



Grade 5 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 5 Mathematics Curriculum	
Content Area: Mathematics	
Course Title: Grade 5 Mathematics	Grade level: 5
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 5 Mathematics Curriculum Unit I Overview
Content Area: Mathematics
Unit Title: Quarter I
Target Course/Grade Level: 5

Unit Summary:

Students will be able to:

- Write and interpret numerical expressions/ Understand the place value system
- Perform operations with multi-digit whole numbers and with decimals to hundredths

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:

5.OA.A.1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

5.OA.A.2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.

5.NBT.A.1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.

5.NBT.A.2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

5.NBT.B.5. Fluently multiply multi-digit whole numbers using the standard algorithm. *(benchmarked)

5.NBT.B.6. Find whole-number quotients of whole numbers with up to four-digit dividends and two-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.

5.NBT.A.3. Read, write, and compare decimals to thousandths.

5.NBT.A.3a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.

5.NBT.A.3b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.

CPI

Cumulative Progress Indicators (CPI) for Unit

Performance Task 1

You are a well-known Chef who concentrates on healthy cooking. Your task is to create a meal plan for a dinner party at the White House. You will select one item from each food group and use equations to calculate the fat and calorie

totals for your meal. Then compare your meal with another Chef (in your classroom. Which meal has the most or least amount of calories? Consider adjusting your meal. Reflect on your own eating habits.

Use this chart and the workspace below to show your menu choices and total fat and calorie count. Show your work using equations and/or algebraic expressions where needed.

FOOD ITEM PER SERVING	TOTAL FAT GRAMS PER SERVING
CALORIES PER SERVING	

MEAT GROUP

Turkey 2 oz. (1 slice)	2	51
Ham 2 oz. (1 slice)	5	159
Hamburger 3 oz.	20	286

DAIRY GROUP

Milk (1 cup whole)	8	150
American Cheese 1 oz.	9	110
Yogurt (1 cup)	4	144

VEGETABLE GROUP

Peas 8 oz	1	268
Olives 8 oz.	5	50
Avocado 8 oz	3	368

FRUIT GROUP

Banana (large)	1	130
Strawberries 6 oz.	0	0
Mangos 6 oz.	1	145

BREAD & PASTA GROUP

Wheat Bread (1 slice)	1	70
Macaroni (1 cup)	0	159

RUBRIC

	<p>3 - POINT ANSWER</p> <p>The student understands multiplication of whole numbers. All computations are correct. Table is complete and correct.</p> <p>2 - POINT ANSWER</p> <p>The student understands multiplication of whole numbers. Most computations are correct. The table is complete and almost entirely correct</p> <p>1 - POINT ANSWER</p> <p>The student may understand the concept of multiplication, but may make computations errors or mistakes in which foods are picked or which numbers are used in multiplying.</p> <p>0 - POINTS No Response</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 are whole numbers and decimals written, ordered and compared? • How can I find the value of an algebraic expression? • What procedure or strategy can be used for multiplying and dividing? 	<p>Unit Enduring Understandings:</p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> • Using symbols will help evaluate expressions • Placement of the decimal point creates value of a number • Computation is based on place value and properties • Standard Algorithms or Area Models can solve for multiplication and
<p>Knowledge:</p> <p><i>Students will know how to/that...</i></p> <ul style="list-style-type: none"> • The meaning parenthesis, brackets, braces, and PEMDAS • Solve numerical expressions • Compare quantitative relationships exist between the digits in place value positions of a multi-digit number • Explain how a decimal point changes number value • Use digits in one place to represent 1/10 of what it would represent in the place to its left and ten times what it would represent in the place to its right. • Solving for multiplication and division of whole • numbers can be accomplished using standard and 	<p>Skills:</p> <p><i>Students will be able to show or display...</i></p> <ul style="list-style-type: none"> • Demonstrate understanding of PEMDAS • Write numerical expressions when given a verbal description or word problem • Write powers of 10 using whole number exponents • Understanding place value of whole numbers and decimals • Multiply/divide using powers of 10 • Compare decimals using symbols to record comparisons • Recognize and explain patterns • Fluently multiply multi-digit whole numbers • Divide multi-digit whole numbers explain/represent calculations with equations, rectangular arrays, and area models

- non-standard algorithms and procedures
- Using base ten patterns are important
- elements when multiplying and dividing

Pacing Guide:

PreTesting	1 – 2 Days
Place Value with Whole Numbers and Decimals/Comparing Decimals/Powers of Ten	3 Weeks
Evaluating and Representing Numerical Expressions	2 Weeks
Multi-Digit Multiplication & Division	3 Weeks
Incorporate Fluency Standards & Multiplying Whole Numbers	Entire Unit
Benchmark Testing & Reteaching	2 Weeks

Week 1: MAPs / Pre-Assessment

Week 2: GoMath Chapter 1

Week 3: GoMath Chapter 1

Week 4: GoMath Chapter 1

Week 5: GoMath Chapter 1 & 2

Week 6: GoMath Chapter 2

Week 7: GoMath Chapter 2

Week 8: GoMath Chapter 2 and Benchmark

Cape May City Elementary School District Grade 5 Mathematics Curriculum Unit II Overview

Content Area: Mathematics

Unit Title: Quarter II

Target Course/Grade Level: 5

Students will be able to:

- Understand concepts of volume
- Perform operations with multi-digit whole numbers and with decimals to hundredths
- Use equivalent fractions as a strategy to add and subtract 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

5.MD.C.3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement.

5.MD.C.5a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.

5.MD.C.5b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.

5.MD.C.4. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and non-standard units.

5.MD.C.5. Relate volume to the operations of multiplication and addition

and solve real world and mathematical problems involving volume.

5.MD.C.5a. Find the volume of a right rectangular prism with whole- number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.

5.MD.C.5b. Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems.

5.MD.C.5c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems

5.NBT.B.5. Fluently multiply multi-digit whole numbers using the standard algorithm. *(benchmarked)

5.NF.A.1. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$ (in general, $\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$).

5.NF.A.2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.

5.NF.B.3. Interpret a fraction as division of the numerator by the denominator ($\frac{a}{b} = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

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

5.NF.B.4a Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$.

5.NF.B.4b. Find the area of a rectangle with fractional side lengths

CPI #	Cumulative Progress Indicators (CPI) for Unit
2 & 3	<p>Volume Performance Task 1</p> <p>You are the teacher’s helper. Your teacher wants to take three boxes of books home from school. She needs to know if they will all fit in her truck, which has 60 cubic feet of space. Will she need to make two trips to get all the boxes home? Here is some information you will need:</p> <ul style="list-style-type: none">• Two of the boxes are the same size. (2 ft. long, 3ft. wide, and 2 ft. high)• One box is larger than the others. (3 ft. long, 3 ft. wide, and 3 ft. high).• Can your teacher take all three boxes in one load? Show how you know with pictures, words, and numbers.• Can your teacher fit anything else in her trunk? If so, what are the possible dimensions of the item? <p>Rubric</p> <p>3 - point answer</p> <p>The student correctly calculates the volume of each box. The student also finds the total volume of the three boxes and determines that the teacher can fit them in the trunk. The student is able to determine the dimensions of another item that can fit.</p> <p>2 - point answer</p> <p>The student correctly calculates the volume of the boxes and determines that they fit in the truck, but is unable to calculate the dimensions of another item that can fit.</p> <p>1 - point answer</p> <p>The student calculates the volume of two or three boxes, but is unable to provide an explanation of how the items will fit in the trunk and/or calculate the dimensions of another item.</p> <p>0- Point answer</p> <p>Students attempts to calculate the volume, but with major errors even with</p>

	<p>support.</p> <p>Performance Task 2</p> <p>You and your fifth grade class are making cookies to demonstrate your understanding of fractions and how it relates to everyday recipes. Students will make sugar cookies. Your task is to adjust the recipes to make larger quantities. Here is the recipe for 36 Cookies. You want to make 72 cookies, so you need to double the recipe. Here is the recipe. How much will you need of each ingredient? Show your work and explain your answer.</p> <p>Sugar Cookie Recipe (makes 36 cookies) 2 Cups of Flour 1 ½ Cups of Sugar ¼ Tsp. of Baking Powder ½ Tsp. Baking Soda ¾ Cup of Milk 1 1/3 Tsp. of Salt</p> <p>Mix and roll into balls. Place on ungreased cookie sheet. Bake at 375 degrees for 12 minutes. Let cool and enjoy!</p> <p>RUBRIC</p> <p>3 Points - Student accurately computes the amount of each ingredient needed when adjusting the amount of requested cookies. Student chooses appropriate strategy and work is complete and correct.</p> <p>2 Points - Student computes the amount of each ingredient needed with minor errors. Chosen strategy was appropriate to situation.</p> <p>1 Point- Student needs assistance to choose appropriate strategy needed and/or has major computational errors.</p> <p>0- Points- Student is unable to connect understanding to compute fractional values even with assistance</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"> • What is the meaning of volume and how can it be found? • When and where will you need to know 	<p>Unit Enduring Understandings:</p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> • Volume is the amount of space in an object and can be found in a variety of ways • When multiplying a whole number by a fraction, the whole number can be written as a fraction (#/1)

- how to find the volume of an object?
- How can you represent a word problem numerically? What steps are necessary to add and subtract fractions?
- How do you multiply a fraction by a whole number? What does that mean?

- When multiplying fractions, reduce to simplest form
- Multiplication is an inverse of division
- The interpretation of the multiplication of fractions can be better understood through visual representation

Knowledge:

Students will know how to/that...

- How to use the volume formula(s) $V = L \times W \times h$ and $V = B \times h$
- How to count cubic units
- How to choose the appropriate cubic unit
- How to find the volume of an irregular figure
- Word problems can be represented by numerical expressions
- Add and subtract proper fractions, improper fractions, and mixed numbers
- Find Common Denominators to solve fraction equations
- How to multiply a whole number by a fraction
- How to multiply a fraction by a fraction
- How to represent fractional values in a variety of ways (model, pictures)
- Reduce Fractions into lowest terms
- How a product is related to its factors
- Area Formula ($L \times W$)
- Find Area of a figure with whole and mixed numbers

Skills:

Students will be able to show or display...

- Determine the volume of a figure by counting the number of cubes needed to fill it with no gaps or overlays
- Calculate the base area of a figure
- Relate the base to the length and width
- Decompose irregular figures into regular, solid figures
- Demonstrate volume is additive by combining the volume of smaller figures to find the volume of a composite figure
- Write numerical expressions from a given word problem.
- Solve fractional problems using addition/subtraction/multiplication
- Determine when is the appropriate time to add, subtract or multiply using fractions
- Apply their number sense and estimation strategies when solving problems involving fractions
- Find the area of a rectangle containing fractional units

Pacing Guide:

Solve problems relating to volume utilizing different strategies	3 Weeks
Solve problems involving Addition and Subtraction Fractions	2 1/2 Weeks
Multiplying Fractions and Fractional Side Lengths to solve measurement problems	2 1/2 Weeks
Incorporate Fluency Standards & Multiplying Whole Numbers	Entire Unit
Benchmark Testing and Reteaching	2 Weeks

Week 9: GoMath Chapter 11

Week 10: GoMath Chapter 11

Week 11: GoMath Chapter 11 & 6

Week 12: GoMath Chapter 6

Week 13: GoMath Chapter 6 & 7

Week 14: GoMath Chapter 7

Week 15: GoMath Chapter 8

Week 16: Performance Benchmark and review.

**Cape May City Elementary School District Grade 5 Mathematics Curriculum
Unit III Overview**

Content Area: Mathematics

Unit Title: Quarter III

Target Course/Grade Level: 5

Unit Summary:

Students will be able to:

- Apply and extend previous understandings of multiplication and division of fractions
- Perform operations with multi-digit whole numbers and with decimals to hundredths
- Convert like measurement units within a given measurement system

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

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

5.NF.B.4b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.

5.NF.B.5. Interpret multiplication as scaling (resizing), by:

5.NF.B.5a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.

5.NF.B.5b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.

5.NF.B.6. Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

5.NF.B.7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. *(benchmarked)

5.NF.B.7a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.

5.NF.B.7b. Interpret division of a whole number by a unit fraction, and compute such quotients.

5.NF.B.7c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem.

5.NBT.A.2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

5.NBT.B.7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. *(benchmarked)

5.MD.A.1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems

CPI #

Cumulative Progress Indicators (CPI) for Unit

4

You are framing a set of pictures for your parents for a gift. One picture is $8 \frac{1}{2}$ inches by 10 inches. The other picture is $3 \frac{1}{2}$ inches by 5 inches. You are creating a colored border around each picture to frame it. How much colored border will you need for each picture?

- Draw and or show your work to figure out how much border you will need for each picture and the total amount of border needed for both pictures. You can solve it several ways- drawing a picture and solving, converting measurements to decimals to solve using fractions.
- Border costs \$1.20 a foot. Convert the amount of border you need from inches to feet to see how much the border will cost RUBRIC

3 Point Response

• Student correctly and accurately calculates the length of colored border is needed for each picture and shows all work for adding fractions and or decimals (if converted) and/or draws a picture of each frame to solve.

• 1st Picture $8\frac{1}{2} + 8\frac{1}{2} + 10 + 10 = 37$ inches of colored border

• 2nd Picture $3\frac{1}{2} + 3\frac{1}{2} + 5 + 5 = 17$ Inches or colored border

• Total Amount of Border = 54 Inches

• Converts to $4\frac{1}{2}$ Feet or 4.5 Feet

• Multiplies $4.5 \times \$1.20$ per foot = \$5.40 is the total cost for border for both pictures

2 Point Response

• Student correctly and accurately calculates the length of colored border is needed for each picture and shows all work for adding fractions and or draws a picture of each frame to solve.

• 1st Picture $8\frac{1}{2} + 8\frac{1}{2} + 10 + 10 = 37$ inches of colored border

• 2nd Picture $3\frac{1}{2} + 3\frac{1}{2} + 5 + 5 = 17$ Inches or colored border

• Total Amount of Border = 54 Inches

• Converts to $4\frac{1}{2}$ Feet or 4.5 Feet

1 Point Response

• Student correctly and accurately calculates the length of colored border is needed for each picture and shows all work for adding fractions and or draws a picture of each frame to solve.

• 1st Picture $8\frac{1}{2} + 8\frac{1}{2} + 10 + 10 = 37$ inches of colored border

• 2nd Picture $3\frac{1}{2} + 3\frac{1}{2} + 5 + 5 = 17$ Inches or colored border

***Student incorrectly calculates the total amount of border and does not correctly calculate the total cost of the border for both pictures.

0 Point Response –No Response

Unit Enduring Questions:

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

- How do you divide a whole number by a fraction? What does that mean?
- How can you represent multiplying and dividing fractions and mixed numbers using a number line, fractional part, or model?
- What strategies are used in interpreting fraction problems into story context?
- How can I apply properties of operations, and/or the relationship between addition and subtraction; explain the reasoning used, when working with computation of decimals?

Unit Enduring Understandings:

Students will understand that...

- The interpretation of the multiplication of fractions can be better understood through visual representation
- To interpret fractional problems, they must create a coherent representation
- Apply Area Formula to find total area of shapes with fractional side lengths
- Decimal place value effects the strategies used in computing addition, subtraction, multiplication, and division problems using decimals
- Converting units in the metric system is based on the powers of ten
- Converting units in the customary system uses multiplication and division
- When dividing a whole number by a fraction, find the reciprocal of the fraction and multiply by the whole number

Knowledge:

Students will know how to/that...

- Multiply and divide fractions by whole numbers and fractions by fractions, drawing visual models to represent products, showing $(a/b) \times (c/d) = ab(1/bd)$, and creating story contexts.
- Explain how a product is related to the magnitude of the factors
- Divide a unit fraction by a non-zero whole number and interpret by creating a story context or visual fraction model
- Explain patterns in the placement of the decimal point when multiplying or dividing a decimal by powers of 10.
- Solve problems involving fractions and decimals
- Convert Measurement Equivalents to solve problems
- Add/Subtract/Multiply/Divide Decimals to solve real world problems

Skills:

Students will be able to show or display...

- Determine when is the appropriate time to add, subtract, multiply or divide using fractions
- Apply their number sense and estimation strategies when solving real world problems involving fractions
- Solve multi-step, real world problems that require conversions
- Multiplication as resizing (scaling)
- Find the area of a rectangle containing fractional units
- Represent powers of 10 using whole-number exponents.
- Add/Subtract/Multiply/Divide decimals to hundredths using concrete models and drawings

Pacing Guide:

Multiplying & Dividing Fractions	3 Weeks
Add/Subtract/Multiply/Divide Decimals	2 1/2 Weeks
Measurement Conversions	2 1/2 Weeks
Incorporate Fluency Standards & Multiplying Whole Numbers	Entire Unit
Benchmark Testing & Reteaching	2 Weeks
PARCC Preparation (Links located under Resource Tab)	Entire Unit

Multiplying & Dividing Fractions	3 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 5 Curriculum Unit IV Overview	
Content Area: Mathematics	
Unit Title: Quarter IV	
Target Course/Grade Level: 5	
Unit Summary: <i>Students will be able to:</i> <ul style="list-style-type: none"> • Graph points on the coordinate plane to solve real-world and mathematical problems • Analyze patterns and relationships • Classify two dimensional figures into categories based on their properties • Represent and interpret data • Perform operations with multi-digit whole numbers and with decimals to hundredths • Apply and extend previous understanding of multiplication and division 	
Interdisciplinary Connections: <ul style="list-style-type: none"> • 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

5.G.A.1. Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).

5.G.A.2. Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

5.OA.A.3. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane

5.G.B.3. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.

5.G.B.4. Classify two-dimensional figures in a hierarchy based on properties.

5.MD.B.2. Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots.

5.NBT.B.5. Fluently multiply multi-digit whole numbers using the standard algorithm. *(benchmarked)

5.NBT.B.7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. *(benchmarked)

5.NF.B.7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. *(benchmarked)

CPI #	Cumulative Progress Indicators (CPI) for Unit
5	<p>SCIENCE FAIR PROJECT</p> <p>Students will complete Science Fair projects involving the measurement of change and the data documenting that change. Students will display their data using the appropriate graph including all labels.</p> <p>3• Point Answer:</p> <ul style="list-style-type: none">• The graph is clear, logical and attractive

	<ul style="list-style-type: none"> • has an appropriate title and symbols • has labels for both the x and y axis • includes the creator's name • includes all accurate data <p>2• Point Answer:</p> <ul style="list-style-type: none"> • The graph is clear, and attractive • has a title and symbols • has labels for at least one of the axis • includes the creator's name • includes all accurate data <p>1• Point Answer:</p> <ul style="list-style-type: none"> • The graph has a title and some symbols • has no labels for the axis • may not have the creator's name • includes mostly accurate data <p>0• Point Answer:</p> <ul style="list-style-type: none"> • has no labels for the axis • may not have the creator's name • may not include any accurate data
<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 are points graphed? • How can we show the relationship between sequences on a graph? • Which operation should I use to solve real world problems? • How can polygons be described, classified and named? • How can line plots be used to represent data? • How can numbers be used to describe certain data sets? 	<p>Unit Enduring Understandings:</p> <p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> • Plane shapes have many properties that make them different from one another. • Each type of graph is most appropriate for certain kinds of data. • An object's location in space can be described quantitatively • Fluency in computation with whole numbers, decimals and fractions is critical to future math
<p>Knowledge:</p> <p><i>Students will know how to/that...</i></p> <ul style="list-style-type: none"> • That a pair of perpendicular number lines, axes, define the coordinate system. 	<p>Skills:</p> <p><i>Students will be able to show or display...</i></p> <ul style="list-style-type: none"> • Interpret coordinate values of points in the context of a real-world situation.

- Given points in the plane is located using an ordered pair of numbers (coordinates).
- First numbers in an ordered pair indicates how far to travel from the origin in the direction of the x-axis. And the second numbers in an ordered pair indicate how far to travel in the direction of the y-axis.
- All shapes have attributes which identify and categorize the shape.
- Line plots display a data set in measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$)
- Multiply multi-digit numbers with accuracy
- Compute with decimals
- Solve real world problems involving the division of fractions.

- Graph points defined by whole number coordinates in the first quadrant of the coordinate plane
- Classify two-dimensional figures based on properties.
- Make and/or read a line plot to display data in fractions of a unit.
- Generate two numerical patterns from two given rules, identify the relationship between corresponding terms, create ordered pairs and graph ordered pairs
- Fluently multiply multi-digit whole numbers with accuracy and efficiency
- Add, subtract, multiply, and divide decimals to hundredths
- Solve real world problems involving division of unit fractions by whole numbers or whole numbers

Pacing Guide:

Coordinate Grids- Plotting/ X & Y Axis	2 Weeks
Classifying & Identifying Geometric Shapes & Properties	1 Week
Add/Subtract/Multiply/Divide Decimals (Review)	2 Weeks
Line Plots	2 Weeks
Incorporate Fluency Standards- Multiplying Whole Numbers	Entire Unit Week
Dividing Fractions (Review)	1 Week
Benchmark Testing & Reteaching	2 Weeks

Week 25: GoMath Chapter 9

Week 26: GoMath Chapter 9

Week 27: GoMath Chapter 10

Week 28: GoMath Chapter 10

Week 29: GoMath Chapter 11

Week 30: GoMath Chapter 11

Week 31: GoMath Chapter 11

Week 32: Performance Benchmark and review.

**Cape May City Elementary School District Grade 5 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 5 (Text and Workbook)	