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Board Approved:	August 18, 2015

LONG BEACH ISLAND CONSOLIDATED SCHOOL DISTRICT
Mathematics
Curriculum

Content Area: Mathematics

Course Title: Elementary	Grade Level: 4

Unit Plan 1: Operations and Algebraic Thinking	Suggested: September, October ongoing
Unit Plan 2: Numbers and Operations in Base Ten	Suggested: November, December, January ongoing
Unit Plan 3: Numbers and Operations - Fractions	Suggested: January/February ongoing
Unit Plan 4: Measurement and Data	Suggested: March/April ongoing
Unit Plan 5: Geometry	Suggested: April/May/June

Standards for Mathematical Practice
The following standards for mathematical practice should be incorporated in all units.

MP.1 Make sense of problems and persevere in solving them.	- Find meaning in problems - Look for entry points - Analyze, conjecture and plan solution pathways - Monitor and adjust - Verify answers - Ask themselves the question: "Does this make sense?"
MP.2 Reason abstractly and quantitatively.	- Make sense of quantities and their relationships in problems - Learn to contextualize and decontextualize - Create coherent representations of problems
MP.3 Construct viable arguments and critique the reasoning of others.	- Understand and use information to construct arguments - Make and explore the truth of conjectures - Recognize and use counterexamples - Justify conclusions and respond to arguments of others
MP.4 Model with mathematics.	- Apply mathematics to problems in everyday life - Make assumptions and approximations - Identify quantities in a practical situation - Interpret results in the context of the situation and reflect on whether the results make sense
MP.5 Use appropriate tools strategically.	- Consider the available tools when solving problems - Are familiar with tools appropriate for their grade or course (pencil and paper, concrete models, ruler, protractor, calculator, spreadsheet, computer programs, digital content located on a website, and other technological tools) - Make sound decisions of which of these tools might be helpful
MP.6 Attend to precision.	- Communicate precisely to others - Use clear definitions, state the meaning of symbols and are careful about specifying units of measure and labeling axes - Calculate accurately and efficiently
MP.7 Look for and make use of structure.	- Discern patterns and structures - Can step back for an overview and shift perspective - See complicated things as single objects or as being composed of several objects
MP.8 Look for and express regularity in repeated reasoning.	- Notice if calculations are repeated and look both for general methods and shortcuts - In solving problems, maintain oversight of the process while attending to detail - Evaluate the reasonableness of their immediate results

Long Beach Island Consolidated School District **MATHEMATICS CURRICULUM** **Unit 1 Overview**

Content Area: Mathematics

Unit 1 Title: Operations and Algebraic Thinking

Target Course / Grade Level: 4

Cluster:
- Use the four operations with whole numbers to solve problems.
- Gain familiarity with factors and multiples.
- Generate and analyze patterns.

Cluster Summary:
Students will continue to develop their understanding of the four operations to solve multi-step problems with the emphasis on multiplication to find the product and division to find the factor. By comparing a variety of solution strategies, students learn the relationship between multiplication and division. Additional understanding and solutions can be found through the use of groups, arrays and models.

Primary Interdisciplinary Connections:

Science	measurement (distance, weight, and growth), data analysis and collection, experiments relating to **Energy, Earth and Human Activity** and **Engineering and Design.**
Social Studies	economics & money, weather patterns, geography & map skills, and graphing
Language Arts	math journal, word problem comprehension, math stories, open-ended math questions, multi-step problems, math literature (*see list under Teacher Resources*)
Technology	8.1- Educational Technology: use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge. interactive whiteboard lessons, independent centers, classroom websites, online resources and apps (*see list under Teacher Resources*)

21st Century Life and Careers:

Number	NJ Core Curriculum Content Standard
CRP1.	Act as a responsible and contributing citizen and employee.
CRP2.	Apply appropriate academic and technical skills.
CRP4.	Communicate clearly and effectively and with reason.
CRP6.	Demonstrate creativity and innovation.
CRP8.	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11.	Use technology to enhance productivity.
CRP12.	Work productively in teams while using cultural global competence.

Learning Targets	
Content Standards: OA	
Number	**Common Core Standard for Mastery**
	Mathematics: Operations and Algebraic Thinking
4.OA.1	Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 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.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.OA.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.
4.OA.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.
	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. For example, given the rule "Add 3" and the starting number 1,

4.OA.5	generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.
Number	**Common Core Standard for Introduction**
5.OA.1	Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

Unit Essential Questions	**Unit Enduring Understandings**
● How can numbers be expressed, ordered, and compared? ● How can place value understanding help us with comparing, ordering, and rounding? ● Why is it important to identify relationships between mathematical operations? ● How can number sense help us with recall of multiplication and division facts? ● Why is it important to identify patterns?	*Students will understand that…* ● numbers can be compared abstractly and quantitatively. ● knowing their multiplication facts can help in real life situations. ● by identifying patterns helps reinforce facts and develop fluency with operations. ● developing number sense helps to solve problems in a variety of ways.
Unit Objectives *Students will know…* ● how to solve multi-step word problems with whole numbers using the four operations. ● how to write an algebraic expression. ● how to find all factor pairs for a whole number less than 100. ● how to identify patterns and apply the rule.	**Unit Objectives** *Students will be able to…* ● identify and verbalize which quantity is being multiplied and which number tells how many times. ● use mental computation and estimation strategies to check the reasonableness of their answer. ● use drawings and algebraic equations to represent a word problem. ● list all factors of a given number. ● determine whether a number is prime or composite. ● investigate different patterns to find rules, identify features in the patterns, and justify the reason for those features.

LONG BEACH ISLAND CONSOLIDATED SCHOOL DISTRICT
MATHEMATICS CURRICULUM
Evidence of Learning

Formative Assessments
- Teacher Observation
- Performance Assessments
- Exit Slips
- Games
- Anecdotal Records
- Oral Assessments/Conferencing

- Portfolio/Math Journal
- Daily Classwork
- Pre-assessments

Summative Assessments
- Tests
- Quizzes
- National/State/District Wide Assessments

Modifications (ELLs, Special Education, Gifted and Talented)

Low Level Strategies
- Small Group Instruction
- Leveled and Heterogenous Grouping/Peer to Peer Interaction
- Visual Models
- Multi-sensory materials
- Manipulatives
- Supplemental Aids (addition table, multiplication table, number line, etc.)
- Tiered Activities
- Modified Assignments and Assessments
- Study sheets/Summary sheets/Vocabulary support
- Breakdown presentation of material
- Assistive Technology

High Level Strategies
- Enrichment & Challenge Activities/HOT Problems
- Extended Assignments/Assessments
- Leveled and Heterogenous Grouping/Peer to Peer Interaction
- Group projects
- Student Driven Activities
- Student Choice Activities

Instructional Materials/Teacher Resources:

Specific Titles for Operations and Algebraic Thinking:
- One Grace of Rice by Demi
- If You Hopped Like a Frog by David Schwartz
- The Math Curse by Jon Scieszka

Websites:
www.tenmarks.com
www.mathisfun.com
www.sumdog.com
www.multiplication.com
www.mathgametime.com
www.mrnussbaum.com
www.interactivesites.weebly.com

IPAD games:
4th Grade Splash Math
K-5 Fun Learning Splash Math Games
Turbo Math Pirate Challenge
Doodle Math
4th Grade Planet
Grade 4 Common Core State Standards Workbooks
4th Grade Math: Common Core State Standards Education Enrichment Game

Optional Equipment:
computers, whiteboards, iPads, overheads, interactive whiteboard

Teacher Notes:

Long Beach Island Consolidated School District
MATHEMATICS CURRICULUM
Unit 2 Overview

Content Area: Mathematics

Unit 2 Title: Numbers and Operations Base Ten

Target Course / Grade Level: 4

Cluster:
- Generalize place value understanding for multi-digit whole numbers.
- Use place value understanding and properties of operations to perform multi-digit arithmetic.

Cluster Summary:
Students generalize their understanding of place value to 1,000,000, understanding the relative sizes of numbers in each place. They apply their understanding of models for multiplication (equal-sized groups, arrays, area models), place value, and properties of operations, in particular the distributive property, as they develop, discuss, and use efficient, accurate, and generalizable methods to compute products of multi-digit whole numbers. Depending on the numbers and the context, they select and accurately apply appropriate methods to estimate or mentally calculate products. They develop fluency with efficient procedures for multiplying whole numbers; understand and explain why the

procedures work based on place value and properties of operations; and use them to solve problems. Students apply their understanding of models for division, place value, properties of operations, and the relationship of division to multiplication as they develop, discuss, and use efficient, accurate, and generalizable procedures to find quotients involving multi-digit dividends. They select and accurately apply appropriate methods to estimate and mentally calculate quotients, and interpret remainders based upon the context.

Primary Interdisciplinary Connections:

Science	measurement (distance, weight, and growth), data analysis and collection
Social Studies	economics & money, weather patterns, geography & map skills, and graphing
Language Arts	math journal, word problem comprehension, math stories, open-ended math questions, multi-step problems, math literature (*see list under Teacher Resources*)
Technology	8.1- Educational Technology: use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge. interactive whiteboard lessons, independent centers, classroom websites, online resources and apps (*see list under Teacher Resources*)

21st Century Life and Careers:

Number	NJ Core Curriculum Content Standard
CRP1.	Act as a responsible and contributing citizen and employee.
CRP2.	Apply appropriate academic and technical skills.
CRP4.	Communicate clearly and effectively and with reason.
CRP6.	Demonstrate creativity and innovation.
CRP8.	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11.	Use technology to enhance productivity.
CRP12.	Work productively in teams while using cultural global competence.

Learning Targets	
Content Standards: NBT	
Number	**Common Core Standard for Mastery**
	MATHEMATICS: Numbers and Operations Base Ten
4.NBT.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. For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.
4.NBT.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.3	Use place value understanding to round multi-digit whole numbers to any place.
4.NBT.4	Fluently add and subtract multi-digit whole numbers using the standard algorithm
4.NBT.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.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.
Number	**Common Core Standard for Introduction**
5.NBT.3	Read, write and compare decimals to the thousandths.

Unit Essential Questions	Unit Enduring Understandings
● How can place value properties aid computation? ● How can numbers be expressed, ordered, and compared? ● What are strategies to make a reasonable estimate? ● How do I know when an answer is reasonable? ● What makes a strategy for computing effective	*Students will understand that…* ● place value is based on groups of ten. ● numbers will represent quantity, position, location, and relationships. ● estimation is a way to get an approximate answer. ● computation involves taking apart and combining numbers using a variety of approaches.

and efficient?	
Unit Objectives *Students will know…* ● to identify place value positions while calculating the 4 operations ● to identify place value of a given number to make comparisons. ● to estimate to justify the reasonableness of their answer.	**Unit Objectives** *Students will be able to…* ● add, subtract, multiply and divide whole numbers. ● apply place value to whole numbers. ● compare, order, and express whole numbers using base ten numerals, number names and expanded form. ● round numbers to check their accuracy.

Long Beach Island Consolidated School District
Mathematics Curriculum

Formative Assessments
- Teacher Observation
- Performance Assessments
- Exit Slips
- Games
- Anecdotal Records
- Oral Assessments/Conferencing
- Portfolio/Math Journal
- Daily Classwork
- Pre-assessments

Summative Assessments
- Tests
- Quizzes
- National/State/District Wide Assessments

Modifications (ELLs, Special Education, Gifted and Talented)

Low Level Strategies
- Small Group Instruction
- Leveled and Heterogenous Grouping/Peer to Peer Interaction
- Visual Models
- Multi-sensory materials
- Manipulatives
- Supplemental Aids (addition table, multiplication table, number line, etc.)
- Tiered Activities
- Modified Assignments and Assessments
- Study sheets/Summary sheets/Vocabulary support
- Breakdown presentation of material
- Assistive Technology

High Level Strategies
- Enrichment & Challenge Activities/HOT Problems
- Extended Assignments/Assessments
- Leveled and Heterogenous Grouping/Peer to Peer Interaction
- Group projects
- Student Driven Activities

● Student Choice Activities

Instructional Materials/Teacher Resources:

Specific Books for Number and Operations in Base Ten:
Amanda Beans Amazing Dream by Marilyn Burns
How Much is a Million? by David Schwartz
If You Made a Million by David Schwartz
One Hundred Hungry Ants by Elinor Pinczes
The King's Commissioners by Marilyn Burns
The M&M Counting Book
The Math Curse by Jon Scieszka
Two Ways to Count to Ten by Ryby Dee

Websites:
www.tenmarks.com
www.mathisfun.com
www.sumdog.com
www.multiplication.com
www.mathgametime.com
www.mrnussbaum.com
www.interactivesites.weebly.com

IPAD games:
4th Grade Splash Math
K-5 Fun Learning Splash Math Games
Turbo Math Pirate Challenge
Doodle Math
4th Grade Planet
Grade 4 Common Core State Standards Workbooks
4th Grade Math: Common Core State Standards Education Enrichment Game

Optional Equipment:
computers, whiteboards, iPads, overheads, interactive whiteboard

Teacher Notes:

Long Beach Island Consolidated School District MATHEMATICS CURRICULUM Unit 3 Overview
Content Area: Mathematics
Unit 3 Title: Number and Operations: Fractions

Target Course / Grade Level: 4

Cluster:
- Extend understanding of fraction equivalence and ordering
- Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
- Understand decimal notation for fractions, and compare decimal fractions.

Cluster Summary:
Students will use their understanding of fractions to recognize the equivalence of a given fraction. They will write fractions in sequential order. Students will demonstrate addition and subtraction of fractional parts using manipulatives and common denominators. They will multiply a fractional part by a whole number. Students make connections between fractions and decimals and also comparing of both fractions and decimals.

Primary Interdisciplinary Connections:

Science	measurement (distance, weight,and growth), data analysis and collection
Social Studies	economics & money, weather patterns, geography & map skills, and graphing
Language Arts	math journal, word problem comprehension, math stories, open-ended math questions, multi-step problems, math literature (*see list under Teacher Resources*)
Technology	8.1- Educational Technology: use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge. interactive whiteboard lessons, independent centers, classroom websites, online resources and apps (*see list under Teacher Resources*)

21st Century Life and Careers:

Number	NJ Core Curriculum Content Standard
CRP1.	Act as a responsible and contributing citizen and employee.
CRP2.	Apply appropriate academic and technical skills.
CRP4.	Communicate clearly and effectively and with reason.
CRP6.	Demonstrate creativity and innovation.
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	solving them.
CRP11.	Use technology to enhance productivity.
CRP12.	Work productively in teams while using cultural global competence.

Learning Targets

Content Standards: NF

Number	**Common Core Standard for Mastery**
	MATHEMATICS: Numbers and Operations: Fractions
4.NF.1	Explain why a fraction *a/b* is equivalent to a fraction (n x a)/(n x 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.
4. NF. 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, e.g., by using a visual fraction model.
4. NF. 3	Understand a fraction *a/b* with *a* > 1 as a sum of fractions 1/*b*.
4. NF. 4	Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.
4. NF.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. *For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.*
4.NF.6	Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.*
4.NF.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.

Unit Essential Questions	**Unit Enduring Understandings** *Students will understand that…* ● fractions and decimals express a relationship

● How can fractions and decimals be modeled, compared, and ordered? ● How are common fractions and decimals alike and different? ● How is computation with rational numbers similar and different to whole number computation?	between two numbers. ● fractions and decimals are parts of whole numbers. ● an improper fraction represents a number greater than one and can be expressed as a mixed number.
Unit Objectives *Students will know…* ● how to make a visual representation of a fraction or decimal. ● how to make computations with fractions.	**Unit Objectives** *Students will be able to…* ● understand fractions as division of two whole numbers. ● read and write symbolic notation for fractions. ● identify fractions as part of a whole, part of a set, part of an area, and locations on the number line. ● recognize and name equivalent fractions. ● order fractions, including improper fractions, and mixed numbers.

Long Beach Island Consolidated School District
Mathematics Curriculum
Evidence of Learning

Formative Assessments
● Teacher Observation
● Performance Assessments
● Exit Slips
● Games
● Anecdotal Records
● Oral Assessments/Conferencing
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● Daily Classwork
● Pre-assessment

Summative Assessments
● Tests
● Quizzes
● National/State/District Wide Assessments

Modifications (ELLs, Special Education, Gifted and Talented)
Low Level Strategies
● Small Group Instruction
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● Visual Models
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● Tiered Activities
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● Breakdown presentation of material
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High Level Strategies
● Enrichment & Challenge Activities/HOT Problems
● Extended Assignments/Assessments
● Leveled and Heterogenous Grouping/Peer to Peer Interaction
● Group projects
● Student Driven Activities
● Student Choice Activities

Instructional Materials/Teacher Resources:

Specific Books for Number and Operations - Fractions:
The Hershey's Milk Chocolate Fractions Book by Jerry Pallotta
A Remainder of One by Elinor Pinczes
Each Orange Had 8 Slices by Paul Giganti

Websites:
www.tenmarks.com
www.mathisfun.com
www.sumdog.com
www.multiplication.com
www.mathgametime.com
www.mrnussbaum.com
www.interactivesites.weebly.com

IPAD games:
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Optional Equipment:
computers, whiteboards, iPads, overheads, interactive whiteboard

Teacher Notes:

Long Beach Island Consolidated School District
MATHEMATICS CURRICULUM
Unit 4 Overview

Content Area: Mathematics

Unit 4 Title: Measurement and Data

Target Course / Grade Level: 4

Cluster:
- Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.
- Represent and interpret data.
- Geometric measurement: understand concepts of angles and measure angles.

Cluster Summary:

Students will solve, interpret, and analyze problems involving measurements. The use of a protractor for measurement of degrees is introduced in the grade level and area and perimeter is reviewed. Student will also analyze for plotting.

Primary Interdisciplinary Connections:

Science	measurement (distance, weight, and growth), data analysis and collection, experiments relating to **Waves**, **Earth's Place in the Universe** and **Earth's Systems.**
Social Studies	economics & money, weather patterns, geography & map skills, and graphing
Language Arts	math journal, word problem comprehension, math stories, open-ended math questions, multi-step problems, math literature (*see list under Teacher Resources*)

Technology	8.1- Educational Technology: use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge. interactive whiteboard lessons, independent centers, classroom websites, online resources and apps (*see list under Teacher Resources*)

21st Century Life and Careers:

Number	NJ Core Curriculum Content Standard
CRP1.	Act as a responsible and contributing citizen and employee.
CRP2.	Apply appropriate academic and technical skills.
CRP4.	Communicate clearly and effectively and with reason.
CRP6.	Demonstrate creativity and innovation.
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CRP11.	Use technology to enhance productivity.
CRP12.	Work productively in teams while using cultural global competence.

Learning Targets	
Content Standards: MD	
Number	**Common Core Standard for Mastery**
	MATHEMATICS: Measurement and Data
4.MD.1	Know relative sizes of measurement units within one system of units including km, m, cm; 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.MD.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.
4.MD.3	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.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. 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.5	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 1/360 of a circle is called "one-degree 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.6	Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
4.MD.7	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.
Number	**Common Core Standard for Introduction**
5.MD.3	Recognize volume as an attribute of solid figures and understand concepts of volume measurement. a. 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. b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said is said to have a volume of n cubic units.
5.MD.4	Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
5.MD.5	Relate volume to the operations of multiplication and addition and solve real world mathematical problems involving volume.

Unit Essential Questions
- What types of problems are solved with measurement?
- What are the tools of measurement and how are they used?
- How do units within a system relate to each other?
- When is an estimate more appropriate than an actual measurement?
- How can information be gathered, recorded, and organized?
- What visual aspects of a data display help people understand and interpret information easily?

Unit Enduring Understandings
Students will understand that…
- objects have distinct attributes that can be measured.
- standard units provide common language for communication of measurements.
- the choice of measurement tools depends on the measurable attribute and the degree of precision desired.
- data displays convey information in a concise way.

Unit Objectives
Students will know…
- how to tell time.
- how to measure angles using a protractor.
- how to use and read a variety of measurement tools, such as thermometers, rulers, tape measures, and scales, etc.
- how to create and analyze tables and line plots to record data.

Unit Objectives
Students will be able to…
- calculate elapsed time in word problems.
- describe temperature with thermometers.
- determine length/height with rulers and measuring tapes.
- measure weight with variety of scales.
- find area of rectangles using formula.
- calculate perimeter of polygons.
- record with customary and metric units.
- communicate measurements.
- understand the relationships between and among units.
- carry out conversions with units of time and money.
- carry out conversions of customary and metric units of length, weight and volume.

Long Beach Island Consolidated School District
Mathematics Curriculum
Evidence of Learning

Formative Assessments
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Summative Assessments
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High Level Strategies
- Enrichment & Challenge Activities/HOT Problems
- Extended Assignments/Assessments
- Leveled and Heterogenous Grouping/Peer to Peer Interaction
- Group projects
- Student Driven Activities
- Student Choice Activities

Instructional Materials/Teacher Resources:

Specific Books for Measurement and Data:
The Librarian Who Measured the Earth by Kathryn Lasby
How Big is a Foot? by Rolf Myller
Measuring Penny by Loreen Leedy

Websites:
www.tenmarks.com
www.mathisfun.com

www.sumdog.com
www.multiplication.com
www.mathgametime.com
www.mrnussbaum.com
www.interactivesites.weebly.com

IPAD games:
4th Grade Splash Math
K-5 Fun Learning Splash Math Games
Turbo Math Pirate Challenge
Doodle Math
4th Grade Planet
Grade 4 Common Core State Standards Workbooks
4th Grade Math: Common Core State Standards Education Enrichment Game

Optional Equipment:
computers, whiteboards, iPads, overheads, interactive whiteboard

Teacher Notes:

Long Beach Island Consolidated School District
MATHEMATICS CURRICULUM
Unit 5 Overview

Content Area: Mathematics

Unit 5 Title: Geometry

Target Course / Grade Level: 4

Cluster: ● Draw and identify lines and angles, and classify shapes by properties of their lines

Cluster Summary: Students will use their knowledge of geometric shapes to develop understanding of lines and angles. They will classify two-dimensional shapes according to their properties.

Primary Interdisciplinary Connections:

Science	measurement (distance, weight, and growth), data analysis and collection, experiments relating to **Molecules to Organisms.**
Social Studies	economics & money, weather patterns, geography & map skills, and graphing
Language Arts	math journal, word problem comprehension, math stories, open-ended math questions, multi-step problems, math literature (*see list under Teacher Resources*)
Technology	8.1- Educational Technology: use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge. interactive whiteboard lessons, independent centers, classroom websites, online resources and apps (*see list under Teacher Resources*)

21st Century Life and Careers:

Number	NJ Core Curriculum Content Standard
CRP1.	Act as a responsible and contributing citizen and employee.
CRP2.	Apply appropriate academic and technical skills.
CRP4.	Communicate clearly and effectively and with reason.
CRP6.	Demonstrate creativity and innovation.

CRP8.	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11.	Use technology to enhance productivity.
CRP12.	Work productively in teams while using cultural global competence.

Learning Targets	
Content Standards: G	
Number	Common Core Standard for Mastery
	MATHEMATICS: Geometry
4.G.1	Draw points, lines, line segments, ray, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
4.G.2	Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specific size. Recognize right triangles as a category, and identify right triangles.
4.G.3	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-symmetrical figures and draw line of symmetry.

Unit Essential Questions	**Unit Enduring Understandings**
● How can understanding geometric vocabulary assist with drawing points, lines, line segments, rays, and angles? ● How do geometric relationships help us solve problems? ● How are geometric shapes and objects classified?	*Students will understand that…* ● geometry offers ways to interpret and compare real-world objects. ● analyzing geometric relationships develops reasoning and justification skills.

Unit Objectives	Unit Objectives
Students will know… ● how to draw and classify points, lines, line segments, rays, and angles with the appropriate tools. ● the difference between parallel and perpendicular lines. ● how to identify symmetry in a two-dimensional shape.	*Students will be able to…* ● draw and classify points, lines, line segments, rays, and angles with appropriate tools. ● identify that two lines are perpendicular when they intersect in right angles. ● identify and describe symmetry in two-dimensional geometric shapes. ● identify two-dimensional geometric shapes based on their properties.

Long Beach Island Consolidated School District
Mathematics Curriculum
Evidence of Learning

Formative Assessments
- Teacher Observation
- Performance Assessments
- Exit Slips
- Games
- Anecdotal Records
- Oral Assessments/Conferencing
- Portfolio/Math Journals
- Daily Classwork
- Pre-assessment

Summative Assessments
- Tests
- Quizzes
- National/State/District Wide Assessments

Modifications (ELLs, Special Education, Gifted and Talented)
Low Level Strategies
- Small Group Instruction
- Leveled and Heterogenous Grouping/Peer to Peer Interaction
- Visual Models
- Multi-sensory materials
- Manipulatives
- Supplemental Aids (addition table, multiplication table, number line, etc.)
- Tiered Activities
- Modified Assignments and Assessments
- Study sheets/Summary sheets/Vocabulary support
- Breakdown presentation of material
- Assistive Technology

High Level Strategies

- Enrichment & Challenge Activities/HOT Problems
- Extended Assignments/Assessments
- Leveled and Heterogenous Grouping/Peer to Peer Interaction
- Group projects
- Student Driven Activities
- Student Choice Activities

Instructional Materials/Teacher Resources:

Specific Books for Geometry:
The Greedy Triangle by Marilyn Burns
The Dot and the Line by Norton Juster
Spaghetti and Meatballs by Marilyn Burns
Grandfather Tang's Story by Ann Tampert

Websites:
www.tenmarks.com
www.mathisfun.com
www.sumdog.com
www.multiplication.com
www.mathgametime.com
www.mrnussbaum.com
www.interactivesites.weebly.com

IPAD games:
4th Grade Splash Math
K-5 Fun Learning Splash Math Games
Turbo Math Pirate Challenge
Doodle Math
4th Grade Planet
Grade 4 Common Core State Standards Workbooks
4th Grade Math: Common Core State Standards Education Enrichment Game

Optional Equipment:
computers, whiteboards, iPads, overheads, interactive whiteboard

Teacher Notes: