games
- Alligator Chomp https://www.youtube.com/watch?v=nvLNhTnDO4I&t=5s
- https://www.mathgames.com/kindergarten
- **www.ixl.com/math/kindergarten**
- https://www.education.com/games/kindergarten/math

- https://www.topmarks.co.uk/maths-games/5-7-years/shapes
- Sumdog
- Teacher Pay Teacher Resources
- Sheppard Software

Leveled Texts

Advanced:

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- The Greedy Triangle by Marilyn Burns
- Round Trip by Ann Jonas
- The Grapes of Math by Greg Tang
- Math Fables by Greg Tang
- Go Figure! And Why Pi?
- 7x9=Trouble! By Brian Karas

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- Zero the Hero by Joan Holub
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Beginner:

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- Lifetime: The Amazing Numbers in Animal Lives by Lois Schaefer
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- How Many Seeds in a Pumpkin? By Margaret McNamara
- Each Orange Had 8 Slices: A Counting Book by Paul Giganti, Jr.
- Fannie in the Kitchen by Deborah Hopkinson
- Ten Apples Up On Top! By Dr. Seuss

Frelinghuysen Township School District
Math Curriculum

Grade 1

Unit 1: Operations and Algebraic Thinking

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
1.OA.A.1 1.OA.B.2 1.OA.B.3 1.OA.B.4 1.OA.C.6 1.OA.D.7 1.OA.D.8	(K-2) 8.1.2.A.4-Demonstrate developmentally appropriate navigation skills in virtual. environments (i.e. games, museums). 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.2.E.1-Use digital tools and online resources to explore a problem or issue.	CRP1: Act as a responsible and contributing citizen and employee. CRP2: Apply appropriate academic and technical skills. CRP4: Communicate clearly and effectively and with reason. CRP6: Demonstrate creativity and innovation. CRP7: Employ valid and reliable research strategies. CRP8: Utilize critical thinking to make sense of problems and persevere in solving them. CRP11: Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Use pictures to "add to" and find sums. • Use concrete objects to solve "adding to" addition problems. • Use concrete objects to solve "putting together" addition problems. • Solve adding to and putting together situations using the strategy make a model. • Understand and apply the Additive Identity Property for Addition. • Explore the Commutative Property of Addition. • Model and record all the ways to put together numbers within 10. • Build fluency for addition within 10 • Use pictures to show "taking from" and find differences. • Use concrete objects to solve "taking from" subtraction problems. • Use concrete objects to solve "taking apart" subtraction problems. • Solve taking from and taking apart subtraction problems using the strategy make a model.	• How do pictures show adding to? • How do you model adding to a group? • How do you model putting together? • How do you solve addition problems by making a model? • What happens when you add 0 to a number? • Why can you add addends in any order? • How can you show all the ways to make a number? • Why are some addition facts easy to add? • How can you show taking from with pictures? • How do you model taking from a group? • How do you model taking apart? • How do you solve subtraction problems by making a model? • How can you use pictures to compare and subtract? • How can you use models to compare and subtract? • What happens when you subtract 0 from a number? • How can you show all the ways to take

- Compare pictorial groups to understand subtraction.
- Model and compare groups to show the meaning of subtraction.
- Identify how many are left when subtracting all or 0.
- Model and record all of the ways to take apart numbers within 10.
- Build fluency for subtraction within 10.
- Understand and apply the Commutative Property of Addition for sums within 20.
- Use count on 1, 2, or 3 as a strategy to find sums within 20.
- Use doubles as a strategy to solve addition facts with sums within 20.
- Use doubles to create equivalent but easier sums.
- Use doubles plus 1 and doubles minus 1 as strategies to find sums within 20.
- Use a ten frame to add 10 and an addend less than 10.
- Use make a ten as a strategy to find sums within 20.
- Use numbers to show how to use the make a ten strategy to add.
- Use the Associative Property of Addition to add three addends.
- Understand and apply the Associative Property or Commutative Property of Addition to add three addends.
- Solve adding to and putting together situations using the strategy draw a picture.
- Use count back 1, 2, or 3 as a strategy to subtract.
- Recall addition facts to subtract numbers within 20.
- Use addition as a strategy to subtract numbers within 20.
- Use make a 10 as a strategy to subtract.
- Subtract by breaking apart to make a ten.
- Solve subtraction problem situations using the strategy act it out.
- Solve addition and subtraction problem situations using the strategy make a model.
- Record related facts within 20.

apart a number?

- Why are some subtraction facts easy to subtract?
- What happens if you change the order of the addends when you add?
- How do you count on 1, 2, or 3?
- What are doubles facts?
- How can you use doubles to help you add?
- How can you use what you know about doubles to find other sums?
- What strategies can you use to solve addition fact problems?
- How can you use a ten frame to add 10 and some more?
- How do you use the make a ten strategy to add?
- How can you make a ten to help you add?
- How can you add three addends?
- How can you group numbers to add three addends?
- How do you solve addition word problems by drawing a picture?
- How can you count back 1, 2, or 3?
- How can you use an addition fact to find the answer to a subtraction fact?
- How can you use addition to help you find the answer to a subtraction fact?
- How can you make a ten to help you subtract?
- How do you break apart a number to subtract?
- How can acting out a problem help you solve the problem?
- How can making a model help you solve a problem?
- How do related facts help you find missing numbers?
- How do you know if addition and subtraction facts are related?
- How can you use addition to check subtraction?
- How can you use a related fact to find an unknown number?
- How do you choose when to add and when to subtract to solve a problem?
- How can you add and subtract in different

• Identify related addition and subtraction facts within 20. • Apply the inverse relationship of addition and subtraction. • Use related facts to determine unknown numbers. • Use a related fact to subtract. • Choose an operation and strategy to solve an addition or subtraction word problem. • Represent equivalent forms of numbers using sums and differences within 20. • Determine if an equation is true or false.	ways to make the same number? • How can you decide if a number sentence is true or false?

ASSESSMENT

Formative	Summative	Benchmark
• Exit Slips • Journals • Oral reading • Class discussion • Response to reading • Interactive online games • Open-ended response questions & comprehension questions • Teacher observation • Classwork Practice • Lesson Quick Checks • Mid Chapter checkpoints	• Chapter Review/Tests • Alternate Assessments • Performance Tasks • Projects • Choice Boards	• Unit pre and post assessments that align to text series **Alternative** • Portfolio • Performance assessments

LEARNING PLAN

Pacing Guide: 13 weeks

Recommended Learning Activities

- Complete Chapters 1 -5 in Go Math series!
  - Whole group guided video instruction (Listen and Draw/Model and Draw/Unlock the Problem)
  - Share and Show
  - On Your Own
  - Problem Solving Applications
  - Checks for Understanding
  - Practice and Homework
- Vocabulary Reader *Animals in Our World*
- Complete Real World Project *My Animal Stories*
- Play Chapter games: *Addition Bingo, Subtraction Slide, Ducky Sums, Neighborhood Sums, Under the Sea, Related Fact Race, Basics Facts Race*
- Play Chapter vocabulary games: *Going to the Zoo, Bingo, Concentration, Picture It, Make a Match*
- Complete Journal Activity *The Write Way*
- Complete Chapter Activity Cards: Sum Sentences, Put it Together, How Many Ways?, Back and

Forth, Apples Away, Runaway Squares, Subtract!, Picture This, Double Trouble, Back and Forth, Make a Ten to Add, Add With a Ten, The Sum is the Same, Apples Away, Plus and Minus, Face Facts, Any Way You Cut It, Problem Solving, The Missing Piece, Number Tales

- Read Chapter Literature Books: The Class Party, Math Club, Join Us, Busy Bugs, The Class Party, Milk for Sale, Doubles Fun on the Farm, Funny Bunny Hats, Miss Bumble's Garden, Picture Puzzles, Juggling
- View Math on the Spot videos
- S.T.E.M. Connecting Math and Science: Caring for Pets, What's It Like?, Hide Me!, Hatch, Swim, Hop, Plant Power

Integrated Accommodations and Modifications

Special Education, ELL and 504

- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented

- Flexible grouping
- Differentiated activities (centers)
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study
- Enrichment Activities

Interdisciplinary Connections

ELA
Science
Social Studies
Technology
Character education
Career Education

21st Century Skills and Career Education

- Problem Solving
- Critical Thinking
- Communication
- Collaborative learning
- Productivity
- Real world applications

Instructional and Supplemental Materials

- GoMath Student and eStudent Edition
- GoMath Teacher and eTeacher Edition
- Chapter Resources (Reteach/Enrich)
- Connecting cubes
- Ten frame
- White board, markers, erasers
- Dice
- Counters, 2-color counters
- Colored pencils (red/blue)
- crayons
- Graphic Organizers from eTeacher resources
- Chapter vocabulary cards
- Go Digital Tools: Interactive Student Edition, iTools, HMH Mega Math, Animated Math Models,

Math on the Spot Videos, Personal Math Trainer, Multimedia Glossary

- Grab and Go Activity Cards, Games, and Literature books
- Abcya.com first grade math games
- Sheppard Software
- Kahoot
- "What's Inside My Backpack?" (tpt)
- Game Card Addition (tpt)
- Order of Addends Sort (tpt)

Leveled Texts

Advanced:

- Alexander, Who Used to Be Rich Last Sunday by Judith Viorst
- The Greedy Triangle by Marilyn Burns
- Round Trip by Ann Jonas
- The Grapes of Math by Greg Tang
- Math Fables by Greg Tang
- Go Figure! And Why Pi?
- 7x9=Trouble! By Brian Karas

Intermediate:

- Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins
- Zero the Hero by Joan Holub
- The Chicken Problem by Jennifer Oakley
- This Plus That: Life's Little Equations by Amy Rosenthal
- Sir Cumference and All the King's Tens by Cindy Neuthwander

Beginner:

- Counting Crocodiles by Judy Sierra
- Two of Everything by Lily Toy Hong
- Lifetime: The Amazing Numbers in Animal Lives by Lois Schaefer
- How Many Jelly Beans by Andrea Memors
- How Many Seeds in a Pumpkin? By Margaret McNamara
- Each Orange Had 8 Slices: A Counting Book by Paul Giganti, Jr.
- Fannie in the Kitchen by Deborah Hopkinson
- Ten Apples Up On Top! By Dr. Seuss

Grade 1

Unit 2: Number and Operations in Base Ten

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
1.NB.A.1 1.NB.2 1.NB.B.2a 1.NB.B.2b 1.NB.B.2c 1.NB.B.3 1.NB.C.4 1.NB.C.5	(K-2) 8.1.2.A.4-Demonstrate developmentally appropriate navigation skills in virtual. environments (i.e. games, museums). 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.2.E.1-Use digital tools and online resources to explore a problem or issue.	CRP1: Act as a responsible and contributing citizen and employee. CRP2: Apply appropriate academic and technical skills. CRP4: Communicate clearly and effectively and with reason. CRP6: Demonstrate creativity and innovation. CRP7: Employ valid and reliable research strategies CRP8: Utilize critical thinking to make sense of problems and persevere in solving them. CRP11: Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Count by ones to extend a counting sequence up to 120. • Count by tens from any number to extend a counting sequence up to 120. • Use models and write to represent equivalent forms of ten and ones. • Use objects, pictures, and numbers to represent a ten and some ones. • Use objects, pictures, and numbers to represent tens. • Group objects to show numbers to 50 as tens and ones. • Use objects, pictures, and numbers to represent a ten and some ones. • Use objects, pictures, and numbers to represent tens. • Group objects to show numbers to 50 as tens and ones. • Model and compare two-digit numbers to determine which is greater. • Model and compare two-digit numbers to determine which is less. • Use symbols for is less than “”, and is	• How can knowing a counting pattern help you count to 120? • How do numbers change as you count by tens to 120? • How can you use different ways to write a number as ten and ones? • How can you show a number as ten and ones? • How can you model and name groups of ten? • How can you group cubes to show a number as tens and ones? • How can you show numbers to 100 as tens and ones? • How can making a model help you show a number in different ways? • How can you model, read, and write numbers from 100 to 110? • How can you compare two numbers to find which is greater? • How can you compare two numbers to find which is less? • How can you use symbols to show how

equal to "=" to compare numbers • Solve problems using the strategy make a model. • Identify numbers that are 10 more or 10 less than a given number. • Add and subtract within 20. • Draw a model to add tens. • Draw a model to subtract tens. • Use a hundred chart to find sums. • Use concrete models to add ones or tens to a two-digit number. • Make a ten to add a two-digit number and a one-digit number. • Use a hundred chart to find sums. Use concrete models to add ones or tens to a two-digit number. • Make a ten to add a two-digit number and a one-digit number.	numbers compare? • How can making a model help you compare numbers? • How can you identify numbers that are 10 less or 10 more than a number? • What strategies can you use to add and subtract? • How can you add tens? • How can you subtract tens? • How can you use a hundred chart to count on by ones or tens? • How can models help you add ones or tens to a two-digit number? • How can making a ten help you add a two-digit number and a one-digit number? • How can you model tens and ones to help you add two-digit numbers? • How can drawing a picture help you explain how to solve an addition problem? • How can you use a hundred chart to show the relationship between addition and subtraction?

ASSESSMENT

Formative	Summative	Benchmark
• Exit Slips • Journals • Oral reading • Class discussion • Response to reading • Interactive online games • Open-ended response questions & comprehension questions • Teacher observation • Classwork Practice • Lesson Quick Checks • Mid Chapter checkpoints	• Chapter Review/Tests • Alternate Assessments • Performance Tasks • Projects • Choice Boards	• Unit pre and post assessments that align to text series **Alternative** • Portfolio • Performance assessments

LEARNING PLAN

Pacing Guide: 7 weeks

Recommended Learning Activities

- Complete Chapters 6 - 8 in Go Math series!
  - Whole group guided video instruction (Listen and Draw/Model and Draw/Unlock the Problem)
  - Share and Show
  - On Your Own

- Problem Solving Applications
- Checks for Understanding
- Practice and Homework

- Vocabulary Reader *Around the Neighborhood*
- Complete Real World Project *My Neighborhood*
- Play Chapter games: *Puddle Hopping, Tens and Ones Race, The Greater Game, Rainy Day Fun, Neighborhood Sums, Flying Along, Basic Facts Race*
- Play Chapter vocabulary games: *Going to Town, Guess the Word, Bingo*
- Complete Journal Activity *The Write Way*
- Complete Chapter Activity Cards: Teen Time, Groups of Ten, Ten and Up, 20 Through 50, Add With Ten, Regroup, Count On, Neat Trick
- Read Chapter Literature Books: Join Us, Strawberries, Name That Number, Garden Party, It's a Home Run!, Party Plans
- View Math on the Spot videos
- S.T.E.M. Connecting Math and Science: What's It Like?, Caring for Pets, Hide Me, Hatch, Swim, Hop, Plant Power

Integrated Accommodations and Modifications

Special Education, ELL and 504

- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented

- Flexible grouping
- Differentiated activities (centers)
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study
- Enrichment Activities

Interdisciplinary Connections

ELA
Science
Social Studies
Technology
Character education
Career Education

21st Century Skills and Career Education

- Problem Solving
- Critical Thinking
- Communication
- Collaborative learning
- Productivity
- Real world applications

Instructional and Supplemental Materials

- GoMath Student and eStudent Edition
- GoMath Teacher and eTeacher Edition
- Chapter Resources (Reteach/Enrich)
- Workmats
- Spinners

- Counting Chart
- Connecting cubes
- Ten frame
- Base-ten blocks
- Hundreds Chart
- White board, markers, erasers
- Dice
- Counters, 2-color counters
- Colored pencils (red/blue)
- crayons
- Graphic Organizers from eTeacher resources
- Chapter vocabulary cards
- Go Digital Tools: Interactive Student Edition, iTools, HMH Mega Math, Animated Math Models, Math on the Spot Videos, Personal Math Trainer, Multimedia Glossary
- Grab and Go Activity Cards, Games, and Literature books
- Abcya.com first grade math games
- Sheppard Software
- Kahoot!
- The Place Value Path (tpt)
- Game-Math Attack 1 & 2
- Greg's Greater Than (tpt)
- Greater Than, Less Than, Equal To True or False Sort tens & ones (tpt)
- Greater Than Math Center (tpt)

Leveled Texts

Advanced:

- Alexander, Who Used to Be Rich Last Sunday by Judith Viorst
- The Greedy Triangle by Marilyn Burns
- Round Trip by Ann Jonas
- The Grapes of Math by Greg Tang
- Math Fables by Greg Tang
- Go Figure! And Why Pi?
- 7x9=Trouble! By Brian Karas

Intermediate:

- Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins
- Zero the Hero by Joan Holub
- The Chicken Problem by Jennifer Oakley
- This Plus That: Life's Little Equations by Amy Rosenthal
- Sir Cumference and All the King's Tens by Cindy Neuthwander

Beginner:

- Counting Crocodiles by Judy Sierra
- Two of Everything by Lily Toy Hong
- Lifetime: The Amazing Numbers in Animal Lives by Lois Schaefer
- How Many Jelly Beans by Andrea Memors
- How Many Seeds in a Pumpkin? By Margaret McNamara
- Each Orange Had 8 Slices: A Counting Book by Paul Giganti, Jr.
- Fannie in the Kitchen by Deborah Hopkinson
- Ten Apples Up On Top! By Dr. Seuss

Grade 1

Unit 3: Measurement and Data

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
• 1.MD.A.2 • 1.MD.B.3 • 1.MD.C.4	8.1.2.A.4-Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums). 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.2.E.1-Use digital tools and online resources to explore a problem or issue.	• CRP1. Act as a responsible and contributing citizen and employee. • CRP2. Apply appropriate academic and technical skills. • CRP4. Communicate clearly and effectively and with reason. • CRP6. Demonstrate creativity and innovation. • CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. • CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Order objects by length • Use the transitivity Principle to measure indirectly • Measure length using nonstandard units • Make a nonstandard measuring tool to measure length • Solve measurement problems using the strategy act it out • Write times to the hour shown on analog clocks • Write times to the half hour shown on analog clocks • Tell times to the hour and half hour using analog and digital clocks • Use the hour hand to draw and write times on analog and digital clocks • Analyze and compare data shown in a picture graph where each symbol represents one • Make a picture graph where each symbol represents one and interpret the information • Analyze and compare data shown in a bar	• How do you order objects by length? • How can you compare lengths of three objects to put them in order? • How do you measure length using nonstandard units? • How do you use a nonstandard measuring tool to measure length? • How can acting it out help you solve measurement problems? • How do you tell time to the hour on a clock that only has an hour hand? • How do you tell time to the half hour on a clock that has only an hour hand? • How are the minute hand and hour hand different for time to the hour and time to the half hour? • How do you know whether to draw and write time to the hour or half hour? • What do the pictures in a picture graph show? • How do you make a picture graph to answer a question? • How can you read a bar graph to find the

graph • Make a bar graph and interpret the information • Analyze and compare data shown in a tally chart • Make a tally chart and interpret the information • Solve problem situations using the strategy make a graph	number that a bar shows? • How does a bar graph help you compare information? • How do you count the tallies on a tally chart? • Why is a tally chart a good way to show information that you have collected? • How can showing information in a graph help you solve problems?

ASSESSMENT

Formative	Summative	Benchmark
• Exit Slips • Journals • Oral reading • Graphic Organizers • Class discussion • Response to reading • Interactive online games • Open-ended response questions & comprehension questions • Running records • Teacher observation • Classwork Practice • Discussion Trifolds • Video logs	• Weekly Tests/Balanced Tests • Unit Assessments • Alternate Assessments • Performance Tasks • Projects • Choice Boards • Benchmark Assessments	• Unit pre and post assessments that align to text series **Alternative** • Portfolio • Performance assessments

LEARNING PLAN

Pacing Guide: 5 weeks

Recommended Learning Activities

- Complete Chapters 9 and 10 in Go Math Series!
  - Whole group guided video instruction (Listen and Draw/Model and Draw/Unlock the Problem)
  - Share and Show
  - On Your Own
  - Problem Solving Applications
  - Checks for Understanding
  - Practice and Homework
- Vocabulary Reader: All Kinds of Weather
- Complete Real World Project: Fun with Friends at School
- Vocabulary Builder for Chapters 9 and 10
- Play Chapter Games: Measure Up!, Graph Game
- Play Chapter Vocabulary Games: Going to a Weather Station, Picture It
- Complete STEM Activities: What's it Like? Do the Math – Order by Weight, Plan and Build-Make a Back Scratcher, In the Mix – Compare Soil Properties, Sunny Summer – Exploring Summer, All Around You – Salt Water Environment, Measuring Up – Do the Math, Set Things in Motion – Do the Math! – Make a Bar Graph

Frelinghuysen Township School District
Math Curriculum

Integrated Accommodations and Modifications

Special Education, ELL and 504

- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented

- Flexible grouping
- Differentiated activities (centers)
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study

Interdisciplinary Connections

(ELA, Math, Science, Social Studies)
Technology
Character education
Career Education

21st Century Skills and Career Education

- Problem Solving
- Critical Thinking
- Communication
- Collaborative learning
- Productivity
- Real world applications

Instructional and Supplemental Materials

- GoMath Student and eStudent Edition
- GoMath Teacher and eTeacher Edition
- Chapter Resources (Reteach/Enrich) Teacher and Student edition
- Connecting cubes
- White board, markers, erasers
- Dice
- Counters, 2-color counters
- Colored pencils
- Markers
- Pencils
- Paperclips
- Number cards
- Number cubes
- Large foam dice
- Crayons
- Graphic Organizers from eTeacher resources
- Chapter vocabulary cards
- Go Digital Tools: Interactive Student Edition, iTools, HMH Mega Math, Animated Math Models, Math on the Spot Videos, Personal Math Trainer, Multimedia Glossary
- Grab and Go Activity Cards, Games, and Literature books
- Lesson Transparency: Chapter 9 and 10 Teacher Edition, Chapter 9 and 10 Student Edition
- Listen to PD Podcasts: Different Ways to Show Numbers, Addition with Regrouping, Subtraction with Regrouping, Explore Plane Shapes, Explore Plane Figures

- Kahoot games
- Abcya math games
- Sumdog
- Sheppard Software
- Teacher Pay Teacher Resources

Leveled Texts

Advanced:

- Alexander, Who Used to Be Rich Last Sunday by Judith Viorst
- The Greedy Triangle by Marilyn Burns
- Round Trip by Ann Jonas
- The Grapes of Math by Greg Tang
- Math Fables by Greg Tang
- Go Figure! And Why Pi?
- 7x9=Trouble! By Brian Karas

Intermediate:

- Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins
- Zero the Hero by Joan Holub
- The Chicken Problem by Jennifer Oakley
- This Plus That: Life's Little Equations by Amy Rosenthal
- Sir Cumference and All the King's Tens by Cindy Neuthwander

Beginner:

- Counting Crocodiles by Judy Sierra
- Two of Everything by Lily Toy Hong
- Lifetime: The Amazing Numbers in Animal Lives by Lois Schaefer
- How Many Jelly Beans by Andrea Memors
- How Many Seeds in a Pumpkin? By Margaret McNamara
- Each Orange Had 8 Slices: A Counting Book by Paul Giganti, Jr.
- Fannie in the Kitchen by Deborah Hopkinson
- Ten Apples Up On Top! By Dr. Seuss

Grade 1

Unit 4: Geometry

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
• 1.G.A.1 • 1.G.A.2.	8.1.2.A.4-Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums). 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.2.E.1-Use digital tools and online resources to explore a problem or issue.	• CRP1. Act as a responsible and contributing citizen and employee. • CRP2. Apply appropriate academic and technical skills. • CRP4. Communicate clearly and effectively and with reason. • CRP6. Demonstrate creativity and innovation. • CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. • CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Identify and describe three-dimensional shapes according to defining attributes • Compose a new shape by combining three-dimensional shapes • Use composite three-dimensional shapes to build new shapes • Identify three-dimensional shapes used to build a composite shape using the strategy act it out • Identify two-dimensional shapes on three-dimensional shapes • Use defining attributes to sort shapes • Describe attributes of two-dimensional shapes • Use objects to compose new two-dimensional shapes • Compose a new shape by combining two-dimensional shapes • Make new shapes from composite two-dimensional shapes using the strategy act it out • Decompose combined shapes into shapes • Decompose two-dimensional shapes into parts	• How can you identify and describe three-dimensional shapes? • How can you combine three-dimensional shapes to make new shapes? • How can you use a combined shape to build new shapes? • How can acting it out help you take apart combined shapes? • What two-dimensional shapes do you see on the flat surfaces of three-dimensional shapes? • How can you use attributes to classify and sort two-dimensional shapes? • What attributes can you use to describe two-dimensional shapes? • How can you put two-dimensional shapes together to make new two-dimensional shapes? • How can you combine two-dimensional shapes to make new shapes? • How can acting it out help you make new shapes from combined shapes? • How can you find shapes in other shapes?

• Identify equal and unequal parts (or shares) in two-dimensional shapes • Partition circles and rectangles into two equal shares • Partition circles and rectangles into four equal shares	• How can you take apart two-dimensional shapes? • How can you identify equal and unequal parts in two-dimensional shapes? • How can a shape be separated into two equal shares? • How can a shape be separated into four equal shares?

ASSESSMENT

Formative	Summative	Benchmark
• Exit Slips • Journals • Oral reading • Graphic Organizers • Class discussion • Response to reading • Interactive online games • Open-ended response questions & comprehension questions • Running records • Teacher observation • Classwork Practice • Discussion Trifolds • Video logs	• Weekly Tests/Balanced Tests • Unit Assessments • Alternate Assessments • Performance Tasks • Projects • Choice Boards • Benchmark Assessments	• Unit pre and post assessments that align to text series **Alternative** • Portfolio • Performance assessments

LEARNING PLAN

Pacing Guide: 6 weeks

Recommended Learning Activities

- Complete Chapters 11 and 12 in Go Math Series!
  - Whole group guided video instruction (Listen and Draw/Model and Draw/Unlock the Problem)
  - Share and Show
  - On Your Own
  - Problem Solving Applications
  - Checks for Understanding
  - Practice and Homework
- Vocabulary Reader: On the Move
- Complete Real World Project: My Shape Coloring Book
- Vocabulary Builder for Chapters 11 and 12
- Play Chapter Games: Shape Match Bingo, Rocket Shapes
- Play Chapter Vocabulary Games: Going on a Train Trip, Guess the Word
- Complete STEM Activities: Good Night, Sky – Do the Math – Compare Solid Shapes, So Salty – do The Math – Model Fractions
- Vocabulary Builder

Integrated Accommodations and Modifications

Special Education, ELL and 504	Gifted and Talented

• Repeat/modify directions • Visual models • Assistive technology • Extended time • Preferred/flexible seating • Differentiated activities (centers) • Shortened assignments • Sensory integration activities • Flexible grouping • Games • Kinesthetic Activity • Role Play	• Flexible grouping • Differentiated activities (centers) • Games • Assistive technology • Problem solving strategies • Tiered choice activities • Kinesthetic Activities • Role Play • Critical thinking strategies • Accelerated learning • Independent study

Interdisciplinary Connections

ELA Science Social Studies Technology Character education Career Education	21st Century Skills and Career Education • Problem Solving • Critical Thinking • Communication • Collaborative learning • Productivity • Real world applications

Instructional and Supplemental Materials

- GoMath Student and eStudent Edition
- GoMath Teacher and eTeacher Edition
- Chapter Resources (Reteach/Enrich) Teacher and Student edition
- Connecting cubes
- White board, markers, erasers
- Dice
- Counters, 2-color counters
- Colored pencils
- Markers
- Pencils
- Paperclips
- 2-D Shapes
- 3-D Shapes
- Number cards
- Number cubes
- Large foam dice
- Crayons
- Graphic Organizers from eTeacher resources
- Chapter vocabulary cards
- Go Digital Tools: Interactive Student Edition, iTools, HMH Mega Math, Animated Math Models, Math on the Spot Videos, Personal Math Trainer, Multimedia Glossary
- Grab and Go Activity Cards, Games, and Literature books
- Listen to PD Podcast: Represent Patterns and Make Generalizations, Analyze and Represent Change, Explore Length
- Lesson Transparency: Chapter 11 and 12 Teacher Edition, Chapter 11 and 12 Student Edition
- Kahoot games

- Abcya math games
- Sumdog
- Sheppard Software
- Teacher Pay Teacher Resources

Leveled Texts

Advanced:

- Alexander, Who Used to Be Rich Last Sunday by Judith Viorst
- The Greedy Triangle by Marilyn Burns
- Round Trip by Ann Jonas
- The Grapes of Math by Greg Tang
- Math Fables by Greg Tang
- Go Figure! And Why Pi?
- 7x9=Trouble! By Brian Karas

Intermediate:

- Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins
- Zero the Hero by Joan Holub
- The Chicken Problem by Jennifer Oakley
- This Plus That: Life's Little Equations by Amy Rosenthal
- Sir Cumference and All the King's Tens by Cindy Neuthwander

Beginner:

- Counting Crocodiles by Judy Sierra
- Two of Everything by Lily Toy Hong
- Lifetime: The Amazing Numbers in Animal Lives by Lois Schaefer
- How Many Jelly Beans by Andrea Memors
- How Many Seeds in a Pumpkin? By Margaret McNamara
- Each Orange Had 8 Slices: A Counting Book by Paul Giganti, Jr.
- Fannie in the Kitchen by Deborah Hopkinson
- Ten Apples Up On Top! By Dr. Seuss

Frelinghuysen Township School District
Math Curriculum

Grade 2

Unit 1: Number Sense and Place Value

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
2.OA.C.3 2.NBT.A.1 2.NBT.A.1a 2.NBT.A.1b 2.NBT.A.2 2.NBT.A.3 2.NBT.A.4 2.NBT.B.8	(K-2) 8.1.2.A.4-Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums). 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.2.E.1-Use digital tools and online resources to explore a problem or issue.	CRP1: Act as a responsible and contributing citizen and employee. CRP2: Apply appropriate academic and technical skills. CRP4: Communicate clearly and effectively and with reason. CRP6: Demonstrate creativity and innovation. CRP7: Employ valid and reliable research strategies. CRP8: Utilize critical thinking to make sense of problems and persevere in solving them. CRP11: Use technology to enhance productivity.

Learning Outcomes

Students will be able to….

- Classify numbers up to 20 as even or odd.
- Write equations with equal addends to represent even numbers.
- Use place value to describe the values of digits in 2-digit numbers.
- Write 2-digit numbers in expanded form.
- Write 2-digit numbers in word form, expanded form, and standard form.
- Apply place value concepts to find equivalent representations of numbers.
- Solve problems by finding different combinations of tens and ones to represent 2-digit numbers using the strategy find a pattern.
- Extend counting sequences within 100, counting by 1s, 5s, and 10s.
- Extend counting sequences within 1,000, counting by 1s, 5s, 10s, and 100s.
- Understand that each group of 10 tens is equivalent to 1 hundred.
- Write 3-digit numbers that are represented by groups of tens.

Students will be able to answer….

- How does finding a pattern help you find all the ways to show a number with tens and ones?
- How do you count by 1s, 5s, and 10s with numbers less than 100?
- How do you count by 1s, 5s, 10s, and 100s with numbers less than 1,000?
- How do you describe a 2-digit number as tens and ones?
- What are different ways to write a 2-digit number?
- How can you show the value of a number in different ways?
- How does finding a pattern help you find all the ways to show a number with tens and ones?
- How do you count by 1s, 5s, and 10s with numbers less than 100?
- How do you count by 1s, 5s, 10s, and 100s with numbers less than 1,000?
- How do you group tens as hundreds?
- How do you write a 3-digit number for a

- Use concrete and pictorial models to represent 3-digit numbers.
- Apply place value concepts to write 3-digit numbers that are represented by pictorial models.
- Use place value to describe the values of digits in numbers to 1,000.
- Read and write 3-digit numbers in word form.
- Write 3-digit numbers in expanded form and in standard form.
- Apply place value concepts to find equivalent representations of numbers.
- Identify 10 more, 10 less, 100 more, or 100 less than a given number.
- Extend number patterns by counting on by tens or hundreds.
- Solve problems involving number comparisons by using the strategy make a model.
- Compare 3-digit numbers using the >, =, and < symbols.

group of tens?
- How do you show a 3-digit number using blocks?
- How do you write the 3-digit number that is shown by a set of blocks?
- How do you know the values of the digits in numbers?
- How do you write 3-digit numbers using words?
- What are three ways to write a 3-digit number?
- How can you use blocks or quick pictures to show the value of a number in different ways?
- How do you use place value to find 10 more, 10 less, 100 more, or 100 less than a 3-digit number?
- How does place value help you identify and extend counting patterns?
- How can you make a model to solve a problem about comparing numbers?
- How do you compare 3-digit numbers?

ASSESSMENT

Formative

- Exit Slips
- Journals
- Oral reading
- Graphic Organizers
- Class discussion
- Response to reading
- Interactive online games
- Open-ended response questions & comprehension questions
- Teacher observation
- Classwork Practice
- Lesson Quick Checks
- Mid Chapter checkpoints

Summative

- Chapter Review/Tests
- Alternate Assessments
- Performance Tasks
- Projects
- Choice Boards

Benchmark

- Unit pre and post assessments that align to text series

Alternative

- Portfolio
- Performance assessments

LEARNING PLAN

Pacing Guide: 7 weeks

Recommended Learning Activities

- Complete Chapters 1 and 2 in Go Math series!
  - Whole group guided video instruction (Listen and Draw/Model and Draw/Unlock the Problem)
  - Share and Show
  - On Your Own

- Problem Solving Applications
- Checks for Understanding
- Practice and Homework

- Vocabulary Reader *Whales*
- Complete Real World Project *By the Sea*
- Play Chapter games: *Three in a Row, Four in a Row, Fish for Digits!,* Climb the Steps
- Play Chapter vocabulary games: *Going to the Farmers Market, Guess the Word*
- Complete Journal Activity *The Write Way*
- Complete Chapter Activity Cards: We Show Seashells, Gone Fishing, Ways to Go, Little Riddles, Line Time, Pattern on Pine Street, Out to Dry, Seed This!
- Read Chapter Literature Books: The Roadside Stand, Doubles Fun on the Farm, Margo's Lights, Dave and Boots, The Number Machine, Time to Take a Trip!
- View Math on the Spot videos
- S.T.E.M. Connecting Math and Science: Rock Resources, By a Hair, A Fine Feather, Magnets, What's the Matter?, Explore the Backyard, Salt of the Earth, Everywhere, A Change of Pace

Integrated Accommodations and Modifications

Special Education, ELL and 504

- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented

- Flexible grouping
- Differentiated activities (centers)
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study
- Enrichment Activities

Interdisciplinary Connections

ELA
Science
Social Studies
Technology
Character education
Career Education

21st Century Skills and Career Education

- Problem Solving
- Critical Thinking
- Communication
- Collaborative learning
- Productivity
- Real world applications

Instructional and Supplemental Materials

- GoMath Student and eStudent Edition
- GoMath Teacher and eTeacher Edition
- Chapter Resources (Reteach/Enrich)
- Connecting cubes
- Base-ten blocks
- White board, markers, erasers
- Place-value charts
- Dice

- Counters
- Hundreds Chart
- Graphic Organizers from eTeacher resources
- Chapter vocabulary cards
- Go Digital Tools: Interactive Student Edition, iTools, HMH Mega Math, Animated Math Models, Math on the Spot Videos, Personal Math Trainer, Multimedia Glossary
- Grab and Go Activity Cards, Games, and Literature books
- Second Grade Math Games abcya.com
- Sheppard Software Math Games
- Even Odd Game http://www.mathnook.com/math/evenoddcollider.html
- Place Value Hockey Game http://www.abcya.com/place_value_hockey.htm
- http://www.firstinmath.com/

Leveled Texts

Advanced:

- Alexander, Who Used to Be Rich Last Sunday by Judith Viorst
- The Greedy Triangle by Marilyn Burns
- Round Trip by Ann Jonas
- The Grapes of Math by Greg Tang
- Math Fables by Greg Tang
- Go Figure! And Why Pi?
- 7x9=Trouble! By Brian Karas

Intermediate:

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- Zero the Hero by Joan Holub
- The Chicken Problem by Jennifer Oakley
- This Plus That: Life's Little Equations by Amy Rosenthal
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Beginner:

- Counting Crocodiles by Judy Sierra
- Two of Everything by Lily Toy Hong
- Lifetime: The Amazing Numbers in Animal Lives by Lois Schaefer
- How Many Jelly Beans by Andrea Memors
- How Many Seeds in a Pumpkin? By Margaret McNamara
- Each Orange Had 8 Slices: A Counting Book by Paul Giganti, Jr.
- Fannie in the Kitchen by Deborah Hopkinson
- Ten Apples Up On Top! By Dr. Seuss

Frelinghuysen Township School District
Math Curriculum

Grade 2

Unit 2: Addition and Subtraction

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
2.OA.A.1 2.OA.B.2 2.OA.C.4 2.NBT.B.5 2.NBT.B.6 2.NBT.B.7 2.NBT.B.9	(K-2) 8.1.2.A.4-Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums). 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.2.E.1-Use digital tools and online resources to explore a problem or issue.	CRP1: Act as a responsible and contributing citizen and employee. CRP2: Apply appropriate academic and technical skills. CRP4: Communicate clearly and effectively and with reason. CRP6: Demonstrate creativity and innovation. CRP7: Employ valid and reliable research strategies. CRP8: Utilize critical thinking to make sense of problems and persevere in solving them. CRP11: Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer…*
• Use doubles facts as a strategy for finding sums for near doubles facts. • Recall sums for basic facts using properties and strategies. • Recall sums for addition facts using the make a ten strategy • Find sums of three addends by applying the Commutative and Associative Properties of Addition. • Use the inverse relationship of addition and subtraction to recall basic facts. • Recall differences for basic facts using mental strategies. • Find differences on a number line to develop the mental strategy of decomposing to simplify facts. • Use bar models to represent a variety of addition and subtraction situations. • Write equations to represent and solve a variety of addition and subtraction situations. • Solve problems involving equal groups by using the strategy act it out.	• How can you use doubles facts to find sums for near doubles facts? • What are some ways to remember sums? • How is the make a ten strategy used to find sums? • How do you add three numbers? • How are addition and subtraction related? • What are some ways to remember differences? • How does getting to 10 in subtraction help when finding differences? • How are bar models used to show addition and subtraction problems? • How are number sentences used to show addition and subtraction situations? • How can acting it out help when solving a problem about equal groups? • How can you write an addition

• Write equations using repeated addition to find the total number of objects in arrays. • Find a sum by breaking apart a 1-digit addend to make a 2-digit addend a multiple of 10. • Use compensation to develop flexible thinking for 2-digit addition. • Apply place-value concepts when using a break-apart strategy for 2-digit addition. • Model 2-digit addition with regrouping. • Draw quick pictures and record 2-digit addition using the standard algorithm. • Record 2-digit addition using the standard algorithm. • Practice 2-digit addition with and without regrouping. • Rewrite horizontal addition problems vertically in the standard algorithm format. • Solve problems involving 2-digit addition using the strategy draw a diagram. • Represent addition situations with number sentences using a symbol for the unknown number. • Find sums of three 2-digit numbers. • Find sums of four 2-digit numbers. • Break apart a 1-digit subtrahend to subtract it from a 2-digit number. • Break apart a 2-digit subtrahend to subtract it from a 2-digit number. • Model 2-digit subtraction with regrouping. • Draw quick pictures and record 2-digit subtraction using the standard algorithm. • Record 2-digit subtraction using the standard algorithm. • Practice 2-digit subtraction with and without regrouping. • Rewrite horizontal subtraction problems vertically in the standard algorithm format. • Use addition to find differences. • Solve problems involving 2-digit subtraction by using the strategy draw a diagram. • Represent subtraction situations with number sentences using a symbol for the unknown number. • Analyze word problems to determine what operations to use to solve multistep problems. • Draw quick pictures to represent 3-digit addition.	sentence for problems with equal groups? • How does breaking apart a number make it easier to add? • How can you make an addend a ten to help solve an addition problem? • How do you break apart addends to add tens and then add ones? • When do you regroup in addition? • How do you record 2-digit addition? • How do you record the steps when adding 2-digit numbers? • How do you record the steps when adding 2-digit numbers? • What are two different ways to write addition problems? • How can drawing a diagram help when solving addition problems? • How do you write a number sentence to represent a problem? • What are some ways to add 3 numbers? • What are some ways to add 4 numbers? • How does breaking apart a number make subtracting easier? • When do you regroup in subtraction? • How do you record 2-digit subtraction? • How do you record the steps when subtracting 2-digit numbers? • What are two different ways to write subtraction problems? • How can you use addition to solve subtraction problems? • How can drawing a diagram help when solving subtraction problems? • How do you write a number sentence to represent a problem? • How do you decide what steps to do to solve a problem? • How do you break apart addends to add hundreds, tens, and then ones? • When do you regroup ones in addition? • When do you regroup tens in addition?

• Apply place value concepts when using a break apart strategy for 3-digit addition. • Record 3-digit addition using the standard algorithm with possible regrouping of ones. • Record 3-digit addition using the standard algorithm with possible regrouping of tens. • Record 3-digit addition using the standard algorithm with possible regrouping of both ones and tens. • Solve problems involving 3-digit subtraction by using the strategy make a model. • Record 3-digit subtraction using the standard algorithm with possible regrouping of tens. • Record 3-digit subtraction using the standard algorithm with possible regrouping of hundreds. • Record 3-digit subtraction using the standard algorithm with possible regrouping of both hundreds and tens. • Record subtraction using the standard algorithm when there are zeros in the minuend.	• How do you know when to regroup in addition? • How can making a model help when solving subtraction problems? • When do you regroup tens in subtraction? • When do you regroup hundreds in subtraction? • How do you know when to regroup in subtraction? • How do you regroup when there are zeros in the number you start with?

ASSESSMENT

Formative	Summative	Benchmark
• Exit Slips • Journals • Oral reading • Graphic Organizers • Class discussion • Response to reading • Interactive online games • Open-ended response questions & comprehension questions • Teacher observation • Classwork Practice • Lesson Quick Checks • Mid Chapter checkpoints	• Chapter Review/Tests • Alternate Assessments • Performance Tasks • Projects • Choice Boards	• Unit pre and post assessments that align to text series **Alternative** • Portfolio • Performance assessments

LEARNING PLAN

Pacing Guide: 13 weeks

Recommended Learning Activities

- Complete Chapters 3-6 in Go Math! series
  - Whole group guided video instruction (Listen and Draw/Model and Draw/Unlock the Problem)
  - Share and Show
  - On Your Own
  - Problem Solving Applications

- Checks for Understanding
- Practice and Homework

- Vocabulary Reader *All About Animals*
- Complete Real World Project *A Bunch of Animals*
- Play Chapter games: *On the Ferris Wheel, Caterpillar Chase, 2-Digit Shuffle, Soccer Sums, Subtraction Action, What is the Difference?, Around the World!*
- Play Chapter vocabulary games: *Going to a Coral Reef, Match Up, Bingo, Picture It*
- Complete Journal Activity *The Write Way*
- Complete Chapter Activity Cards: Ring Toss, Way to Go!, Lucy Goosey, A Heap of Sheep, Quilting Bee, Canine Collection, Pebble Beach, Marvelous, Aqua Addition, All That Jazz, Cool Blades, School Store, Ways to Go, Super Subtraction, Measuring Up, We're in the Money, Sticker Subtraction, Regrouping, Regrouping Ones, hundreds, What a Deal, Zero Gravity, Twice is Nice
- Read Chapter Literature Books: Doubles Fun on the Farm, Benny, Bessie, and the Blueberries, Game Time!, Nature's Numbers, Butterfly Farm, Comic Books for Sale, Party Plans, The If Game, The Bug Boys
- View Math on the Spot videos
- S.T.E.M. Connecting Math and Science: Turn Up the Heat, Ladybug Life, People Power, Send In the Clouds, Where Does the Water Go?, Everyday Technology, Measure It!, The Center of Attention, In Your Place

Integrated Accommodations and Modifications

Special Education, ELL and 504

- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented

- Flexible grouping
- Differentiated activities (centers)
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study
- Enrichment Activities

Interdisciplinary Connections

ELA
Science
Social Studies
Technology
Character education
Career Education

21st Century Skills and Career Education

- Problem Solving
- Critical Thinking
- Communication
- Collaborative learning
- Productivity
- Real world applications

Instructional and Supplemental Materials

- GoMath Student and eStudent Edition
- GoMath Teacher and eTeacher Edition
- Chapter Resources (Reteach/Enrich)

- Connecting cubes
- Number cubes
- Base-ten blocks
- Ten frames
- Number lines
- White board, markers, erasers
- Place-value charts
- Dice
- Two-colored Counters
- Hundreds Chart
- Graphic Organizers from eTeacher resources
- Chapter vocabulary cards
- Go Digital Tools: Interactive Student Edition, iTools, HMH Mega Math, Animated Math Models, Math on the Spot Videos, Personal Math Trainer, Multimedia Glossary
- Grab and Go Activity Cards, Games, and Literature books
- Second Grade Math Games abcya.com
- Sheppard Software Math Games
- Addition and Subtraction games http://www.mathplayground.com/index_addition_subtraction.html
- http://www.firstinmath.com/
- Balloon Pop Subtraction http://www.abcya.com/subtraction_game.htm
- Domino Addition Center (tpt)
- Addition and Subtraction Digital Math Games/Math Centers/Tablets,Smartboards (tpt)
- Daily 3 Math: Domino Dash Addition, Double It 2 Dice Game, Roll a Ten, Roll the Dice Addition (tpt)
- Around the World-Addition and Subtraction Flash Cards
- Online Resources: Sumdog, Reflex Math

Leveled Texts

Advanced:

- Alexander, Who Used to Be Rich Last Sunday by Judith Viorst
- The Greedy Triangle by Marilyn Burns
- Round Trip by Ann Jonas
- The Grapes of Math by Greg Tang
- Math Fables by Greg Tang
- Go Figure! And Why Pi?
- 7x9=Trouble! By Brian Karas

Intermediate:

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- Sir Cumference and All the King's Tens by Cindy Neuthwander

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- How Many Seeds in a Pumpkin? By Margaret McNamara
- Each Orange Had 8 Slices: A Counting Book by Paul Giganti, Jr.
- Fannie in the Kitchen by Deborah Hopkinson
- Ten Apples Up On Top! By Dr. Seuss

:

Frelinghuysen Township School District
Math Curriculum

Grade 2

Unit 3: Measurement and Data

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
2.MD.C.7 2.MD.C.8 2.MD.A.1 2.MD.A.2 2.MD.A.3 2.MD.A.4 2.MD.B.5 2.MD.B.6 2.MD.D.9 2.MD.D.10	(K-2) 8.1.2.A.4-Demonstrate developmentally appropriate navigation skills in virtual. environments (i.e. games, museums). 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.2.E.1-Use digital tools and online resources to explore a problem or issue.	CRP1: Act as a responsible and contributing citizen and employee. CRP2: Apply appropriate academic and technical skills. CRP4: Communicate clearly and effectively and with reason. CRP6: Demonstrate creativity and innovation. CRP7: Employ valid and reliable research strategies. CRP8: Utilize critical thinking to make sense of problems and persevere in solving them. CRP11: Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer…*
• Find the total values of collections of dimes, nickels, and pennies. • Find the total values of collections of quarters, dimes, nickels, and pennies. • Order coins in a collection by value and then find the total value. • Represent money amounts less than a dollar using two different combinations of coins. • Show one dollar in a variety of ways. • Find and record the total value for money amounts greater than $1. • Solve word problems involving money by using the strategy act it out. • Tell and write time to the hour and half hour. • Tell and write time to the nearest five minutes. • Practice telling time to the nearest five minutes. Tell and write time using A.M. and P.M. • Use concrete models to measure the lengths of objects in inches.	• How do you find the total value of a group of dimes, nickels, and pennies? • How do you find the total value of a group of coins? • How do you order coins to help find the total value of a group of coins? • How do you choose coins to show a money amount in different ways? • How can you show the value of one dollar with coins? • How do you show money amounts greater than one dollar? • How does acting it out help when solving problems about money? • How do you tell time to the hour and half hour on a clock? • How do you tell and show time to five minutes? • How does acting it out help when solving problems about money? • How do you tell time to the hour and half hour on a clock? • How do you tell and show time to five

- Make an inch ruler and use it to measure the lengths of objects.
- Estimate the lengths of objects by mentally partitioning the lengths into inches.
- Measure the lengths of objects to the nearest inch using an inch ruler.
- Solve addition and subtraction problems involving the lengths of objects by using the strategy draw a diagram.
- Measure the lengths of objects in both inches and feet to explore the inverse relationship between size and number of units.
- Estimate the lengths of objects in feet.
- Select appropriate tools for measuring different lengths.
- Measure the lengths of objects and use a line plot to display the measurement data.
- Use a concrete model to measure the lengths of objects in centimeters.
- Estimate lengths of objects in centimeters by comparing them to known lengths.
- Measure lengths of objects to the nearest centimeter using a centimeter ruler.
- Solve problems involving adding and subtracting lengths by using the strategy draw a diagram.
- Measure the lengths of objects in both centimeters and meters to explore the inverse relationship between size and number of units.
- Estimate the lengths of objects in meters.
- Measure and then find the difference in the lengths of two objects.
- Collect data in a survey and record that data in a tally chart.
- Interpret data in picture graphs and use that information to solve problems.
- Make picture graphs to represent data.
- Interpret data in bar graphs and use that information to solve problems.
- Make bar graphs to represent data.
- Solve problems involving data by using the strategy make a graph.

minutes?

- How can you use inch models to measure length?
- Why is using a ruler similar to using a row of color tiles to measure length?
- How do you estimate the lengths of objects in inches?
- How do you use an inch ruler to measure lengths?
- How can drawing a diagram help when solving problems about length?
- Why is measuring in feet different from measuring in inches?
- How do you estimate the lengths of objects in feet?
- How do you choose a measuring tool to use when measuring lengths?
- How can a line plot be used to show measurement data?
- How do you use a centimeter model to measure the lengths of objects?
- How do you use known lengths to estimate unknown lengths?
- How do you use a centimeter ruler to measure lengths?
- How can drawing a diagram help when solving problems about lengths?
- How is measuring in meters different from measuring in centimeters?
- How do you estimate the lengths of objects in meters?
- How do you find the difference between the lengths of two objects?
- How do you use a tally chart to record data from a survey?
- How do you use a picture graph to show data?
- How do you make a picture graph to show data in a tally chart?
- How is a bar graph used to show data?
- How do you make a bar graph to show data?
- How does making a bar graph help when solving problems about data?

Frelinghuysen Township School District
Math Curriculum

ASSESSMENT

Formative	Summative	Benchmark
• Exit Slips • Journals • Oral reading • Graphic Organizers • Class discussion • Response to reading • Interactive online games • Open-ended response questions & comprehension questions • Teacher observation • Classwork Practice • Lesson Quick Checks • Mid Chapter checkpoints	• Chapter Review/Tests • Alternate Assessments • Performance Tasks • Projects • Choice Boards	• Unit pre and post assessments that align to text series **Alternative** • Portfolio • Performance assessments

LEARNING PLAN

Pacing Guide: 11 weeks

Recommended Learning Activities

- Complete Chapters 7-10 Go Math! series
  - Whole group guided video instruction (Listen and Draw/Model and Draw/Unlock the Problem)
  - Share and Show
  - On Your Own
  - Problem Solving Applications
  - Checks for Understanding
  - Practice and Homework
- Vocabulary Reader: Making a Kite
- Complete Real World Project
- Play Chapter games: *Tic Tac Toe!, Just In Time, How Long?, Race to Finish*
- Play Chapter vocabulary games: Going to Los Angeles, Guess the Word, Make a Match, Picture It
- Complete Journal Activity *The Write Way*
- Complete Chapter Activity Cards: Piggly Wiggly, Mikes Kites, Blowing Bubbles, Time for School, Tracking Time, Super Subs, Batter Up!, Tally Ho!, Keep in Shape, Who Knew?
- Read Chapter Literature Books: Coin Trick, Time to Go Shopping, All the Time, Is It Time Yet, Nature Walk, A Trip to the Pond, Wow! Fluffo Sure Can Eat!, What Do you Like?
- View Math on the Spot videos
- S.T.E.M. Connecting Math and Science: Let's Test It, Why It Matters, Plan & Build, Let's Check Again, On the Move, Turn, Turn, Turn, Let's Check Again, Units to Know, Plant Start-Ups, Over the Moon

Integrated Accommodations and Modifications

Special Education, ELL and 504	Gifted and Talented
• Repeat/modify directions • Visual models • Assistive technology • Extended time	• Flexible grouping • Differentiated activities (centers) • Games • Assistive technology

• Preferred/flexible seating • Differentiated activities (centers) • Shortened assignments • Sensory integration activities • Flexible grouping • Games • Kinesthetic Activity • Role Play	• Problem solving strategies • Tiered choice activities • Kinesthetic Activities • Role Play • Critical thinking strategies • Accelerated learning • Independent study • Enrichment Activities

Interdisciplinary Connections

ELA Science Social Studies Technology Character education Career Education	21st Century Skills and Career Education • Problem Solving • Critical Thinking • Communication • Collaborative learning • Productivity • Real world applications

Instructional and Supplemental Materials

- GoMath Student and eStudent Edition
- GoMath Teacher and eTeacher Edition
- Chapter Resources (Reteach/Enrich)
- Connecting cubes
- Clocks
- Play Coins/Bills
- Color Tiles, Paper Clips
- Colored Pencils, Crayons, Paper Strips
- Rulers, Inch & Centimeter Rulers
- Yarn
- Yardsticks
- Measuring Tape
- Classroom Objects
- Meter Sticks
- Masking Tape
- Base-ten Unit Cubes
- Connecting Cubes
- Opaque Bags
- White board, markers, erasers
- Graphic Organizers from eTeacher resources
- Chapter vocabulary cards
- Go Digital Tools: Interactive Student Edition, iTools, HMH Mega Math, Animated Math Models, Math on the Spot Videos, Personal Math Trainer, Multimedia Glossary
- Grab and Go Activity Cards, Games, and Literature books
- Read How Big is a Foot?
- Daily 3 Math: (tpt)
- Around the World-Coin and Money Flash Cards
- Second Grade Math Games abcya.com
- Sheppard Software Math Games
- Money Bingo: http://www.abcya.com/money_bingo.htm

- Time Games: http://www.maths-games.org/time-games.html
- http://www.firstinmayh.com/
- Measurement Games: http://www.onlinemathlearning.com/measurement-games.html
- Online Resources: Sumdog

Leveled Texts

Advanced:

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- The Greedy Triangle by Marilyn Burns
- Round Trip by Ann Jonas
- The Grapes of Math by Greg Tang
- Math Fables by Greg Tang
- Go Figure! And Why Pi?
- 7x9=Trouble! By Brian Karas

Intermediate:

- Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins
- Zero the Hero by Joan Holub
- The Chicken Problem by Jennifer Oakley
- This Plus That: Life's Little Equations by Amy Rosenthal
- Sir Cumference and All the King's Tens by Cindy Neuthwander

Beginner:

- Counting Crocodiles by Judy Sierra
- Two of Everything by Lily Toy Hong
- Lifetime: The Amazing Numbers in Animal Lives by Lois Schaefer
- How Many Jelly Beans by Andrea Memors
- How Many Seeds in a Pumpkin? By Margaret McNamara
- Each Orange Had 8 Slices: A Counting Book by Paul Giganti, Jr.
- Fannie in the Kitchen by Deborah Hopkinson
- Ten Apples Up On Top! By Dr. Seuss

Frelinghuysen Township School District
Math Curriculum

Grade 2

Unit 4: Geometry and Fractions

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
• 2.G.A.1 • 2.G.A.2 • 2.G.A.3	(K-2) 8.1.2.A.4-Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums). 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.2.E.1-Use digital tools and online resources to explore a problem or issue.	CRP1: Act as a responsible and contributing citizen and employee. CRP2: Apply appropriate academic and technical skills. CRP4: Communicate clearly and effectively and with reason. CRP6: Demonstrate creativity and innovation. CRP7: Employ valid and reliable research strategies. CRP8: Utilize critical thinking to make sense of problems and persevere in solving them. CRP11: Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Identify three-dimensional shapes. • Identify and describe 3-D shapes according to the number of faces, edges, sides, and vertices. • Build 3-D shapes using cubes and other objects. • Name 3-. 4-, 5-, and 6-sided shapes according to the number of sides and vertices. • Identify angles in 2-D shapes. • Sort 2-D shapes according to their attributes. • Partition rectangles onto equal-size squares and find the total number of these squares • Identify and name equal parts of circles and rectangles as halves, thirds, or fourths. • Partition shapes to show halves, thirds, or fourths. • Identify and describe on equal part as a half of, a third of, or a fourth of a whole. • Solve problems involving wholes divided into equal shares by using the strategy *draw a diagram.*	• What objects match three-dimensional shapes? • How would you describe the faces of a rectangular prism and the faces of a cube? • How can you build a rectangular prism? • What shapes can you name just by knowing the number of sides and vertices? • How do you find and count angles in two-dimensional shapes? • How do you use the number of sides and angles to sort two-dimensional shapes? • How do you find the total number of same-size squares that will cover a rectangle? • What are halves, thirds, and fourths of a whole? • How do you know if a shape shows halves, thirds, or fourths? • How do you find a half of, a third of, or a fourth of a whole? • How can drawing a diagram help when solving problems about equal shares?

Frelinghuysen Township School District
Math Curriculum

ASSESSMENT

Formative

- Exit Slips
- Journals
- Oral reading
- Graphic Organizers
- Class discussion
- Response to reading
- Interactive online games
- Open-ended response questions & comprehension questions
- Running records
- Teacher observation
- Classwork Practice
- Discussion Trifolds
- Video logs
- Lesson Quick Checks
- Mid-Chapter Checkpoints
- Practice and Homework pages

Summative

- Chapter Tests
- Unit Assessments
- Alternate Assessments
- Performance Tasks
- Projects
- Choice Boards
- Benchmark Assessments

Benchmark

- Unit pre and post assessments that align to text series

Alternative

- Portfolio
- Performance assessments

LEARNING PLAN

Pacing Guide: 3 weeks

Recommended Learning Activities

- Complete Chapter 11 in Go Math series!
  - Whole group guided video instruction (Listen and Draw/Model and Draw/Unlock the Problem)
  - Share and Show
  - On Your Own
  - Problem Solving Applications
  - Checks for Understanding
  - Practice and Homework
- Vocabulary Reader *A Farmer's Job*
- Complete Real World Project *At the Farm Stand*
- Play Chapter vocabulary game *Going to a Balloon Race, Hidden Figures*
- Complete Journal Activity *The Write Way*
- Complete Chapter Activity Cards: Name That Shape!, Tina's Recycled Castle, Happy Helpers, Hexagonal Hopscotch, In the Right Direction, Pieced Together, Tanked Full Toad
- Read Chapter Literature Books: Building a Mini-Park, Square Fair, Taking Shape
- Read The Greedy Triangle
- View Math on the Spot videos
- STEAM Attract Attention
- Shape-Bots: A 2D and 3D Geometry Project (tpt)
- Shape Activities: "What does the shape say?" (tpt)
- Shape Hunt (tpt)
- Fraction Pizza (tpt)
- Math Mat Review Activity: Graham Crackers (tpt)
- Create 2D shapes with pretzels and marshmallows

- Create 3D shapes with straws and twist ties

Integrated Accommodations and Modifications

Special Education, ELL and 504

- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented

- Flexible grouping
- Differentiated activities (centers)
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study

Interdisciplinary Connections

ELA
Science
Social Studies
Technology
Character education
Career Education

21st Century Skills and Career Education

- Problem Solving
- Critical Thinking
- Communication
- Collaborative learning
- Productivity
- Real world applications

Instructional and Supplemental Materials

- GoMath Student and eStudent Edition
- GoMath Teacher and eTeacher Edition
- Chapter Resources (Reteach/Enrich)
- White board, marker, eraser
- Go Digital Tools: Personal Math Trainer, Math on the Spot Video, HMH Mega Math, Animated Math Models, iTools
- Grab-and-Go Centers Kit (cards, games, literature books)
- Chapter Vocabulary cards
- 2-D and 3-D shapes (manipulatives and real world shapes)
- Pattern blocks
- Rulers
- Color tiles
- Counters
- Dice games
- Second Grade Math Games abcya.com
- Sheppard Software Math Games
- Fraction Games http://www.maths-games.org/fraction-games.html
- Shapes Games http://pbskids.org/games/shapes/

Leveled Texts

Advanced:

- Alexander, Who Used to Be Rich Last Sunday by Judith Viorst
- The Greedy Triangle by Marilyn Burns

- Round Trip by Ann Jonas
- The Grapes of Math by Greg Tang
- Math Fables by Greg Tang
- Go Figure! And Why Pi?
- 7x9=Trouble! By Brian Karas

Intermediate:

- Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins
- Zero the Hero by Joan Holub
- The Chicken Problem by Jennifer Oakley
- This Plus That: Life's Little Equations by Amy Rosenthal
- Sir Cumference and All the King's Tens by Cindy Neuthwander

Beginner:

- Counting Crocodiles by Judy Sierra
- Two of Everything by Lily Toy Hong
- Lifetime: The Amazing Numbers in Animal Lives by Lois Schaefer
- How Many Jelly Beans by Andrea Memors
- How Many Seeds in a Pumpkin? By Margaret McNamara
- Each Orange Had 8 Slices: A Counting Book by Paul Giganti, Jr.
- Fannie in the Kitchen by Deborah Hopkinson
- Ten Apples Up On Top! By Dr. Seuss

Frelinghuysen Township School District
Math Curriculum

Grade 3

Unit 1: Whole Number Operations

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
• 3.OA.A.1 • 3.OA.A.2 • 3.OA.A.3 • 3.OA.A.4 • 3.OA.B.5 • 3.OA.B.6 • 3.OA.C.7 • 3.OA.D.8 • 3.OA.D.9 • 3.NBT.A.1 • 3.NBT.A.2 • 3.NBT.A.3 • 3.MD.B.3 • 3.MD.B.4	(3-5) 8.1.5.A.1-Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.5.E.1-Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.	• CRP1. Act as a responsible and contributing citizen and employee. • CRP2. Apply appropriate academic and technical skills. • CRP4. Communicate clearly and effectively and with reason. • CRP6. Demonstrate creativity and innovation. • CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. • CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Identify and describe whole-number patterns and solve problems • Round 2- and 3-digit numbers to the nearest ten or hundred • Use compatible numbers and rounding to estimate sums and differences • Use a variety of strategies to find sums and differences mentally • Use the Commutative and Associative Properties of Addition to add more than two addends • Use a variety of strategies to add and subtract 3-digit numbers • Solve addition and subtraction problems by using the strategy *draw a diagram* • Organize data in tables and solve problems by using the strategy *make a table*	• How can you use properties to explain patterns on the addition table? • How can you round numbers? • How can you use compatible numbers and rounding to estimate sums? • What mental math strategies can you use to find sums? • How can you add more than two addends? • How can you use the break apart strategy to add 3-digit numbers? • How can you use place value to add 3-digit numbers? • How can you use compatible numbers and rounding to estimate differences? • What mental math strategies can you use to find differences? • How can you use place value to subtract 3-digit numbers? • How can you use the combine place values strategy to subtract 3-digit numbers? • How can you use the strategy *draw a diagram* to solve one- and two-step addition and subtraction

• Read and interpret data in a scaled picture graph and draw a scaled bar graph to show data in a table or picture graph • Solve one- and two-step compare problems using data represented in scaled bar graphs • Read and interpret data in a line plot and use data to make a line plot • Model and skip count objects in equal groups or on a number line to find how many there are • Write an addition sentence and a multiplication sentence for a model • Solve one- and two-step problems by using the strategy *draw a diagram* • Use arrays to model products and factors • Model the Commutative Property of Multiplication and use it to find products • Model multiplication with the factors 1 and 0 • Use a variety of strategies to multiply with the factors 2, 3, 4, 5, 6, 7, 8, 9, and 10 • Use the Distributive Property to find products by breaking apart arrays • Use the Associative Property of Multiplication to multiply with three factors • Identify and explain patterns on the multiplication table • Use the Distributive Property to find products • Solve multiplication problems by using the strategy *make a table* • Identify and describe a number pattern shown in a function table • Use an array or a multiplication table to find an unknown factor • Solve multiplication problems by using the strategy *draw a*	problems? • How can you use the strategy *make a table* to organize data and solve problems? • How can you read and interpret data in a picture graph? • How can you draw a picture graph to show data in a table? • How can you read and interpret data in a bar graph? • How can you draw a bar graph to show data in a table or picture graph? • How can you solve problems using data represented in bar graphs? • How can you read and interpret data in a line plot and use data to make a line plot? • How can you use equal groups to find how many in all? • How is multiplication like addition? How is it different? • How can you use a number line to skip count and find how many in all? • How can you use the strategy *draw a diagram* to solve one- and two-step problems? • How can you use arrays to model multiplication and find factors? • How can you use the Commutative Property of Multiplication to find products? • What happens when you multiply a number by 0 or 1? • How can you multiply with 2 and 4? • How can you multiply with 5 and 10? • What are some ways to multiply with 3 and 6? • How can you use the Distributive Property to find products? • What strategies can you use to multiply with 7? • How can you use the Associative Property of Multiplication to find products? • How can you use properties to explain patterns on the multiplication table? • What strategies can you use to multiply by 8? • What strategies can you use to multiply with 9? • How can you use the strategy *make a table* to solve multiplication problems? • What are some ways you can describe a pattern in a table? • How can you use an array or a multiplication table to find an unknown factor or product? • How can you use the strategy *draw a diagram* to multiply with multiples of 10?

diagram • Use base-ten blocks, a number line, or place value to multiply with multiples of 10 • Model and record multiplication with multiples of 10 • Solve division problems by using the strategy *act it out* • Use models to explore the meaning of partitive (sharing) and quotative (measurement) division • Model division by using equal groups and bar models • Use repeated subtraction and a number line to relate subtraction to division • Relate multiplication and division as inverse operations and write related multiplication and division facts • Divide using the rules for 1 and 0 • Use a variety of strategies to divide by 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 • Solve two-step problems by using the strategy *act it out* • Perform operations in order when there are no parentheses	• What strategies can you use to multiply with multiples of 10? • How can you model and record multiplying 1-digit whole numbers by multiples of 10? • How can you use the strategy *act it out* to solve problems with equal groups? • How can you model a division problem to find how many in each group? • How can you model a division problem to find how many equal groups? • How can you use bar models to solve division problems? • How is division related to subtraction? • How can you use arrays to solve division problems? • How can you use multiplication to divide? • How can you write a set of related multiplication and division facts? • What are the rules for dividing with 1 and 0? • What does dividing by 2 mean? • What strategies can you use to divide by 10? • What does dividing by 5 mean? • What strategies can you use to divide by 3? • What strategies can you use to divide by 4? • What strategies can you use to divide by 6? • What strategies can you use to divide by 7? • What strategies can you use to divide by 8? • What strategies can you use to divide by 9? • How can you use the strategy *act it out* to solve two-step problems? • Why are there rules such as the order of operations?

ASSESSMENT

Formative	Summative	Benchmark
• Exit Slips • Journals • Oral reading • Graphic Organizers • Class discussion • Response to reading • Interactive online games • Open-ended response questions & comprehension questions • Teacher observation	• Chapter tests • Alternate Assessments • Performance Tasks • Projects • Choice Boards • Journal	• Unit pre and post assessments that align to text series <u>Alternative</u> • Portfolio • Performance based

• Classwork Practice • Discussion Trifolds • Video logs • Show What You Know • Share and Show • Lesson Quick Checks • Mid Chapter Checkpoints • Digital Personal Math Trainer • Practice and Homework pages		

LEARNING PLAN

Pacing Guide: 19 Weeks

Recommended Learning Activities

- Complete Chapters 1, 2, 3, 4, 5, 6, and 7 in Go Math! series
  - Whole group guided video instruction and/or Unlock the Problem
  - Share and Show
  - On Your Own problems
    - partner practice
    - independent problem solving practice
  - Checks for Understanding
  - Practice and Homework
- Complete Real World Project - Inventing Toys
- View Math on the Spot videos
- Complete Personal Math Trainer activities
- View Real Word Videos
- View Animated Math Models
- Play Chapter Vocabulary games: Going to New York City, Picture It, Matchup, Guess the Word, Pick It, Bingo, Matchup
- Read Chapter Literature books: More Acorns, So Many Seashells, Soccer Bash, The Class Trip, Diego's Perfect Fit, Collections Times Four, Here's What I Do, The Workshop, Party Plans By the Numbers!, The Homework Table, Corey's Cookie Caper, The Garden Fence, Sports Camp, On the Menu: Bamboo, Figs, and Other Tasty Treats
- Complete Chapter Activity cards: Roll to 100!, Block it Out!, What's the Difference, Ready! Aim! Subtract!, Super Subtraction, To Add or Subtract?, Mystery Numbers, And the Survey Says…, It's in the Bag, LifeSpan Pictographs, Story Time, Line 'Em Up, Factor Spin, Hurray for Arrays!, Diamond Derby, Multiplication Dash, Multiplication MathO!, Comparing 2 and 5, Dividing Nickels, Division MathO!, Missing Sides, Division Dilemmas, Comparing 2 and 5, Dividing Nickels, Division Mystery
- Play Chapter games from Grab and Go Centers Kit: *Auto Addition, Picnic Pattern Path, Addition Bingo, Time to Subtract, Multiplication Bingo, Guess My Numbers, Number Cube Products, All in the Family, Division Cover-Up*
- Play Digital HMH Mega Math Games
- Complete the STEM Math and Science Connection Activities: *In Our Corner of Space, Communities of Populations, Reflection and Refraction, Cool! It's Freezing!*
- Use iTools interactive tools
- Online games and videos

- Multiplication Bingo
- Have students look through newspapers and magazines to find bar graphs

Integrated Accommodations and Modifications

Special Education, ELL and 504

- Reteach Activities
- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented

- Enrich Activities
- Flexible grouping
- Differentiated activities in Grab and Go Centers
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study

Interdisciplinary Connections

ELA
Science
Social Studies
Technology
Character education
Career Education

21st Century Skills and Career Education

- Problem Solving
- Critical Thinking
- Communication
- Collaborative learning
- Productivity
- Real world applications

Instructional and Supplemental Materials

- base ten blocks
- counters
- hundreds charts
- number cubes/dice
- calculators
- whiteboards, markers, erasers
- newspapers and magazines
- Graphic organizers from eTeacher Resources
- Chapter vocabulary cards
- Go Digital Tools: iTools, HMH Mega Math, Animated Math Models, Math on the Spot Videos, Personal Math Trainer,
- Grab and Go Activity cards, Games, and Literature books
- http://www.math-play.com/baseball-math-subtraction-with-regrouping/subtracting-with-regrouping-baseball_html5.html
- http://www.abcya.com/fuzz_bugs_graphing.htm
- https://www.mathgames.com/graphing
- http://www.multiplication.com/games/all-games

- https://www.education.com/games/multiplication/
- https://www.mathplayground.com/index_multiplication_division.html
- http://www.abcya.com/clear_it_multiplication.htm
- http://www.multiplication.com/games/division-games
- http://www.fun4thebrain.com/division.html
- http://www.sheppardsoftware.com/math.htm
- http://www.reflexmath.com
- Multiplication and Division Relationships https://www.youtube.com/watch?v=i31rRt5m1-4
- Learn Multiplication and Division https://www.youtube.com/watch?v=DPv4FuXkFXw
- Multiplication Vocabulary https://www.youtube.com/watch?v=3SrN2RdWv1Y
- Properties of Multiplication Song https://www.youtube.com/watch?v=jG9E2pev3bQ
- The Best of Times by Greg Tang
- The Grapes of Math by Greg Tang
- The Hershey's Times Book by Jerry Pallotta
- A Remainder of One by Elinor Pinczes

Leveled Texts

- Advanced:

Fractals, Googols, and Other Mathematical Tales

Fraction Fun by David Adler

Spaghetti and Meatballs for All by Marilyn Burns

What's Your Angle Pythagoras? By Julie Mila

The Math Wiz by Betsy Duffey

Fractions, Decimals and Percents by David Adler

A Very Improbable Story by Edward Einhorn

Math Curse by Jon Scieszka and Lane Smith

- Intermediate:

Alexander, Who Used to Be Rich Last Sunday by Judith Viorst

The Greedy Triangle by Marilyn Burns

Round Trip by Ann Jonas

The Grapes of Math by Greg Tang

Math Fables by Greg Tang

Go Figure! And Why Pi?

7x9=Trouble! By Brian Karas

- Beginner:

Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins

Zero the Hero by Joan Holub

The Chicken Problem by Jennifer Oakley

This Plus That: Life's Little Equations by Amy Rosenthal

Sir Cumference and All the King's Tens by Cindy Neuthwander

Sir Cumference and the First Round Table by Cindy Neuthwander

Frelinghuysen Township School District
Math Curriculum

Grade 3

Unit 2: Fractions

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
• 3.NF.A.1 • 3.NF.A.2a • 3.NF.A.2b • 3.NF.A.3a • 3.NF.A.3b • 3.NF.A.3c • 3.NF.A.3d	(3-5) 8.1.5.A.1-Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.5.E.1-Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.	• CRP1. Act as a responsible and contributing citizen and employee. • CRP2. Apply appropriate academic and technical skills. • CRP4. Communicate clearly and effectively and with reason. • CRP6. Demonstrate creativity and innovation. • CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. • CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Explore and identify equal parts of a whole. • Divide models to make equal shares. • Use a fraction to name one part of a whole that is divided into equal parts. • Read, write, and model fractions that represent more than one part of a whole that is divided into equal parts. • Represent and locate fractions on a number line. • Relate fractions and whole numbers by expressing whole numbers as fractions and recognizing fractions that are equivalent to whole numbers. • Model, read, and write fractional parts of a group.	• What are equal parts of a whole? • Why do you need to know how to make equal shares? • What do the top and bottom numbers of a fraction tell? • How does a fraction name part of a whole? • How can you represent and locate fractions on a number line? • When might you use a fraction greater than 1 or a whole number? • How can a fraction name part of a group? • How can a fraction tell how many are in part of a group? • How can you use the strategy draw a diagram to solve fraction problems? • How can you use the strategy act it out to

• Find fractional parts of a group using unit fractions. • Solve fraction problems by using the strategy draw a diagram. • Solve comparison problems by using the strategy act it out. • Compare fractions with the same denominator by using models and reasoning strategies. • Compare fractions with the same numerator by using models and reasoning strategies. • Compare fractions by using models and strategies involving the size of the pieces in the whole. • Compare and order fractions by using models and reasoning strategies. • Model equivalent fractions by folding paper, using area models, and using number lines. • Generate equivalent fractions by using models.	solve comparison problems? • How can you compare fractions with the same denominator? • How can you compare fractions with the same numerator? • What strategies can you use to compare fractions? • How can you compare and order fractions? • How can you use models to find equivalent fractions? • How can you use models to name equivalent fractions?

ASSESSMENT

Formative	Summative	Benchmark
• Exit Slips • Journals • Oral reading • Graphic Organizers • Class discussion • Response to reading • Interactive online games • Open-ended response questions & comprehension questions • Teacher observation • Classwork Practice • Discussion Trifolds • Video logs • Show What You Know • Share and Show • Lesson Quick Checks • Mid Chapter Checkpoints • Digital Personal Math Trainer • Practice and Homework pages	• Chapter tests • Alternate Assessments • Performance Tasks • Projects • Choice Boards • Journal	• Unit pre- and post-assessments that align to text series **Alternative** • Portfolio • Performance assessments

Frelinghuysen Township School District
Math Curriculum

LEARNING PLAN

Pacing Guide: 6 Weeks

Recommended Learning Activities

- Complete Chapters 8 and 9 in Go Math! series
  - Whole group guided video instruction and/or Unlock the Problem
  - Share and Show
  - On Your Own problems
    - partner practice
    - independent problem solving practice
  - Checks for Understanding
  - Practice and Homework
- Complete the Coins in the U.S. Real World Project
- View Math on the Spot videos
- Complete Personal Math Trainer activities
- Use fraction strips to model fractions
- View Real Word Videos
- View Animated Math Models
- Play Chapter Vocabulary games: *Going to the Mint, Pick It*
- Read Chapter Literature books: Pizza Parts!, The Whole Picture,
- Complete Chapter Activity cards: Fish for Fractions, Fraction Action, Who's the Greatest?
- Play Chapter games from Grab and Go Centers Kit: *Fraction Action*
- Play Digital HMH Mega Math Games
- Complete the STEM Math and Science Connection Activities: *Water Moves All Around, Using a Wheel-and-Axle*
- Use iTools interactive fraction strips
- Use pattern blocks to model fractions
- Complete a fractions hunt at home; bring items to school
- Online fractions games and videos

Integrated Accommodations and Modifications

Special Education, ELL and 504

- Reteach Activities
- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented

- Enrich Activities
- Flexible grouping
- Differentiated activities in Grab and Go Centers
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study

Interdisciplinary Connections

ELA Science Social Studies Technology Character education Career Education	21st Century Skills and Career Education • Problem Solving • Critical Thinking • Communication • Collaborative learning • Productivity • Real world applications

Instructional and Supplemental Materials

- fraction strips
- pattern blocks
- whiteboards, markers, erasers
- Graphic organizers from eTeacher Resources
- Chapter vocabulary cards
- Go Digital Tools: iTools, HMH Mega Math, Animated Math Models, Math on the Spot Videos, Personal Math Trainer,
- Grab and Go Activity cards, Games, and Literature books
- recipes that show fractions
- Pizza Counting by Christina Dobson; illustrated by Matthew Holmes
- Hershey's Milk Chocolate Fractions Book by Jerry Pallotta; illustrated by Rob Bolster
- Fractions, Decimals, and Percents by David Adler; illustrated by Edward Miller
- https://www.mathplayground.com/index_fractions.html
- https://www.mathgames.com/fractions
- https://www.sheppardsoftware.com/mathgames/menus/fractions.htm
- http://www.abcya.com/fraction_fling.htm
- https://www.weareteachers.com/fun-with-fractions-7-tactile-and-kinesthetic-games/
- https://www.teachstarter.com/blog/31-activities-resources-teaching-fractions-classroom/
- Intro to Fractions by FreeSchool https://www.youtube.com/watch?v=yT1WuyxTCmo
- Fractions Song for Kids https://www.youtube.com/watch?v=lTce7f6KGE0

Leveled Texts

- Advanced:

Fractals, Googols, and Other Mathematical Tales

Fraction Fun by David Adler

Spaghetti and Meatballs for All by Marilyn Burns

What's Your Angle Pythagoras? By Julie Mila

The Math Wiz by Betsy Duffey

Fractions, Decimals and Percents by David Adler

A Very Improbable Story by Edward Einhorn

Math Curse by Jon Scieszka and Lane Smith

- Intermediate:

Alexander, Who Used to Be Rich Last Sunday by Judith Viorst

The Greedy Triangle by Marilyn Burns

Round Trip by Ann Jonas

The Grapes of Math by Greg Tang

Math Fables by Greg Tang

Go Figure! And Why Pi?

7x9=Trouble! By Brian Karas

- Beginner:

Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins

Zero the Hero by Joan Holub

The Chicken Problem by Jennifer Oakley

This Plus That: Life's Little Equations by Amy Rosenthal

Sir Cumference and All the King's Tens by Cindy Neuthwander

Sir Cumference and the First Round Table by Cindy Neuthwander

Frelinghuysen Township School District
Math Curriculum

Grade 3

Unit 3: Measurement

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
• 3.MD.A.1 • 3.MD.A.2 • 3.MD.B.4 • 3.MD.C.5 • 3.MD.C.5a • 3.MD.C.5b • 3.MD.C.6 • 3.MD.C.7 • 3.MD.C.7a • 3.MD.C.7b • 3.MD.C.7c • 3.MD.D.8	(3-5) 8.1.5.A.1-Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.5.E.1-Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.	• CRP1. Act as a responsible and contributing citizen and employee. • CRP2. Apply appropriate academic and technical skills. • CRP4. Communicate clearly and effectively and with reason. • CRP6. Demonstrate creativity and innovation. • CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. • CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Read, write, and tell time on analog and digital clocks to the nearest minute and decide when to use A.M. and P.M. • Use a number line or an analog clock to measure time intervals in minutes and to add or subtract time intervals to find starting times or ending times • Solve problems involving addition and subtraction of time intervals by using the strategy *draw a diagram* • Measure length to the nearest half or fourth inch and use measurement data to make a line plot • Estimate and measure liquid volume in liters and mass in grams and kilograms • Solve problems involving liquid volumes or masses • Estimate, measure, and find perimeter and area of polygons	• How can you tell time to the nearest minute? • How can you tell when to use A.M. and P.M. with time? • How can you measure elapsed time in minutes? • How can you find a starting time or an ending time when you know the elapsed time? • How can you use the strategy *draw a diagram* to solve problems about time? • How can you generate measurement data and show the data on a line plot? • How can you estimate and measure liquid volume in metric units? • How can you estimate and measure mass in metric units? • How can you use models to solve liquid volume and mass problems?

• Find the unknown length of a side of a polygon when you know its perimeter • Explore perimeter and area as attributes of polygons • Solve area problems by using the strategy *find a pattern* • Apply the Distributive Property to find the area of combined rectangles • Compare rectangles that have the same perimeter or have the same area	• How can you find perimeter? • How can you measure perimeter? • How can you find the unknown length of a side in a plane figure when you know its perimeter? • How is finding the area of a figure different from finding the perimeter of a figure? • How can you find the area of a plane figure? • Why can you multiply to find the area of a rectangle? • How can you use the strategy *find a pattern* to solve area problems? • How can you break apart a figure to find the area? • How can you use area to compare rectangles with the same perimeter? • How can you use perimeter to compare rectangles with the same area?

ASSESSMENT

Formative	Summative	Benchmark
• Exit Slips • Journals • Oral reading • Graphic Organizers • Class discussion • Response to reading • Interactive online games • Open-ended response questions & comprehension questions • Teacher observation • Classwork Practice • Discussion Trifolds • Video logs • Show What You Know • Share and Show • Lesson Quick Checks • Mid Chapter Checkpoints • Digital Personal Math Trainer • Practice and Homework pages	• Chapter tests • Alternate Assessments • Performance Tasks • Projects • Choice Boards • Journal	• Unit pre- and post-assessments that align to text series **Alternative** • Portfolio • Performance assessments

Frelinghuysen Township School District
Math Curriculum

LEARNING PLAN

Pacing Guide: 6 Weeks

Recommended Learning Activities

- Complete Chapters 10 and 11 in Go Math! series
  - Whole group guided video instruction and/or Unlock the Problem
  - Share and Show
  - On Your Own problems
    - partner practice
    - independent problem solving practice
  - Checks for Understanding
  - Practice and Homework
- Complete the Real World Project - *Plan a Playground*
- View Math on the Spot videos
- Complete Personal Math Trainer activities
- View Real Word Videos
- View Animated Math Models
- Play Chapter Vocabulary games: *Going to the Playground, Picture It*
- Read Chapter Literature books: How Heavy? How Much, Late for School, A Trip to the Pond, A Walk on the Path, Busy Bees, James' Frames
- Complete Chapter Activity cards: Inch by Inch, Race A- Weigh, Time Marches On, Time After Time, Roll to 100, Jump to 9, Perimeter Parade, Hurray for Arrays!, Classification Act, Figure it Out
- Play Chapter games from Grab and Go Centers Kit: *Matching Time*
- Play Digital HMH Mega Math Games
- Complete the STEM Math and Science Connection Activities: *Measure It!*
- Use iTools interactive tools
- Use Judy Clocks to model time
- Use square tiles to model and measure area
- Use rulers to measure classroom objects
- Use various beakers and containers to measure liquid
- Use a pan balance and gram masses to measure mass of objects
- Use geoboards and rubber bands to model perimeter and area
- Measure unusually-shaped objects using string lengths
- Use graph/grid paper to draw shapes with a certain area
- Online games and videos

Integrated Accommodations and Modifications

Special Education, ELL and 504	Gifted and Talented
• Reteach Activities • Repeat/modify directions • Visual models • Assistive technology • Extended time • Preferred/flexible seating • Differentiated activities (centers) • Shortened assignments • Sensory integration activities	• Enrich Activities • Flexible grouping • Differentiated activities in Grab and Go Centers • Games • Assistive technology • Problem solving strategies • Tiered choice activities • Kinesthetic Activities

• Flexible grouping • Games • Kinesthetic Activity • Role Play	• Role Play • Critical thinking strategies • Accelerated learning • Independent study

Interdisciplinary Connections

ELA Science Social Studies Technology Character education Career Education	21st Century Skills and Career Education • Problem Solving • Critical Thinking • Communication • Collaborative learning • Productivity • Real world applications

Instructional and Supplemental Materials

- Judy clocks
- square tile blocks
- rulers
- tape measures
- string
- pan balance
- gram masses
- beakers and other liquid containers (metric)
- geoboards and rubber bands
- graph/grid paper
- whiteboards, markers, erasers
- Graphic organizers from eTeacher Resources
- Chapter vocabulary cards
- Go Digital Tools: iTools, HMH Mega Math, Animated Math Models, Math on the Spot Videos, Personal Math Trainer,
- Grab and Go Activity cards, Games, and Literature books
- http://www.abcya.com/telling_time.htm
- https://www.mathgames.com/time
- https://www.mathgames.com/measurement
- https://www.funbrain.com/games/measure-it
- https://www.sheppardsoftware.com/mathgames/menus/measurement.htm
- https://www.mathplayground.com/area_perimeter.html
- http://www.sheppardsoftware.com/mathgames/geometry/shapeshoot/PerimeterShapesShoot.htm
- The Perimeter and Area Song https://www.youtube.com/watch?v=Xk-PyhjFWw4
- Telling Time for Children https://www.youtube.com/watch?v=HrxZWNu72WI
- Metric System - Units of Mass - Khan Academy https://www.youtube.com/watch?v=TD1zuENbEdk
- Measuring Penny by Loreen Leedy
- On the Scale, A Weighty Tale by Brian Cleary
- Perimeter, Volume, and Area; A Monster Book of Dimensions by David Adler

Leveled Texts

- Advanced:

Fractals, Googols, and Other Mathematical Tales

Fraction Fun by David Adler

Spaghetti and Meatballs for All by Marilyn Burns

What's Your Angle Pythagoras? By Julie Mila

The Math Wiz by Betsy Duffey

Fractions, Decimals and Percents by David Adler

A Very Improbable Story by Edward Einhorn

Math Curse by Jon Scieszka and Lane Smith

- Intermediate:

Alexander, Who Used to Be Rich Last Sunday by Judith Viorst

The Greedy Triangle by Marilyn Burns

Round Trip by Ann Jonas

The Grapes of Math by Greg Tang

Math Fables by Greg Tang

Go Figure! And Why Pi?

7x9=Trouble! By Brian Karas

- Beginner:

Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins

Zero the Hero by Joan Holub

The Chicken Problem by Jennifer Oakley

This Plus That: Life's Little Equations by Amy Rosenthal

Sir Cumference and All the King's Tens by Cindy Neuthwander

Sir Cumference and the First Round Table by Cindy Neuthwander

Grade 3

Unit 4: Geometry

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
• 3.G.A.1 • 3.G.A.2	(3-5) 8.1.5.A.1-Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.5.E.1-Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.	• CRP1. Act as a responsible and contributing citizen and employee. • CRP2. Apply appropriate academic and technical skills. • CRP4. Communicate clearly and effectively and with reason. • CRP6. Demonstrate creativity and innovation. • CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. • CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Identify and describe attributes of plane shapes • Describe angles and line segments in plane shapes • Describe, classify, and compare quadrilaterals based on their sides and angles and draw quadrilaterals • Describe and compare triangles based on the number of sides that have equal length and by their angles	• What are some ways to describe two-dimensional shapes? • How can you describe angles in plane shapes? • How can you use line segments and angles to make polygons? • How can you describe line segments that are sides of polygons? • How can you use sides and angles to help you describe quadrilaterals? • How can you draw quadrilaterals? • How can you use sides and angles to help you describe triangles? • How can you use the strategy *draw a diagram* to classify plane shapes? • How can you divide shapes into parts with equal areas and write the area as a unit fraction of the whole?

• Solve problems by using the strategy *draw a diagram* to classify plane shapes • Partition shapes into parts with equal areas and express the area as a unit fraction of the whole	

ASSESSMENT

Formative	Summative	Benchmark
• Exit Slips • Journals • Oral reading • Graphic Organizers • Class discussion • Response to reading • Interactive online games • Open-ended response questions & comprehension questions • Teacher observation • Classwork Practice • Discussion Trifolds • Video logs • Show What You Know • Share and Show • Lesson Quick Checks • Mid Chapter Checkpoints • Digital Personal Math Trainer • Practice and Homework pages	• Chapter tests • Alternate Assessments • Performance Tasks • Projects • Choice Boards • Journal	• Unit pre- and post-assessments that align to text series Alternative • Portfolio • Performance assessments

LEARNING PLAN

Pacing Guide: 3 Weeks

Recommended Learning Activities

- Complete Chapter 12 in Go Math! series
  - Whole group guided video instruction and/or Unlock the Problem
  - Share and Show
  - On Your Own problems
    - partner practice
    - independent problem-solving practice
  - Checks for Understanding
  - Practice and Homework
- Complete the Real World Project - *Make a Mosaic*
- View Math on the Spot videos
- Complete Personal Math Trainer activities
- View Real Word Videos

- View Animated Math Models
- Play Chapter Vocabulary game: *Going to an Art Museum*
- Read Chapter Literature book: The Whole Picture
- Complete Chapter Activity cards: Fish for Fractions, Classification Act, Figure it Out, What Figure?
- Play Digital HMH Mega Math Games
- Use iTools interactive tools
- Use the corner of a sheet of paper to determine classification of angle
- Classroom hunt looking for lines, line segments, right angles etc.
- Students classify pattern blocks according to types of angles
- Schoolwide hunt looking for plane shapes
- Students find examples in the classroom of intersecting, perpendicular, and parallel lines
- Use dot paper to draw different types of quadrilaterals, triangles, and other polygons
- Use Venn Diagram to sort polygons
- Draw quadrilaterals on grid paper and use the drawings to show fractions
- Use pattern blocks to compose fractions
- Use geoboards to construct polygons
- Make polygons out of straws and twist ties
- Online games and videos

Integrated Accommodations and Modifications

Special Education, ELL and 504

- Reteach Activities
- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented

- Enrich Activities
- Flexible grouping
- Differentiated activities in Grab and Go Centers
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study

Interdisciplinary Connections

ELA
Science
Social Studies
Technology
Character education
Career Education

21st Century Skills and Career Education

- Problem Solving
- Critical Thinking
- Communication
- Collaborative learning
- Productivity
- Real world applications

Instructional and Supplemental Materials

- pattern blocks
- straws
- twist ties
- dot paper
- rulers
- geoboards and rubber bands
- graph/grid paper
- whiteboards, markers, erasers
- Graphic organizers from eTeacher Resources
- Chapter vocabulary cards
- Go Digital Tools: iTools, HMH Mega Math, Animated Math Models, Math on the Spot Videos, Personal Math Trainer,
- Grab and Go Activity cards, Games, and Literature books
- https://www.mathplayground.com/index_geometry.html
- https://www.education.com/games/geometry/
- https://www.splashmath.com/geometry-games-for-3rd-graders
- Quadrilateral Song for Kids https://www.youtube.com/watch?v=WMkY_uIku9Q
- Polygons https://www.youtube.com/watch?v=UeKN5-ogFTs
- Angles Song https://www.youtube.com/watch?v=NVuMULQjb3o
- If You Were a Quadrilateral by Molly Blaisdell
- The Greedy Triangle by Marilyn Burns, Gordon Silveria

Leveled Texts

- Advanced:

Fractals, Googols, and Other Mathematical Tales

Fraction Fun by David Adler

Spaghetti and Meatballs for All by Marilyn Burns

What's Your Angle Pythagoras? By Julie Mila

The Math Wiz by Betsy Duffey

Fractions, Decimals and Percents by David Adler

A Very Improbable Story by Edward Einhorn

Math Curse by Jon Scieszka and Lane Smith

- Intermediate:

Alexander, Who Used to Be Rich Last Sunday by Judith Viorst

The Greedy Triangle by Marilyn Burns

Round Trip by Ann Jonas

The Grapes of Math by Greg Tang

Math Fables by Greg Tang

Go Figure! And Why Pi?

7x9=Trouble! By Brian Karas

- Beginner:

Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins

Zero the Hero by Joan Holub

The Chicken Problem by Jennifer Oakley

This Plus That: Life's Little Equations by Amy Rosenthal

Sir Cumference and All the King's Tens by Cindy Neuthwander

Sir Cumference and the First Round Table by Cindy Neuthwander

Frelinghuysen Township School District
Math Curriculum

Grade 4

Unit 1: Place Value and Operations with Whole Numbers

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
• 4.NBT.A.1 • 4.NBT.A.2 • 4.NBT.A.3 • 4.NBT.B.4 • 4.OA.A.1 • 4.OA.A.2 • 4.NBT.B.5 • 4.OA.A.3 • 4.NBT.B.6 • 4.OA.B.4 • 4.OA.C.5	8.1.5.A.1-Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.5.E.1-Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.	• CRP1. Act as a responsible and contributing citizen and employee. • CRP2. Apply appropriate academic and technical skills. • CRP4. Communicate clearly and effectively and with reason. • CRP6. Demonstrate creativity and innovation. • CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. • CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Model the 10-to-1 relationship among place-value positions in the base-ten number system. • Read and write whole numbers in standard form, word, form, and expanded form. • Compare and order whole numbers based on the values of the digits in each number. • Round a whole number to any place. • Rename whole numbers by regrouping. • Add and subtract whole numbers and determine whether solutions to problems are reasonable. • Use the strategy *draw a diagram* to solve comparison problems with addition and	• How can you describe the value of a digit? • How can you read and write numbers through hundred thousands? • How can you compare and order numbers? • How can you round numbers? • How can you rename a whole number? • How can you add and subtract whole numbers? • How can you use the strategy *draw a diagram* to solve comparison problems with addition and subtraction? • How does a model help you solve a

subtraction. • Relate and solve problems involving multiplicative comparison and additive comparisons. • Multiply tens, hundreds, and thousands by whole numbers through 10. • Estimate products by rounding and using compatible numbers to determine if exact answers to multiplication problems are reasonable. • Use multiplication strategies such as the Distributive Property, expanded form, partial products, mental math, and regrouping to multiply a multidigit number by a 1-digit number. • Use the *draw a diagram* strategy to solve a multistep multiplication and division problems. • Represent and solve multistep problems using equations. • Use area models, place value, partial products, and regrouping to multiply 2-digit numbers. • Use multiples and compatible numbers to estimate quotients. • Use models to divide whole numbers that do not divide evenly. • Use remainders to interpret division problems. • Divide tens, hundreds, and thousands by whole numbers to 10. • Use the Distributive Property, repeated subtraction and multiples and the Partial Quotients strategy to divide. • Use base-10 blocks to model division with regrouping. • Use place value to determine where to place the first digit of a quotient and divide multidigit numbers by 1-digit divisors. • Find all the factors of a number by using models. • Determine whether a number is a factor of a given number using divisibility rules. • Find common factors by using the strategy *make a list*. • Understand the relationship between factors and multiples. • Determine whether a number is prime or	comparison problem? • How does understanding place value help you multiply tens, hundreds, and thousands? • What strategies can you use to estimate products • How can you use the multiplication strategies such as the Distributive Property, expanded form, partial products, mental math, and regrouping to multiply a multidigit number by a 1-digit number? • When can you use the *draw a diagram* strategy to solve multistep multiplication and division problems? • Represent and solve multistep problems using equations. • How can you use area models, place value, partial products, and regrouping to multiply two digit numbers? • How can you use multiples and compatible numbers to estimate quotients? • How can you use models to divide whole numbers that do not divide evenly? • How can you interpret remainders in division problems? • How can you divide numbers through thousands by whole numbers to 10? • How can you find quotients using the following strategies: Distributive Property, repeated subtraction and multiples, and Partial Quotients? • How can you use base-ten blocks to model division with regrouping? • How can you use place value to know where to place the first digit and divide multidigit numbers? • How can you use models to find factors? • How can you use divisibility rules to tell whether one number is a factor of another number? • How can you use the make a list strategy to solve problems with common factors? • How are factors and multiples related?

composite. • Generate a number pattern and describe features of the pattern.	• How can you tell whether a number is prime or composite? • How can you make and describe patterns?

ASSESSMENT

Formative	Summative	Benchmark

• Exit Slips
• Journals
• Oral reading
• Graphic Organizers
• Class discussion
• Response to reading
• Interactive online games
• Open-ended response questions & comprehension questions
• Teacher observation
• Classwork Practice
• Discussion Trifolds
• Video logs
• Blogs
• Show What you Know
• Lesson Quick Checks
• Share and Show
• Mid Chapter Checkpoints
• Digital Personal Math Trainer
• Practice and Homework pages
	• Chapter tests
	• Alternate Assessments
	  • Performance Tasks
	  • Projects
	  • Choice Boards
		• Unit pre and post assessments that align to text series
		Alternative
		• Portfolio
		• Performance assessments

LEARNING PLAN

Pacing Guide: 14 Weeks

Recommended Learning Activities

- Complete chapters 1-5 in the Go Math! series
- Complete the Food in Space Real World Project and discuss Mars One
- View Math on the Spot videos
- Complete Personal Math Trainer activities
- Use base-ten blocks to model place value
- View Real Word Videos
- View Animated Math Models
- Play Chapter Vocabulary games: *Going to Space, Picture It, Match Up, Pick It, Guess the Word*

- Read Chapter Literature books: The World's Tallest Buildings, Summing up a Pet's Needs, Putting the World on a Page, Tickle My Memory, Multiplying a Good Deed, Putting the World on a Page, The Division Champs, Moon Weight, The Thirst Quencher, Eratosthenes and His Sieve,
- Complete Chapter Activity cards: It's in the Area, Round Up!, Ask me about Area, Title Tabulations, Know your Nines, What's my Fact, Roll to Measure, Product Power, Roomy Dimensions, First One Out, Bits and Pieces, Remainders Rule, Divide and Conquer, Estimate It, Dividend Rolls, Flowering Factors, Prime Time, Follow the Leader,
- Play Chapter games from Grab and Go Centers Kit: *Who's the Closest?, Tree Climb, Triangle Products, Multiplication Marathon, Divide All Five, Divide to Win, Factor Farm*
- Play Digital HMH Mega Math Games: *Country Countdown Block Busters, The Number Games Tiny's Think Tank, Numberopolis Carnival Stories, The Number Games Up, Up and Array, Ice Station Exploration Arctic Algebra,*
- Complete the STEM Math and Science Connection Activities: *Can Waves Cut Caves: Erosion and Deposition, Air Masses and Fronts, Our Place in Space, Forewarned, Like Mother-Like Daughter, Other Ways Plants Grow: Spore Bearing Plants, Life in Full Circle, Lunar and Solar Calendars: Chinese and Aztec Calendars, The Food Eaters, Heat Proofing a Home, Fast or Slow,Falling Downslope: The Mississippi River Watershed, Flash and Boom*
- Use iTools interactive base-ten blocks to model regrouping
- Create a Word Map, Semantic Map, or Word Definition Map graphic organizer for unit vocabulary words
- Newspaper hunt to find numbers at least 6 digits long to write in each form
- Find estimated amounts in new stories, on the Internet, in newspapers, or magazines
- Round multidigit numbers to specific place values in a Rounding Rodeo
- View Math Antics videos for rounding, division, and multiplication
- Play Round and Roll game
- Play Rounding Numbers Pirate game on MathPlayground.com
- Play games on Sheppard Software
- Additional center activities: https://www.k-5mathteachingresources.com/4th-grade-number-activities.html
- Have a Place Value Snowball Fight
- Make expanded number triangles
- Play Last Man Standing using place value clues for digits in a number
- Make foldables for different multiplication and division strategies
- Scavenger hunt with task cards
- Multiplication/Division choice board activity extensions
- Design a Restaurant using multiplication strategies
- Practice factoring numbers using edible counters
- Make foldables for divisibility rules
- Play prime or composite Slap card game

Integrated Accommodations and Modifications

Special Education, ELL and 504	Gifted and Talented
• Reteach Activities • Repeat/modify directions • Visual models • Assistive technology • Extended time	• Enrich Activities • Flexible grouping • Differentiated activities in Grab and Go Centers • Games • Assistive technology

• Preferred/flexible seating • Differentiated activities (centers) • Shortened assignments • Sensory integration activities • Flexible grouping • Games • Kinesthetic Activity • Role Play	• Problem solving strategies • Tiered choice activities • Kinesthetic Activities • Role Play • Critical thinking strategies • Accelerated learning • Independent study

Interdisciplinary Connections

ELA Science Social Studies Technology Character education Career Education	21st Century Skills and Career Education • Problem Solving • Critical Thinking • Communication • Collaborative learning • Productivity • Real world applications

Instructional and Supplemental Materials

- Base-ten blocks
- counters
- place-value charts
- whiteboards, markers, erasers
- Hundreds chart
- Graphic organizers from eTeacher Resources
- Chapter vocabulary cards
- Go Digital Tools: iTools, HMH Mega Math, Animated Math Models, Math on the Spot Videos, Personal Math Trainer,
- Grab and Go Activity cards, Games, and Literature books
- newspapers and magazines
- Mars One links: https://www.youtube.com/watch?v=7gV7LX0tLDw , www.mars-one.com
- Math Antics Rounding https://www.youtube.com/watch?v=fd-E18EqSVk
- Math Antics Multiplication https://www.youtube.com/watch?v=FJ5qLWP3Fqo and https://www.youtube.com/watch?v=RVYwunbpMHA
- Math Antics Division https://www.youtube.com/watch?v=KGMf314LUc0&t=525s and https://www.youtube.com/watch?v=LGqBQrUYua4&t=605s
- Rounding Numbers Pirates http://www.math-play.com/rounding-numbers-pirate/rounding-numbers-pirate.html
- Last Man Standing http://pitnerm.blogspot.com/2012/08/last-man-standing-freebie.html
- Place Value Snowball Fight http://fourthgrademathnut.blogspot.com/2013/06/snowball-fight-in-june.html
- Multiplication and Division choice board:https://drive.google.com/file/d/0B356WaEU9noSbXJsMHJkZWJlYlE/view
- number cards
- Kahoot games

Leveled Texts

- Advanced:

Fractals, Googols, and Other Mathematical Tales

Fraction Fun by David Adler

Spaghetti and Meatballs for All by Marilyn Burns

What's Your Angle Pythagoras? By Julie Mila

The Math Wiz by Betsy Duffey

Fractions, Decimals and Percents by David Adler

A Very Improbable Story by Edward Einhorn

Math Curse by Jon Scieszka and Lane Smith

- Intermediate:

Alexander, Who Used to Be Rich Last Sunday by Judith Viorst

The Greedy Triangle by Marilyn Burns

Round Trip by Ann Jonas

The Grapes of Math by Greg Tang

Math Fables by Greg Tang

Go Figure! And Why Pi?

7x9=Trouble! By Brian Karas

- Beginner:

Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins

Zero the Hero by Joan Holub

The Chicken Problem by Jennifer Oakley

This Plus That: Life's Little Equations by Amy Rosenthal

Sir Cumference and All the King's Tens by Cindy Neuthwander

Sir Cumference and the First Round Table by Cindy Neuthwander

Grade 4

Unit 2: Fractions and Decimals

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
• 4.NF.A.1 • 4.NF.A.2 • 4.NF.B.3a • 4.NF.B.3b • 4.NF.B.3d • 4.NF.B.3c • 4.NF.B.4a • 4.NF.B.4b • 4.NF.B.4c • 4.NF.C.5 • 4.NF.C.6 • 4.MD.A.2 • 4.NF.C.7	8.1.5.A.1-Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.5.E.1-Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.	• CRP1. Act as a responsible and contributing citizen and employee. • CRP2. Apply appropriate academic and technical skills. • CRP4. Communicate clearly and effectively and with reason. • CRP6. Demonstrate creativity and innovation. • CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. • CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Use models to show equivalent fractions. • Use multiplication to generate equivalent fractions. • Write and identify equivalent fractions in simplest form. • Use equivalent fractions to represent a pair of fractions as fractions with a common denominator. • Use the strategy make a table to solve problems using equivalent fractions. • Compare fractions using benchmarks. • Compare and order fractions by first writing them as fractions with a common	• How can you use models to show equivalent fractions? • How can you use multiplication to find equivalent fractions? • How can you write a fraction as an equivalent fraction in simplest form? • How can you write a pair of fractions as fractions with a common denominator? • How can you use the strategy make a table to solve problems using equivalent fractions? • How can you use benchmarks and common numerators or denominators to compare and order fractions? • When can you add or subtract parts of a whole? • How can you add and subtract fractions with like denominators using models? • How can you add and subtract fractions with like denominators?

numerator or a common denominator. • Understand that to add or subtract fractions they must refer to parts of the same whole. • Use models to represent and find sums and differences involving fractions. • Solve word problems involving addition and subtraction with fractions. • Write fractions greater than 1 as mixed numbers and write mixed numbers as fractions greater than 1. • Add and subtract mixed numbers. • Rename mixed numbers to subtract. • Use the properties of addition to add fractions. • Write a fraction as a product of a whole number and a unit fraction. • Write a product of a whole number and a fraction as a product of a whole number and a unit fraction. • Use a model to multiply a fraction by a whole number. • Use the strategy draw a diagram to solve comparison problems with fractions • Record tenths and hundredths as fractions and decimals. • Translate among representations of fractions, decimals, and money. • Compare decimals to hundredths by reasoning about their size.	• How can you rename mixed numbers as fractions greater than 1 and rename fractions greater than 1 as mixed numbers? • How can you add and subtract mixed numbers with like denominators? • How can you rename a mixed number to help you subtract? • How can you add fractions with like denominators using the properties of addition? • How can you write a fraction as a product of a whole number and a unit fraction? • How can you write a product of a whole number and a fraction as a product of a whole number and a unit fraction? • How can you use a model to multiply a fraction by a whole number? • How can you use the strategy draw a diagram to solve comparison problems with fractions? • How can you record tenths and hundredths as fractions and decimals? • How can you relate fractions, decimals, and money? • How can you compare decimals?

ASSESSMENT

Formative	Summative	Benchmark
• Exit Slips • Journals • Oral reading	• Chapter tests • Alternate Assessments • Performance Tasks	• Unit pre and post assessments that align to text series Alternative

• Graphic Organizers • Class discussion • Response to reading • Interactive online games • Open-ended response questions & comprehension questions • Teacher observation • Classwork Practice • Discussion Trifolds • Video logs • Blogs • Show What you Know • Lesson Quick Checks • Share and Show • Mid Chapter Checkpoints • Digital Personal Math Trainer • Practice and Homework pages	• Projects • Choice Boards	• Portfolio • Performance assessments

LEARNING PLAN

Pacing Guide: 11 weeks

Recommended Learning Activities

- Complete chapters 6-9 in the Go Math! series
- Complete the Building Custom Guitars Real World Project
- View Math on the Spot videos
- Complete Personal Math Trainer activities
- View Real Word Videos
- View Animated Math Models
- Play Chapter Vocabulary games: *Going to San Francisco, Bingo, Pick It, Match Up*
- Read Chapter Literature books: *A Melody in Fractions, Sleeping Half the Day Away, Fundraising Fair, Elizabeth Groovy Green Racing Machine, And the Total Is, Decimals on the Diamond*
- Complete Chapter Activity cards: *Ruler Challenge, Fraction Bingo, Fraction Swap, What's Your Order, Pencil Me In, Fantastic Fractions, What's My Place, Where is the Decimal*
- Play Chapter games from Grab and Go Centers Kit: *Fraction Action, Fraction Concentration, Order Please*
- Play Digital HMH Mega Math Games*: Fraction Flare Up, Number Line Mine, Ship Shapes*
- Complete the STEM Math and Science Connection Activities: *What Goes Up Comes Down, Bringing Up Baby, Generating Electricity, The Good and the Bad of It*
- Use iTools interactive fraction bars, circles, number lines, and clocks
- Create a Word Map, Semantic Map, or Word Definition Map graphic organizer for unit vocabulary words
- Play games on Sheppard Software

- Make equivalent fraction rainbow posters
- Read *The Foot Book*. Trace and measure each student's foot to the nearest tenth cm and ¼ in
- Adjusting recipe activities using equivalent fractions
- complete Tangram fraction puzzles
- Students write fraction word problems, trade, and solve
- Create Wanted Posters for a given mixed number and it's secret identify (improper fraction or equivalent mixed number) using magazines or newspapers
- Students create their own memory match cards using decimals and their corresponding word form or fraction
- Use National Geographic Kids to research length or weight of 5 insects or small creatures as decimals and fractions.
- Fraction Food Activity: sort food item (smarties) into categories and write fractions for each. Simplify, add fractions, and/or write as decimals
- Design each letter of student's first name on grid paper squares. Record fraction and decimal for shaded region on each. Simplify.
- Teach the butterfly method for multiplying fractions in simplest form.
- Identify improper fractions on dominoes. Change to mixed numbers.
- View video Reclaiming the Power from Cyberchase to explore adding fractions, mixed numbers, and improper fractions

Integrated Accommodations and Modifications

Special Education, ELL and 504

- Reteach Activities
- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented

- Enrich Activities
- Flexible grouping
- Differentiated activities in Grab and Go Centers
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study

Interdisciplinary Connections

ELA
Science
Social Studies
Technology
Character education
Career Education

21st Century Skills and Career Education

- Problem Solving
- Critical Thinking
- Communication
- Collaborative learning
- Productivity
- Real world applications

Instructional and Supplemental Materials

- counters

- fraction bars or circles
- grid paper
- number cubes
- inch and centimeter rulers
- whiteboards, markers, erasers
- Graphic organizers from eTeacher Resources
- Chapter vocabulary cards
- Go Digital Tools: iTools, HMH Mega Math, Animated Math Models, Math on the Spot Videos, Personal Math Trainer,
- Grab and Go Activity cards, Games, and Literature books
- recipe cards
- Tangrams
- magazines and newspapers
- dominoes
- Equivalent Fraction Concentration: http://www.math-play.com/equivalent-fractions-game.html
- Equivalent Fraction game: http://pbskids.org/cyberchase/math-games/melvins-make-match/
- Equivalent Fraction game: https://www.helpingwithmath.com/resources/games/fraction_game4/equivalent01.html
- Triplets: https://www.mathplayground.com/Triplets/index.html
- Simplifying Fractions Soccer: http://www.math-play.com/simplifying-fractions-game/simplifying-fractions-soccer-game_html5.html
- Fresh Baked Fractions: https://www.funbrain.com/games/fresh-baked-fractions
- Speedway Fractions: https://www.mathplayground.com/ASB_Speedway.html
- Snow Sprint Fractions: https://www.mathplayground.com/ASB_SnowSprint.html
- Kahoot games

Leveled Texts

- Advanced:

Fractals, Googols, and Other Mathematical Tales

Fraction Fun by David Adler

Spaghetti and Meatballs for All by Marilyn Burns

What's Your Angle Pythagoras? By Julie Mila

The Math Wiz by Betsy Duffey

Fractions, Decimals and Percents by David Adler

A Very Improbable Story by Edward Einhorn

Math Curse by Jon Scieszka and Lane Smith

- Intermediate:

Alexander, Who Used to Be Rich Last Sunday by Judith Viorst

The Greedy Triangle by Marilyn Burns

Round Trip by Ann Jonas

The Grapes of Math by Greg Tang

Math Fables by Greg Tang

Go Figure! And Why Pi?

7x9=Trouble! By Brian Karas

- Beginner:

Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins

Zero the Hero by Joan Holub

The Chicken Problem by Jennifer Oakley

This Plus That: Life's Little Equations by Amy Rosenthal

Sir Cumference and All the King's Tens by Cindy Neuthwander

Sir Cumference and the First Round Table by Cindy Neuthwander

Frelinghuysen Township School District
Math Curriculum

Grade 4

Unit 3: Geometry, Measurement, and Data

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
• 4.G.A.1 • 4.G.A.2 • 4.G.A.3 • 4.OA.A.5 • 4.MD.C.5a • 4.MD.C.5b • 4.MD.C.5.6 • 4.MD.C.7 • 4.MD.A.1 • 4.MD.A.2 • 4.MD.B.4 • 4.MD.A.3	8.1.5.A.1-Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.5.E.1-Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.	• CRP1. Act as a responsible and contributing citizen and employee. • CRP2. Apply appropriate academic and technical skills. • CRP4. Communicate clearly and effectively and with reason. • CRP6. Demonstrate creativity and innovation. • CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. • CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Identify and draw points, lines, line segments, rays, and angles. • Classify triangles by the size of their angles. • Identify and draw parallel lines and perpendicular lines. • Sort and classify quadrilaterals. • Identify and draw lines of symmetry in two-dimensional figures. • Relate angles and fractional parts of a circle. • Relate degrees to fractional parts of a circle by understanding that an angle that measures n° turns through ___n 360 of a circle. • Use a protractor to measure an angle	• How can you identify and draw points, lines, line segments, rays, and angles? • How can you classify triangles by the size of their angles? • How can you identify and draw parallel lines and perpendicular lines? • How can you sort and classify quadrilaterals? • How do you find lines of symmetry? • How can you relate angles, degrees, and fractional parts of a circle? • How can you use a protractor to measure and draw angles? • How can you determine the measure of an angle separated into parts? • How can you use benchmarks to understand the relative sizes of measurement units?

and draw an angle with a given measure. • Determine the measure of an angle separated into parts. • Use benchmarks to understand the relative sizes of measurement units. • Use models to compare customary units of length, weight, liquid volume, and time. • Make and interpret line plots with fractional data. • Compare metric units of mass and liquid volume. • Solve elapsed time problems. • Solve problems involving mixed measures. • Use patterns to write number pairs for measurement units. • Use a formula to find the perimeter of a rectangle. • Use a formula to find the area of a rectangle. • Find the area of combined rectangles. • Given perimeter or area, find the unknown measure of a side of a rectangle.	• How can you use models to compare customary units of length, weight, liquid volume, and time? • How can you make and interpret line plots with fractional data? • How can you compare metric units of mass and liquid volume? • How can you solve elapsed time problems? • How can you solve problems involving mixed measures? • How can you use patterns to write number pairs for measurement units? • How can you use a formula to find the perimeter of a rectangle? • How can you use a formula to find the area of a rectangle? • How can you find the area of combined rectangles? • How can you find an unknown measure of a rectangle given its area or perimeter?

ASSESSMENT

Formative	Summative	Benchmark

• Exit Slips
• Journals
• Oral reading
• Graphic Organizers
• Class discussion
• Response to reading
• Interactive online games
• Open-ended response questions & comprehension questions
• Teacher observation
• Classwork Practice
• Discussion Trifolds
• Video logs
	• Chapter tests
	• Alternate Assessments
	  • Performance Tasks
	  • Projects
	  • Choice Boards
		• Unit pre and post assessments that align to text series
		Alternative
		• Portfolio
		• Performance assessments

• Blogs • Show What you Know • Lesson Quick Checks • Share and Show • Mid Chapter Checkpoints • Digital Personal Math Trainer • Practice and Homework pages		

LEARNING PLAN

Pacing Guide: 8 weeks

Recommended Learning Activities

- Complete chapters 10-13 in the Go Math! series.
- Complete the Landscape Architects Real World Project.
- View Math on the Spot videos.
- Complete Personal Math Trainer activities.
- View Real Word Videos.
- View Animated Math Models.
- Play Chapter Vocabulary games: *Going to a Botanical Garden, Picture It, Bingo, Guess the Word*
- Read Chapter Literature books: *A New Angle on Trains and Train Stations, Skateboarding Takes Shape, A Mirror Image, Measuring the Mississippi, A Trip to the Pond, Fighting Fire with Fire, Paint by Numbers, Designing a Skate Park*
- Complete Chapter Activity cards: *Concentrate, Connecting Vertices, Picture Perfect, Measure Up, Balancing Act, Challenging Changes, Capacity Overload, Capacity Challenge, Mass Match-Up, Ultimate Units, Perimeter Pairs, Meter Math, 36 is my Area, Roomy Dimensions, Spinning Rectangles*
- Play Chapter games from Grab and Go Centers Kit: *Time to Go*
- Play Digital HMH Mega Math Games*: Polar Planes, Ship Shapes, Tiny's Think Tank, Linear Lab, Made to Measure, Arachna Graph, Clock-a-Doodle-Doo.*
- Complete the STEM Math and Science Connection Activities: *You have a Solution, Other Models Scientists Use, Night and Day, Pump up the Volume.*
- Use iTools interactive Draw Segments, Lines, and Rays, Draw Angles, Draw Polygons, Symmetry, Counters, Fraction Circles, Balance and Scales, Capacity.
- Create a Word Map, Semantic Map, or Word Definition Map graphic organizer for unit vocabulary words.
- Make a geometry foldable.
- Create 3D shapes having students act as vertices and use yarn as sides. Identify angles, symmetry, parallel lines, intersecting lines, etc.
- Students create several examples of each type of triangle on grid paper. Use with a partner to classify triangles.
- Play the Clue Game to describe lines, angles, triangles, or quadrilaterals drawn.
- Use geoboards to represent lines, angles, triangles, or quadrilaterals.
- Use Venn Diagrams to compare and contrast different quadrilaterals.
- Hold a symmetry hunt through magazines. Students create a poster.

- Build designs with pattern blocks. Identify symmetry.
- Make origami to explore symmetry.
- Go on a Types of Lines scavenger hunt around the classroom or school. Classify.
- Use pattern blocks to build and describe patterns. Write a paragraph to describe pattern and trade with a partner to replicate.
- Compare and Contrast a protractor and ruler using a Venn Diagram.
- Complete a measuring angles scavenger hunt.
- View math antics videos for geometry.
- Complete Scholastic Study Jams Measuring Angles activity http://studyjams.scholastic.com/studyjams/jams/math/geometry/measure-angles.htm
- Students design their own city maps using specific angle and line requirements.
- Complete missing angle puzzles to practice adding angles to 90° or 180°.
- Groups research and create measurement posters for length, volume, mass, or time to show different units of measure, equivalencies, abbreviations, and examples.
- Draw the standard units of volume poster for gallon, quart, pint, and cup equivalencies.
- Collect data and build a human line plot to represent the data.
- Students bring items from home that show metric units of liquid volume. Convert measurements into equivalencies (ex 1L=1,000mL).
- Build a tiny house on grid paper. state area and perimeter of architecture and design choices.

Integrated Accommodations and Modifications

Special Education, ELL and 504

- Reteach Activities
- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented

- Enrich Activities
- Flexible grouping
- Differentiated activities in Grab and Go Centers
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study

Interdisciplinary Connections

ELA
Science
Social Studies
Technology
Character education
Career Education

21st Century Skills and Career Education

- Problem Solving
- Critical Thinking
- Communication
- Collaborative learning
- Productivity
- Real world applications

Instructional and Supplemental Materials

- geoboards and rubber bands
- Venn Diagrams
- yarn
- grid paper
- pattern blocks
- counters
- rulers, tape measures, meter sticks
- protractors
- pan balances
- Liters, gallon, quarts, pints, and cups
- large and small analog clocks
- whiteboards, markers, erasers
- Graphic organizers from eTeacher Resources
- Chapter vocabulary cards
- Go Digital Tools: iTools, HMH Mega Math, Animated Math Models, Math on the Spot Videos, Personal Math Trainer,
- Grab and Go Activity cards, Games, and Literature books
- magazines
- poster boards
- objects showing metric units of liquid volume
- Shape Surveyor: https://www.funbrain.com/games/shape-surveyor
- Measuring Angles: https://www.mathplayground.com/measuringangles.html
- Types of Angles: https://www.mathgames.com/skill/4.1-acute-right-obtuse-and-straight-angles
- Dunk Tank Game Show: http://files.pbslearningmedia.org/dlos/wnet/dlo6.html
- Kahoot games

Leveled Texts

- Advanced:

Fractals, Googols, and Other Mathematical Tales

Fraction Fun by David Adler

Spaghetti and Meatballs for All by Marilyn Burns

What's Your Angle Pythagoras? By Julie Mila

The Math Wiz by Betsy Duffey

Fractions, Decimals and Percents by David Adler

A Very Improbable Story by Edward Einhorn

Math Curse by Jon Scieszka and Lane Smith

- Intermediate:

Alexander, Who Used to Be Rich Last Sunday by Judith Viorst

The Greedy Triangle by Marilyn Burns

Round Trip by Ann Jonas

The Grapes of Math by Greg Tang

Math Fables by Greg Tang

Go Figure! And Why Pi?

7x9=Trouble! By Brian Karas

- Beginner:

Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins

Zero the Hero by Joan Holub

The Chicken Problem by Jennifer Oakley

This Plus That: Life's Little Equations by Amy Rosenthal

Sir Cumference and All the King's Tens by Cindy Neuthwander

Sir Cumference and the First Round Table by Cindy Neuthwander

Frelinghuysen Township School District
Math Curriculum

Grade 5

Unit 1: Fluency with Whole Numbers and Decimals

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
• 5.O.A.A.1 • 5.OA.A.2 • 5.NBT.A.1 • 5.NBT.A.2 • 5.NBT.A.4 • 5.NBT.A.3a • 5.NBT.A.3B • 5.NBT.B.5 • 5.NBT.B.6 • 5.NBT.B.7 • 5.NF.B.3	(3-5) 8.1.5.A.1-Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.5.E.1-Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.	CRP1. Act as a responsible and contributing citizen and employee. CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP6. Demonstrate creativity and innovation. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• recognize the 10 to 1 relationship among place-value positions • Read and write whole numbers through hundred millions • Write and evaluate repeated factors in exponent form • Multiply by 1-and 2-digit numbers using properties and a standard algorithm. • Use multiplication to solve division problems. • Write numerical expressions and evaluate numerical expressions using order of operations. • Divide 3- and 4- digit dividends by 1-digit divisors using a variety of strategies. • Divide by 2-digit divisors using base-ten blocks, place value, and other strategies.	• How can you compare decimals, fractions, and mixed numbers on a number line? • How can you order decimals, fractions, and mixed numbers on a number line? • How can you factor numbers using a factor tree? • How can you express real world quantities as percents and use them to solve problems? • How can you express decimals as percents and percents as decimals? • How can you convert between fractions, decimals, and percents? • How do you divide a fraction by a whole number?

• Estimate quotients using compatible numbers. • Solve division problems and decide when to write a remainder as a fraction. • Solve problems by using the strategy *draw a diagram* • Model, read and write decimals to thousandths. • Compare and order decimals to thousandths using place value. • Round decimals to any place. • Add and subtract decimals using base-ten blocks and place value. • Make reasonable estimates of decimals of decimal sums and differences. • Identify, describe and create numerical patterns with decimals. • Solve problems using the strategy *make a table* • Multiply a decimal and whole number using drawings and place value. • Solve problems using the strategy *draw a diagram* to multiply money • Multiply decimals using drawings and place value. • Estimate decimal quotients. • Divide decimals by whole numbers using drawings and place value. • Model division by decimals using drawings and place value. • Solve multi step decimal problems using the strategy *work backward.*	• How can you express real world quantities as ratios? • How can you determine if two ratios are equivalent? • How can you find rates and unit rates? • How can you solve problems involving distance, rate, and time? • How can you use positive and negative numbers to represent real world quantities? • How can you write and evaluate expressions? • How can you use inequalities to solve problems? • How can you plot polygons on a coordinate grid? • How can you find the area of a parallelogram? • How can you describe a set of data using median and mode? • How can you find the average of a set of values? • How can you use a histogram to organize data? • How can you analyze data in a histogram?

ASSESSMENT

Formative	Summative	Benchmark

• Exit Slips
• Journals
• Oral reading
• Graphic Organizers
• Class discussion
• Response to reading
• Interactive online games
• Open-ended response questions & comprehension questions
	• Chapter tests
	• Unit Assessments
	• Alternate Assessments
	  • Performance Tasks
	  • Projects
	  • Choice Boards
	  • Benchmark Assessments
	  • Journal
		• Unit pre and post assessments that align to text series
		Alternative
		• Portfolio
		• Performance assessments

• Running records • Teacher observation • Classwork Practice • Discussion Trifolds • Video logs • Show What You Know • Share and Show • Lesson Quick Checks • Mid Chapter Checkpoints • Digital Personal Math Trainer • Practice and Homework pages		

LEARNING PLAN

Pacing Guide: 6 Weeks

Recommended Learning Activities

- Complete chapters 1 - 5 in Go Math! series
  - Whole group guided video instruction and /or Unlock the Problem
  - share and show
  - On Your Own problem
    - partner practice
    - independent problem solving practice
- Complete the In the Chef's Kitchen Real World project
- View Math on the Spot videos
- Complete Personal Math Trainer activities
- Use base-ten blocks to model place value
- View Real World Videos
- View animated Math Models
- Play chapter Vocabulary games: Going to London, England; Matchup; The Write Way; Pick It; Bingo; Picture It
- Read Chapter Literature Books:A Drive Through History; Niagara Falls Numbers; Dewey and His Decimals; Halfpipe; A Hundredth of a Second; Doubling Every Day; Seeking the Lowest Price; Fractions Add Up!; Fossil Hunters; Table Soccer, Anyone?
- Complete Chapter Activity Cards: Number Explosion, Form Fun, Special 5, Amazing Areas, Multiplication Relay, 15 - Minute March, Divide and Conquer, Decide and Divide, Do We Decima?, Add - a - Round, Get Around!, Decimal Display, One Form to Another, Dueling Decimals, Market Multiplication, Tic-Tac-Decimals, D is for…, Centimeter Division, Grid It, Plan A Schedule, Mixed Measures, Pattern Block Mix-Up
- Play Chapter Games from Grab and Go Centers Kit: What's Left? Decimal Challenge, Ride the Course, Powerful Product, Match Up, Picture Problems, What's the Difference?
- Play Digital HMH Mega Math Games
- Complete the STEM Math and Science Connection Activities: The Sun-Earth-Moon System, Wonderful Water, The Sun and the Sea, Food Webs, Living Things Change
- Use Itools interactive fraction strips
- Use pattern blocks to model fractions
- Online games and videos

Frelinghuysen Township School District
Math Curriculum

Integrated Accommodations and Modifications

Special Education, ELL and 504

- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented

- Flexible grouping
- Differentiated activities (centers)
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study

Interdisciplinary Connections

ELA
Science
Social Studies
Technology
Character education
Career Education

21st Century Skills and Career Education

- Problem Solving
- Critical Thinking
- Communication
- Collaborative learning
- Productivity
- Real world applications

Instructional and Supplemental Materials

- whiteboards, markers, erasers
- graphic organizers for eTeacher Resources
- Chapter vocabulary cards
- Go Digital Math Tools:iTools, HMH Mega Math, Animated Math Models, Math on the Spot videos, Personal Math Trainer
- Gran and Go Activity cards, games and literature books
- Go Math! Real World Project
- https://www.khanacademy.org/math/cc-fifth-grade-math/cc-5th-place-value-decimals-top
- https://www.khanacademy.org/math/cc-fifth-grade-math/multiplication-and-division
- https://www.sumdog.com/
- https://www.freckle.com/
- https://www.mathplayground.com/
- http://sheppardsoftware.com/
- https://kahoot.com/

Leveled Texts

- Advanced:

Fractals, Googols, and Other Mathematical Tales

Fraction Fun by David Adler

Spaghetti and Meatballs for All by Marilyn Burns

What's Your Angle Pythagoras? By Julie Mila

The Math Wiz by Betsy Duffey

Fractions, Decimals and Percents by David Adler

A Very Improbable Story by Edward Einhorn

Math Curse by Jon Scieszka and Lane Smith

- Intermediate:

Alexander, Who Used to Be Rich Last Sunday by Judith Viorst

The Greedy Triangle by Marilyn Burns

Round Trip by Ann Jonas

The Grapes of Math by Greg Tang

Math Fables by Greg Tang

Go Figure! And Why Pi?

7x9=Trouble! By Brian Karas

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Zero the Hero by Joan Holub

The Chicken Problem by Jennifer Oakley

This Plus That: Life's Little Equations by Amy Rosenthal

Sir Cumference and All the King's Tens by Cindy Neuthwander

Sir Cumference and the First Round Table by Cindy Neuthwander

Frelinghuysen Township School District
Math Curriculum

Grade 5

Unit 2: Operations with Fractions

DESIRED RESULTS

Standards

New Student Learning Standards 5.OA.A.2 5.NF.A.1 5.NF.A.2 5.NF.B.4a 5.NF.B.4b 5.NF.B.5a 5.NF.B.5b 5.NF.b.6	Technology Standards (3-5) 8.1.5.A.1-Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.5.E.1-Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.	21st Century Life and Career Standards • CRP1. Act as a responsible and contributing citizen and employee. • CRP2. Apply appropriate academic and technical skills. • CRP4. Communicate clearly and effectively and with reason. • CRP6. Demonstrate creativity and innovation. • CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. • CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Add fractions with unlike denominators using models, drawings, properties, and equivalent fractions. • Make reasonable estimates of fraction sums and differences. • Add and subtract mixed numbers with unlike denominators. • Identify, describe and create numerical patterns with fractions. • Solve problems using the strategy *work*	• How can you use models to add fractions that have different denominators? • How can you use models to subtract fractions that have different denominators? • How can you make reasonable estimates of fraction sums and differences? • How can you add and subtract mixed numbers with unlike denominators? • How can you use a common denominator to add and subtract fractions with unlike denominators? • How can you use renaming to find the difference of two mixed numbers? • How can you use addition or subtraction to describe a pattern or create a sequence with fractions? • How can the strategy *work backward* help you solve a

backward. • Model to find the fractional part of a group • Multiply fractions and whole numbers using models, drawings, and other strategies. • Multiply fractions using models, drawings, and other strategies. • Multiply mixed numbers using drawings and other strategies. • Relate the size of the product compared to the size of one factor when multiplying fractions less than one and greater than one. • Solve problems using the strategy *guess, check and revise.* • Divide a whole number by a fraction and divide a fraction by a whole number using models, drawings and other strategies. • Solve problems using the strategy *draw a diagram.* • Interpret a fraction as division and solve whole-number division problems that result in a fraction or mixed number. • Represent division by drawing diagrams and writing story problems and equation	problem with fractions that involves addition and subtraction? • How can properties help you add fractions with unlike denominators? • How can you find a fractional part of a group? • How can you use a model to show the product of a fraction and a whole number? • How can you find the product of a fraction and a whole number without using a model? • How can you use an area model to show the product of two fractions? • How does the size of the product compare to the size of one factor when multiplying fractions? • How do you multiply fractions? • How can you use a unit tile to the find the area of a rectangle with fractional side lengths? • How does the size of the product compare to the size of one factor when multiplying fractions greater than one? • How do you multiply mixed numbers? • How can you use the strategy *guess check, and revise* to solve problems with fractions? • How do you divide a whole number by a fraction and divide a fraction by a whole number? • How can the strategy *draw a diagram* help you solve fraction division problems by writing a multiplication sentence? • How does a fraction represent division? • How can you divide fractions by solving a related multiplication sentence? • How can you use diagrams, equations, and story problems to represent division?

ASSESSMENT		
Formative	Summative	Benchmark
• Exit Slips • Journals	• Chapter tests • Unit Assessments	• Unit pre and post assessments that align

• Oral reading • Graphic Organizers • Class discussion • Response to reading • Interactive online games • Open-ended response questions & comprehension questions • Running records • Teacher observation • Classwork Practice • Discussion Trifolds • Video logs • Show What You Know • Share and Show • Lesson Quick Checks • Mid Chapter Checkpoints • Digital Personal Math Trainer • Practice and Homework pages	• Alternate Assessments • Performance Tasks • Projects • Choice Boards • Benchmark Assessments • Journal	to text series **Alternative** • Portfolio • Performance assessments

LEARNING PLAN

Pacing Guide: 8 Weeks

Recommended Learning Activities

- Complete chapters 6-8 in Go Math! series
  - Whole group guided video instruction and /or Unlock the Problem
  - share and show
  - On Your Own problem
    - partner practice
    - independent problem solving practice
- Complete the Rhythm Track Real World project
- View Math on the Spot videos
- Complete Personal Math Trainer activities
- Use base-ten blocks to model place value
- View Real World Videos
- View animated Math Models
- Play chapter Vocabulary games: Picture Problems; What's the Difference?; Fraction Factors; It's a Toss Up; 2 Steps Forward, 1 Step Back; Model Makers Triple Play
- Read Chapter Literature Books: Fractions Add Up!, Fossil Hunters, Table Soccer, Anyone?Cranking Out the Numbers
- Complete Chapter Activity Cards: Plan A Schedule, Mixed Measures, Pattern Block Mix-Up, Fraction Fix Up, Fruitful Fractions, Mixed Fractions, Amazing Areas
- Play Chapter Games from Grab and Go Centers Kit: *Going to Chicago*
- Play Digital HMH Mega Math Games

- Complete the STEM Math and Science Connection Activities: Resources on the Move, How Do We Know?, Meet Scientist
- Use Itools interactive fraction strips
- Use pattern blocks to model fractions
- Online games and videos

Integrated Accommodations and Modifications

Special Education, ELL and 504

- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented

- Flexible grouping
- Differentiated activities (centers)
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study

Interdisciplinary Connections

ELA
Science
Social Studies
Technology
Character education
Career Education

21st Century Skills and Career Education

- Problem Solving
- Critical Thinking
- Communication
- Collaborative learning
- Productivity
- Real world applications

Instructional and Supplemental Materials

- whiteboards, markers, erasers
- graphic organizers for eTeacher Resources
- Chapter vocabulary cards
- Go Digital Math Tools:iTools, HMH Mega Math, Animated Math Models, Math on the Spot videos, Personal Math Trainer
- Gran and Go Activity cards, games and literature books
- Go Math! Real World Project
- https://www.khanacademy.org/math/cc-fifth-grade-math/cc-5th-fractions-topichttps://www.sumdog.com/
- https://www.freckle.com/
- https://www.mathplayground.com/
- http://sheppardsoftware.com/

Leveled Texts

- Advanced:

Fractals, Googols, and Other Mathematical Tales

Fraction Fun by David Adler

Spaghetti and Meatballs for All by Marilyn Burns

What's Your Angle Pythagoras? By Julie Mila

The Math Wiz by Betsy Duffey

Fractions, Decimals and Percents by David Adler

A Very Improbable Story by Edward Einhorn

Math Curse by Jon Scieszka and Lane Smith

- Intermediate:

Alexander, Who Used to Be Rich Last Sunday by Judith Viorst

The Greedy Triangle by Marilyn Burns

Round Trip by Ann Jonas

The Grapes of Math by Greg Tang

Math Fables by Greg Tang

Go Figure! And Why Pi?

7x9=Trouble! By Brian Karas

- Beginner:

Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins

Zero the Hero by Joan Holub

The Chicken Problem by Jennifer Oakley

This Plus That: Life's Little Equations by Amy Rosenthal

Sir Cumference and All the King's Tens by Cindy Neuthwander

Sir Cumference and the First Round Table by Cindy Neuthwander

Frelinghuysen Township School District
Math Curriculum

Grade 5

Unit 3: Operations with Fractions

DESIRED RESULTS

Standards

New Student Learning Standards	Technology Standards	21st Century Life and Career Standards
5.OA.B.3 5.MD.B.2 5.G.A.1 5.G.A.2 5.MD.A.1 5.MD.C.3 5.MD.C.3a 5.MD.C.3B 5.MD.c.4 5.MD.c.5a 5.MD.C.5b 5.MD.C.5c 5.G.B.3 5.G.B.4	(3-5) 8.1.5.A.1-Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems. 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.5.E.1-Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.	• CRP1. Act as a responsible and contributing citizen and employee. • CRP2. Apply appropriate academic and technical skills. • CRP4. Communicate clearly and effectively and with reason. • CRP6. Demonstrate creativity and innovation. • CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. • CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Make and use line plots with fractions to solve problems. • Graph and name points on a coordinate grid using ordered pairs. • Analyze and display data in a line graph. • Use two rules to generate a numerical pattern and identify the relationship between the corresponding terms in the patterns. • Solve problems using the strategy *solve a simpler problem.* • Graph the relationship between two numerical patterns on a coordinate grid. • Compare, contrast and convert customary units of length, capacity, and weight. • Convert measurement units to solve multistep problems.	• How can a line plot help you find an average with data given in fractions? • How can you identify and plot points on a coordinate grid? • How can you use a coordinate grid to display data collected in an experiment? • How can you use a line graph to display and analyze real-world data? • How can you identify a relationship between two numerical patterns? • How can you use the strategy *solve a simpler problem* to help you solve a problem with patterns? • How can you compare and convert customary units of length? • How can you compare and convert

• Compare, contrast and convert metric units. • Solve problems about customary and metric conversions using the strategy *make a table.* • Convert units of time to solve elapsed time problems. • Classify and compare polygons, triangles, and quadrilaterals using their properties. • Solve problems using the strategy *act it out* and *make a table.* • Identify, describe and classify three-dimensional figures. • Understand unit cubes and how they can be used to build a solid figure. • Estimate volume of a rectangular prism and find the volume of a rectangular prism by counting unit cubes and using a formula. • Find the the volume of combined rectangular prisms.	customary units of capacity? • How can you compare and convert customary units of weight? • How can you solve multistep problems that include measurement conversions? • How can you compare and convert metric units? • How can you use the strategy *make a table* to help solve problems about customary and metric conversions? • How can you identify and classify polygons? • How can you classify triangles? • How can you classify and compare quadrilaterals? • How can you identify, describe, and classify three-dimensional figures? • What is unit cube and how can you use it to build a solid figure? • How can you use unit cubes to find the volume of a rectangular prism? • How can you use an everyday object to estimate the volume of a rectangular prism? • How can you find the volume of a rectangular prism? • How can you use a formula to find the volume of a rectangular prism? • How can you use the strategy *make a table* to compare different rectangular prisms with the same volume? • How can you find the volume of rectangular prisms that are combined?

ASSESSMENT

Formative	Summative	Benchmark
• Exit Slips • Journals • Oral reading • Graphic Organizers • Class discussion • Response to reading • Interactive online games • Open-ended response questions & comprehension questions	• Chapter tests • Unit Assessments • Alternate Assessments • Performance Tasks • Projects • Choice Boards • Benchmark Assessments • Journal	• Unit pre and post assessments that align to text series **Alternative** • Portfolio • Performance assessments

• Running records • Teacher observation • Classwork Practice • Discussion Trifolds • Video logs • Show What You Know • Share and Show • Lesson Quick Checks • Mid Chapter Checkpoints • Digital Personal Math Trainer • Practice and Homework pages		

LEARNING PLAN

Pacing Guide: 6 Weeks

Recommended Learning Activities

- Complete chapters 9-11 in Go Math! series
  - Whole group guided video instruction and /or Unlock the Problem
  - share and show
  - On Your Own problem
    - partner practice
    - independent problem solving practice
- Complete the *Geometry and Measurement* Real World project
- View Math on the Spot videos
- Complete Personal Math Trainer activities
- Use base-ten blocks to model place value
- View Real World Videos
- View animated Math Models
- Play chapter Vocabulary games: *Going to the Moon; The Write Way, BINGO, Picture It*
- Read Chapter Literature Books: Graphing Practice, Is This Career For You?, Park Visitors, A Day in Dallas, A Math Mix-Up, Beautiful Geometry, City of the Future
- Complete Chapter Activity Cards: *Fraction Fix Up; Fruitful Fractions; Let's Shake!; Figure Out the Points; What's the Point; Size It Up Metric!; Measurement MathO; Conversion Challenge; Inner Space; What's In The Box?; Vary the Volume; 3-D Construction; Geometry MathO; Picture This; Protractor Practice*
- Games from Grab and Go Centers Kit: *Going to the Moon*
- Play Digital HMH Mega Math Games: *It's a Toss-Up;2 Steps Forward, 1 Step Back; Model Makers Triple Play*
- Complete the STEM Math and Science Connection Activities: *Pull (or push) Harder; Meeting People's Needs; Light Bends*
- Use Itools interactive fraction strips
- Use pattern blocks to model fractions
- Online games and videos

Integrated Accommodations and Modifications

Special Education, ELL and 504	Gifted and Talented

• Repeat/modify directions • Visual models • Assistive technology • Extended time • Preferred/flexible seating • Differentiated activities (centers) • Shortened assignments • Sensory integration activities • Flexible grouping • Games • Kinesthetic Activity • Role Play	• Flexible grouping • Differentiated activities (centers) • Games • Assistive technology • Problem solving strategies • Tiered choice activities • Kinesthetic Activities • Role Play • Critical thinking strategies • Accelerated learning • Independent study

Interdisciplinary Connections

ELA Science Social Studies Technology Character education	21st Century Skills and Career Education • Problem Solving • Critical Thinking • Communication • Collaborative learning • Productivity • Real world applications

Instructional and Supplemental Materials

- whiteboards, markers, erasers
- graphic organizers for eTeacher Resources
- Chapter vocabulary cards
- Go Digital Math Tools:iTools, HMH Mega Math, Animated Math Models, Math on the Spot videos, Personal Math Trainer
- Gran and Go Activity cards, games and literature books
- Go Math! Real World Project
- https://www.khanacademy.org/
- https://www.freckle.com/
- https://www.mathplayground.com/
- http://sheppardsoftware.com/

Leveled Texts

- Advanced:

Fractals, Googols, and Other Mathematical Tales

Fraction Fun by David Adler

Spaghetti and Meatballs for All by Marilyn Burns

What's Your Angle Pythagoras? By Julie Mila

The Math Wiz by Betsy Duffey

Fractions, Decimals and Percents by David Adler

A Very Improbable Story by Edward Einhorn

Math Curse by Jon Scieszka and Lane Smith

- Intermediate:

Alexander, Who Used to Be Rich Last Sunday by Judith Viorst

The Greedy Triangle by Marilyn Burns

Round Trip by Ann Jonas

The Grapes of Math by Greg Tang

Math Fables by Greg Tang

Go Figure! And Why Pi?

7x9=Trouble! By Brian Karas

- Beginner:

Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins

Zero the Hero by Joan Holub

The Chicken Problem by Jennifer Oakley

This Plus That: Life's Little Equations by Amy Rosenthal

Sir Cumference and All the King's Tens by Cindy Neuthwander

Sir Cumference and the First Round Table by Cindy Neuthwander

Frelinghuysen Township School District
Math Curriculum

Grade 6

Unit 1: The Number System

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
6.NS.B.2 6.NS.B.3 6.NS.B.4 6.NS.A.1 6.NS.B.4 6.NS.A.1 6.NS.B.4 6.NS.C.6c 6.NS.C.7a 6.NS.C.5 6.NS.C.6a 6.NS.C.6b 6.NS.C.6c 6.ns.c.7a 6.NS.C.7b 6.NS.C.7c 6.ns.c.7d 6.ns.c.8	(6) 8.1.8.A.1-Demonstrate knowledge of a real world problem using digital tools. 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.8.E.1-Effectively use a variety of search tools and filters in professional public databases to find information to solve a real world problem.	CRP1. Act as a responsible and contributing citizen and employee. CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP6. Demonstrate creativity and innovation. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• write the prime factorization of numbers • find the least common multiple and greatest common factor of two whole numbers • solve problems finding the greatest common factor by using the strategy *draw a diagram* • add, subtract, and multiply multi-digit decimals fluently • divide whole numbers and decimals fluently by whole numbers and decimals • convert between fractions and decimals • compare and order fractions and decimals multiply and divide fractions • simplify fractional factors by using the	• How do you divide multi-digit numbers? • How do you write the prime factorization of a number? • How can you find the least common multiple of two whole numbers? • How can you find the greatest common factor of two whole numbers? • How can you use the strategy *draw a diagram* to help you solve problems involving the GCF and the Distributive Property? • How do you add and subtract multi-digit decimals? How do you multiply multi-digit decimals? • How do you divide decimals by whole numbers? • How do you divide whole numbers and decimals by decimals? • How can you convert between fractions and

greatest common factor • use a model to show division of fractions and mixed numbers • solve problems with fractions and mixed numbers by applying the strategy *use a model* • use positive and negative numbers to represent real-world quantities • compare and order integers and rational numbers • plot rational numbers on a number line, and use a number line to identify opposites • find and interpret the absolute value of rational numbers and interpret comparisons involving absolute values • plot ordered pairs of rational numbers on a coordinate plane • solve problems on the coordinate plane by using the strategy *draw a diagram*	decimals? • How can you compare and order fractions and decimals? • How do you multiply fractions? • How do you simplify fractional factors by using the greatest common factor? • How can you use a model to show division of fractions? • How can you use compatible numbers to estimate quotients of fractions and mixed numbers? • How do you divide fractions? • How can you use a model to show division of mixed numbers? • How do you divide mixed numbers? • How can you use the strategy *use a model* to help you solve a division problem? • How can you use positive and negative numbers to represent real-world quantities? • How can you compare and order integers? • How can you plot rational numbers on a number line? • How can you compare and order rational numbers? • How can you find and interpret the absolute value of rational numbers? • How can you interpret comparisons involving absolute values? • How do you plot ordered pairs of rational numbers on a coordinate plane? • How can you identify the relationship between points on a coordinate plane? • How can you find the distance between two points that lie on a horizontal or vertical line on a coordinate plane? • How can you use the strategy *draw a diagram* to help you solve a problem on the coordinate plane?

ASSESSMENT

Formative	Summative	Benchmark

• Exit Slips
• Journals
• Oral reading
• Graphic Organizers
• Class discussion
• Response to reading
	• Chapter tests
	• Unit Assessments
	• Alternate Assessments
	  • Performance Tasks
	  • Projects
	  • Choice Boards
		• Unit pre and post assessments that align to text series
		Alternative
		• Portfolio

• Interactive online games • Open-ended response questions & comprehension questions • Running records • Teacher observation • Classwork Practice • Discussion Trifolds • Video logs • Show What You Know • Share and Show • Lesson Quick Checks • Mid Chapter Checkpoints • Digital Personal Math Trainer • Practice and Homework pages	• Benchmark Assessments • Journal	• Performance assessments

LEARNING PLAN

Pacing Guide: 8 Weeks

Recommended Learning Activities

- Complete chapters 1-3 in Go Math! series
  - Whole group guided video instruction and /or Unlock the Problem
  - share and show
  - On Your Own problem
    - partner practice
    - independent problem solving practice
- Complete the Sweet Success Real World project
- View Math on the Spot videos
- Complete Personal Math Trainer activities
- Use base-ten blocks to model place value
- View Real World Videos
- View animated Math Models
- Play chapter Vocabulary games: Going to Washington, DC; The Write Way; Guess the Word; Picture It
- Read Chapter Literature Books:A Drive Through History, Fabulous Fibonacci Numbers, Halfpipe, A Peek into a Tiny World,
- Fair Share, How Much Should It Cost?, Searching for a Shipwreck, The Missing Cup, Forecast: Sunny Skies!, A Peek into a Tiny World, Music to Our Ears
- Complete Chapter Activity Cards: Greatest Common Factor, Circle Fun, Equal Measures, Are We Equals?, Penalty Shot, Point out the Figure, Point Match, Integer Opposites, Integer Order, Integer Face-Off
- Games from Grab and Go Centers Kit: Is It Rational?, Fraction Frenzy, Divide and Find
- Play Digital HMH Mega Math Games:
- Complete the STEM Math and Science Connection Activities: Model It!; A Rocky World; What a

Drag!
- Use Itools interactive fraction strips
- Use pattern blocks to model fractions
- Online games and videos

Integrated Accommodations and Modifications

Special Education, ELL and 504
- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented
- Flexible grouping
- Differentiated activities (centers)
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study

Interdisciplinary Connections

ELA
Science
Social Studies
Technology
Character education
Career Education

21st Century Skills and Career Education
- Problem Solving
- Critical Thinking
- Communication
- Collaborative learning
- Productivity
- Real world applications

Instructional and Supplemental Materials

- whiteboards, markers, erasers
- graphic organizers for eTeacher Resources
- Chapter vocabulary cards
- Go Digital Math Tools:iTools, HMH Mega Math, Animated Math Models, Math on the Spot videos, Personal Math Trainer
- Gran and Go Activity cards, games and literature books
- Go Math! Real World Project
- https://www.khanacademy.org/
- https://www.sumdog.com/
- https://www.freckle.com/
- https://www.mathplayground.com/
- http://sheppardsoftware.com/
- https://kahoot.com/

Leveled Texts

- Advanced:

Fractals, Googols, and Other Mathematical Tales

Fraction Fun by David Adler

Spaghetti and Meatballs for All by Marilyn Burns

What's Your Angle Pythagoras? By Julie Mila

The Math Wiz by Betsy Duffey

Fractions, Decimals and Percents by David Adler

A Very Improbable Story by Edward Einhorn

Math Curse by Jon Scieszka and Lane Smith

- Intermediate:

Alexander, Who Used to Be Rich Last Sunday by Judith Viorst

The Greedy Triangle by Marilyn Burns

Round Trip by Ann Jonas

The Grapes of Math by Greg Tang

Math Fables by Greg Tang

Go Figure! And Why Pi?

7x9=Trouble! By Brian Karas

- Beginner:

Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins

Zero the Hero by Joan Holub

The Chicken Problem by Jennifer Oakley

This Plus That: Life's Little Equations by Amy Rosenthal

Sir Cumference and All the King's Tens by Cindy Neuthwander

Sir Cumference and the First Round Table by Cindy Neuthwander

Frelinghuysen Township School District
Math Curriculum

Grade 6

Unit 2 : Ratios and Rates

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
6.RP.A.1 6.RP.A.2 6.RP.A.3a 6.RP.A.3b 6.RP.A.3c 6.RP.A.3d	(6) 8.1.8.A.1-Demonstrate knowledge of a real world problem using digital tools. 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.8.E.1-Effectively use a variety of search tools and filters in professional public databases to find information to solve a real world problem.	CRP1. Act as a responsible and contributing citizen and employee. CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP6. Demonstrate creativity and innovation. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Model ratios and write ratios and rates • Solve problems involving ratios by using the strategy *find a pattern* • Use tables to solve problems involving equivalent ratios • Make comparisons and solve problems using unit ratios • Use a graph to represent equivalent ratios • Use a model to show a percent as a rate per 100 • Convert between fractions, decimals and percents • Solve percent problems	• How can you model ratios? • How do you write ratios and rates? • How can you use a multiplication table to find equivalent ratios? • How can you use the strategy *find a pattern* to help you compare ratios? • How can you use tables to solve problems involving equivalent ratios? • How can you use unit rates to make comparisons? • How can you solve problems using unit rates? • How can you use a graph to represent equivalent ratios? • How can you use a model to show a percent? • How can you write percents as fractions and decimals? • How can you write fractions and decimals as percents? • How do you find a percent of a quantity? • How can you use the strategy *use a model* to help you solve a percent problem? • How can you find the whole given a part and a percent? • How can you use ratio reasoning to convert from one unit of length to another? • How can you use ratio reasoning to convert from one unit of weight or mass to another?

by applying the strategy *use a model* • Find the whole given a part and the percent • Convert from one unit of length, capacity, weight, or mass to another • Transform units to solve problems • Solve problems involving distance, rate, and time by applying the strategy *use a formula*	• How can you transform units to solve problems? • How can you use the strategy *use a formula* to solve problems involving distance, rate and time?

ASSESSMENT

Formative	Summative	Benchmark

• Exit Slips
• Journals
• Oral reading
• Graphic Organizers
• Class discussion
• Response to reading
• Interactive online games
• Open-ended response questions & comprehension questions
• Running records
• Teacher observation
• Classwork Practice
• Discussion Trifolds
• Video logs
• Show What You Know
• Share and Show
• Lesson Quick Checks
• Mid Chapter Checkpoints
• Digital Personal Math Trainer
• Practice and Homework pages
	• Chapter tests
	• Unit Assessments
	• Alternate Assessments
	  • Performance Tasks
	  • Projects
	  • Choice Boards
	  • Benchmark Assessments
	  • Journal
		• Unit pre and post assessments that align to text series
		Alternative
		• Portfolio
		• Performance assessments

Frelinghuysen Township School District
Math Curriculum

LEARNING PLAN

Pacing Guide:8 weeks

Recommended Learning Activities

- Complete chapters 4-6 in Go Math! series
  - Whole group guided video instruction and /or Unlock the Problem
  - share and show
  - On Your Own problem
    - partner practice
    - independent problem solving practice
- Complete the *Meet Me in St. Louis* Real World project
- View Math on the Spot videos
- Complete Personal Math Trainer activities
- Use base-ten blocks to model place value
- View Real World Videos
- View animated Math Models
- Play chapter Vocabulary games: Going to the Baseball Hall of Fame;Matchup; The Write Way; Bingo
- Read Chapter Literature Books: The Missing Cup, Forecast: Sunny Skies!; A Peek Into a Tiny World; Fabulous Fibonacci Numbers; Music To Our Ears
- Complete Chapter Activity Cards: Circle Fun; Rates; Writing an Equivalent Ratio; 34%, 0.34, and 17/50; Percent Partners; Happening Hobbies; Sporting Circles; Finding Percents; Rates, Estimating Units of Measure; Greatest Common Factor; Variables and Expressions
- Games from Grab and Go Centers Kit:
- Play Digital HMH Mega Math Games
- Complete the STEM Math and Science Connection Activities: Packing It In; Input and Output; Speed It Up
- Use Itools interactive fraction strips
- Use pattern blocks to model fractions
- Online games and videos

Integrated Accommodations and Modifications

Special Education, ELL and 504

- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented

- Flexible grouping
- Differentiated activities (centers)
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study

Frelinghuysen Township School District
Math Curriculum

Interdisciplinary Connections

ELA Science Social Studies Technology Character education Career Education	21st Century Skills and Career Education • Problem Solving • Critical Thinking • Communication • Collaborative learning • Productivity • Real world applications

Instructional and Supplemental Materials

- whiteboards, markers, erasers
- graphic organizers for eTeacher Resources
- Chapter vocabulary cards
- Go Digital Math Tools: iTools, HMH Mega Math, Animated Math Models, Math on the Spot videos, Personal Math Trainer
- Gran and Go Activity cards, games and literature books
- Go Math! Real World Project
- https://www.khanacademy.org/
- https://www.sumdog.com/
- https://www.freckle.com/
- https://www.mathplayground.com/
- http://sheppardsoftware.com/
- https://kahoot.com/

Leveled Texts

- Advanced:

Fractals, Googols, and Other Mathematical Tales

Fraction Fun by David Adler

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What's Your Angle Pythagoras? By Julie Mila

The Math Wiz by Betsy Duffey

Fractions, Decimals and Percents by David Adler

A Very Improbable Story by Edward Einhorn

Math Curse by Jon Scieszka and Lane Smith

- Intermediate:

Alexander, Who Used to Be Rich Last Sunday by Judith Viorst

The Greedy Triangle by Marilyn Burns

Round Trip by Ann Jonas

The Grapes of Math by Greg Tang

Math Fables by Greg Tang

Go Figure! And Why Pi?

7x9=Trouble! By Brian Karas

- Beginner:

Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins

Zero the Hero by Joan Holub

The Chicken Problem by Jennifer Oakley

This Plus That: Life's Little Equations by Amy Rosenthal

Sir Cumference and All the King's Tens by Cindy Neuthwander

Sir Cumference and the First Round Table by Cindy Neuthwander

Frelinghuysen Township School District
Math Curriculum

Grade 6

Unit 3: Expressions and Equations

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
6.EE.A.1 6.EE.A.2a 6.EE.A.2b 6.EE.A.2c 6.EE.A.3 6.EE.A.4 6.EE.B.6 6.EE.B.5 6.EE.B.7 6.EE.B.8 6.EE.C.9	(6) 8.1.8.A.1-Demonstrate knowledge of a real world problem using digital tools. 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.8.E.1-Effectively use a variety of search tools and filters in professional public databases to find information to solve a real world problem.	CRP1. Act as a responsible and contributing citizen and employee. CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP6. Demonstrate creativity and innovation. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Write and evaluate numerical expressions involving whole-number exponents • Write expressions that record operations with numbers and with letters standing for numbers • Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity • Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).	• How do you write and find the value of expressions involving exponents? • How do you use the order of operations to evaluate expressions involving exponents? • How do you write an algebraic expression to represent a situation? • How can you describe the parts of an expression? • How do you evaluate an algebraic expression or a formula? • How can you use variables and algebraic expressions to solve problems? • How can you use the strategy *use a model* to combine like terms? • How can you use properties of operations to write equivalent algebraic expressions? • How can you identify equivalent algebraic expressions? • How do you determine whether a number is a solution of an equation? • How do you write and equation to represent a situation? • How can you use models to solve addition equations? • How do you solve addition and subtraction equations? • How can you use models to solve multiplication equations? • How do you solve multiplication and division equations?

• Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand any number in a specified set. • Apply the properties of operations to generate equivalent expressions. • Apply the properties of operations to generate equivalent expressions. • Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). • Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true. • Solve real-world and mathematical problems by writing and solving equations fo the form x + p = q and px = q for cases in which p, q, and x are all nonnegative rational numbers • Understand solving an equation or inequality as a process of answering a question: which values from a specified set, in any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true. • Write and inequality of the form x>c or x<c to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form x>c or x<c have infinitely many solutions; represent solutions of such inequalities on number line	• How can you use the strategy *solve a simpler problem* to solve equations involving fractions? • How do you determine whether a number is a solution of an inequality? • How do you write a inequality to represent a situation? • How do you represent the solutions of an inequality on a number line? • How can you write an equation to represent the relationship between an independent variable and a dependent variable? • How can you translate between equations and tables? • How can you use the strategy *find a pattern* to solve problems involving relationships between quantities? • How can you graph the relationship between two quantities? • How can you translate between equations and graphs?

diagrams. • Use variables to represent two quantities in a real-world problem that change in relationship to one another; write and equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. •	

ASSESSMENT

Formative	Summative	Benchmark

• Exit Slips
• Journals
• Oral reading
• Graphic Organizers
• Class discussion
• Response to reading
• Interactive online games
• Open-ended response questions & comprehension questions
• Running records
• Teacher observation
• Classwork Practice
• Discussion Trifolds
• Video logs
• Show What You Know
• Share and Show
• Lesson Quick Checks
• Mid Chapter Checkpoints
• Digital Personal Math Trainer
• Practice and Homework pages
	• Chapter tests
	• Unit Assessments
	• Alternate Assessments
	  ◦ Performance Tasks
	  ◦ Projects
	  ◦ Choice Boards
	  ◦ Benchmark Assessments
	  ◦ Journal
		• Unit pre and post assessments that align to text series
		Alternative
		• Portfolio
		• Performance assessments

LEARNING PLAN

Pacing Guide: 9 weeks

Recommended Learning Activities

- Complete chapters 7 -9 in Go Math! series
  - Whole group guided video instruction and /or Unlock the Problem
  - share and show
  - On Your Own problem
    - partner practice
    - independent problem solving practice

- Complete the *The Great Outdoors* Real World project
- View Math on the Spot videos
- Complete Personal Math Trainer activities
- Use base-ten blocks to model place value
- View Real World Videos
- View animated Math Models
- Play chapter Vocabulary games: Going Down the Blue Ridge Parkway, Pick It, Guess the Word
- Read Chapter Literature Books: Fabulous Fibonacci Numbers, Music To Our Ears, Input Should Equal Output, Buying Online,
- Complete Chapter Activity Cards: Greatest Common Factor; Variables and Expressions; Solving Addition and Subtraction Equations; Variables and Expressions; Algebra Tiles; Function Moves; Function Machine; Functions and Equations
- Games from Grab and Go Centers Kit:Can You Solve It?, Function Find
- Play Digital HMH Mega Math Games:
- Complete the STEM Math and Science Connection Activities: *Comparing Earthquake Magnitudes, So Inclined, Fast Graphs*
- Use Itools interactive fraction strips
- Use pattern blocks to model fractions
- Online games and videos

Integrated Accommodations and Modifications

Special Education, ELL and 504

- Repeat/modify directions
- Visual models
- Assistive technology
- Extended time
- Preferred/flexible seating
- Differentiated activities (centers)
- Shortened assignments
- Sensory integration activities
- Flexible grouping
- Games
- Kinesthetic Activity
- Role Play

Gifted and Talented

- Flexible grouping
- Differentiated activities (centers)
- Games
- Assistive technology
- Problem solving strategies
- Tiered choice activities
- Kinesthetic Activities
- Role Play
- Critical thinking strategies
- Accelerated learning
- Independent study

Interdisciplinary Connections

ELA
Science
Social Studies
Technology
Character education
Career Education

21st Century Skills and Career Education

- Problem Solving
- Critical Thinking
- Communication
- Collaborative learning
- Productivity
- Real world applications

Instructional and Supplemental Materials

- whiteboards, markers, erasers
- graphic organizers for eTeacher Resources
- Chapter vocabulary cards
- Go Digital Math Tools: iTools, HMH Mega Math, Animated Math Models, Math on the Spot videos, Personal Math Trainer
- Gran and Go Activity cards, games and literature books
- Go Math! Real World Project
- https://www.khanacademy.org/
- https://www.sumdog.com/
- https://www.freckle.com/
- https://www.mathplayground.com/
- http://sheppardsoftware.com/
- https://kahoot.com/

Leveled Texts

- Advanced:

Fractals, Googols, and Other Mathematical Tales

Fraction Fun by David Adler

Spaghetti and Meatballs for All by Marilyn Burns

What's Your Angle Pythagoras? By Julie Mila

The Math Wiz by Betsy Duffey

Fractions, Decimals and Percents by David Adler

A Very Improbable Story by Edward Einhorn

Math Curse by Jon Scieszka and Lane Smith

- Intermediate:

Alexander, Who Used to Be Rich Last Sunday by Judith Viorst

The Greedy Triangle by Marilyn Burns

Round Trip by Ann Jonas

The Grapes of Math by Greg Tang

Math Fables by Greg Tang

Go Figure! And Why Pi?

7x9=Trouble! By Brian Karas

- Beginner:

Lemonade in Winter: A Book for Kids Counting Money by Emily Jenkins

Zero the Hero by Joan Holub

The Chicken Problem by Jennifer Oakley

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Grade 6

Unit 3:Geometry and Statistics

DESIRED RESULTS

Standards

New Jersey Student Learning Standards	Technology Standards	21st Century Life and Career Standards
6.G.A.1 6.G.A.3 6.G.A.2 6.G.A.4 6.SP.A.1 6.SP.B.4 6.SP.B.5a 6.SP.B.5b 6.SP.B.5c 6.SP.B.5d 6.SPA.2 6.SP.A.3 6.SP.B.4 6.SP.B.5c 6.SP.B.5d	(6) 8.1.8.A.1-Demonstrate knowledge of a real world problem using digital tools. 8.1.P.C.1-Collaborate with peers by participating in interactive digital games or activities. 8.1.8.E.1-Effectively use a variety of search tools and filters in professional public databases to find information to solve a real world problem.	CRP1. Act as a responsible and contributing citizen and employee. CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP6. Demonstrate creativity and innovation. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP11. Use technology to enhance productivity.

Learning Outcomes

Students will be able to….	*Students will be able to answer….*
• Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems. • Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems. • Represent three-dimensional figures using nets make up of rectangles and triangles, and use the nets to find the	• How can you find the area of parallelograms? • What is the relationship among the areas of triangles, rectangles, and parallelograms? • How can you find the area of triangles? • What is the relationship between the areas of trapezoids and parallelograms? • How can you find the area of trapezoids? • How can you find the area of regular polygons? • How can you find the area of composite figures? • How can you use the strategy *find a pattern* to show how changing dimensions affects area? • How can you plot polygons on a coordinate plane and find their side lengths? • How do you use nets to represent three-dimensional figures? • What is the relationship between a net and the surface area of a prism? • How can you find the surface area of prisms? • How can you find the surface area of a pyramid? • What is the relationship between the volume and edge

surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems. • Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = l w h and V = b h to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. • Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. • Reporting the number of observations. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. • Display numerical data in plots on a number line, including dot plots, histograms, and box plots. • Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. • Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered. • Recognize that a measure of center for numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number	lengths of a prism with fractional edge lengths? • How can you find volumes of rectangular prisms with fractional edge lengths? • How can you use the strategy *use a formula* to solve problems involving area, surface area, and volume? • How do you identify a statistical question? • How can you describe how a data set was collected? • How can you use dot plots and frequency tables to display data? • How can you use histograms to display data? • How does the mean represent the fair share and balance point? • How can you describe a set of data using mean, median, and mode? • How does an outlier affect measures of center? • How can you use the strategy *draw a diagram* to solve problems involving data? • How can you describe overall patterns in a data set? • How can you use box plots to display data? • How do you calculate the mean absolute deviation of a data set? • How can you summarize a data set by using range, interquartile range, and mean absolute deviation? • How can you choose appropriate measures of center and variability to describe a data set? • What do measures of center and variability indicate about a data set? • How can you describe the distribution of a data set collected to answer a statistical question? • How can you use the strategy *work backward* to draw conclusions about a data set?

• Understand that set of data collected to answer a statistical question has distribution which can be described by its center, spread, and overall shape.	

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	• Unit Assessments
	• Alternate Assessments
	  ◦ Performance Tasks
	  ◦ Projects
	  ◦ Choice Boards
	  ◦ Benchmark Assessments
	  ◦ Journal
		• Unit pre and post assessments that align to text series
		Alternative
		• Portfolio
		• Performance assessments

LEARNING PLAN

Pacing Guide: 9 weeks

Recommended Learning Activities

- Complete chapters 10 - 13 in Go Math! series
  - Whole group guided video instruction and /or Unlock the Problem
  - share and show
  - On Your Own problem
    - partner practice
    - independent problem solving practice
- Complete the *This Place Is a Zoo!* Real World project
- View Math on the Spot videos
- Complete Personal Math Trainer activities
- Use base-ten blocks to model place value
- View Real World Videos
- View animated Math Models
- Play chapter Vocabulary games: Going to the Philadelphia Zoo, Bingo, Picture It, The Write Way, Matchup
- Read Chapter Literature Books: Room Makeover, Serving the Community, If I Designed the Zoo, Room

Makeover: Serving the Community, More Than A Guess, Take Your Math To Work, The Latest in Recycling

- Complete Chapter Activity Cards: Risky Rectangles, Complex Areas, Point Out the Figure, Areas of Geometric Figures, Areas of Parallelograms and Trapezoids, Estimating Units of Measure, Volumes of Cylinders and Rectangular Prisms, Volume of a Prism, Sporting Circles; Mean, Median, and Mode; Integer Opposites; Box - and - Whisker Plot
- Games from Grab and Go Centers Kit: Geopardy, What's My Volume?, Biased or Unbiased?, Graphs Galore! Mean, Median & Mode March
- Play Digital HMH Mega Math Games:
- Complete the STEM Math and Science Connection Activities: Mean, Median, Mode and Range; Measuring Space; Graph It!; Crunching Data!
- Use itools interactive fraction strips
- Use pattern blocks to model fractions
- Grid paper
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- https://www.sumdog.com/
- https://www.freckle.com/
- https://www.mathplayground.com/
- http://sheppardsoftware.com/
- https://kahoot.com/

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Sir Cumference and the First Round Table by Cindy Neuthwander

MATH TEXTS K-6	
TEACHING NUMBERS I Spy Numbers by Jean Marzollo 1,2,3 Peas by Keith Baker Chicka Chicka 1,2,3 by Bill Martin Jr. Splash! by Ann Jonas (counting) The Very Hungry Caterpillar by Eric Carle (counting) How Do Dinosaurs Count to 10? by Jane Yolen Number Everywhere by Elliot Kaufman 10 Black Dots by Donald Crews How Many Bugs in a Box? by David Carter How Many Snails? by Paul Giganti, Jr. Ten Sly Piranhas by William Wise 12 Ways to Get to 11 by Eve Merriam None the Number by Oliver Jeffers Zero the Hero by Joan Holub More or Less by Stuart Murphy Tally O'Mally by Stuart Murphy One Odd Day by Doris Fisher My Even Day by Doris Fisher Even Steven and Odd Todd by Kathryn Cristaldi Seven Blind Mice by Ed Young (ordinal numbers) 100 Hungry Ants by Elinor Pinczes Curious George Learns to Count From 1 to 100 by H.A. Rey 100 Days of School by Trudy Harris How Many Seeds in a Pumpkin? by Margaret McNamara (estimation) One is a Snail, Ten is a Crab by April Sayre (skip counting) How Many Feet in the Bed? by Diane Hamm (skip counting) 98, 99, 100! Ready or Not, Here I Come! by Teddy Slater (counting) Centipede's 100 Shoes by Tony Ross Place Value by David Adler What's the Place Value by Shirley Duke **PATTERNING & SORTING** Pattern Fish by Trudy Harris Pattern by Henry Pluckrose Patterns! by National Geographic Kids I See a Pattern Here by Bruce Goldstone A-B-A-B-A A Book of Pattern Play by Brian Cleary Teddy bear Patterns by Barbara McGrath	**ADDITION AND SUBTRACTION** Five Little Monkeys Jumping on the Bed by Eileen Christelow Monster Musical Chairs by Stuart Murphy Ten For Me by Barbara Mariconda Elevator Magic by Stuart Murphy Quack & Count by Keith Baker Monster Math Picnic by Grace Maccaronne **GEOMETRY & FRACTIONS** The Warlord's Puzzle by Virginia Pilegard Full House: An Invitation to Fractions by Dayle Ann Dodds Picture Pie by Ed Emberley The Wishing Club by Donna Jo Napoli Inchworm and a Half by Elinor J. Pinczes The Lion's Share by Matthew McElligott Gator Pie by Louise Matthews Changes, Changes by Pat Hutchins The Shape of Things by Dayle Ann Dodds (Author) and Julie Lacome (Illustrator) I Spy Shapes in Art by Lucy Micklethwait Mouse Shapes by Ellen Stoll Walsh Tangram Cat by Maranke Rinck & Martijn van der Linden Grandfather Tang's Story by Ann Tompert (Author) and Robert Andrew Parker (Illustrator) The Greedy Triangle by Marilyn Burns (Author) and Gordon Silveria (Illustrator) The Fly on the Ceiling by Dr. Julie Glass (author) and Richard Walz (Illustrator) The Greedy Triangle by Marilyn Burns Shapes! by National Geographic Kids When a Line Bends…A Shape Begins by Rhonda Greene Shapes That Roll by Karen Nagel Go, Shapes, Go by Denise Fleming Shape Up! by David Adler The Shape of Things by Dale Dodds If You Were a Quadrilateral by Molly Blaisdell If You Were a Polygon by Marcie Aboff Shapes, Shapes, Shapes by Tana Hoban Give Me Half by Stuart Murphy A Fraction's Goal – Parts of a Whole by Brian Cleary

Bees, Snails, and Peacock Tails by Betsy Franco (patterns)
Growing Patterns by Sarah Campbell
Animal Patterns by Nathan Olson
Busy Bugs: A Book About Patterns by Jayne Harvey
Sort It Out! by Barbara Mariconda
Sorting by Henry Pluckrose
Sorting at the Market by Tracey Steffora
Dave's Down to Earth Rock Shop by Stuart Murphy (sorting)

MEASUREMENT & TIME
How Big is a Foot? by Rolf Myller
Jim and the Beanstalk by Raymond Briggs
Measuring Penny by Loreen Leedy
Actual Size by Steve Jenkins
Inch by Inch by Leo Lionni
Length by Henry Pluckrose
Inch by Inch by Leo Lionni
The Best Bug Parade by Stuart Murphy (size)
Measuring Penny by Loreen Leedy
Is It Larger? Is It Smaller? by Tana Hoban
Super Sandcastle Saturday by Stuart Murphy (size)
Actual Size by Steve Jenkins
Size by Henry Pluckrose
Weight by Henry Pluckrose
Just a Little Bit by Ann Tompert (weight)
Who Sank the Boat? by Pamela Allen (weight)
Me and the Measure of Things by Joan Sweeney
Me Counting Time by Joan Sweeney
It's About Time by Stuart Murphy
What Time is it, Mr. Crocodile? by Judy Sierra
Telling Time by Jules Older
The Clock Struck One by Trudy Harris
10 Minutes Until Bedtime by Peggy Rathmann
Game Time by Stuart Murphy (time)
Telling Time with Big Momma Cat by Barry Moser

ADDITION & SUBTRACTION
Equal Shmequal by Virginia Kroll
The Action of Subtraction by Brian Cleary
The Mission of Addition by Brian Cleary
If You Were a Plus Sign by Trisha Shaskan
If You Were a Minus Sign by Trisha Shaskan
Mission Addition by Loreen Leedy
Subtraction Action by Loreen Leedy
Domino Addition by Lynette Long
Jump, Kangaroo, Jump by Stuart Murphy (fractions)
Pancakes, Crackers, and Pizza by Marjorie Eberts (fractions)

GRAPHING, MONEY, & FINANCIAL LITERACY
The Great Graph Contest by Loreen Leedy
Family Reunion by Bonnie Bader (graphing)
Once Upon a Dime by Nancy Allen
Just Saving My Money by Mercer Mayer
A Dollar, A Penny, How Much and How Many? by Brian Cleary
Trouble with Money by Stan Berenstain
Bunny Money by Rosemary Wells
Tightwad Tod by Daphne Skinner
You Can't Buy a Dinosaur with a Dime by Harriet Ziefert
Lemonade in Winter by Emily Jenkins (money)
Alexander, Who Used to be Rich Last Sunday by Judith Viorst
Jelly Beans for Sale by Bruce McMillan
Dollars and Sense by Stan Berenstain
If You Made a Million by David Schwartz

MULTIPLICATION
One Hundred Hungry Ants by Elinor J. Pinczes
Each Orange Had Eight Slices by Paul Giganti, Jr.
Six-Dinner Sid by Inga Moore

One Grain of Rice : A Mathematical Folktale by Demi
Snowflake Bentley by Jacqueline Briggs Martin
365 Penguins by Jean-Luc Fromental
Sea Squares by Joy N. Hulme
Amanda Bean's Amazing Dream: A Mathematical Story by Cindy Neuschwander

DIVISION
The Doorbell Rang by Pat Hutchins
Bean Thirteen by Matthew McElligott
A Remainder of One by Elinor Pinczes
The Great Divide: A Mathematical Marathon by Dayle Ann Dodds

Sources
https://proudtobeprimary.com/math-books-for-kids/

https://www.k-5mathteachingresources.com/math-read-alouds.html