

Grade 3 Mathematics Curriculum

This curricula and accompanying instructional materials have been developed to align with the NJSLS and in accordance with the NJ Department of Education's guidelines to include: Curriculum designed to meet grade level expectations, integrated accommodations and modifications for students with IEPs, 504s, ELLs, and gifted and talented students, assessments including benchmarks, formative, summative, and alternative assessments, a list of core instructional and supplemental materials, pacing guide, interdisciplinary connections, integration of 21st century skills, integration of technology, and integration of 21st Century Life and Career standards.

About the Standards

In 1996, the New Jersey State Board of Education adopted the state's first set of academic standards called the Core Curriculum Content Standards. The standards described what students should know and be able to do upon completion of a thirteen-year public school education. Over the last twenty years, New Jersey's academic standards have laid the foundation for local district curricula that is used by teachers in their daily lesson plans.

Revised every five years, the standards provide local school districts with clear and specific benchmarks for student achievement in nine content areas. Developed and reviewed by panels of teachers, administrators, parents, students, and representatives from higher education, business, and the community, the standards are influenced by national standards, research-based practice, and student needs. The standards define a "Thorough and Efficient Education" as guaranteed in 1875 by the New Jersey Constitution. Currently the standards are designed to prepare our students for college and careers by emphasizing high-level skills needed for tomorrow's world.

The New Jersey Student Learning Standards include Preschool Teaching and Learning Standards, as well as nine K-12 standards for the following content areas: 21st Century Life and Careers, Comprehensive Health and Physical Education, English Language Arts, Mathematics, Science, Social Studies, Technology, Visual and Performing Arts, World Languages

The most recent review and revision of the standards occurred in 2014. However, the standards in language arts and math underwent an additional review in 2015 with adoption by the New Jersey State Board of Education in May 2016.

Cape May City Elementary School District Grade 3 Mathematics Curriculum		
Content Area: Mathematics		
Course Title: Grade 3 Mathematics Grade level: 3		
Unit 1: Quarter I	Dates for Unit: September to November	
Unit 2: Quarter II	Dates for Unit: November to February	
Unit 3: Quarter III	Dates for Units: February to April	
Unit 4: Quarter IV	Dates for Units: April to June	
Date Created: 09/17/19	Board Approved On: 10/10/19	

Cape May City Elementary School District Grade 3 Mathematics Curriculum Unit I Overview	
Content Area: Mathematics	
Unit Title: Quarter I	
Target Course/Grade Level: 3	

Unit Summary:

Students will be able to:

- Represent and solve problems involving multiplication and division
- Understand properties of multiplication and the relationship between multiplication and division
- Understand concepts of area and relate area to multiplication and addition (Geometric measurement)
- Use place value understanding and properties of operations to perform multi-digit arithmetic

Interdisciplinary Connections:

• Science, Technology, Social Studies, Health, Social Emotional Learning, English Language/ Arts

21st Century Themes, Skills, and Standards:

- http://www.state.nj.us/education/cccs/2014/career/
- 21st Century Life and Career Standard 9.1, including critical thinking, problem solving, creativity, innovation, collaboration, teamwork and leadership, cross-cultural understanding and interpersonal communication and science.
- Incorporation of relevant technologies as tools as part of instruction (i.e. Chromebooks, Touch screen devices, manipulatives, certified assistive technologies for students with special needs, etc.)
- Developing effective communication
- Developing Independent Learning Strategies
- Incorporating Science, Technology, Engineering, and English themes into daily lessons

Learning Targets:

- **3.0A.A.1.** Interpret products of whole numbers, e.g., interpret 5 x 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 x 7.
- **3.0A.A.2**. Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 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 $56 \div 8$.
- **3.0A.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. *(benchmarked)
- **3.0A.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 $8 \times ? = 48,5 = \div 3, 6 \times 6 = ?$
- **3.0A.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.5. Recognize area as an attribute of plane figures and understand concepts of area measurement.
- **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 non- standard units).
- **3.MD.C.7**. Relate area to the operations of multiplication and addition.
- **3.MD.C.7a. & 3.MD.7b** 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.

3.NBT.A.1. 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 to 90 (e.g., 9 × 80, 5

× 60) using strategies based on place value and properties of operations.

CPI#	Cumulative Progress Indicators (CPI) for Unit
Performance Task 1	Your family has just developed 24 photos from your vacation. They want you to organize the photos into an arrangement of equal rows and columns for a family poster. Draw a plan that shows 2 different ways to organize your photos. Choose one of your plans and write the repeated addition equation, and the related multiplication equation. Explain how your drawing relates to multiplication.
	Rubric
	3 – Student will be able to demonstrate/draw two arrays to display the family photos into equal groups. (e.g. 4 rows of 6 and 8 rows of 3). Student will write a repeated addition equation for one of the arrays and the related multiplication equation. Student clearly explains their answer in a sentence,
	in a series of steps or labels their drawings and equations.
	2 – Student will demonstrate/draw at least one correct array with the correct repeated addition sentence and related multiplication fact with some explanation.
	1 – Student will demonstrate/draw one or two ways to organize photos into equal groups/arrays, excluding repeated addition or multiplication equations, or writes incorrect equations.
	0 – Student shows little or no evidence of organizing photos.

Unit Enduring Questions:

Questions that will foster inquiry, understanding and transfer of learning.

- How are addition and multiplication related?
- Which operation should I use to solve real world problems?
- How can rounding be used to estimate sums and differences?
- How can multiplication and/or addition help me to solve measurement problems involving area?
- How can an array help with multiplication?

Unit Enduring Understandings:

Students will understand that...

- There are various strategies that can be used to solve problems involving multiplication and division.
- Place Value Strategies can be used to solve problems involving multi-digit arithmetic
- Rounding is a process for finding multiples of 10 and 100.
- Multiplication can be used to solve real world measurement problems involving area.

Knowledge:

Students will know how to/that....

- Know the value of digits up to 1,000
- Round to the nearest 10 and 100
- Use place value to add and subtract
- Add and subtract with and without regrouping
- Construct Arrays to solve multiplication equations and solve for Area
- Use Repeated Addition
- Organize and share equal groups
- Solve and write multiplication and division equations
- Multiply by multiples of 10 (10 X 8)
- Use N = Unknown in equations
- Create simple multiplication and division word problems
- Area is the total square units of a given shape
- Area is measured in square units
- Multiplication can be used to solve problems involving area
- Apply vocabulary

Skills:

Students will be able to show or display...

- Fluently add and subtract basic facts
- Read and write numbers in a variety of ways
- Use algorithms and place value strategies to add and subtract with and without regrouping
- Estimate Sums and Differences
- Round to the nearest ten and hundred
- Know how to connect repeated addition to multiplication
- Demonstrate/explain meanings of multiplication and division through pictures, arrays, vocabulary, repeated addition or subtraction
- Fluently multiply by 0, 1, 2, 5, and 10.
- Relate repeated addition to multiplication equations
- How to choose the correct operation to solve word problems involving any of the four operations
- Write multiplication and division equations to solve problems
- Determine the area of a figure by counting square units
- Demonstrate how rows and columns in arrays can be used to determine area

Pacing Guide:

PreTest	1 – 2 Days
Place Value	1 ½ Weeks
Solve Problems involving Addition of Multi-Digit Numbers	1 ½ Weeks
Solve Problems involving Subtraction of Multi-Digit Numbers	1 ½ Weeks
Meaning of Multiplication and solving multiplication equations	2 Weeks
Meaning of Division and solving division equations	2 Weeks
Using Multiplication and Arrays to solve for Area	1 ½ Weeks
Benchmark Testing & Reteaching	2 Weeks

Week 1: MAPs / Pre-Assessment

Week 2: GoMath Chapter 1

Week 3: GoMath Chapter 1

Week 4: GoMath Chapter 3

Week 5: GoMath Chapter 3

Week 6: GoMath Chapter 3

Week 7: GoMath Chapter 3 & 6

Week 8: GoMath Chapter 6 and Benchmark

Cape May City Elementary School District Grade 3 Mathematics Curriculum Unit II Overview

Content Area: Mathematics

Unit Title: Quarter II

Target Course/Grade Level: 3

Students will be able to:

- Represent and solve problems involving multiplication and division
- Geometric measurement: understand concepts of area and relate area to multiplication and to addition
- Multiply and divide within 100
- Solve problems involving the four operations,

Interdisciplinary Connections:

• Science, Technology, Social Studies, Health, Social Emotional Learning, English Language/ Arts

21st Century Themes, Skills, and Standards:

- http://www.state.nj.us/education/cccs/2014/career/
- 21st Century Life and Career Standard 9.1, including critical thinking, problem solving, creativity, innovation, collaboration, teamwork and leadership, cross-cultural understanding and interpersonal communication and science.
- Incorporation of relevant technologies as tools as part of instruction (i.e. Chromebooks, Touch screen devices, manipulatives, certified assistive technologies for students with special needs, etc.)
- Developing effective communication
- Developing Independent Learning Strategies
- Incorporating Science, Technology, Engineering, and English themes into daily lessons

Learning Targets

3.0A.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. *(benchmarked)

- **3.0A.B.5**. Apply properties of operations as strategies to multiply and divide.
- **3.MD.C.7**. Relate area to the operations of multiplication and addition.
- **3.MD.C.7c.** 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 $a \times b$ and $a \times c$.
- **3.MD.C.7**. Relate area to the operations of multiplication and addition.
- 3.MD.C.7d. Recognize area as additive.
- 3.OA.C.7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division
- **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
- **3.0A.D.9.** Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.
- **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.*(benchmarked)
- **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

CPI#	Cumulative Progress Indicators (CPI) for Unit
2	Performance Assessment Task 2 Bake Sale
	You and your friends are making baked goods for a school bake sale to sell during lunch periods. The baking trays hold different amounts of baked items. You have the following trays to choose from for baking:
	Baked Item # of Trays # In Each Tray
	Blueberry Muffins 4 6
	Strawberry Tarts 6 5
	Granola Bars 8 4
	Choose one baked item that you would like to bake for the bake sale and solve for the following.
	How many total baked items will you be baking
	Draw and label an array to show the total number of baked items in all.
	Write a multiplication equation for your array you drew above
	Write the related repeated addition equation for your array
	2. The bake sale will be held during two lunch periods 12:00pm and 12:30 pm. You need to have an equal amount for each lunch period. Explain how

you would divide the baked items into two equal groups for each lunch period you may redraw your array above or show it on your original array.

Rubric

- 3 -Student calculates the correct total of baked items, then draws the correct array and writes the multiplication and the related addition equation. Student correctly divides the original array into 2 equal groups or redraw s the original array and splits the w hole group of baked items into 2 equal groups and w rites the correct division equation.
- 2 –Student draw s the correct array and the related multiplication and multiplication equation w ith the correct total. Student divides the array into 2 equal groups correctly, but does not write the division equation.
- 1 Student draws the correct array and w rites either a multiplication or addition sentence.
- 0 Student does not show evidence of an array or any arrangement of equal groups.

Unit Enduring Questions:

Questions that will foster inquiry, understanding and transfer of learning.

- Can you explain and/or demonstrate the relationship between Multiplication and Division?
- W hat strategies can you use to multiply and divide within 100 with accuracy and proficiency?
- W hat is the relationship between fractions and whole numbers (e.g. represent them in models, fractions and mixed numbers)

Unit Enduring Understandings:

Students will understand that...

- Various strategies can be used to solve multiplication and division within 100
- Multiplication and or other strategies can be used to solve real world measurement problems involving area
- Use properties of place value to solve for addition and subtraction
- We can represent quantities of unit fractions and

Knowledge:

Students will know how to/that...

- Strategies for solving Multiplication & Division
- (Arrays, Equal Groups)
- Repeated Addition, Number Patterns, Pictures, Fact Families, Arrays)
- Multiplication/Division Fact Families within 40
- Variable N = Unknown

Skills:

Students will be able to show or display...

- Solve Multiplication and Division Equations
- Fluently Multiply within 40
- Solve real world problems involving multiplication and division within 40
- Explain in how to use arrays to solve multiplication equations
- Explain how shared groups help to divide numbers equally

- How to Connect Area Models to Multiplication
- Variable A = Area
- Organize Equal Groups for discovering
- Division concepts
- How to Use Square Units in Area Models
- Length/Width/Rows/Columns
- Side
- Area Formula = L X W or Counting Square Units
- The Commutative, Associative and Distributive Properties of Multiplication
- Rectilinear figures can be decomposed into non-overlapping rectangles
- Unit Fractions represent part of a whole or set
- Fractions are parts of a whole or set

- Connect Area Models to Multiplication and Arrays
 - Find Area of Rectangular Models using
- Area Formula or Count Square Units within 40
- Use the Commutative, Distributive or Associative Property of Multiplication to solve problems
- Use 100 Chart to find patterns in addition and multiplication
- Decompose rectilinear figures into nonover lapping rectangles to find their area
- Equally Partition shapes and fractional parts of a set
- Segment fraction bars and number lines to show unit fractions

Pacing Guide:

Solving Problems Multiplication within 100	2 W eeks
Solving Problems Division within 100	2 W eeks
Solving for Area using models	2 W eeks
Understand fractions and unit fractions	3 Weeks
Fluency (Multiplying/Dividing within 100)	Entire Unit
Benchmark Testing & Re-teaching	2 Weeks

Week 9: GoMath Chapter 4

Week 10: GoMath Chapter 4

Week 11: GoMath Chapter 5

Week 12: GoMath Chapter 5 & 6

Week 13: GoMath Chapter 6

Week 14: GoMath Chapter 7 & 8

<mark>Week 15:</mark> GoMath Chapter 7 & 8

Week 16: Performance Benchmark and review.

Cape May City Elementary School District Grade 3 Mathematics Curriculum Unit III Overview

Content Area: Mathematics

Unit Title: Quarter III

Target Course/Grade Level: 3

Unit Summary:

Students will be able to:

- Develop understanding of fractions as numbers
- · Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects
- Reason with shapes and their attributes
- · Recognize perimeter as an attribute of plane figures and distinguish between linear and area measure

Interdisciplinary Connections:

• Science, Technology, Social Studies, Health, Social Emotional Learning, Mathematics

21st Century Themes, Skills, and Standards:

- http://www.state.nj.us/education/cccs/2014/career/
- 21st Century Life and Career Standard 9.1, including critical thinking, problem solving, creativity, innovation, collaboration, teamwork and leadership, cross-cultural understanding and interpersonal communication and science.
- Incorporation of relevant technologies as tools as part of instruction (i.e. Chromebooks, Touch screen devices, manipulatives, certified assistive technologies for students with special needs, etc.)
- Developing effective communication
- Developing Independent Learning Strategies
- Incorporating Science, Technology, Engineering, and Mathematical themes into daily lessons

Learning Targets

- 3.NF.A.2. Understand a fraction as a number on the number line; represent fractions on a number line diagram.
- **3.NF.A.2a**. 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.2b**. 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. [Grade 3 expectations in this

domain are limited to fractions with denominators 2, 3, 4, 6, and 8.]

explain your answer. About 1/4

- 3.NF.A.3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size
- 3.NF.A.3a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
- **3.NF.A.3b**. Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model.
- **3.NF.A.3c.** Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers
- **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.
- **3.MD.A.2.** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units.
- **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.

CPI# **Cumulative Progress Indicators (CPI) for Unit** 3 Hershey Fractions Description: Students will use a Hershey Chocolate Bar to reinforce fractional concepts in real life situations. HERSEY BAR FRACTIONS **HERSEY** HERSEY HERSEY **HERSEY HERSEY** HERSEY **HERSEY** HERSEY **HERSEY** HERSEY HERSEY **HERSEY** How many row s are in this Hershey Bar? How many columns are in this Hershey Bar? Write and addition and multiplication equation you see using the above information. Shade 4 of the pieces of chocolate bar that you will share with a friend. What fraction do you see? Shade 4 more pieces of the chocolate bar to share. What is your fraction now?

Look at the chocolate bar and estimate how much of the chocolate bar you have left, and

or

3/49

1/2

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- 3- Student counts the correct number of row s and columns and also writes the correct multiplication and repeated addition equation. The student shades 4 parts of the Hershey Bar 4/16 and w rites the correct fraction and 8 parts 8/16. Student estimates 8/16 to $\frac{1}{2}$ of the candy bar is eaten and explains how they derived at their answer.
- 2 Student discovers the correct amount of row s and columns and w rites at least one correct addition/multiplication equation. And shades and identifies at least one of the fractional parts (4/16 or 8/16). Student identifies 8/16 as $\frac{1}{2}$ but may not have a clear explanation.
- 1 Student has correctly identified row s & columns and has at least one of the correct equations. Student correctly shades and identifies at least one of the shaded parts correctly. Student incorrectly identifies 8/16 as ½ and does not explain their answer.
- 0 Student does not show a clear understanding of any of the mathematical tasks.

Unit Enduring Questions:

Questions that will foster inquiry, understanding and transfer of learning.

- How do we decide which unit of measurement to use?
- Which unit of measure should I use to measure an object?
- How can counting by 5's help me tell time?
- Why is it important to know the difference between the hour and minute hand?
- Which operation or strategy will I use to solve a problem?

Unit Enduring Understandings:

Students will understand that...

- We can represent quantities of unit fractions and fractions in a variety of ways: Pictures, Number Lines, Partitioned Shapes or Parts of a set to understand Fractions and Mixed Numbers and their values.
- We can solve real world problems involving measurement a in several ways such as choosing the correct operation, starting with the end result, reversing the process, breaking down into smaller parts and/or working backwards.
- Plane shapes have categories based on attributes for example - Rhombuses, rectangles, and squares are examples of quadrilaterals

Knowledge:

Students will know how to/that...

- Unit Fractions represent part of a whole or set
- Fractions are parts of a whole or set
- Difference between numerator and denominator
- Shapes can be categorized by attributes
- Measure and calculate perimeter and area of polygons
- Fractions can be represented on a number line
- Recognize ¼, ½, ¾ as a quantity and in measurement

Skills:

Students will be able to show or display...

- Connect plane shapes/and or parts of a set to fractions
- Equally Partition shapes and fractional parts of a set
- Use fraction bars to solve problems
- Segment fraction bars and number lines to show unit fractions
- Connect fraction models to actual numerators and denominators.
- Compare Fractions

- Time is measured in intervals
- Hour Hand
- Measurement Quantities & Representation (mL, L etc.)
- Volume & Mass can be measured using the metric system
- Répresent the unknown with "N" in equations
- Use Benchmarking to compare fractions (1/4, ½, ¾)
- Estimate measurement quantities
- Solve Problems involving measurement
- Apply fraction strategies to discover measurement quantities
- Tell time to the minute
- Calculate elapsed time
- Know the names of polygons and measure for Area and perimeter

Pacing Guide:

Equivalent Fractions	1 ½ Weeks
Compare Fractions using < > and =	2 Weeks
Measurement & Data – Solve problems involving Time & Elapsed Time	1 ½ Weeks
Measurement & Data – Solve real w orld problems involving Liquid Capacity & Mass	1 Week
Categorize Plane Shapes and their attributes	1 Week
Measure plane shapes using Area and Perimeter strategies & formulas	1 Week
Find the value of the unknown in equations (all four operations)	Entire Unit
Fluency (Multiplying/Divide within 100)	Entire Unit
Find the value of the unknown in equations (all four operations)	Entire Unit
Benchmark Testing & Reteaching	2 Weeks

Week 17: GoMath Chapter 8

Week 18: GoMath Chapter 8

Week 19: GoMath Chapter 8

Week 20: GoMath Chapter 9

Week 21: GoMath Chapter 9

Week 22: GoMath Chapter 10 & 11

Week 23: GoMath Chapter 10 & 11

Week 24: Performance Benchmark and review.

Cape May City Elementary School District Mathematics Grade 3 Curriculum Unit IV Overview

Content Area: Mathematics

Unit Title: Quarter IV

Target Course/Grade Level: 3

Unit Summary:

Students will be able to:

- · Represent and interpret data
- · Multiply and divide within 100
- Use place value understanding and properties of operations to perform multi-digit arithmetic
- · Understand concepts of area and relate area to multiplication and to addition

Interdisciplinary Connections:

• Science, Technology, Social Studies, Health, Social Emotional Learning, Mathematics

21st Century Themes, Skills, and Standards:

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- Developing effective communication
- Developing Independent Learning Strategies
- Incorporating Science, Technology, Engineering, and Mathematical themes into daily lessons

Learning Targets

- **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.
- **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 horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.
- **3.0A.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. *(benchmarked)
- 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. *(benchmarked)

- 3.MD.C.7. Relate area to the operations of multiplication and addition.
- **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. *(benchmarked)
- **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. *(benchmarked)

CPI# **Cumulative Progress Indicators (CPI) for Unit** 4 Since many students play the Hand Ball at Recess, your Gym Teacher decided to make it a Field Day Event. The Gym Teacher only has so much room on the Playground but w ould like to have 2 Hand Ball Courts that can be draw n on the blacktop with Sidewalk Chalk. The Third Graders were asked to design tw o different Hand Ball Courts both with an Area of 36 Square Feet. Use Square Centimeter Graph Paper and design 2 Handball Courts (they can be square or rectangular) both with an Area of 36 Feet. Draw and Label your Area Models. Label the measurement of each side of the Hand Ball Courts and determine the Perimeter of each. **Be sure to include the following - Label the Area and Perimeter of each figure. Explain w hich strategy you used to determine the Area and Perimeter of your Hand Ball Courts. NOTE: - 1 Square Centimeter = 1 Square Foot RUBRIC 3 – Student correctly draws and labels two different Area Models both with an Area of 36 Square Units. Student also correctly labels the length and width of all sides of both figures and correctly calculates the Perimeter of each Model. Student shows evidence of using Area and Perimeter Formulas or strategies in their calculations. Student gives explanation of how they calculated Perimeter and Area in a sentence, phrase or equation. 2 - - Student correctly draws and labels two different Area Models both with an Area of 36 Square Units. Student also correctly labels the length of all sides of both figures and correctly calculates the Perimeter of each Model. But student omits one or more of the following – showing all work, labeling sides/measurements of figures and/or eliminates the explanation. 1 – Student will demonstrate/draw at least one correct Area Model of 36 Square Units and calculates the correct perimeter. The model is labeled appropriately. But student omits one or more of the following – showing all work, labeling sides/measurements of figures and/or eliminates the explanation.

AND/OR Student draw s 2 different Area Models of 36 Sq. Units, Labels both Figures, But student omits one or more of the following – perimeter, showing all work, labeling sides/measurements of figures and/or eliminates the explanation.

0 – Student shows little evidence of creating Area Models with measurements of 36 Square Units or determining Perimeter.

Unit Enduring Questions:

Questions that will foster inquiry, understanding and transfer of learning.

- How can I use tools and formulas to solve real world problems involving area and perimeter?
- Which strategy will I use to calculate perimeter and area of regular and irregular figures?
- Which chart or graph (Bar Graph, Line Plot, Pictograph) will display information collected clearly?
- Which operation should use to solve real world problems?

Unit Enduring Understandings:

Students will understand that...

- Knowing the Perimeter Formulas and strategies will solve problems involving Perimeter
- Knowing Area Formulas (L X W) or Counting Square Units will solve problems involving Area
- Breaking Apart Irregular Figures to solve for Area and Perimeter is a strategy to solve more complex problems involving Perimeter and Area
- Graphs and charts can help us organize data to make decisions

Knowledge:

Students will know how to/that...

- Fluently multiply and divide within 100
- Fluently add and subtract within 1000
- Know Area and Perimeter Formulas
- Measure and calculate area by counting unit squares or multiplying L X W
- Measure and calculate perimeter of polygons.
- Find the area of polygons with whole-number side lengths
- Find perimeter of a polygons
- Multiply side lengths to find areas of rectangles
- Breaking Apart Irregular Figures is a strategy to find Area & Perimeter A= Area P= Perimeter
- Area Formulas (L X W) or Counting Square Units
- Organize data into a Bar Graph, Pictograph or Line Plot

Skills:

Students will be able to show or display...

- Use tools and formulas to solve real world and mathematical problems involving perimeter/ area
- Explain how students found perimeter and area of given real world problems
- Construct argument or proof of how students found perimeter and area.
- Find an unknown side length of a polygon
- Explain strategies for finding area and perimeter if polygons
- Read and Interpret a Bar Graph,
- Pictograph and a Line Plot
- Create a Bar Graph, Pictograph and a
- Line Plot
- Compare Perimeters of 2 or more figures
- Compare Area of 2 or more figures

Pacing Guide:

Measurement – Area and Perimeter	2 Weeks
Measurement and Data - Bar Graphs and Pictographs	2 Weeks
Measurement and Data - Line Plots	2 Weeks
Fluency Review – Add/Sub within 1000 & Problem Solving (Standard Algorithm)	1 Week

Fluency Review (Multiplying/Divide w ithin 100)	1 Week
Benchmark Testing & Reteaching	2 Weeks

Week 25: GoMath Chapter 11

Week 26: GoMath Chapter 11

Week 27: GoMath Chapter 11 & 2

Week 28: GoMath Chapter 2

Week 29: GoMath Chapter 2

Week 30: GoMath EOY Resources

Week 31: GoMath EOY Resources

Week 32: Performance Benchmark and review.

Cape May City Elementary School District Grade 3 Mathematics Curriculum Evidence of Learning

Specific Formative Assessments Utilized in Daily Lessons:

- Suggested Formative Assessment
- Daily independent practice
- Peer Discussions
- Student Portfolio
- Problem of the Day
- Self-Evaluations
- Teacher Quizzes
- Student created activities
- Exit Tickets

Summative Assessment Utilized throughout Units:

- QBA's
- Performance Task
- Technology Task
- MAPs Testing
- Chapter Tests from GoMath

Benchmarks:

- Quarterly Benchmarks from GoMath!
- MAPs Testing and Reports

Modifications for English Language Learner's [ELL]

- Teacher tutoring
- Peer tutoring
- Online Resources
- Cooperative Learning Groups
- Modified Assignments
- Differentiated Instruction
- Response to Intervention (<u>www.help4teachers.com</u>)
- Provide additional examples and opportunities for additional problems for repetition with visuals and manipulatives
- Assess/teach prerequisite skills
- Allow students to count in their native language.
- W rite the number words and corresponding numerals. Have children draw objects to illustrate each word
- Provide students with a variety of materials of various textures to increase tactile learning while counting.
- Children should move objects in a set as they recite the counting sequence.
- Allow students to act out word problems, moving around room as necessary.
- Utilize Envision Spanish Version/Interactive Path and Printable Resources
 - Read picture books to build vocabulary and background knowledge (samples below)
 - o https://www.cantonpl.org/blog/post/picture-books-about-shapes
 - http://childrenspicturebooks.info/math/fractions.htm
 - o http://www.the-best-childrens-books.org/teaching-graphs.html
 - Teach a variety of strategies that students can use to problem solve (act it out, manipulatives, hundreds chart, draw a picture, etc.)
 - Read all directions and word problems. Translate if necessary.
 - Utilize Envision Spanish Version/Interactive Path and Printable Resources

Modifications for Special Education Students [IEPs]:

- Follow all IEP accommodations for each student as to meet each student's individual need
- For extra strategies please review list above in the ELL category for students who have IEPs
- Provide instructional breaks / practice chunking
- Circling back to original topic
- Provide graphic organizers
- Provide additional examples and opportunities for additional problems for repetition
- Provide tutoring opportunities
- Provide retesting opportunities after remediation (up to teacher and district discretion) Teach for mastery not test
- Teaching concepts in different modalities
- Adjust pace and homework assignments

Modifications for students with 504s:

- Adhere to the modifications of the 504
- For extra strategies please review list above in the ELL category and for students who have IEPs
- Provide instructional breaks / practice chunking
- Circling back to original topic

Modifications Gifted and Talented Students:

- Advance Questions from GoMath
- Teacher created assignments
- STEM Lab Activities
- http://www.npsd.k12.wi.us/cms files/resources/GiftedandTalentedResourcesforEducators2013.pdf

Modifications At-Risk/Basic Skills:

- Teacher tutoring
- Supplemental / Pullout Teaching
- Peer tutoring
- Cooperative Learning Groups / Centers
- Modified Assignments
- Differentiated Instruction
- Response to Intervention (<u>www.help4teachers.com</u>)
- Provide additional examples and opportunities for additional problems for repetition with visuals and manipulatives
- Simplified language for understanding
- Modify Homework, Assignments and Assessment (can be oral if necessary)
- Total Physical Response
- Picture & number wall

Teacher Notes:

- As required by the NJ Department of Education, teachers in all content areas will integrate the 21st Century Life and Careers Standards. As the NJDOE indicates, "Providing New Jersey students with the life and career skills needed to function optimally within this dynamic context is a critical focus and organizing principle of K-12 public education. New Jersey has both an obligation to prepare its young people to thrive in this environment, and a vested economic interest in grooming an engaged citizenry made up of productive members of a global workforce that rewards innovation, creativity, and adaptation to change." The links below indicate the CPIs for grade ranges and need to be addressed throughout the units of study: Life and Career Standards
- As indicated in the NJSLS, standards and interdisciplinary connections will be integrated throughout content area curriculum. Links to relevant content standards can be at Scholastic.com, Starfall.com, and other online resources.

Project-based Learning Tasks:

• Ongoing student portfolio assessments [created by faculty] to monitor student progress.

Vocabulary:

- In-text vocabulary should be incorporated into every unit. Word journals, vocabulary walls, and/or various other activities should be utilized by the instructor to teach vocabulary.
- Story, key details, retell, describe, main topic, rhyming words, syllables, story elements, character, setting, question, question words, front cover, back cover, title page, narrative, favorite, informational text, rules, connection, discuss, conversation, information, illustrator, author, illustrate, picture

The Research Process:

- The research process must be integrated within each course curriculum. Student will be provided with opportunities to investigate issues from thematic units of study. As the NJSLS indicate, students will develop proficiency with MLA or APA format as applicable.
- https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/general_format.html
- https://owl.purdue.edu/owl/research_and_citation/mla_style/mla_formatting_and_style_guide/mla_formatting_and_style_guide.html

Technology:

- Students must engage in technology applications integrated throughout the curriculum, though technology provided by us in their individual classroom, and in our technology centered classrooms.
- MAPs
- Online Resources

Resources:

- Ancillary resources and materials used to deliver instruction are included below:
- Learning New Jersey Model Curriculum
- ThinkCentral
- Achieve3000
- Prodigy.com
- Reading A-Z.com
- Abcmouse .com
- EnchantedLearning,Com
- Sing Along Songs
- Scholastic.com
- Bilingualplanet.com
- Frog street
- Press.com
- 122 teachme.com
- Purplemath.com
- Starfall
- NCTM Illuminations http://illuminations.nctm.org,
- Illustrative Math https://www.illustrativemathematics.org

Career Education & Resources:

- NJDOE CTE (https://www.nj.gov/education/cte/)
- Careers are Everywhere Workbook (https://lmci.state.tx.us/shared/careersareeverywhere.asp)
- Career Bingo (http://www.breitlinks.com/careers/career-pdfs/careerbingo.pdf)
- Vocational Information Center / Career Exploration Guides and Resources for Younger Students (http://www.khake.com/page64.html)
- CTE NJDOE Career Explore (https://www.nj.gov/education/cte/resources/tools/exploration.htm)

Differentiation Strategies

Differentiation strategies can require varied amounts of preparation time. High-prep strategies often require a teacher to both create multiple pathways to process information/demonstrate learning and to assign students to those pathways. Hence, more ongoing monitoring and assessment is often required. In contrast, low-prep strategies might require a teacher to strategically create process and product choices for students, but students are allowed to choose which option to pursue given their learning profile or readiness level. Also, a low-prep strategy might be focused on a discrete skill (such as vocabulary words), so there are fewer details to consider. Most teachers find that integration of one to two new low-prep strategies and one high-prep strategy each quarter is a reasonable goal.

Low Prep Strategies	
Varied journal prompts, spelling or vocabulary lists	Students are given a choice of different journal prompts, spelling lists or vocabulary lists depending on level of proficiency/assessment results.
Anchor activities	Anchor activities provide meaningful options for students when they are not actively engaged in classroom activities (e.g., when they finish early, are waiting for further directions, are stumped, first enter class, or when the teacher is working with other students). Anchors should be directly related to the current learning goals.
Choices of review activities	Different review or extension activities are made available to students during a specific section of the class (such as at the beginning or end of the period).
Homework options	Students are provided with choices about the assignments they complete as homework. Or, students are directed to specific homework based on student needs.
Student-teacher goal setting	The teacher and student work together to develop individual learning goals for the student.
Flexible grouping	Students might be instructed as a whole group, in small groups of

	various permutations (homogeneous or heterogeneous by skill or interest), in pairs or individual. Any small groups or pairs change over time based on assessment data.
Varied computer programs	The computer is used as an additional center in the classroom, and students are directed to specific websites or software that allows them to work on skills at their level.
Multiple Intelligence or Learning Style options	Students select activities or are assigned an activity that is designed for learning a specific area of content through their strong intelligence (verbal-linguistic, interpersonal, musical, etc.)
Varying scaffolding of same organizer	Provide graphic organizers that require students to complete various amounts of information. Some will be more filled out (by the teacher) than others.
Think-Pair-Share by readiness, interest, and/or learning profile	Students are placed in predetermined pairs, asked to think about a question for a specific amount of time, then are asked to share their answers first with their partner and then with the whole group.
Mini workshops to re-teach or extend skills	A short, specific lesson with a student or group of students that focuses on one area of interest or reinforcement of a specific skill.
Orbitals	Students conduct independent investigations generally lasting 3-6 weeks. The investigations "orbit" or revolve around some facet of the curriculum.
Games to practice mastery of information and skill	Use games as a way to review and reinforce concepts. Include questions and tasks that are on a variety of cognitive levels.
Multiple levels of questions	Teachers vary the sorts of questions posed to different students based on their ability to handle them. Varying questions is an excellent way to build the confidence (and motivation) of students who are reluctant to contribute to class discourse. Note: Most teachers would probably admit that without even thinking about it they tend to address particular types of questions to particular students. In some cases, such tendencies may need to be corrected. (For example, a teacher may be unknowingly addressing all of the more challenging questions to one student, thereby inhibiting other students' learning and fostering class resentment of that student.)
	High Prep Strategies
Cubing	Designed to help students think about a topic or idea from many different angles or perspectives. The tasks are placed on the six sides

	of a cube and use commands that help support thinking (justify, describe, evaluate, connect, etc.). The students complete the task on the side that ends face up, either independently or in homogenous groups.
Tiered assignment/ product	The content and objective are the same, but the process and/or the products that students must create to demonstrate mastery are varied according to the students' readiness level.
Independent studies	Students choose a topic of interest that they are curious about and wants to discover new information on. Research is done from questions developed by the student and/or teacher. The researcher produces a product to share learning with classmates.
4MAT	Teachers plan instruction for each of four learning preferences over the course of several days on a given topic. Some lessons focus on mastery, some on understanding, some on personal involvement, and some on synthesis. Each learner has a chance to approach the topic through preferred modes and to strengthen weaker areas
Jigsaw	Students are grouped based on their reading proficiency and each group is given an appropriate text on a specific aspect of a topic (the economic, political and social impact of the Civil War, for example). Students later get into heterogeneous groups to share their findings with their peers, who have read about different areas of study from source texts on their own reading levels. The jigsaw technique allows you to tackle the same subject with all of your students while discreetly providing them the different tools they need to get there.
Alternative assessments	After completing a learning experience via the same content or process, the student may have a choice of products to show what has been learned. This differentiation creates possibilities for students who excel in different modalities over others (verbal versus visual).
Modified Assessments	Assessments can be modified in a variety of ways – for example by formatting the document differently (e.g. more space between questions) or by using different types of questions (matching vs. open ended) or by asking only the truly essential questions.
Learning contracts or Personal Agendas	A contract is a negotiated agreement between teacher and student that may have a mix of requirements and choice based on skills and understandings considered important by the teacher. A personal agenda could be quite similar, as it would list the tasks the teacher wants each student to accomplish in a given day/lesson/unit. Both Learning contracts and personal agendas will likely vary between

	students within a classroom.
Compacting	This strategy begins with a student assessment to determine level of knowledge or skill already attained (i.e. pretest). Students who demonstrate proficiency before the unit even begins are given the opportunity to work at a higher level (either independently or in a group).
Literature circles	Flexible grouping of students who engage in different studies of a piece of literature. Groups can be heterogeneous and homogeneous.
Learning Centers	A station (or simply a collection of materials) that students might use independently to explore topics or practice skills. Centers allow individual or groups of students to work at their own pace. Students are constantly reassessed to determine which centers are appropriate for students at a particular time, and to plan activities at those centers to build the most pressing skills.
Tic-Tac-Toe Choice Board (sometimes called "Think-Tac-Toe"	The tic-tac-toe choice board is a strategy that enables students to choose multiple tasks to practice a skill, or demonstrate and extend understanding of a process or concept. From the board, students choose (or teacher assigns) three adjacent or diagonal. To design a tic-tac-toe board: - Identify the outcomes and instructional focus - Design 9 different tasks - Use assessment data to determine student levels - Arrange the tasks on a tic-tac-toe board either randomly, in rows according to level of difficulty, or you may want to select one critical task to place in the center of the board for all students to complete.

Curriculum Development Resources/Instructional Materials:

List or Link Ancillary Resources and Curriculum Materials Here:

- New Jersey Student Learning Standards (https://www.nj.gov/education/cccs/)
- NJSLS Mathematics (https://www.nj.gov/education/aps/cccs/math/)

Board of Education Approved Text(s)

GoMath Grade 3 (Text and Workbook)