**Long Beach Island Consolidated School District Curriculum Guide**

| Grade: 3 | Content Area: Math |
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## Introduction:

Students in Third Grade Math will complete 4 units that focus on these critical areas: developing an understanding of multiplication and division and strategies for multiplication and division within 100; developing an understanding of fractions; developing an understanding of the structure of rectangular arrays and area; and describing and analyzing two-dimensional shapes. All Math units follow the NJ Student Learning Objectives. Student progress will be measured in a variety of methods.

**Original Adoption: October 23, 2018**

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| **Revised on: July 10, 2019** |
| **Revised by: A. Ferrer** |

| **Recommended Pacing Guide** | |
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| **Unit 1:** Multiplication, Division, and Concepts of Area | 64 Days |
| **Unit 2:** Modeling Multiplication, Division and Fractions | 51 Days |
| **Unit 3:** Fractions as Numbers and Measurement | 41 Days |
| **Unit 4:** Representing Data | 21 Days |

| **Unit 1: Multiplication, Division, and Concepts of Area**<br>In this unit students will develop an understanding of the meanings of multiplication and division of whole numbers through activities and problems involving equal-sized groups, arrays, and area models. Students use properties of operations to calculate products of whole numbers, and strategies based on these properties to solve multiplication and division problems involving single-digit factors. By comparing a variety of solution strategies, students learn the relationship between multiplication and division. | **Duration:** 64 Days |
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| **Standards/Learning Targets** | |
| New Jersey Student Learning Standards:<br>● 3.OA.A.1:Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. For example, describe and/or represent a context in which a total number of objects can be expressed as 5 × 7.<br>● 3.OA.A.2: interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 | |

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shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe and/or represent a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.

- 3.OA.A.3: Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
- 3.OA.A.4: Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = □ ÷ 3, 6 × 6 = ?.
- 3.OA.B.6: Understand division as an unknown factor problem. For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.
- 3.MD.C.5a: A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.
- 3.MD.C.5b: A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.
- 3.MD.C.6: Measure areas by counting unit squares (square cm, square m., square in., square ft, and nonstandard units).
- 3.MD.C.7a,b: Relate area to the operations of multiplication and addition.
  **a.** Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
  **b.** Multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
- 3.NBT.A.1: Use place value understanding to round whole numbers to the nearest 10 or 100.
- 3.NBT.A.3 : Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.

**Standards for Mathematical Practice:**

- MP.1 Make sense of problems and persevere in solving them.
- MP.2 Reason Abstractly and quantitatively.
- MP.3 Construct viable arguments and critique the reasoning of others.
- MP.4 Model with mathematics.
- MP.5 Use appropriate tools strategically.
- MP.6 Attend to precision.
- MP.7 Look for and make use of structure.

**Interdisciplinary Connections:**

**Reading:**

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- **RI.3.4:** Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.

**Speaking and Listening:**

- **SL.3.1.A:** Explicitly draw on previously read text or material and other information known about the topic to explore ideas under discussion.
- **SL.3.1.B:** Follow agreed-upon norms for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
- **SL.3.4:** Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

**Writing:**

- **W.3.4:** With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. (Grade-specific expectations for writing types are defined in standards 1–3 above.)

**Technology Standards:**

- **8.1.5.A.1:** Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
- **8.1.5.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.
- **8.1.5.F.1:** Apply digital tools to collect, organize, and analyze data that support a scientific finding.

**21st Century Themes/Career Readiness:**

- 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.

**21st Century Life and Career Standards:**

- 9.2.4.A.1 Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.
- 9.2.4.A.2 Identify various life roles and civic and work-related activities in the school, home, and community
- 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

**Evidence of Student Learning**

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| **Formative Tasks:**<br>● Teacher Observation<br>● Anecdotal Records/ Checklists<br>● Oral Assessments/Conferencing<br>● Analysis of student work<br>● Daily Review<br>● Solve and Share<br>● Quick Check Quizzes<br>● Exit Slips<br>● Cooperative Group Learning<br>● Games<br>● Self-reflection | **Alternative Assessments:**<br>● Performance Tasks<br>● Student created models<br>● Written/verbal explanations<br>● Peer assessment<br>● Self-assessment<br>● Checklists<br>● Rubrics<br>● Portfolio/Math Journals |
| **Summative Assessments:**<br>● Topic Tests<br>● Topic Performance Assessments<br>● Timed Basic Fact Quizzes | **Benchmark Assessments:**<br>● Pearson Benchmark Assessments<br>● Beginning of Year SGO<br>● Mid-Year SGO<br>● End of Year SGO |
| **Knowledge & Skills** | |
| **Enduring Understandings:**<br>● Represent and solve problems involving multiplication and division<br>● Understand properties of multiplication and the relationship between multiplication and division<br>● Understand concepts of area and relate area to multiplication and addition (Geometric measurement)<br>● Use place value understanding and properties of operations to perform multi-digit arithmetic | **Essential Questions:**<br>● How do you interpret products of whole numbers as repeated addition or equal groups of objects(up to 100)?<br>● How do you interpret the quotient as a set of objects (up to 100) partitioned equally into a number of shares, and as the number of equal shares?<br>● Are you able to use multiplication and division within 100 to solve word problems by modeling equal groups or arrays, and by writing equations to represent equal groups or arrays?<br>● How do you determine the unknown in a division or multiplication equation involving 3 whole numbers(within 100)?<br>● How can you solve division of whole numbers by representing the problem as an unknown factor problem?<br>● How do you measure areas by |

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| | counting unit squares (square cm, square m., square in., square ft., and improvised units)?<br>● How do you tile a rectangle to find its area?<br>● Can you explain the relationship between tiling and multiplying side lengths to find the area of rectangles?<br>● Can you solve real world problems by multiplying side lengths to find areas of rectangles?<br>● How do you round whole numbers to the nearest 10 or 100?<br>● How do you multiply one-digit whole numbers by multiples of 10? |
| **Core Instructional & Supplemental Materials** | |
| **Suggested Activities/Resources:**<br>● Multiplication War Card Game<br>● Baseball Multiplication - Batter rolls 2 dice and multiplies the numbers. Batter moves along baseball diamond depending on product. Runs are scored when a batter reaches home plate<br>● Multiplication Bingo<br>● Around the World: Flashcard Practice<br>● SMARTboard applications<br>● Grades K-6: Envision 2.0, 2016<br>● Envisions online resources<br>● Sushi Monsters iPad Application- Basic Fact Practice<br>● Reflexmath.com<br>● Happynumbers.com<br>● Achieve3000: Differentiated Instruction Solutions<br>● Online Math Games<br>● Math Playground<br>● ABCya<br>● Funbrain<br>● Flocabulary<br>● GoNoodle | **Varied Levels of Text:**<br>● *Hershey's Kisses* by Jerry Pallotta<br>● *Safari Park* by Stuart Murphy<br>● *The Doorbell Rang* by Pat Hutchings<br>● *Divide and Ride* by Stuart J. Murphy<br>● *Everybody Wins!* Bruce, Sheila M<br>● *The Great Divide* Dodds, Dayle Ann N<br>● *If You Were A Divided-By Sign* Shaskan, Trisha Speed<br>● *If You Were A Times Sign* Shaskan, Trisha Speed<br>● *Jump, Kangaroo, Jump!* Murphy, Stuart J.<br>● *Mummies In The Library: Divide The Pages* Perritano, John Q<br>● *Fractions = Trouble!* Mills, Claudia M<br>● *Building An Igloo* Steltzer, Ulli NF<br>● *If You Were A Polygon* Aboff, Marcie<br>● *Mummy Math* Neuschwander, Cindy P<br>● *Shape Up!* Adler, David A.<br>● *Coyotes All Around* Murphy, Stuart J. O<br>● *Earth Day — Hooray!* Murphy, Stuart J. Q<br>● *Great Estimations* Goldstone, Bruce Q |

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| • Number Rock<br>• TheBazillions-YouTube | |

| Accommodations/Modifications |
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**English Language Learners:**

- Provide written directions with models and diagrams when possible
- Build in more group work to allow ELL students to interact and communicate with peers
- Pre-teach as often as possible- share photos, videos, articles, vocabulary etc. with ELL students prior to use in class
- Provide vocabulary ahead of time
- Use sentence frames to give students practice with academic language
- Highlight key words
- Utilize visual charts/cues
- Frequently check for understanding
- Test key concepts and main ideas
- Simplify written and verbal instructions
- Give students objective tests: matching, multiple choice, etc.
- Provide manipulatives
- Allow extra time
- Use alternative assessments such as physical demonstration and pictorial products
- Provide shorter assessments
- Grade content vs. mechanics
- Read assessments aloud
- Allow open-book or open-note tests

**Special Education/504 Plans/Students with Disabilities:**

- Follow specific students accommodations and modifications as listed in individual student IEP or 504 plan
- Provide opportunities for movement
- Have manipulatives and other math resources available for student use
- Incorporate small group instruction
- Utilize visual charts/cues
- Facilitate successful experiences
- Provide tutoring if needed
- Provide positive praise to increase motivation
- Differentiate tests to meet the needs of students
- Shorten tests and give in multiple sessions if needed
- Reteach/Review before giving assessments
- Read assessment directions for each section to student(s)
- Allow the use of tools such as a computer or iPad
- Allow the use of manipulatives such as counters during testing

- Highlight key parts of equations or word problems for student(s)
- Allow verbal answers
- Print tests with larger font
- Allow for extra time if needed/necessary

**Students at Risk of Failure:**

- Ensure child has access to all appropriate academic resources both in school and at home
- Provide structure and adhere to a consistent daily routine with clear and concise rules
- Facilitate successful experiences
- Provide tutoring if needed
- Pair with adult mentor or buddy
- Be flexible with assignments
- Offer several alternatives from which all students can choose.
- Give students extra time to complete tests
- Give students objective tests: matching, multiple choice, etc.
- Test key concepts or main ideas
- Answer fewer or different test questions
- Graph paper to assist in organizing or lining up math problems
- Use of computers and calculators
- Answers to be dictated
- Accept short answers
- Open-book or open-note tests
- Allow students to complete assignments in school
- Do not penalize for late or missing assignments/materials
- Offer encouragement and understanding
- Allow students to have personal possessions and property in school
- Give choice to provide a sense of control

**Economically Disadvantaged:**

- Provide clear, achievable expectations, do not lower academic requirements for them.
- Build a safe and nurturing atmosphere
- Be flexible with assignments
- Providing needed academic resources (paper, pencils, computer time)
- Provide materials for all assignments in class and at home
- Offer several alternatives from which all students can choose.
- Allow students to finish assignments independently, or give them the opportunity to complete tasks at their own pace.
- Use real-world examples and create mental models for abstract idea
- Provide increased knowledge base and vocabulary use about real world experiences.
- Share the decision making in class.
- Maintain expectations while offering choice and soliciting input

**Culturally Diverse:**

- Involve families in student learning
- Provide social/emotional support
- Respect cultural traditions

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- Build in more group work to encourage interaction with peers
- Show photos, videos, and definitions when possible for culturally unique vocabulary
- Translate directions into native language
- Teach study skills
- Provide students with necessary academic resources and materials
- Allow students to demonstrate knowledge through alternative assessments
- Provide visuals
- Assign peer tutor
- Support verbal explanations with non verbal cues: Gestures/ facial expressions Props, realia, manipulatives, concrete materials,visuals, graphs, pictures, maps
- Provide positive praise to increase motivation
- Provide real world connections and emphasize the value of education
- Communicate high expectations for the success of all students
- Integrate the arts into learning activities

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| **Unit 2: Modeling Multiplication, Division and Fractions**<br>In this unit students will continue to work with multiplication and division to represent and solve problems. Students will increase their understanding of the properties of multiplication and the relationship between multiplication and division. Students will solve problems involving the four operations, and identify and explain patterns in arithmetic. Students will develop an understanding of fractions, beginning with unit fractions. Students use fractions along with visual fraction models to represent parts of a whole. Students are able to use fractions to represent numbers equal to, less than, and greater than one. They solve problems that involve comparing fractions by using visual fraction models and strategies based on noticing equal numerators or denominators. | **Duration:** 51 Days |
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**Standards/Learning Targets**

**New Jersey Student Learning Standards:**

- 3.OA.A.3: Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
- 3.OA.B.5: Apply properties of operations as strategies to multiply and divide. Examples: If 6 x 4 = 24 is known, then 4 x 6 = 24 is also known. (Commutative property of multiplication.) 3 x 5 x 2 can be found by 3 x 5 = 15, then 15 x 2 =30, or by 5 x 2= 10, then 3 x 10 = 30. (Associative property of multiplication) Knowing that 8 x 5 = 40 and 8 x 2 = 16, one can find 8 x 7 as 8 x (5 + 2) = (8 x 5) + (8 x 2) = 40 + 16 = 56 (Distributive property). (Students need not use formal terms for these properties)
- 3.OA.C.7**:** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
- 3.OA.D.8: Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
- 3.OA.D.9: Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example,

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observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.

- 3.NBT.A.2:Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
- 3.MD.C.7c,d : Relate area to the operations of multiplication and addition.
  **c.** Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths ***a*** and ***b*** + ***c*** is the sum of ***a*** × ***b*** and ***a*** × ***c.*** Use area models to represent the distributive property in mathematical reasoning.
  **d.** Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.
- 3.NF.A.1: Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.
- 3.G.A.2: Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.

**Standards for Mathematical Practice:**

- MP.1 Make sense of problems and persevere in solving them.
- MP.2 Reason Abstractly and quantitatively.
- MP.3 Construct viable arguments and critique the reasoning of others.
- MP.4 Model with mathematics.
- MP.5 Use appropriate tools strategically.
- MP.6 Attend to precision.
- MP.7 Look for and make use of structure.
- MP.8 Look for and express regularity in repeated reasoning.

**Interdisciplinary Connections:**

**Reading:**

- **RI.3.4:** Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.

**Speaking and Listening:**

- **SL.3.1.A:** Explicitly draw on previously read text or material and other information known about the topic to explore ideas under discussion.
- **SL.3.1.B:** Follow agreed-upon norms for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
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**Writing:**

- **W.3.4:** With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. (Grade-specific expectations for writing types are defined in standards 1–3 above.)

**Technology Standards:**

- **8.1.5.A.1:** Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
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- **8.1.5.F.1:** Apply digital tools to collect, organize, and analyze data that support a scientific finding.

**21st Century Themes/Career Readiness:**

- 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.

**21st Century Life and Career Standards:**

- 9.2.4.A.1 Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.
- 9.2.4.A.2 Identify various life roles and civic and work-related activities in the school, home, and community
- 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

**Evidence of Student Learning**

**Formative Tasks:**

- Teacher Observation
- Anecdotal Records/ Checklists
- Oral Assessments/Conferencing
- Analysis of student work
- Daily Review
- Solve and Share
- Quick Check Quizzes
- Exit Slips
- Cooperative Group Learning

**Alternative Assessments:**

- Performance Tasks
- Student created models
- Written/verbal explanations
- Peer assessment
- Self-assessment
- Checklists
- Rubrics
- Portfolio/Math Journals

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| ● Games<br>● Self-reflection | |
| **Summative Assessments:**<br>● Topic Tests<br>● Topic Performance Assessments<br>● Timed Basic Fact Quizzes | **Benchmark Assessments:**<br>● Pearson Benchmark Assessments<br>● Beginning of Year SGO<br>● Mid-Year SGO<br>● End of Year SGO |
| **Knowledge & Skills** | |
| **Enduring Understandings:**<br>● Understand properties of multiplication and the relationship between multiplication and division<br>● Multiply and divide within 100<br>● Represent and solve problems involving multiplication and division<br>● Solve problems involving the four operations, and identify and explain patterns in arithmetic<br>● Geometric measurement: understand concepts of area and relate area to multiplication and to addition<br>● Use place value understanding and properties of operations to perform multi-digit arithmetic<br>● Develop understanding of fractions as numbers<br>● Reason with shapes and their attributes | **Essential Questions:**<br>● How can you use multiplication and division within 100 to solve word problems involving measurement quantities (area) using drawings?<br>● Are you able to multiply one-digit whole numbers by applying the properties of operations (commutative, associative, and distributive properties)?<br>● How can you use tiling and an area model to represent the distributive property?<br>● How do you solve real-world problems involving find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts?<br>● Can you fluently multiply and divide within 40 using strategies such as the relationship between multiplication and division?<br>● Are you able to write equations when solving two-step word problems, using a symbol for an unknown?<br>● Are you able to find the value of an unknown in an equation involving any of the four operations and use estimation strategies to assess the reasonableness of answers?<br>● What are arithmetic patterns in addition or multiplication tables and explain the pattern using the |

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| | properties of operations?<br>● Can you fluently add and subtract (with regrouping) two 2-digit whole numbers within 100?<br>● How do you partition shapes into parts with equal areas and express the area of each part as a unit fraction?<br>● Can you interpret the unit fraction 1/b as the quantity formed by 1 of b equal parts of a whole, and the fraction a/b as the quantity formed by a parts of size 1/b? |
| **Core Instructional & Supplemental Materials** | |
| **Suggested Activities/Resources:**<br>● Multiples of 10 Shopping list- Students are given a shopping list and have to purchase enough items for the class.<br>● Place Value game- Students will be participants in a game that demonstrates their knowledge of place value. In two teams, students will send one person at a time to come to the board, where they will place sentence strips over numbers identifying the correct place value. Students will work as a team to complete a 4+ digit number with correct place values.<br>● Around the World: Flashcard Practice<br>● SMARTboard applications<br>● Grades K-6: Envision 2.0, 2016<br>● Envisions online resources<br>● Sushi Monsters iPad Application- Basic Fact Practice<br>● Reflexmath.com<br>● Happynumbers.com<br>● Achieve3000: Differentiated Instruction Solutions<br>● Online Math Games | **Varied Levels of Text:**<br>● *Divide and Ride* by Stuart J. Murphy<br>● *Everybody Wins!* Bruce, Sheila M<br>● *The Great Divide* Dodds, Dayle Ann N<br>● *If You Were A Divided-By Sign* Shaskan, Trisha Speed<br>● *If You Were A Times Sign* Shaskan, Trisha Speed<br>● *Jump, Kangaroo, Jump!* Murphy, Stuart J.<br>● *Mummies In The Library: Divide The Pages* Perritano, John Q<br>● *Fractions = Trouble!* Mills, Claudia M<br>● *Building An Igloo* Steltzer, Ulli NF<br>● *If You Were A Polygon* Aboff, Marcie<br>● *Mummy Math* Neuschwander, Cindy P<br>● *Shape Up!* Adler, David A.<br>● *Coyotes All Around* Murphy, Stuart J. O<br>● *Earth Day — Hooray!* Murphy, Stuart J. Q<br>● *Great Estimations* Goldstone, Bruce Q |

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| • Math Playground<br>• ABCya<br>• Funbrain<br>• Flocabulary<br>• GoNoodle<br>• Number Rock<br>• TheBazillions-YouTube<br>• BrainPop.com<br>• Gizmos | |

**Accommodations/Modifications**

**English Language Learners:**

- Provide written directions with models and diagrams when possible
- Build in more group work to allow ELL students to interact and communicate with peers
- Pre-teach as often as possible- share photos, videos, articles, vocabulary etc. with ELL students prior to use in class
- Provide vocabulary ahead of time
- Use sentence frames to give students practice with academic language
- Highlight key words
- Utilize visual charts/cues
- Frequently check for understanding
- Test key concepts and main ideas
- Simplify written and verbal instructions
- Give students objective tests: matching, multiple choice, etc.
- Provide manipulatives
- Allow extra time
- Use alternative assessments such as physical demonstration and pictorial products
- Provide shorter assessments
- Grade content vs. mechanics
- Read assessments aloud
- Allow open-book or open-note tests

**Special Education/504 Plans/Students with Disabilities:**

- Follow specific students accommodations and modifications as listed in individual student IEP or 504 plan
- Provide opportunities for movement
- Have manipulatives and other math resources available for student use
- Incorporate small group instruction
- Utilize visual charts/cues
- Facilitate successful experiences
- Provide tutoring if needed
- Provide positive praise to increase motivation

- Differentiate tests to meet the needs of students
- Shorten tests and give in multiple sessions if needed
- Reteach/Review before giving assessments
- Read assessment directions for each section to student(s)
- Allow the use of tools such as a computer or iPad
- Allow the use of manipulatives such as counters during testing
- Highlight key parts of equations or word problems for student(s)
- Allow verbal answers
- Print tests with larger font
- Allow for extra time if needed/necessary

**Students at Risk of Failure:**

- Ensure child has access to all appropriate academic resources both in school and at home
- Provide structure and adhere to a consistent daily routine with clear and concise rules
- Facilitate successful experiences
- Provide tutoring if needed
- Pair with adult mentor or buddy
- Be flexible with assignments
- Offer several alternatives from which all students can choose.
- Give students extra time to complete tests
- Give students objective tests: matching, multiple choice, etc.
- Test key concepts or main ideas
- Answer fewer or different test questions
- Graph paper to assist in organizing or lining up math problems
- Use of computers and calculators
- Answers to be dictated
- Accept short answers
- Open-book or open-note tests
- Allow students to complete assignments in school
- Do not penalize for late or missing assignments/materials
- Offer encouragement and understanding
- Allow students to have personal possessions and property in school
- Give choice to provide a sense of control

**Economically Disadvantaged:**

- Provide clear, achievable expectations, do not lower academic requirements for them.
- Build a safe and nurturing atmosphere
- Be flexible with assignments
- Providing needed academic resources (paper, pencils, computer time)
- Provide materials for all assignments in class and at home
- Offer several alternatives from which all students can choose.
- Allow students to finish assignments independently, or give them the opportunity to complete tasks at their own pace.
- Use real-world examples and create mental models for abstract idea
- Provide increased knowledge base and vocabulary use about real world experiences.

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- Share the decision making in class.
- Maintain expectations while offering choice and soliciting input

**Culturally Diverse:**

- Involve families in student learning
- Provide social/emotional support
- Respect cultural traditions
- Build in more group work to encourage interaction with peers
- Show photos, videos, and definitions when possible for culturally unique vocabulary
- Translate directions into native language
- Teach study skills
- Provide students with necessary academic resources and materials
- Allow students to demonstrate knowledge through alternative assessments
- Provide visuals
- Assign peer tutor
- Support verbal explanations with non verbal cues: Gestures/ facial expressions Props, realia, manipulatives, concrete materials,visuals, graphs, pictures, maps
- Provide positive praise to increase motivation
- Provide real world connections and emphasize the value of education
- Communicate high expectations for the success of all students
- Integrate the arts into learning activities

| **Unit 3: Fractions as Numbers and Measurement**<br>In this unit students will develop an understanding of fractions as numbers and their place on a number line. Students will solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. Students will reason with shapes and their attributes, and will recognize perimeter as an attribute of plane figures. They will be able to distinguish between linear and area measure. | **Duration:** 41 Days |
|---|---|

**Standards/Learning Targets**

**New Jersey Student Learning Standards:**

- 3.OA.C.7: Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

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- 3.NF.A.2a,b: Understand a fraction as a number on the number line; represent fractions on a number line diagram.
  **a)** Represent a fraction ***1/b*** on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into ***b*** equal parts. Recognize that each part has size ***1/b*** and that the endpoint of the part based at 0 locates the number ***1/b*** on the number line.
  **b)** Represent a fraction ***a/b*** on a number line diagram by marking off ***a*** lengths ***1/b*** from 0. Recognize that the resulting interval has size ***a/b*** and that its endpoint locates the number ***a/b*** on the number line.
- 3.NF.A.3a: Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.
- 3.NF.A.3b: Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.
- 3.NF.A.3c: Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.
- 3.NF.A.3d: Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.
- 3.MD.A.1: Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.
- 3.MD.A.2: Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).6 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.
- 3.G.A.1: Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
- 3.MD.D.8: Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

**Standards for Mathematical Practice:**

- MP.1 Make sense of problems and persevere in solving them.
- MP.2 Reason Abstractly and quantitatively.
- MP.3 Construct viable arguments and critique the reasoning of others.

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- MP.4 Model with mathematics.
- MP.5 Use appropriate tools strategically.
- MP.6 Attend to precision.
- MP.7 Look for and make use of structure.
- MP.8 Look for and express regularity in repeated reasoning.

**Interdisciplinary Connections:**

**Reading:**

- **RI.3.4:** Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.

**Speaking and Listening:**

- **SL.3.1.A:** Explicitly draw on previously read text or material and other information known about the topic to explore ideas under discussion.
- **SL.3.1.B:** Follow agreed-upon norms for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
- **SL.3.4:** Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

**Writing:**

- **W.3.4:** With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. (Grade-specific expectations for writing types are defined in standards 1–3 above.)

**Technology Standards:**

- **8.1.5.A.1:** Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
- **8.1.5.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.
- **8.1.5.F.1:** Apply digital tools to collect, organize, and analyze data that support a scientific finding.

**21st Century Themes/Career Readiness:**

- 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

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them.

- CRP11. Use technology to enhance productivity.

**21st Century Life and Career Standards:**

- 9.2.4.A.1 Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.
- 9.2.4.A.2 Identify various life roles and civic and work-related activities in the school, home, and community
- 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

**Evidence of Student Learning**

| **Formative Tasks:** | **Alternative Assessments:** |
|---|---|
| ● Teacher Observation<br>● Anecdotal Records/ Checklists<br>● Oral Assessments/Conferencing<br>● Analysis of student work<br>● Daily Review<br>● Solve and Share<br>● Quick Check Quizzes<br>● Exit Slips<br>● Cooperative Group Learning<br>● Games<br>● Self-reflection | ● Performance Tasks<br>● Student created models<br>● Written/verbal explanations<br>● Peer assessment<br>● Self-assessment<br>● Checklists<br>● Rubrics<br>● Portfolio/Math Journals |
| **Summative Assessments:**<br>● Topic Tests<br>● Topic Performance Assessments<br>● Timed Basic Fact Quizzes | **Benchmark Assessments:**<br>● Pearson Benchmark Assessments<br>● Beginning of Year SGO<br>● Mid-Year SGO<br>● End of Year SGO |

**Knowledge & Skills**

| **Enduring Understandings:** | **Essential Questions:** |
|---|---|
| ● Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects<br>● Develop understanding of fractions as numbers<br>● Reason with shapes and their attributes<br>● Multiply and divide within 100 | ● How do you make a drawing of a number line depicting the position of *1/b* (with *b* = 2, 3, 4, 6, or 8)?<br>● How do you represent the unit fraction *1/4* on the number line by dividing the number line between 0 & 1 into 4 equal lengths and naming the point at the end of the first length as the position of unit fraction *¼*, and |

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| ● Recognize perimeter as an attribute of plane figures and distinguish between linear and area measure | can you apply the same method for locating the points 1/2, 1/3, 1/5, 1/6, and 1/8 on the number line?<br>● How do you make a drawing of a number line depicting the position of a fraction *a*/*b* (*b* = 2, 4, 3, 4, 6, or 8, and including whole numbers up to 5)?<br>● Are you able to generate simple equivalent fractions, explain why they are equivalent, and support the explanation with visual fraction models?<br>● How do you locate equivalent fractions on a number line?<br>● How do you express whole numbers as fractions, identify fractions equivalent to whole numbers and locate them on the number line?<br>● How do you compare two fractions having the same numerator, compare two fractions having the same denominator; reason about their size and use the symbols >, =, or < to record the comparison?<br>● Can you tell and write time to the nearest minute to solve word problems with addition and subtraction involving time intervals in minutes?<br>● How can you solve one-step word problems by estimating and measuring volume and mass using appropriate tools and units?<br>● Can you fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division?<br>● Can you recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories?<br>● How do you solve real world and mathematical problems involving |

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| | perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters? |
| **Core Instructional & Supplemental Materials** | |
| **Suggested Activities/Resources:**<br>● Fraction top it- Players flip over one fraction card and compare who has the greater fraction.<br>● Equivalent Fraction strip game- Use 5 strips of paper. Each strip represents 1 whole, halves, quarters, eighths, and sixteenths. Students play with a partner to roll a fraction dice to place the fraction represented on the dice onto the whole. First person to fill in their whole strip wins.<br>● Cut It Up- Students work with graham crackers to create different fractions and identify how as the denominator increases the size of each piece decreases<br>● Recipe Fractions- Students follow a recipe and explore how fractions are used in the real world. Students will pretend to be a chef and present the recipe to a mock "menu¨, identifying how many people the recipe can feed.<br>● Around the World: Flashcard Practice<br>● SMARTboard applications<br>● Grades K-6: Envision 2.0, 2016<br>● Envisions online resources<br>● Sushi Monsters iPad Application- Basic Fact Practice<br>● Fractions Game<br>● Reflexmath.com<br>● Happynumbers.com<br>● Achieve3000: Differentiated Instruction Solutions | **Varied Levels of Text:**<br>● *Fraction Fun* by David Adler<br>● *Give Me Half!* By Stuart Murphy<br>● *Clean Sweep Campers* by Lucille Recht Penner<br>● *Hershey's Fractions Book* by Jerry Pallotta<br>● *Divide and Ride* by Stuart J. Murphy<br>● *Everybody Wins!* Bruce, Sheila M<br>● *The Great Divide* Dodds, Dayle Ann N<br>● *If You Were A Divided-By Sign* Shaskan, Trisha Speed<br>● *If You Were A Times Sign* Shaskan, Trisha Speed<br>● *Jump, Kangaroo, Jump!* Murphy, Stuart J.<br>● *Mummies In The Library: Divide The Pages* Perritano, John Q<br>● *Fractions = Trouble!* Mills, Claudia M<br>● *Building An Igloo* Steltzer, Ulli NF<br>● *If You Were A Polygon* Aboff, Marcie<br>● *Mummy Math* Neuschwander, Cindy P<br>● *Shape Up!* Adler, David A.<br>● *Coyotes All Around* Murphy, Stuart J. O<br>● *Earth Day — Hooray!* Murphy, Stuart J. Q<br>● *Great Estimations* Goldstone, Bruce Q |

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| • Online Math Games<br>• ST Math<br>• Math Playground<br>• ABCya<br>• Funbrain<br>• Flocabulary<br>• GoNoodle<br>• Number Rock<br>• TheBazillions-YouTube<br>• BrainPop.com<br>• Gizmos | |

**Accommodations/Modifications**

**English Language Learners:**

- Provide written directions with models and diagrams when possible
- Build in more group work to allow ELL students to interact and communicate with peers
- Pre-teach as often as possible- share photos, videos, articles, vocabulary etc. with ELL students prior to use in class
- Provide vocabulary ahead of time
- Use sentence frames to give students practice with academic language
- Highlight key words
- Utilize visual charts/cues
- Frequently check for understanding
- Test key concepts and main ideas
- Simplify written and verbal instructions
- Give students objective tests: matching, multiple choice, etc.
- Provide manipulatives
- Allow extra time
- Use alternative assessments such as physical demonstration and pictorial products
- Provide shorter assessments
- Grade content vs. mechanics
- Read assessments aloud
- Allow open-book or open-note tests

**Special Education/504 Plans/Students with Disabilities:**

- Follow specific students accommodations and modifications as listed in individual student IEP or 504 plan
- Provide opportunities for movement
- Have manipulatives and other math resources available for student use
- Incorporate small group instruction
- Utilize visual charts/cues

- Facilitate successful experiences
- Provide tutoring if needed
- Provide positive praise to increase motivation
- Differentiate tests to meet the needs of students
- Shorten tests and give in multiple sessions if needed
- Reteach/Review before giving assessments
- Read assessment directions for each section to student(s)
- Allow the use of tools such as a computer or iPad
- Allow the use of manipulatives such as counters during testing
- Highlight key parts of equations or word problems for student(s)
- Allow verbal answers
- Print tests with larger font
- Allow for extra time if needed/necessary

**Students at Risk of Failure:**

- Ensure child has access to all appropriate academic resources both in school and at home
- Provide structure and adhere to a consistent daily routine with clear and concise rules
- Facilitate successful experiences
- Provide tutoring if needed
- Pair with adult mentor or buddy
- Be flexible with assignments
- Offer several alternatives from which all students can choose.
- Give students extra time to complete tests
- Give students objective tests: matching, multiple choice, etc.
- Test key concepts or main ideas
- Answer fewer or different test questions
- Graph paper to assist in organizing or lining up math problems
- Use of computers and calculators
- Answers to be dictated
- Accept short answers
- Open-book or open-note tests
- Allow students to complete assignments in school
- Do not penalize for late or missing assignments/materials
- Offer encouragement and understanding
- Allow students to have personal possessions and property in school
- Give choice to provide a sense of control

**Economically Disadvantaged:**

- Provide clear, achievable expectations, do not lower academic requirements for them.
- Build a safe and nurturing atmosphere
- Be flexible with assignments
- Providing needed academic resources (paper, pencils, computer time)
- Provide materials for all assignments in class and at home
- Offer several alternatives from which all students can choose.

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- Allow students to finish assignments independently, or give them the opportunity to complete tasks at their own pace.
- Use real-world examples and create mental models for abstract idea
- Provide increased knowledge base and vocabulary use about real world experiences.
- Share the decision making in class.
- Maintain expectations while offering choice and soliciting input

**Culturally Diverse:**

- Involve families in student learning
- Provide social/emotional support
- Respect cultural traditions
- Build in more group work to encourage interaction with peers
- Show photos, videos, and definitions when possible for culturally unique vocabulary
- Translate directions into native language
- Teach study skills
- Provide students with necessary academic resources and materials
- Allow students to demonstrate knowledge through alternative assessments
- Provide visuals
- Assign peer tutor
- Support verbal explanations with non verbal cues: Gestures/ facial expressions Props, realia, manipulatives, concrete materials,visuals, graphs, pictures, maps
- Provide positive praise to increase motivation
- Provide real world connections and emphasize the value of education
- Communicate high expectations for the success of all students
- Integrate the arts into learning activities

| **Unit 4: Representing Data**<br>In this unit students will represent and interpret data. They will be able to multiply and divide within 100 with accuracy and efficiency. Students will solve two-step word problems with equations containing unknowns. Students will also understand the concepts of area and relate area to multiplication and to addition. | **Duration:** 21 Days |
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**Standards/Learning Targets**

**New Jersey Student Learning Standards:**

- 3.MD.B.3: Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.
- 3.MD.B.4: Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the

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horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.

- 3.OA.C.7: Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
- 3.OA.D.8: Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
- 3.NBT.A.2: Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
- 3.MD.C.7d :Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

**Standards for Mathematical Practice:**

- MP.1 Make sense of problems and persevere in solving them.
- MP.2 Reason Abstractly and quantitatively.
- MP.3 Construct viable arguments and critique the reasoning of others.
- MP.4 Model with mathematics.
- MP.5 Use appropriate tools strategically.
- MP.6 Attend to precision.
- MP.7 Look for and make use of structure.
- MP.8 Look for and express regularity in repeated reasoning.

**Interdisciplinary Connections:**

**Reading:**

- **RI.3.4:** Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.

**Speaking and Listening:**

- **SL.3.1.A:** Explicitly draw on previously read text or material and other information known about the topic to explore ideas under discussion.
- **SL.3.1.B:** Follow agreed-upon norms for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
- **SL.3.4:** Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

**Writing:**

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- **W.3.4:** With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. (Grade-specific expectations for writing types are defined in standards 1–3 above.)

**Technology Standards:**

- **8.1.5.A.1:** Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
- **8.1.5.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.
- **8.1.5.F.1:** Apply digital tools to collect, organize, and analyze data that support a scientific finding.

**21st Century Themes/Career Readiness:**

- 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.
- CRP5. Consider the environmental, social and economic impacts of decisions.
- 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.

**21st Century Life and Career Standards:**

- 9.2.4.A.1 Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.
- 9.2.4.A.2 Identify various life roles and civic and work-related activities in the school, home, and community
- 9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

**Evidence of Student Learning**

**Formative Tasks:**

- Teacher Observation
- Anecdotal Records/ Checklists
- Oral Assessments/Conferencing
- Analysis of student work
- Daily Review
- Solve and Share
- Quick Check Quizzes
- Exit Slips
- Cooperative Group Learning

**Alternative Assessments:**

- Performance Tasks
- Student created models
- Written/verbal explanations
- Peer assessment
- Self-assessment
- Checklists
- Rubrics
- Portfolio/Math Journals

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| ● Games<br>● Self-reflection | |
| **Summative Assessments:**<br>● Topic Tests<br>● Topic Performance Assessments<br>● Timed Basic Fact Quizzes | **Benchmark Assessments:**<br>● Pearson Benchmark Assessments<br>● Beginning of Year SGO<br>● Mid-Year SGO<br>● End of Year SGO |
| **Knowledge & Skills** | |
| **Enduring Understandings:**<br>● Represent and interpret data<br>● Multiply and divide within 100<br>● Use place value understanding and properties of operations to perform multi-digit arithmetic<br>● Understand concepts of area and relate area to multiplication and to addition | **Essential Questions:**<br>● How do you draw scaled picture and scaled bar graphs to represent data with several categories?<br>● Can you solve one and two-step word problems using scaled bar graphs?<br>● Are you able to depict data measured in fourths and halves of an inch with a line plot with scales marked with appropriate units?<br>● Can you fluently multiply and divide within 100 using strategies such as the relationship between multiplication and division?<br>● Are you able to write equation(s) containing an unknown and find the value of an unknown in an equation that is a representation of a two-step word problem (with any four operations); and are you able to use estimation strategies to assess the reasonableness of answers?<br>● Can you fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction?<br>● Are you able to solve real world problems involving finding areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of |

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| | the non-overlapping parts? |

**Core Instructional & Supplemental Materials**

**Suggested Activities/Resources:**

- Around the World: Flashcard Practice
- SMARTboard applications
- Grades K-6: Envision 2.0, 2016
- Envisions online resources
- Sushi Monsters iPad Application- Basic Fact Practice
- Reflexmath.com
- Happynumbers.com
- Achieve3000: Differentiated Instruction Solutions
- Online Math Games
- ST Math
- ABCya
- Funbrain
- Math Playground
- Flocabulary
- GoNoodle
- Number Rock
- TheBazillions-YouTube
- BrainPop.com
- Gizmos

**Varied Levels of Text:**

- *Working with Fractions* by David Adler
- *The Wishing Club: A Story About Fractions* by Donna Jo Napoli
- *Fraction Action* by Loreen Leedy
- *Wholey Cow: Fractions Are Fun* by Taryn Souder
- *Divide and Ride* by Stuart J. Murphy
- *Everybody Wins!* Bruce, Sheila M
- *The Great Divide* Dodds, Dayle Ann N
- *If You Were A Divided-By Sign* Shaskan, Trisha Speed
- *If You Were A Times Sign* Shaskan, Trisha Speed
- *Jump, Kangaroo, Jump!* Murphy, Stuart J.
- *Mummies In The Library: Divide The Pages* Perritano, John Q
- *Fractions = Trouble!* Mills, Claudia M
- *Building An Igloo* Steltzer, Ulli NF
- *If You Were A Polygon* Aboff, Marcie
- *Mummy Math* Neuschwander, Cindy P
- *Shape Up!* Adler, David A.
- *Coyotes All Around* Murphy, Stuart J. O
- *Earth Day — Hooray!* Murphy, Stuart J. Q
- *Great Estimations* Goldstone, Bruce Q

**Accommodations/Modifications**

**English Language Learners:**

- Provide written directions with models and diagrams when possible
- Build in more group work to allow ELL students to interact and communicate with peers
- Pre-teach as often as possible- share photos, videos, articles, vocabulary etc. with ELL students prior to use in class
- Provide vocabulary ahead of time
- Use sentence frames to give students practice with academic language

- Highlight key words
- Utilize visual charts/cues
- Frequently check for understanding
- Test key concepts and main ideas
- Simplify written and verbal instructions
- Give students objective tests: matching, multiple choice, etc.
- Provide manipulatives
- Allow extra time
- Use alternative assessments such as physical demonstration and pictorial products
- Provide shorter assessments
- Grade content vs. mechanics
- Read assessments aloud
- Allow open-book or open-note tests

**Special Education/504 Plans/Students with Disabilities:**

- Follow specific students accommodations and modifications as listed in individual student IEP or 504 plan
- Provide opportunities for movement
- Have manipulatives and other math resources available for student use
- Incorporate small group instruction
- Utilize visual charts/cues
- Facilitate successful experiences
- Provide tutoring if needed
- Provide positive praise to increase motivation
- Differentiate tests to meet the needs of students
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- Read assessment directions for each section to student(s)
- Allow the use of tools such as a computer or iPad
- Allow the use of manipulatives such as counters during testing
- Highlight key parts of equations or word problems for student(s)
- Allow verbal answers
- Print tests with larger font
- Allow for extra time if needed/necessary

**Students at Risk of Failure:**

- Ensure child has access to all appropriate academic resources both in school and at home
- Provide structure and adhere to a consistent daily routine with clear and concise rules
- Facilitate successful experiences
- Provide tutoring if needed
- Pair with adult mentor or buddy
- Be flexible with assignments
- Offer several alternatives from which all students can choose.
- Give students extra time to complete tests
- Give students objective tests: matching, multiple choice, etc.

- Test key concepts or main ideas
- Answer fewer or different test questions
- Graph paper to assist in organizing or lining up math problems
- Use of computers and calculators
- Answers to be dictated
- Accept short answers
- Open-book or open-note tests
- Allow students to complete assignments in school
- Do not penalize for late or missing assignments/materials
- Offer encouragement and understanding
- Allow students to have personal possessions and property in school
- Give choice to provide a sense of control

**Economically Disadvantaged:**

- Provide clear, achievable expectations, do not lower academic requirements for them.
- Build a safe and nurturing atmosphere
- Be flexible with assignments
- Providing needed academic resources (paper, pencils, computer time)
- Provide materials for all assignments in class and at home
- Offer several alternatives from which all students can choose.
- Allow students to finish assignments independently, or give them the opportunity to complete tasks at their own pace.
- Use real-world examples and create mental models for abstract idea
- Provide increased knowledge base and vocabulary use about real world experiences.
- Share the decision making in class.
- Maintain expectations while offering choice and soliciting input

**Culturally Diverse:**

- Involve families in student learning
- Provide social/emotional support
- Respect cultural traditions
- Build in more group work to encourage interaction with peers
- Show photos, videos, and definitions when possible for culturally unique vocabulary
- Translate directions into native language
- Teach study skills
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