



Grade 4 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 4 Mathematics	Grade level: 4
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 4 Mathematics Curriculum Unit I Overview
Content Area: Mathematics
Unit Title: Quarter I
Target Course/Grade Level: 4

Unit Summary:

Students will be able to:

- Gain familiarity with factors and multiples
- Generate and analyze patterns
- Solve problems involving measurement and conversion of measurements
- Use the four operations with whole numbers to solve problems
- Generalize place value understanding for multi-digit whole numbers

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:

4.OA.B.4. Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.

4.OA.C.5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

4.MD.A.1. Know relative sizes of measurement units within one system of units including km, m, cm, mm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.

4.OA.A.1. Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.

4.OA.A.2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.

4.NBT.A.1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.

4.NBT.A.2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using

$>$, $=$, and $<$ symbols to record the results of comparisons.

4.NBT.A.3. Use place value understanding to round multi-digit whole numbers to any place.

CPI #

Cumulative Progress Indicators (CPI) for Unit

<p>Performance Task 1</p>	<p>You are a vacation planner.</p> <p>You are planning a 4 Day family vacation to Florida that fits your family of (2 children 2 adults) with a budget of \$3,000. Your task is to provide an itinerary that includes airlines tickets, hotel stay, and food. What activities can you participate in during your stay?</p> <p>Family Vacation Expenses:</p> <ul style="list-style-type: none"> • Roundtrip airline tickets cost \$239.00 • The hotel cost \$200.00 a night. • Amusement park tickets 1 Day: Adults \$42.00 Child: \$29.00 • Water Park tickets 1 Day : Adults-\$25.00 Child-\$15.00 • Other activities: Beach-Free Pool-Free • Food Expenses- \$100.00 per day <p>Rubric</p> <p>3- point answer: The student clearly understands the use of the four operations. All computations are correct.</p> <p>2-point answer: The student may understand the use of the four operations, but makes many computational errors.</p> <p>1-point answer: The student demonstrates little understanding of the task at hand. The student makes many computation errors, and the concept of the number.</p> <p>0-point answer: The student makes no attempt at the problem.</p>
<p>Unit Enduring Questions:</p> <p><i>Questions that will foster inquiry, understanding and transfer of learning.</i></p> <ul style="list-style-type: none"> • How do I know which operation to use in real-world problems? 	<p>Unit Enduring Understandings:</p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> • Each digit has a certain value depending on its place and can help with computation • Whole numbers are multiples of each of its factors.

<ul style="list-style-type: none"> • How can I express an equation? • How can finding the pattern/rule help me understand numbers? • What is the difference between prime and composite numbers? • Which strategy should I use to convert measurements? 	<ul style="list-style-type: none"> • Patterns contain features that are not explicitly stated in the rule • Equations can be expressed in a variety of ways. • Measurement Equivalents 														
<p>Knowledge: <i>Students will know how to/that....</i></p> <ul style="list-style-type: none"> • Use factors and pairs to determine prime and composite numbers between 1 and 100 • Produce number and shape patterns from a given rule • Relative sizes of measurements (g,kg,m,cm) • Multiplication equations represent comparisons • Standard Algorithms, Area and Array models can be used to solve for multiplication and division • The relationships between places of a multi- digit whole number • How to compare and round multi-digit numbers up to one million • Choose the correct operation to solve real world problems 	<p>Skills: <i>Students will be able to show or display...</i></p> <ul style="list-style-type: none"> • Find all factor pairs for a whole number up to 100 and determine prime and composite numbers • Analyzing number patterns to determine the rule • Express measurement in a larger unit in terms of a smaller unit and record equivalent measures • Write multiplication equations from word problems indicating multiplicative comparisons • multiply or divide to solve word problems involving multiplicative comparisons • Read and write numbers in various ways • Estimate by rounding • Solve problems with four operations • Explain the relationships between places in a multi-digit whole number up to one million • Compare and round multi-digits up to one million in various ways • Fluently Add and Subtract Multi-Digit Numbers 														
<p>Pacing Guide:</p> <table border="1"> <tr> <td>Pretest</td><td>1-2 Days</td></tr> <tr> <td>Place Value of Whole Numbers & Rounding</td><td>2 Weeks</td></tr> <tr> <td>Addition & Subtraction of Multi-Digit Numbers</td><td>1 Weeks</td></tr> <tr> <td>Multiplication & Division and Comparisons</td><td>2 Weeks</td></tr> <tr> <td>Factors/ Patterns/Prime and Composite Numbers</td><td>1 Week</td></tr> <tr> <td>Measurement Equivalents</td><td>2 Weeks</td></tr> <tr> <td>Benchmark Testing & Re-teaching</td><td>2 Weeks</td></tr> </table> <p>Week 1: MAPs / Pre-Assessment</p> <p>Week 2: GoMath Chapter 1</p> <p>Week 3: GoMath Chapter 1</p> <p>Week 4: GoMath Chapter 2</p>		Pretest	1-2 Days	Place Value of Whole Numbers & Rounding	2 Weeks	Addition & Subtraction of Multi-Digit Numbers	1 Weeks	Multiplication & Division and Comparisons	2 Weeks	Factors/ Patterns/Prime and Composite Numbers	1 Week	Measurement Equivalents	2 Weeks	Benchmark Testing & Re-teaching	2 Weeks
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Week 5: GoMath Chapter 2 & 3

Week 6: GoMath Chapter 3 & 4

Week 7: GoMath Chapter 4

Week 8: GoMath Chapter 5 and Benchmark

Cape May City Elementary School District Grade 4 Mathematics Curriculum Unit II Overview

Content Area: Mathematics

Unit Title: Quarter II

Target Course/Grade Level: 4

Students will be able to:

- Use place value understanding and properties of operations to perform multi-digit arithmetic
- Use the four operations with whole numbers to solve problems
- Solve problems involving measurement and conversion of measurements
- Extend understanding of fraction equivalence and ordering.
- Build fractions from unit fractions.

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

4.NBT.B.4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.

**[Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.] *(benchmarked)*

4.NBT.B.5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

4.NBT.B.6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.

Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

4.OA.A.3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. 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)

4.MD.A.3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

4.NF.A.1. Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

[Denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.]

4.NF.A.2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, by using a visual fraction model
(Denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100.)

4.NF.B.3. Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.

4.NF.B.3a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

4.NF.B.3b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model.

CPI #

Cumulative Progress Indicators (CPI) for Unit

2

Use the fraction model below to complete the following:

- Label the numerical value of each row
- Analyze the fraction bar and list all fractions that are equivalent to $\frac{1}{2}$.
**See added attachment under Instructional Unit 2 (Word Doc.)
- Analyze the fraction bar and list 3 fractions equivalent to $\frac{1}{4}$.
- List 3 fractions that are close to $\frac{1}{2}$ but not more than
- List 3 fractions that are close to 1 whole, but not more than

	<ul style="list-style-type: none"> Find 2 fractions that are closest to 0 <p>RUBRIC – Some answers will vary, each of the 6 bullet items are worth $\frac{1}{2}$ Point - for a total of 3 points.</p>												
<p>Unit Enduring Questions:</p> <p><i>Questions that will foster inquiry, understanding and transfer of learning.</i></p> <ul style="list-style-type: none"> How can place value help in solving multi-digit problems What needs to be done with the remainder in a real world division problem? How can measurement problems be solved using any of the four operations? How can we find two ways to name the same part of a whole? How can using a number line help with finding fraction equivalents? How can models be used in understanding addition and subtraction of fractions and mixed numbers? 	<p>Unit Enduring Understandings:</p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> Choosing the correct operation is necessary to solve real word problems Solve real world and mathematical problems by finding the perimeter and area of rectangles using a formulas If two fractions are the same size they are equivalent, even though the number and size of the parts differ. Addition and subtraction of fractions relates to joining and separating referring to the same whole Fractions $\frac{a}{b}$ with $a > b$ as a sum of fractions $\frac{1}{b}$ 												
<p>Knowledge:</p> <p><i>Students will know how to/that...</i></p> <ul style="list-style-type: none"> Solve multiplication of up to 4-digit by 1-digit Steps to multiply two 2-digit numbers Steps to find whole digit quotients and remainders with up to 4-digit dividends and 1-digit divisors Explain why fractions are equivalent 	<p>Skills:</p> <p><i>Students will be able to show or display...</i></p> <ul style="list-style-type: none"> Fluently add and subtract multi-digit whole numbers. Use standard algorithms and Area/Array Models to multiply multi-digit whole numbers and divide whole numbers Compose equations from information supplied in word problem Recognize and generate equivalent fractions using models 												
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Week 9: GoMath Chapter 4

Week 10: GoMath Chapter 4

Week 11: GoMath Chapter 5

Week 12: GoMath Chapter 5

Week 13: GoMath Chapter 6

Week 14: GoMath Chapter 6

Week 15: GoMath Chapter 6

Week 16: Performance Benchmark and review.

Cape May City Elementary School District Grade 4 Mathematics Curriculum Unit III Overview

Content Area: Mathematics

Unit Title: Quarter III

Target Course/Grade Level: 4

Unit Summary:

Students will be able to:

- Build fractions from unit fractions
- Represent and interpret data
- Understand decimal notation for fractions and compare decimal fractions.
- Solve problems involving measurement and conversion of measurements
- Use place value understanding and properties of operations to add and subtract

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

4.NF.B.3. Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.

4.NF.B.3c. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.

4.NF.B.3d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.

4.MD.B.4. Make a line plot to display a data set of measurements in fractions of a unit ($1/2$, $1/4$, $1/8$). Solve problems involving addition and subtraction of fractions by using information presented in line plots

4.NF.B.4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

4.NF.B.4a. Understand a fraction a/b as a multiple of $1/b$.

4.F.4.B.4b. Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number.

4.NF.4.B.4c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.

4.NF.C.5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.

4.NF.C.6. Use decimal notation for fractions with denominators 10 or 100

4.NF.C.7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model.

4.MD.A.2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

CPI #

Cumulative Progress Indicators (CPI) for Unit

3

Performance Task

Your class has just won first prize in your school's math competition. For the celebration treat, each student will be allowed to make one cup of trail mix to eat.

1. Choose 3 ingredients from the list below.

Coconut, raisins, marshmallows, chocolate chips, cereal and peanuts.

Write a recipe for 1 cup of trail mix you would like for yourself. Use fractions, but do not use equal amounts, of any ingredients.

2. Write a recipe for a team of 5 students which would be 5 cups of trailmix, using all ingredients, but different amounts of each ingredient. Only 1 ingredient may be a whole number.

RUBRIC

3 - point answer

Student accurately determines different fractional amounts needed for an individual recipe, adds/subtracts fractions correctly and reasonably determines the amount of snack mix needed for the whole class.

2 - point answer

Student displays understanding of determining different fractional amounts needed for an individual recipe, but needs assistance to reasonably determine the amount of snack mix needed for the whole class. Work may not be shown and pictures incomplete.

1 - point answer

Student shows limited understanding of fractional values. Needs assistance in computation and visual representation.

0 - point answer - no response

Unit Enduring Questions:

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

- How can models be used in understanding fractions and decimals
- What are customary and metric units for measuring length, capacity, and weight/mass, and how are they applied to real world situations?
- Which kind of graph can organize my information most effectively?
- How can models help to add/subtract/multiply fractions?

Unit Enduring Understandings:

Students will understand that...

- Addition and subtraction of fractions relates to joining and separating referring to the same whole
- Fractions a/b with $a > b$ as a sum of fractions $1/b$
- Line Plots can be used data sets consisting of measurements in fractions of a unit.
- Fractions can be represented as decimals
- Relative sizes of measurement units within one system

Knowledge:

Students will know how to/that...

- Fractions and decimals can be represented visually to help understand their values
- Multiplying a fraction by a whole number can be represented using visual fraction models and equations
- Using measurement information presented in line plots, can be used to add and subtract fractions
- How to add & subtract multi-digit numbers using a standard algorithm.
- Fractions can be represented as decimals
- Measurement equivalents

Skills:

Students will be able to show or display...

- Decompose a fraction into a sum of fractions with the same denominator
- Multiply a fraction by a whole number.
- Add two fractions with respective denominators of 10 and 100 using equivalent fractions
- Compare two decimals to hundredths by reasoning about their size
- Make a line plot to display a data set in measurements in fractions of a unit ($1/2$, $1/4$, $1/8$)
- Convert Measurement Equivalents
- Add and Subtract two multi-digit numbers using a standard algorithm

Pacing Guide:

Solve Real World Problems involving the Addition of Fractions	1 ½
Solve Real World Problems involving the Subtraction of Fractions	1 ½ Weeks
Multiplying Fractions by a Whole Number	2 Weeks
Line Plots	1 Week
Fraction and Decimal Equivalents	2 Weeks
Fluency Standards – Add & Subtraction of Whole Numbers	Entire Unit
Benchmark Testing and Reteaching	2 Weeks

Week 17: GoMath Chapter 7

Week 18: GoMath Chapter 7

Week 19: GoMath Chapter 8

Week 20: GoMath Chapter 8

Week 21: GoMath Chapter 8 & 9

Week 22: GoMath Chapter 9

Week 23: GoMath Chapter 9

Week 24: Performance Benchmark and review.

Cape May City Elementary School District Mathematics Grade 4 Curriculum Unit IV Overview

Content Area: Mathematics

Unit Title: Quarter IV

Target Course/Grade Level: 4

Unit Summary:

Students will be able to:

- Represent and interpret data
- Identify geometric properties that correspond to angles, lines, and shapes
- Understand concepts of area, angles, perimeter, and measurement and relate to arithmetic skills.

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.
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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

4.MD.A.1 Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit; Know relative sizes of measurement units within one system of units including km, m, cm, mm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...

4.MD.A.2 Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit; Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

4.MD.A.3 Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit; Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor

4.MD.B.4 Represent and interpret data; Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.

4.MD.C.5 Geometric measurement: understand concepts of angle and measure angles; Recognize angles as geometric shapes that are formed wherever two rays share a common

endpoint, and understand concepts of angle measurement:

a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “onedegree angle,” and can be used to measure angles.

b. An angle that turns through n one-degree angles is said to have an angle measure of n degrees

4.MD.C.6 Geometric measurement: understand concepts of angle and measure angles; measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

4.MD.C.7 Geometric measurement: understand concepts of angle and measure angles; Recognize angle measure as additive.

When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.

4.G.A.1 Draw and identify lines and angles, and classify shapes by properties of their lines and Angles; Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

4.G.A.2 Draw and identify lines and angles, and classify shapes by properties of their lines and Angles; Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.

4.G.A.3 Draw and identify lines and angles, and classify shapes by properties of their lines and Angles; Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

CPI

Cumulative Progress Indicators (CPI) for Unit

4

You are on the sales and marketing team at an automobile company. Design a show room to display three new model cares. Include an information booth. Arrange the cars so visitors can walk all around them and get into and out of them. Use as little spaces as necessary.

Vehicle	Dimensions	Other Information
Sporty Compact	Length: 15ft Width: 6ft	Doors: open out 3ft
Midsize Sedan	Length: 16ft Width: 6ft	Doors: open out 3ft
SUV	Length: 17ft Width: 7ft	Doors: open out 3ft

For each car:

- Draw and label the footprint with the doors closed. Then find the area of that footprint in square feet.
- Draw and label dotted lines to enlarge the footprint to show the doors open. Then find the area of the larger footprint.

Each square on the grid represents 1 square foot. Use the area formula for a rectangle to find each area: $A = b \times h$

Car's Footprint x2	Area: Doors Closed	Area: Doors Open

		<table><tr><td></td><td></td><td></td></tr></table>												
		Total Score of 12 points; each successful task request represents one point.												
Unit Enduring Questions: <i>Questions that will foster inquiry, understanding and transfer of learning.</i> <ul style="list-style-type: none">How can I use tools and formulas to solve real world problems involving area, volume, and perimeter?Which strategy will I use to find the measurement of missing angles?Which strategies should I use depending on the geometric shape?Which operation should use to solve real world problems?		Unit Enduring Understandings: <i>Students will understand that...</i> <ul style="list-style-type: none">Knowing the parts of a circleIdentify geometric figuresIdentify patternsIdentify types of anglesKnowing the Perimeter Formulas and strategies will solve problems involving Perimeter, Area, and VolumeKnowing Area Formulas (L X W) or Counting Square Units will solve problems involving AreaGraphs and charts can help us organize data to make decisionsSolve area/perimeter with complex shapes												
Knowledge: <i>Students will know how to/that...</i> <ul style="list-style-type: none">Identify geometric concepts on a flat plane.Know Area, Volume, and Perimeter FormulasMeasure and calculate area by counting unit squares or multiplying L X WMeasure and calculate area of perimeter of polygons.Find the area of polygons with whole-number side lengthsFind perimeter of a polygons, and areaCircumference of a circle		Skills: <i>Students will be able to show or display...</i> <ul style="list-style-type: none">Use tools and formulas to solve real world and mathematical problems involving perimeter/ area/volumeExplain how students found perimeter/area/volume of given real world problemsConstruct argument or proof of how students found perimeter/area/volume.Find an unknown side length of a polygonRead and Interpret a Bar GraphPictograph and a Line PlotCreate a Bar Graph, Pictograph and a Line PlotCompare Perimeters of 2 or more figuresCompare Area of 2 or more figuresCompare Volume of 2 or more figures												
Pacing Guide: <table><tr><td>Two-Dimensional Figures</td><td>2 Weeks</td></tr><tr><td>Angles</td><td>2 Weeks</td></tr><tr><td>Relative sizes of Measurement Units</td><td>2 Weeks</td></tr><tr><td>Fluency Review – Add/Sub within 1000 & Problem Solving (Standard Algorithm)</td><td>2 Week</td></tr><tr><td>Benchmark Testing & Reteaching</td><td>2 Weeks</td></tr></table>					Two-Dimensional Figures	2 Weeks	Angles	2 Weeks	Relative sizes of Measurement Units	2 Weeks	Fluency Review – Add/Sub within 1000 & Problem Solving (Standard Algorithm)	2 Week	Benchmark Testing & Reteaching	2 Weeks
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Week 25: GoMath Chapter 10

Week 26: GoMath Chapter 11

Week 27: GoMath Chapter 11 & 12

Week 28: GoMath Chapter 12

Week 29: GoMath Chapter 12

Week 30: GoMath Chapter 13

Week 31: GoMath Chapter 13

Week 32: Performance Benchmark and review.

**Cape May City Elementary School District Grade 4 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 (www.help4teachers.com)
- 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.
- Write 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)
 - <https://www.cantonpl.org/blog/post/picture-books-about-shapes>
 - <http://childrenspicturebooks.info/math/fractions.htm>
 - <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
- Manipulatives
- Protractors
- 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 (www.help4teachers.com)
- 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: <ul style="list-style-type: none"> • 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 4 (Text and Workbook)	