

Clinton-Glen Gardner School District



Curriculum Management System

Mathematics

Grade 3

May 2012

*** For adoption by all regular education programs as specified and for adoption or adaptation by all Special Education Programs in accordance with Board of Education Policy #2200.**

Board Approved: June 19, 2012

Table of Contents

Clinton-Glen Gardner School District Administration and Board of Education Members	Page 3
Acknowledgments	Page 4
District Mission Statement and Philosophy	Page 5
Common Core State Standards	Page 6
Grade 3 Scope and Sequence	Page 9
Grade 3 Unit Plans	Page 11

CLINTON-GLEN GARDNER SCHOOL DISTRICT

ADMINISTRATION

Dr. Richard S. Katz, Superintendent/Principal
Mrs. Lisa J. Craft, Business Administrator
Mrs. Christine Steiner, Assistant Principal
Mrs. Jenine Kastner, Supervisor of Special Services

BOARD OF EDUCATION

Mr. Robert Pyle, President
Mrs. Cara Morris, Vice President
Mrs. Patricia Cooper
Mrs. Amanda DiRienz
Mrs. Margaret Layding

Acknowledgments

During the 2011-2012 school year, the Clinton-Glen Gardner School District continued working with the curriculum consortium we developed with eight other North-Voorhees sending districts, including Califon, Clinton Township, Hampton, High Bridge, Lebanon Borough, Lebanon Township, Tewksbury Township, and Union Township. This consortium represents a collaborative effort that created an opportunity to bring together math expertise from each of the participating districts. The following individuals are acknowledged for their assistance in the preparation of this Curriculum Management System:

Writers' Names: Lucille Arnold, High Bridge
Leala Baxter, Tewksbury Township
Melissa Betz, High Bridge
Lori Brezinsky, Clinton Township
Debbie Carvatt, Union Township
Chris Cosgrave, Clinton Township
Gretchen Dello Russo, High Bridge
Bobbie Felip, Clinton Township
Evelyn Ferro, Clinton-Glen Gardner
Christina Gerould, Lebanon Township
Michael Grossman, Hampton
Robin Heuneman, Califon

Sherry Kerr, High Bridge
Jamie Levy, Tewksbury Township
Charles Marsteller, Lebanon Borough
Bonnie Mendralla, Tewksbury Township
Pam Nugent, Tewksbury Township
Tina Rockafellow, Clinton Township
Jennifer Smith, High Bridge
Christine Steiner, Clinton-Glen Gardner
Marisa Stettner, Lebanon Township
Jerry Tolomeo, High Bridge
Susan Wydner, Lebanon Township

Clinton-Glen Gardner School District

Mission

The mission of Clinton Public School is to inspire our students to become contributing members of society who are independent, innovative, life-time learners equipped with the necessary skills to meet the demands of our ever-changing world.

Philosophy

The economy in which graduates of our schools will seek employment is more competitive than ever and is rapidly changing in response to advances in technology. To compete in today's global, information-based economy, students must be able to solve real problems, reason effectively, and make logical connections. In this changing world those who have a good understanding of mathematics will have many opportunities and doors open to them throughout their lives. Today's workforce requires mathematical knowledge and skills in areas such as data analysis, problem-solving, pattern recognition, statistics and probability; therefore, our school's curriculum must prepare students for these expectations.

The Clinton-Glen Gardner School is committed to providing all students with the opportunity and the support necessary to learn significant mathematics with depth and understanding. To that end, students will engage in a wide variety of learning activities designed to develop their ability to reason and solve complex problems. Calculators, computers, manipulatives, technology, and the Internet will be used as tools to enhance learning and assist in problem solving. Group work, projects, literature, and interdisciplinary activities will make mathematics more meaningful and aid understanding. Classroom instruction will be designed to meet the learning needs of all children and will reflect a variety of learning styles.

The math curriculum fosters students who:

- Develop computational, conceptual, problem-solving and reasoning skills
- Demonstrate their understanding of mathematical concepts based on higher levels of mathematical thought
- Use technology and other tools as an integral part of solving mathematical problems

**New Jersey State Department of Education
Common Core State Standards**

A note about Common Core State Standards for Mathematics.

The Common Core State Standards for Mathematics were adopted in 2010. The standards referenced in this curriculum guide refer to the progress indicators in these newly adopted standards. A complete copy of the Common Core State Standards for Mathematics may be found at:

<http://www.corestandards.org/the-standards/mathematics> (by grade level)

<http://www.corestandards.org/the-standards> (in their entirety)

Mathematics: Standards for Mathematical Practice Interpreted for Kindergarten Through Second Grade

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with long standing importance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, representation and connections. The second are the strands of mathematical proficiency specified in the National Research Council’s report *Adding It Up*: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately) and productive disposition (habitual inclination to see mathematics as sensible, useful and worthwhile, coupled with a belief in diligence and one’s own efficacy).

The Standards for Mathematical Practice are:

1. MAKE SENSE OF PROBLEMS AND PERSEVERE IN SOLVING THEM.

As you look at or read a mathematical problem, think about what it means and what it is asking you to do. Also think about what would be a good way to start solving it. Ask yourself:

- What does the problem tell me?
 - What information is given?
 - What are the relationships among parts of the problem?
 - What is the goal of solving the problem?
 - Have I seen other problems similar to this one?
- What does the problem ask me to find out (solve)?
- How should I start solving the problem?
- Can pictures or a drawing help me to figure out how to solve the problem?
- Does how I'm answering the problem make sense with what the problem is asking?
- What are some other ways to solve the problem?
- Can I use another way to check if my answer is correct?
- Does my answer make sense?

2. REASON ABSTRACTLY AND QUANTITATIVELY.

Understand the relationship of numbers and number problems and represent them using pictures, drawings or symbols. Talk about the parts of number problems using pictures, drawings or symbols as well as how the pictures, drawings or symbols represent and help explain the problem. Show how using different numbers or operations in the same problem changes it.

3. CONSTRUCT VIABLE ARGUMENTS AND CRITIQUE THE REASONING OF OTHERS.

Use objects, drawings, diagrams or actions to construct arguments about math problems with understanding and using appropriate vocabulary to explain the reasoning process. Build a local argument, communicate it with others, justify your reasoning process and respond to the reasoning process someone else uses. Express agreement if both arguments are correct and explain why an argument is flawed if it is.

4. MODEL WITH MATHEMATICS.

Apply mathematical skills to everyday life, society, the workplace and other situations; identify important quantities in practical situations; write an equation to describe a situation; revise solutions; use tools such as diagrams, two-way tables, graphs, flowcharts and formulas to show relationships; analyze relationships to draw conclusions, interpret results in context and reflect on whether the results make sense.

5. USE APPROPRIATE TOOLS STRATEGICALLY.

Identify and make decisions regarding which tool, such as paper and pencil, models, rulers, spreadsheets, etc., to use to help solve mathematical problems as well as know when a tool is not the right one to use. Use technological and other tools to deepen understanding.

6. ATTEND TO PRECISION.

Communicate precisely when discussing math incorporating the following:

- Use clear definitions.

- Choose, use and explain symbols correctly, consistently and appropriately.
- Specify units of measure and labels correctly.
- Avoid careless errors.
- Follow formulas to explain thinking to others.

7. LOOK FOR AND MAKE USE OF STRUCTURE.

Look for and identify structure and patterns in mathematics (for example, three and seven more is the same amount as seven and three more, or sort shapes according to their number of sides) and see if the pattern or structure changes.

8. LOOK FOR AND EXPRESS REGULARITY IN REPEATED REASONING.

Look for repetition in calculations and numeric thinking, such as skip counting. Pay attention to the whole problem and the details and continuously evaluate the accuracy and reasonableness of both intermediate and final answers.

CONNECTING THE STANDARDS FOR MATHEMATICAL PRACTICE TO THE STANDARDS FOR MATHEMATICS CONTENT

The Standards for Mathematical Practice describe ways in which developing student practitioners of the discipline of mathematics increasingly ought to engage with the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle and high school years. Designers of curricula, assessments and professional development should all attend to the need to connect the mathematical practices to mathematical content in mathematical instruction. The Standards for Mathematical Content are a balanced combination of procedure and understanding. Expectations that begin with the word “understand” are often especially good opportunities to connect the practices to the content. Students who lack understanding of a topic may rely on procedures too heavily. Without a flexible base from which to work, they may be less likely to consider analogous problems, represent problems coherently, justify conclusions, apply the mathematics to practical situations, use technology mindfully to work with the mathematics, explain the mathematics accurately to other students, step back for an overview or deviate from a known procedure to find a shortcut. In short, a lack of understanding effectively prevents a student from engaging the mathematical practices. In this respect those content standards, which set an expectation of understanding are potential “points of intersection” between the Standards for Mathematical Content and the Standards for Mathematical Practice. These points of intersection are intended to be weighted toward central and generative concepts in the school mathematics curriculum that most merit time, resources, innovative energies and focus necessary to qualitatively improve the curriculum, instruction, assessment, professional development and student achievement in mathematics.

**Grade 3
Mathematics**

Scope and Sequence

<p>Topic: Number and Operations in Base Ten</p> <p>I. Addition, Subtraction and the Number System</p> <ul style="list-style-type: none">a. Place Valueb. Roundingc. Numbers to 1000d. Addition<ul style="list-style-type: none">i. 2 and 3 digit numbersii. Commutative propertyiii. Associative propertye. Subtraction<ul style="list-style-type: none">i. 2 and 3 digit numbersii. Commutative propertyiii. Associative property	<p>Topic: Operations and Algebraic Thinking</p> <p>II. Multiplication and Division</p> <ul style="list-style-type: none">a. Multiplication<ul style="list-style-type: none">i. Arraysii. One digit by multiples of 10iii. Properties of operationsiv. Fact fluencyb. Division<ul style="list-style-type: none">i. Equal distributionii. Properties of operationiii. Inverse relationshipc. Estimation and answer reasonablenessd. Arithmetic patterns
<p>Topic: Number and Operations – Fractions</p> <p>III. Fractions</p> <ul style="list-style-type: none">a. Naming equal partsb. Creating equal partsc. Unit fractions<ul style="list-style-type: none">i. Namingii. Comparingiii. Orderingd. Whole number as fractionse. Equivalent fractions	<p>Topic: Geometry</p> <p>IV. Geometry</p> <ul style="list-style-type: none">a. Polygons<ul style="list-style-type: none">i. Attributesii. Comparisonsiii. Classificationiv. Creating equal partsv. Naming equal parts

Topic: Measurement and Data

V. Area and Perimeter

- a. Perimeter
- b. Area
 - i. Unit squares
 - ii. Tiling
 - iii. Formula

VI. Time, Measurement and Data

- a. Time
 - i. To the minute
 - ii. Elapsed time
- b. Volume and Mass
 - i. Grams, kilograms, liters, pounds and ounces
- c. Length
 - i. Measurement to the $\frac{1}{2}$ and $\frac{1}{4}$ mark
- d. Data
 - i. Organize, interpret and describe data
 - ii. Circle graph
 - iii. Bar graph
 - iv. Line plot

Suggested days of Instruction	Curriculum Management System	Topic: Addition, Subtraction and the Number System	
	Subject/Grade Level: Grade 3 Mathematics	Goal 1: The student will be able to utilize their understanding of the number system/place value to round, add, and subtract numbers to 1000.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>1.1. Identify the position of a digit in a number and how it affects rounding to the nearest 10 or 100. (3.NBT.1)</p> <p>1.2. Round numbers to the nearest 10 or 100 and explain when, why and how to do so. (3.NBT.1)</p> <p>1.3. Read, write and sequence numbers to 1000. (3.NBT.1)</p> <p>1.4. Represent a structure of three-digit numbers as being composed of 100s, 10s and 1s. (3.NBT.1)</p> <p>1.5. Solve addition and subtraction problems with 2 and 3 digit numbers by breaking numbers apart and recombining them (algorithms). (3.NBT.2)</p>	<p>Essential Questions: How do you represent numbers? How does understanding place value help you solve double digit addition and subtractions problems? How do I recognize what strategy to use for a specific problem? What strategies do I use to find the sums or differences of whole numbers up to two and three digits long? How do I take apart and recombine numbers in a variety of ways for finding sums and differences?</p> <p>Conceptual Understandings: The base ten numbers system is a “place value” system. There is meaning attached to the quantity the numerals of a number represent. There is a relationship between 100s, 10s and 1s in the base ten number system. Computational fluency involves the use of known combinations to solve more difficult problems. Using mathematical tools helps to solve problems and represent solutions. Two numbers added in either order yields the same sum (commutative property). Three numbers added together can be regrouped without changing the order and will yield the same sum (associative property).</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Assessment Models: Round to the nearest 10 and to the nearest 100 up to 1,000. Solve addition word problems by using algorithms. Demonstrate automaticity in all addition and subtraction facts. Find sums and differences of numbers up to 1,000 using strategies (pictures, algorithms, number lines, numbers).</p> <p>Additional Information: Students should use equivalencies among pennies, dimes, and dollars. Students should be able to read, write, and sequence numbers to 1000.</p>

Suggested days of Instruction	Curriculum Management System <u>Subject/Grade Level:</u> Grade 3 Mathematics	Topic: Addition, Subtraction and the Number System	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>1.6. Compute differences involving equations with a zero in the tens and/or hundreds place. (3.NBT.2)</p> <p>1.7. Apply commutative and associative properties to fluently add and subtract within 1000. (3.NBT.2)</p> <p>1.8. Make sense of problems and persevere in solving them. (MP.1)</p> <p>1.9. Reason abstractly and quantitatively. (MP.2)</p> <p>1.10. Construct viable arguments and critique the reasoning of others. (MP.3)</p> <p>1.11. Model with mathematics. (MP.4)</p> <p>1.12. Use appropriate tools</p>	<p>There are a variety of strategies to solve addition and subtraction problems.</p>	<p>Students should be exposed to word problems that include money including situations in which they must consider the amount of available money compared to multiple items cost to determine if you can make the purchase. Count change to include coins and dollars.</p>

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: Grade 3 Mathematics	Topic: Addition, Subtraction and the Number System	
		Goal 1: The student will be able to utilize their understanding of the number system/place value to round, add, and subtract numbers to 1000.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	strategically. (MP.5) 1.13. Attend to precision. (MP.6) 1.14. Look for and make use of structure. (MP.7) 1.15. Look for and express regularity in repeated reasoning. (MP.8) 1.16. Recognize a problem and brainstorm ways to solve the problem individually or collaboratively. (9.1.4.A.1) 1.17. Evaluate available resources that can assist in solving problems. (9.1.4.A.2) 1.18. Determine when the use of technology is appropriate to solve problems. (9.1.4.A.3)		

Suggested days of Instruction	Curriculum Management System <u>Subject/Grade Level:</u> Grade 3 Mathematics	Topic: Addition, Subtraction and the Number System	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>1.19. Apply critical thinking and problem-solving skills in classroom settings. (9.1.4.A.5)</p> <p>1.20. Participate in brainstorming sessions to seek information, ideas, and strategies that foster creative thinking. (9.1.4.B.1)</p> <p>1.21. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in diferent settings. (9.1.4.C.1)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Multiplication and Division	
	Subject/Grade Level: Grade 3 Mathematics	Goal 2: The student will be able to develop conceptual understanding of multiplication and division in order to fluently perform these operations.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>2.1. Identify the number of groups, the number in each group, and the product in multiplication. (3.OA.1)</p> <p>2.2. Use arrays to model multiplication situations. (3.OA.3)</p> <p>2.3. Break an array into parts to find the product represented by the array. (3.OA.3)</p> <p>2.4. Multiply one-digit numbers by multiples of ten with a focus on place value. (3.NBT.3)</p> <p>2.5. Fluently and accurately multiply two one-digit numbers. (3.OA.7)</p> <p>2.6. Determine the number of objects in each share when dividing. (3.OA.2)</p>	<p>Essential Questions: How does knowing basic facts make problem solving easier? When and where does multiplication/division occur in real life? How is multiplication related to division? How can I show that I understand the meaning of multiplication and division?</p> <p>Conceptual Understandings: When you multiply you are combining a number of equal groups and when you divide you are splitting a quantity into equal groups.</p> <p>Word problems tell what is known and what needs to be figured out.</p> <p>Different kinds of real world problems can be represented and solved using multiplication/division.</p> <p>Patterns and properties can help you remember multiplication facts.</p> <p>Patterns can help you when dividing.</p> <p>You can use multiplication facts you know to help you find the products for other facts.</p> <p>Division involves separating objects into equal groups.</p> <p>When you apply strategies to multiply and divide you use</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Assessment Models: Solve two-step word problems using the four operations, and represent these problems using equations with a letter standing for the unknown quantity.</p> <p>Assess the reasonableness of answers using a variety of strategies.</p> <p>Identify arithmetic patterns and explain them using properties of operations and complete the pattern.</p> <p>Find the product of two factors.</p> <p>Identify the number of groups, the number in each group and the product in a multiplication situation.</p> <p>Use arrays to model multiplication equations.</p> <p>Solve a multiplication word problem using arrays.</p>

Suggested days of Instruction	Curriculum Management System	Topic: Multiplication and Division	
	Subject/Grade Level: Grade 3 Mathematics	Goal 2: The student will be able to develop conceptual understanding of multiplication and division in order to fluently perform these operations.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>2.7. Solve division equations as an unknown-factor problem. (3.OA.6)</p> <p>2.8. Use a variety of representations for solving one-step word problems for multiplication and division within 100. (3.OA.3)</p> <p>2.9. Interpret a problem situation requiring multiplication or division using pictures, objects, words, numbers and equations. (3.OA.3)</p> <p>2.10. Solve problems and determine unknowns in equations. (3.OA.4)</p> <p>2.11. Use the inverse relationship between multiplication and division to solve problems. (3.OA.7)</p> <p>2.12. Apply properties of operations (commutative,</p>	<p>the commutative, associative and distributive properties.</p> <p>Problem solving sometimes involves drawing conclusions to obtain information that is not given explicitly in the problem.</p>	<p>Break an array into equal parts to find the quotient.</p> <p>Solve a division word problem using arrays.</p> <p>Additional Resources:</p>

Suggested days of Instruction	Curriculum Management System	Topic: Multiplication and Division	
	Subject/Grade Level: Grade 3 Mathematics	Goal 2: The student will be able to develop conceptual understanding of multiplication and division in order to fluently perform these operations.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	associative, distributive) in solving multiplication and division equations. (3.OA.5) 2.13. Solve two step word problems using all four operations, representing them by creating equations with a letter standing for the unknown quantity. (3.OA.8) 2.14. Determine the reasonableness of answers using mental math and estimation. (3.OA.8) 2.15. Identify arithmetic patterns. (3.OA.9) 2.16. Make sense of problems and persevere in solving them. (MP.1) 2.17. Reason abstractly and quantitatively. (MP.2)		

Suggested days of Instruction	Curriculum Management System	Topic: Multiplication and Division	
	Subject/Grade Level: Grade 3 Mathematics	Goal 2: The student will be able to develop conceptual understanding of multiplication and division in order to fluently perform these operations.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>2.18. Construct viable arguments and critique the reasoning of others. (MP.3)</p> <p>2.19. Model with mathematics. (MP.4)</p> <p>2.20. Attend to precision. (MP.6)</p> <p>2.21. Look for and make use of structure. (MP.7)</p> <p>2.22. Recognize a problem and brainstorm ways to solve the problem individually or collaboratively. (9.1.4.A.1)</p> <p>2.23. Evaluate available resources that can assist in solving problems. (9.1.4.A.2)</p> <p>2.24. Determine when the use of technology is appropriate to solve problems. (9.1.4.A.3)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Multiplication and Division	
	Subject/Grade Level: Grade 3 Mathematics	Goal 2: The student will be able to develop conceptual understanding of multiplication and division in order to fluently perform these operations.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>2.25. Apply critical thinking and problem-solving skills in classroom settings. (9.1.4.A.5)</p> <p>2.26. Participate in brainstorming sessions to seek information, ideas, and strategies that foster creative thinking. (9.1.4.B.1)</p> <p>2.27. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in diferent settings. (9.1.4.C.1)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Fractions	
	Subject/Grade Level: Grade 3 Mathematics	Goal 3: The student will be able to create and identify fractional parts, make comparisons, and find equivalencies.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>3.1. Find equal parts of a whole and name them with fractions. (3.NF.1)</p> <p>3.2. Divide an area into equal parts. (3.NF.1)</p> <p>3.3. Name fraction parts with unit fractions ($\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, etc.). (3.NF.1)</p> <p>3.4. Order unit fractions on a number line. (3.NF.2)</p> <p>3.5. Partition a number line into equal parts. (3.NF.2.a, 3.NF.2.b)</p> <p>3.6. Demonstrate that an area can be divided into equal parts in a variety of ways resulting in different shaped pieces but are named by the same fraction the same fraction. (3.NF.3, 3.NF.3.a, 3.NF.3.b)</p>	<p>Essential Questions: What are the parts of a fraction? What are fractions and how will I use them in real life? How are models used to show how fractional parts are combined or separated? How are numbers that represent fractional parts compared? How can models be used to compare fractions with like and unlike denominators?</p> <p>Conceptual Understandings: Fractions represent equal parts of a whole. A fraction represents a relationship between two numbers. Different combinations of fractions are equivalent to other combinations or to the whole. Fractions can represent quantities greater than one.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Assessment Models: Write a fraction for the part of a circle that is white/shaded. Complete a number line with missing fractions. Find missing numbers to make an equivalent fraction. Use circles to compare equivalent fractions. Write a fraction for the shaded parts. Compare two fractions as greater than, less than or equal (show a visual fractional model).</p> <p>Additional Information: Students should identify equivalent fractions and decimals fro values involving halves and fourths (eg. $\frac{1}{2}=0.50$).</p>

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: Grade 3 Mathematics	Topic: Fractions	
		Goal 3: The student will be able to create and identify fractional parts, make comparisons, and find equivalencies.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>3.7. Name fractional parts that have numerators greater than 1 ($\frac{3}{4}$, $\frac{2}{3}$, $\frac{3}{6}$, etc.). (3.NF.1)</p> <p>3.8. Express whole numbers as fractions. (3.NF.3.c)</p> <p>3.9. Identify equivalent fractions (represented by picture and/or number line). (3.NF.3.b)</p> <p>3.10. Use fraction notation to record equivalencies (eg. $\frac{3}{6} = \frac{1}{2}$). (3.NF.3.b)</p> <p>3.11. Compare two fractions with the same numerator or the same denominator through reasoning about their size (when given the same whole). (3.NF.3.d)</p> <p>3.12. Make sense of problems and persevere in solving them.</p>		<p>Students should read, write, and interpret the meaning of the decimal numbers 0.50, 0.25, and numbers greater than 1 with these decimal portions, such as 2.5 and 2.25.</p>

Suggested days of Instruction	Curriculum Management System <u>Subject/Grade Level:</u> Grade 3 Mathematics	Topic: Fractions	
		<u>Goal 3:</u> The student will be able to create and identify fractional parts, make comparisons, and find equivalencies.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	(MP.1) 3.13. Reason abstractly and quantitatively. (MP.2) 3.14. Construct viable arguments and critique the reasoning of others. (MP.3) 3.15. Model with mathematics. (MP.4) 3.16. Attend to precision. (MP.6) 3.17. Look for and make use of structure. (MP.7) 3.18. Look for and express regularity in repeated reasoning. (MP.8) 3.19. Recognize a problem and brainstorm ways to solve the problem individually or collaboratively.		

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: Grade 3 Mathematics	Topic: Fractions	
		Goal 3: The student will be able to create and identify fractional parts, make comparisons, and find equivalencies.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>(9.1.4.A.1)</p> <p>3.20. Evaluate available resources that can assist in solving problems. (9.1.4.A.2)</p> <p>3.21. Determine when the use of technology is appropriate to solve problems. (9.1.4.A.3)</p> <p>3.22. Apply critical thinking and problem-solving skills in classroom settings. (9.1.4.A.5)</p> <p>3.23. Participate in brainstorming sessions to seek information, ideas, and strategies that foster creative thinking. (9.1.4.B.1)</p> <p>3.24. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in diferent settings. (9.1.4.C.1)</p>		

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: Grade 3 Mathematics	Topic: Geometry	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>4.1. Identify a polygon as a closed, plane figure made up of three or more line segments. (3.G.1)</p> <p>4.2. Identify the attributes of quadrilaterals: four sides, four vertices, four angles. (3.G.1)</p> <p>4.3. Compare the properties of squares, rectangles, and rhombuses. (3.G.1)</p> <p>4.4. Classify figures by their attributes, and certain types by their numbers of faces, edges, and corners. (3.G.1)</p> <p>4.5. Identify and draw examples of quadrilaterals that do not belong to any subcategory such as: trapezoid, parallelogram. (3.G.1)</p> <p>4.6. Draw a shape and partition</p>	<p>Essential Questions: How can objects be represented and compared using geometric attributes? How can you identify and describe shapes? How do you divide a shape into equal parts and name the parts as a fraction?</p> <p>Conceptual Understandings: Polygons can be described by their specific properties and named based on the number of sides and corners. Shapes can be divided into equal parts. Equal parts can be named as a fraction.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Assessment Models: Identify various quadrilaterals.</p> <p>Sort and categorize quadrilaterals based on specific properties.</p> <p>Given a shape divide it into equal parts and name the parts as a fraction of a whole.</p> <p>Additional Resources:</p>

Suggested days of Instruction	Curriculum Management System	Topic: Geometry	
	Subject/Grade Level: Grade 3 Mathematics	Goal 4: The student will be able to identify and classify figures based on their attributes with specific attention to quadrilaterals.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>into equal parts. (3.G.2)</p> <p>4.7. Describe the equal parts of the whole as a fraction. (3.G.2)</p> <p>4.8. Use appropriate tools strategically. (MP.5)</p> <p>4.9. Attend to precision. (MP.6)</p> <p>4.10. Look for and make use of structure. (MP.7)</p> <p>4.11. Recognize a problem and brainstorm ways to solve the problem individually or collaboratively. (9.1.4.A.1)</p> <p>4.12. Evaluate available resources that can assist in solving problems. (9.1.4.A.2)</p> <p>4.13. Determine when the use of</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Geometry	
	Subject/Grade Level: Grade 3 Mathematics	Goal 4: The student will be able to identify and classify figures based on their attributes with specific attention to quadrilaterals.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>technology is appropriate to solve problems. (9.1.4.A.3)</p> <p>4.14. Apply critical thinking and problem-solving skills in classroom settings. (9.1.4.A.5)</p> <p>4.15. Participate in brainstorming sessions to seek information, ideas, and strategies that foster creative thinking. (9.1.4.B.1)</p> <p>4.16. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in diferent settings. (9.1.4.C.1)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Measurement and Data	
	Subject/Grade Level: Grade 3 Mathematics	Goal 5: The student will be able to develop a conceptual understanding of perimeter and area, distinguish between the two measures, and calculate them accurately.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>5.1. Define area and utilize it as an attribute of plane figures. (3.MD.5, 3.MD.5.a, 3.MD.5.b)</p> <p>5.2. Find the area of an object by counting whole square units. (3.MD.6)</p> <p>5.3. Use the perimeter of a polygon to determine the length of unknown side.</p> <p>5.4. Design and tile a rectangle to determine a given area; understanding that this same area can be found by multiplying the side lengths. (3.MD.7.a)</p> <p>5.5. Apply the multiplying of side lengths of any given rectangle to determine its area. (3.MD.7.b)</p> <p>5.6. Use tiling to calculate the area of two given rectangles. (3.MD.7.c)</p>	<p>Essential Questions: How do you use measurement in your life? What standard unit of measure do I use for area? How do you find an unknown side by measuring perimeter? How do we take a constructed figure and decompose it into separate rectangles to find the area?</p> <p>Conceptual Understandings: Perimeter is a linear measurement to measure the distance around the outside edge of a 2-D figure. Area is the amount of space a given object occupies. Area is the measurement of square units occupying a space. Understand that when measuring area, the space being measured must be completely covered with no gaps or overlaps.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels. Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Assessment Models: Find the perimeter of a given shape. Given the perimeter of a polygon find the length of unknown side. Find the area of a rectilinear figure by breaking into smaller rectangles and adding the areas of the parts together. Draw two rectangles with the same perimeter and different areas. Draw two rectangles with the same area and different perimeters.</p> <p>Additional Information: Students should use measurement tools to measure standard and metric length (inch, foot, yard, centimeter, meter) of a given shape.</p>

Suggested days of Instruction	Curriculum Management System	Topic: Measurement and Data	
	<u>Subject/Grade Level:</u> Grade 3 Mathematics	Goal 5: The student will be able to develop a conceptual understanding of perimeter and area, distinguish between the two measures, and calculate them accurately.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>5.7. Combine these two rectangles; then find the area of this newly created rectangle; students will represent the area of this new rectangle using the distributive property. (3.MD.7.c)</p> <p>5.8. Decompose a rectilinear figure into different rectangles, then find the area of the figure by adding the areas of the rectangles together; application of this skill to real-world problems. (3.MD.7.d)</p> <p>5.9. Apply the understanding through real-world problems that rectangles with the same perimeter can have a different area. (3.MD.8)</p> <p>5.10. Apply the understanding through real-world problems that rectangles with the same area can have different perimeters. (3.MD.8)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Measurement and Data	
	Subject/Grade Level: Grade 3 Mathematics	Goal 5: The student will be able to develop a conceptual understanding of perimeter and area, distinguish between the two measures, and calculate them accurately.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>5.11. Make sense of problems and persevere in solving them. (MP.1)</p> <p>5.12. Reason abstractly and quantitatively. (MP.2)</p> <p>5.13. Model with mathematics. (MP.4)</p> <p>5.14. Use appropriate tools strategically. (MP.5)</p> <p>5.15. Attend to precision. (MP.6)</p> <p>5.16. Look for and make use of structure. (MP.7)</p> <p>5.17. Recognize a problem and brainstorm ways to solve the problem individually or collaboratively. (9.1.4.A.1)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Measurement and Data	
	<u>Subject/Grade Level:</u> Grade 3 Mathematics	Goal 5: The student will be able to develop a conceptual understanding of perimeter and area, distinguish between the two measures, and calculate them accurately.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>5.18. Evaluate available resources that can assist in solving problems. (9.1.4.A.2)</p> <p>5.19. Determine when the use of technology is appropriate to solve problems. (9.1.4.A.3)</p> <p>5.20. Apply critical thinking and problem-solving skills in classroom settings. (9.1.4.A.5)</p> <p>5.21. Participate in brainstorming sessions to seek information, ideas, and strategies that foster creative thinking. (9.1.4.B.1)</p> <p>5.22. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in diferent settings. (9.1.4.C.1)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Measurement and Data	
	Subject/Grade Level: Grade 3 Mathematics	Goal 6: The student will be able to tell time to the minute and determine elapsed time. The student will be able to utilize various forms of measurement to find volume, mass and length.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>6.1. Tell time to the minute and measure elapsed time both using clocks and number lines. (3.MD.1)</p> <p>6.2. Solve word problems related to time intervals. (3.MD.1)</p> <p>6.3. Estimate and measure liquid volumes and masses of objects using grams, kilograms, liters, pounds, and ounces. (3.MD.2)</p> <p>6.4. Solve word problems involving masses or volumes. (3.MD.2)</p> <p>6.5. Use a standard ruler to measure objects to the half and quarter marks. (3.MD.4)</p> <p>6.6. Organize categorical data in different ways to answer different questions.</p>	<p>Essential Questions: How can I measure time using a number line? How do I know which tool to use to measure volume, mass and length of an object? Why do you collect data? How does the type of data influence the choice of graph? How do charts, tables, and graphs help you interpret data?</p> <p>Conceptual Understandings: Data is collected in a context and for a purpose. Organizing categorical data in different ways answers different questions. Comparing provides a reason for describing and collecting data.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels. Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Assessment Models: Tell time to the minute (clock, number line). Find the elapsed time (clock, number line). Solve word problems involving intervals of time. Read and find the liquid volume of given container (liters). Read and find the mass of a given object (grams, kilograms, ounces, pounds). Solve word problems involving mass and volume. Identify and read half and quarter marks on a standard ruler. Classify and organize given data. Create charts, tables, bar graphs using data.</p>

Suggested days of Instruction	Curriculum Management System <u>Subject/Grade Level:</u> Grade 3 Mathematics	Topic: Measurement and Data		
		Goal 6: The student will be able to tell time to the minute and determine elapsed time. The student will be able to utilize various forms of measurement to find volume, mass and length.		
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model	
	(3.MD.3, 3.MD.4) 6.7. Describe and interpret categorical data. (3.MD.3, 3.MD.4) 6.8. Draw and interpret a picture, circle or bar graph. (3.MD.3) 6.9. Solve one and two step how many more, how many less problems using information in the graph. (3.MD.3) 6.10. Use a line plot marked off in whole numbers, halves or quarters. (3.MD.3, 3.MD.4) 6.11. Interpret what the numbers and symbols on a line plot mean. (3.MD.3, 3.MD.4) 6.12. Make sense of problems and persevere in solving them. (MP.1)		Solve problems interpreting data as a whole (how many more/how many less). Identify and interpret what the numbers on the line plot mean in whole numbers, halves and quarters. Represent data by creating a line plot marked off in whole numbers, halves and quarters. Additional Resources:	

Suggested days of Instruction	Curriculum Management System	Topic: Measurement and Data	
	<u>Subject/Grade Level:</u> Grade 3 Mathematics	<u>Goal 6:</u> The student will be able to tell time to the minute and determine elapsed time. The student will be able to utilize various forms of measurement to find volume, mass and length.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>6.13. Reason abstractly and quantitatively. (MP.2)</p> <p>6.14. Model with mathematics. (MP.4)</p> <p>6.15. Use appropriate tools strategically. (MP.5)</p> <p>6.16. Attend to precision. (MP.6)</p> <p>6.17. Look for and make use of structure. (MP.7)</p> <p>6.18. Recognize a problem and brainstorm ways to solve the problem individually or collaboratively. (9.1.4.A.1)</p> <p>6.19. Evaluate available resources that can assist in solving problems. (9.1.4.A.2)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Measurement and Data	
	Subject/Grade Level: Grade 3 Mathematics	Goal 6: The student will be able to tell time to the minute and determine elapsed time. The student will be able to utilize various forms of measurement to find volume, mass and length.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>6.20. Determine when the use of technology is appropriate to solve problems. (9.1.4.A.3)</p> <p>6.21. Apply critical thinking and problem-solving skills in classroom settings. (9.1.4.A.5)</p> <p>6.22. Participate in brainstorming sessions to seek information, ideas, and strategies that foster creative thinking. (9.1.4.B.1)</p> <p>6.23. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in diferent settings. (9.1.4.C.1)</p>		