Introduction

The State of New Jersey adopted the Common Core Standards for Mathematics in June of 2010 and requires implementation in grades 3-5 beginning in September of 2012. The Wandell School mathematics curriculum for grades K-5 incorporates the State of New Jersey's model curriculum for mathematics.

Common Core Standards for Mathematics:

The K-5 standards provide students with a solid foundation in whole numbers, addition, subtraction, multiplication, division, fractions and decimals—which help young students build the foundation to successfully apply more demanding math concepts and procedures, and move into applications.

The standards stress not only procedural skill but also conceptual understanding, to make sure students are learning and absorbing the critical information they need to succeed at higher levels.

These standards define what students should understand and be able to do in their study of mathematics. What does mathematical understanding look like? One hallmark of mathematical understanding is the ability to justify, in a way appropriate to the student's mathematical maturity, why a particular mathematical statement is true or where a mathematical rule comes from. There is a world of difference between a student who can summon a mnemonic device to expand a product such as $(a + b)(x + y)$ and a student who can explain where the mnemonic comes from. The student who can explain the rule understands the mathematics, and may have a better chance to succeed at a less familiar task such as expanding $(a + b + c)(x + y)$. Mathematical understanding and procedural skill are equally important, and both are assessable using mathematical tasks of sufficient richness.

All students must have the opportunity to learn and meet the same high standards if they are to access the knowledge and skills necessary in their post-school lives. The standards do provide clear signposts along the way to the goal of college and career readiness for all students.

National Governors Association Center for Best Practices, Council of Chief State School Officers. "Common Core State Standards - Mathematics." National Governors Association Center for Best Practices, Council of Chief State School Officers, Washington D.C., 2010. Web. 20 June 2012. <http://www.corestandards.org/the-standards/mathematics>.

Unit Overview

Content Area: Mathematics

Unit Title: Number and Operations in Base Ten

Target Course/Grade Level: Grade 3

Unit Summary

   In Grade 3, instructional time should focus on four critical areas: (1) developing understanding of multiplication and division and strategies for multiplication and division within 100; (2) developing understanding of fractions, especially unit fractions (fractions with numerator 1); (3) developing understanding of the structure of rectangular arrays and of area; and (4) describing and analyzing two-dimensional shapes.

   In this unit, students develop an understanding of the meanings of multiplication and division of whole numbers through activities and problems involving equal-sized groups, arrays, and area models; multiplication is finding an unknown product, and division is finding an unknown factor in these situations. For equal-sized group situations, division can require finding the unknown number of groups or the unknown group size.

   Students use properties of operations to calculate products of whole numbers, using increasingly sophisticated strategies based on these properties to solve multiplication and division problems involving single-digit factors. By comparing a variety of solution strategies, students learn the relationship between multiplication and division.

Source: The introduction to the Common Core Standard for Mathematics. Retrieved from http://www.corestandards.org/Math/Content/3/introduction/

Primary interdisciplinary connections: Science, Social Studies, Literature, Physical Education

21st century themes:
- Critical Thinking/Problem Solving
- Communication
- Collaboration

Unit Rationale

A firm grounding in the big picture of how operations with numbers interrelate and how they are vital tools in life can help students build the positive attitudes that will help them become confident, efficient, and effective problem-solvers (McConnell, 2011)

Algebraic thinking develops problem-solving skills. Students must analyze what they know and don't know about a problem, determine a method for finding solutions, and check results for accuracy. Algebra provides students with resources for dealing with real-world situations in a "systematic, analytic manner." (McConnell, 2011)

Learning Targets

Standards
- 3.NBT.A.1 Use place value understanding to round whole numbers to the nearest 10 or 100.
- 3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
- 3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of

answers using mental computation and estimation strategies including rounding.

- 3.OA.D.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*

Content Statements

- Use place value understanding and properties of operations to perform multi-digit arithmetic.
- Solve problems involving the four operations, and identify and explain patterns in arithmetic.

CPI #	Cumulative Progress Indicator (CPI) from NJDOE Model Curriculum
3.NBT.A.1	Round whole numbers to the nearest 10 or 100.
3.NBT.A.2	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.OA.D.8	Find the value of an unknown (expressed as a letter) in an equation that is a representation of a two- step word problem (with any four operations) and assess the reasonableness of the value.
3.OA.D.9	Recognize arithmetic patterns in addition or multiplication tables and explain the pattern using the properties of operations.

Unit Essential Questions	Unit Enduring Understandings
- Topic 1: Numeration - How are numbers read and written? - How can whole numbers be rounded? - Topic 2: Number Sense: Addition and Subtraction - How can sums and differences be found mentally? - How can sums and differences be estimated? - Topic 3: Using Place Value to Add and Subtract - What are standard procedures for adding and subtracting whole numbers?	- Computational fluency includes understanding the meaning and the appropriate use of numerical operations. - The magnitude of numbers affects the outcome of operations on them. - In many cases, there are multiple algorithms for finding a mathematical solution, and those algorithms are frequently associated with different cultures. - Context is critical when using estimation. - One representation may sometimes be more helpful than another; and, used together, multiple representations give a fuller understanding of a problem. - A quantity can be represented numerically in various ways. Problem solving depends upon choosing wise ways. - Numeric fluency includes both the understanding of and the ability to appropriately use numbers. - The symbolic language of algebra is used to communicate and generalize the patterns in mathematics. - Algebraic representation can be used to generalize patterns and relationships. - Mathematical models can be used to describe and quantify physical relationships.

	• Physical models can be used to clarify mathematical relationships. **(source:** http://jaymctighe.com/wordpress/wp-content/uploads/2013/04/NEW-JERSEY-UbD-MAPS.pdf)

Unit Learning Targets
Students will ...

- Find the value of an unknown (expressed as a letter) in an equation that is a representation of a two-step word problem (with any four operations) and assess the reasonableness of the value.
- Recognize arithmetic patterns in addition or multiplication tables and explain the pattern using the properties of operations.
- Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
- Round whole numbers to the nearest 10 or 100.

Evidence of Learning

Summative Assessment (at the end of each topic)
Each topic has a summative test and a performance task.

Equipment needed: see each topic

Teacher Resources:
enVision Math Common Core: Realize Edition. 2015

Formative Assessments

- teacher observation
- homework
- "Review What You Know"
- "Independent Practice"
- Topic performance task
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Topics

Topic	Timeframe
Topic 1 *Numeration*	14 days
Topic 2 *Number Sense: Addition and Subtraction*	14 days
Topic 3 *Using Place Value to Add and Subtract*	14 days

Teacher Notes:

This unit consists of three topics from the enVision Math Common Core series with anywhere from 7 to 13 lessons per topic. These four topics address the Number and Operations in Base Ten and Operations and Algebraic Thinking domains of the Common Core Standards for Mathematics for Grade 3 students. In addition, these three topics address all eight of the Standards for Mathematical Practice.

Essential questions were taken directly from the textbook series used by the district, *enVision Math Common Core: Realize Edition.*

Enduring understandings were taken from *Overarching Understandings and Essential Questions (New Jersey)* at http://jaymctighe.com/resources/downloads/

Curriculum Development Resources

Click the links below to access additional resources used to design this unit:

NJDOE. "Model Curriculum: Mathematics (K-12) - Grade 3." Model Curriculum: Mathematics (K-12) - Grade 3. New Jersey Dept. of Education, n.d. Web. 27 June 2015. <http://www.state.nj.us/education/modelcurriculum/math/1.shtml>.

Charles, Randall. *enVision Math Common Core*. Realize ed. Grade 3. Upper Saddle River: Pearson Education, 2015. Print. enVision Math Common Core

Common Core Standards for Mathematics. http://www.corestandards.org/Math/

McConnell, Carolyn. *The Essential Questions Handbook*. New York: Scholastic, 2011. Print.

Wandell School Math Curricula
Aligned to the 2014 Common Core Standards for Mathematics
ENGAGING STUDENTS • FOSTERING ACHIEVEMENT • CULTIVATING 21ST CENTURY GLOBAL SKILLS

Topic 1
Content Area: Mathematics

Lesson Title: Numeration	**14 days**

Topic Components

21st Century Themes

		Global Awareness	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy		Environmental Literacy

21st Century Skills

	Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication	x	Collaboration

Interdisciplinary Connections: Science, Social Studies, Physical Education, Writing

Integration of Technology: Digital Resources are part of this textbook series

Equipment needed: base ten blocks, number lines, estimation jars, place value charts

Topic Vocabulary
- place value
- standard form
- expanded form
- word form
- round

Goals/Objectives	Topic 1 Sequence	Formative Assessment Tasks
Students: • Round whole numbers to the nearest 10 or 100. • Fluently add and subtract (with regrouping) two 2-digit whole numbers within 100.	1. Review What You Know! 2. Interactive Learning 3. Representing Numbers 4. Understanding Number Lines 5. Counting on the Number Line 6. Finding the Halfway Number 7. Rounding 8. Algebra Connections 9. More Rounding 10. Problem Solving: Make an Organized List 11. Reteaching 12. Topic 1 Test 13. Performance Task	• Teacher observation • Independent practice • Topic test • Performance task
Differentiation		

• differentiated worksheets/activities for each lesson
• leveled homework for each lesson
• reteaching resources at the end of each lesson

Resources Provided
• *enVision Math Common Core: Realize Edition* teacher's guides, workbooks, digital resources, manipulatives

Topic 2
Content Area: Mathematics

Lesson Title: Number Sense: Addition and Subtraction	**14 days**

Topic Components

21st Century Themes

Global Awareness	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy		Environmental Literacy

21st Century Skills

Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication	x	Collaboration

Interdisciplinary Connections: Science, Social Studies, Physical Education,

Integration of Technology: Digital Resources are part of this textbook series

Equipment needed: cups, counters, number lines

Topic Vocabulary:
• Commutative (Order) Property of Addition
• Identity (Zero) Property of Addition
• Associative (Grouping) Property of Addition
• fact family
• difference
• estimate
• compatible numbers

Goals/Objectives	Topic 2 Sequence	Formative Assessment Tasks

Students:

- Round whole numbers to the nearest 10 or 100.
- Fluently add and subtract (with regrouping) two 2-digit whole numbers within 100.
- Find the value of an unknown (expressed as a letter) in an equation that is a representation of a two- step word problem (with any four operations) and assess the reasonableness of the value.
- Recognize arithmetic patterns in addition or multiplication tables and explain the pattern using the properties of operations.

1. Review What You Know!
2. Interactive Learning
3. Addition Meaning and Properties
4. Subtraction Meanings
5. Using Mental Math to Add
6. Going Digital
7. Using Mental Math to Subtract
8. Estimating Sums
9. Algebra Connections
10. Estimating Differences
11. Mixed Problem Solving
12. Problem Solving: Reasonableness
13. Reteaching
14. Topic 2 Test
15. Performance Task

- Teacher observation
- Independent practice
- Topic test
- Performance task

Differentiation

• differentiated worksheets/activities for each lesson
• leveled homework for each lesson
• reteaching resources at the end of each lesson

Resources Provided

- *enVision Math Common Core: Realize Edition* teacher's guides, workbooks, digital resources, manipulatives

Topic 3

Content Area: Mathematics	
Lesson Title: Using Place Value to Add and Subtract	**14 days**

Topic Components

21st Century Themes

Global Awareness	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy		Environmental Literacy

21st Century Skills

	Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication	x	Collaboration

Interdisciplinary Connections: Science, Social Studies, Physical Education,

Integration of Technology: Digital Resources are part of this textbook series

Equipment needed: base ten blocks, balance scale
Topic Vocabulary:
- equation
- inverse operations

Goals/Objectives	Topic 3 Sequence	Formative Assessment Tasks
Students: • Round whole numbers to the nearest 10 or 100. • Fluently add and subtract (with regrouping) two 2-digit whole numbers within 100.	1. Review What You Know! 2. Interactive Learning 3. Adding with an Expanded Algorithm 4. Models for Adding 3-Digit Numbers 5. Going Digital 6. Adding 3-Digit Numbers 7. Adding 3 or More Numbers 8. Problem Solving: Draw a Picture 9. Subtracting with an Expanded Algorithm 10. Models for Subtracting 3-Digit Numbers 11. Subtracting 3-Digit Numbers 12. Algebra Connections 13. Subtracting Across Zero 14. Making Sense of Addition Equations 15. Making Sense of Subtraction Equations 16. Adding and Subtracting 17. Problem Solving: Draw a Picture and Write a Number Sentence 18. Going Digital	• Teacher observation • Independent practice • Topic test • Performance task

	19. Reteaching 20. Topic 3 Test 21. Performance Task	

Differentiation

• differentiated worksheets/activities for each lesson
• leveled homework for each lesson
• reteaching resources at the end of each lesson

Resources Provided

•   *enVision Math Common Core: Realize Edition* teacher's guides, workbooks, digital resources, manipulatives

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Unit Overview
Content Area: Mathematics
Unit Title: Operations and Algebraic Thinking
Target Course/Grade Level: Grade 3
Unit Summary   Students develop an understanding of the meanings of multiplication and division of whole numbers through activities and problems involving equal-sized groups, arrays, and area models; multiplication is finding an unknown product, and division is finding an unknown factor in these situations. For equal-sized group situations, division can require finding the unknown number of groups or the unknown group size. Students use properties of operations to calculate products of whole numbers, using increasingly sophisticated strategies based on these properties to solve multiplication and division problems involving single-digit factors. By comparing a variety of solution strategies, students learn the relationship between multiplication and division. *Source: The introduction to the Common Core Standard for Mathematics. Retrieved from http://www.corestandards.org/Math/Content/3/introduction/*

Primary interdisciplinary connections: Science, Social Studies, Physical Education

21st century themes:

- Critical Thinking/Problem Solving
- Communication
- Collaboration

Unit Rationale

A firm grounding in the big picture of how operations with numbers interrelate and how they are vital tools in life can help students build the positive attitudes that will help them become confident, efficient, and effective problem-solvers (McConnell, 2011)

Algebraic thinking develops problem-solving skills. Students must analyze what they know and don't know about a problem, determine a method for finding solutions, and check results for accuracy. Algebra provides students with resources for dealing with real-world situations in a "systematic, analytic manner." (McConnell, 2011)

Recognizing, analyzing and constructing patterns helps to build a "strong foundation of algebra readiness", and is central to both art and science. (McConnell, 2011)

Learning Targets

Standards

- 3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5×7.*

- 3.OA.A.2 Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.*

- 3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

- 3.OA.A.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = \_ \div 3$, $6 \times 6 = ?$*

- 3.OA.B.5 Apply properties of operations as strategies to multiply and divide.2 *Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)*

- 3.OA.B.6 Understand division as an unknown-factor problem. *For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.*

- 3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

- 3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

- 3.OA.D.9 Identify arithmetic patterns (including patterns in the addition table or multiplication

table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*

- 3.NBT.A.3 Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9×80, 5×60) using strategies based on place value and properties of operations.

Content Statements
- Represent and solve problems involving multiplication and division.
- Understand properties of multiplication and the relationship between multiplication and division.
- Multiply and divide within 100.
- Solve problems involving the four operations, and identify and explain patterns in arithmetic.
- Use place value understanding and properties of operations to perform multi-digit arithmetic.

CPI #	Cumulative Progress Indicator (CPI) from NJDOE Model Curriculum
3.NBT.A.3	Multiply one-digit whole numbers by multiples of 10 (10 - 90).
3.OA.A.1	Interpret products of whole numbers as repeated addition or equal groups of objects (up to 100).
3.OA.A.2	Explain division as a set of objects partitioned equally into a number of shares (up to 100).
3.OA.A.3	Use multiplication within 100 to solve word problems using measurement quantities by creating drawings or arrays.
3.OA.A.4	Determine the unknown in a division or multiplication equation with an unknown relating 3 whole numbers up to 100 (does not require students to solve from memory).
3.OA.B.5	Recognize the Commutative, Associative, and Distributive Properties as strategies to add and multiply whole numbers.
3.OA.B.6	Solve division of whole numbers by representing the problem as an unknown factor problem.
3.OA.C.7	Fluently multiply and divide within 100, using the relationship between multiplication and division.
3.OA.D.8	Find the value of an unknown (expressed as a letter) in an equation that is a representation of a two- step word problem (with any four operations) and assess the reasonableness of the value.
3.OA.D.9	Recognize arithmetic patterns in addition or multiplication tables and explain the pattern using the properties of operations.

Unit Essential Questions
- Topic 4: Meanings of Multiplication
  - What are different meanings of multiplication?
  - How are addition and multiplication related?
- Topic 5: Multiplication Facts: Use Patterns
  - What patterns can be used to find certain multiplication facts?
- Topic 6: Multiplication Facts: Use Known Facts

Unit Enduring Understandings
- Computational fluency includes understanding the meaning and the appropriate use of numerical operations.
- The magnitude of numbers affects the outcome of operations on them.
- In many cases, there are multiple algorithms for finding a mathematical solution, and those algorithms are frequently associated with different cultures.
- Context is critical when using estimation.
- One representation may sometimes be more

-     o How can unknown multiplication facts be found using known facts?
- Topic 7: Meanings of Division
  - o What are different meanings of division?
  - o How is division related to other operations?
- Topic 8: Division Facts
  - o How can an unknown division fact be found by thinking of a related multiplication fact?

helpful than another; and, used together, multiple representations give a fuller understanding of a problem.

- A quantity can be represented numerically in various ways. Problem solving depends upon choosing wise ways.
- Numeric fluency includes both the understanding of and the ability to appropriately use numbers.
- The symbolic language of algebra is used to communicate and generalize the patterns in mathematics.
- Algebraic representation can be used to generalize patterns and relationships.
- Mathematical models can be used to describe and quantify physical relationships.
- Physical models can be used to clarify mathematical relationships.

(source: http://jaymctighe.com/wordpress/wp-content/uploads/2013/04/NEW-JERSEY-UbD-MAPS.pdf)

Unit Learning Targets
Students will …

- Interpret products of whole numbers as repeated addition or equal groups of objects (up to 100).
- Explain division as a set of objects partitioned equally into a number of shares (up to 100).
- Use multiplication within 100 to solve word problems using measurement quantities by creating drawings or arrays.
- Determine the unknown in a division or multiplication equation with an unknown relating 3 whole numbers up to 100.
- Recognize the Commutative, Associative, and Distributive Properties as strategies to add and multiply whole numbers.
- Solve division of whole numbers by representing the problem as an unknown factor problem.
- Fluently multiply and divide within 100, using the relationship between multiplication and division**.**
- Find the value of an unknown (expressed as a letter) in an equation that is a representation of a two-step word problem (with any four operations) and assess the reasonableness of the value.
- Recognize arithmetic patterns in addition or multiplication tables and explain the pattern using the properties of operations.

Evidence of Learning

Summative Assessment (at the end of each topic)
Each topic has a summative test and a performance task.

Teacher Resources:

enVision Math Common Core: Realize Edition. 2015

Formative Assessments

- teacher observation
- homework
- "Review What You Know"

- "Independent Practice"
- Topic performance task
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Topics

Topic	Timeframe
Topic 4 *Meanings of Multiplication*	14 days
Topic 5 *Multiplication Facts: Use Patterns*	14 days
Topic 6 *Multiplication Facts: Use Known Facts*	14 days
Topic 7 *Meanings of Division*	14 days
Topic 8 *Division Facts*	14 days

Teacher Notes:

This unit consists of five topics from the enVision Math Common Core series with anywhere from 7 to 9 lessons per topic. These five topics address the Operations and Algebraic Thinking domain of the Common Core Standards for Mathematics for Grade 3 students. In addition, these five topics address all eight of the Standards for Mathematical Practice.

Essential questions were taken directly from the textbook series used by the district, *enVision Math Common Core: Realize Edition.*

Enduring understandings were taken from *Overarching Understandings and Essential Questions (New Jersey)* at http://jaymctighe.com/resources/downloads/

Curriculum Development Resources

Click the links below to access additional resources used to design this unit:

NJDOE. "Model Curriculum: Mathematics (K-12) - Grade 3." Model Curriculum: Mathematics (K-12) - Grade 3. New Jersey Dept. of Education, n.d. Web. 27 June 2015.
<http://www.state.nj.us/education/modelcurriculum/math/1.shtml>.

Charles, Randall. enVision Math Common Core. Realize ed. Grade 3. Upper Saddle River: Pearson Education, 2015. Print. enVision Math Common Core

Common Core Standards for Mathematics. http://www.corestandards.org/Math/

Topic 4

Content Area: Mathematics

Topic Title: Meanings of Multiplication	**14 days**

Topic Components				
21st Century Themes				
Global Awareness	x Financial, Economic, Business, and Entrepreneurial Literacy	Civic Literacy	Health Literacy	Environmental Literacy
21st Century Skills				
Creativity and Innovation	x Critical Thinking and Problem Solving	x Communication	x Collaboration	

Interdisciplinary Connections: Science, Social Studies, Physical Education, Writing

Integration of Technology: Digital Resources are part of this textbook series

Equipment needed: counters

Topic Vocabulary:

- multiplication
- factors
- product
- array
- Commutative Property of Multiplication

Goals/Objectives	**Topic 4 Sequence**	**Formative Assessment Tasks**
Students: - Interpret products of whole numbers as repeated addition or equal groups of objects (up to 100). - Use multiplication within 100 to solve word problems using measurement quantities by creating drawings or arrays. - Recognize the Commutative, Associative, and Distributive Properties as strategies to add and multiply whole numbers.	1. Review What You Know! 2. Interactive Learning 3. Multiplication as Repeated Addition 4. Arrays and Multiplication 5. The Commutative Property 6. Writing Multiplication Stories 7. Problem Solving: Writing to Explain 8. Reteaching 9. Topic 4 Test 10. Performance Task	- Teacher observation - Independent practice - Topic test - Performance task

• Recognize arithmetic patterns in addition or multiplication tables and explain the pattern using the properties of operations. •		

Differentiation

• differentiated worksheets/activities for each lesson
• leveled homework for each lesson
• reteaching resources at the end of each lesson

Resources Provided

• *enVision Math Common Core: Realize Edition* teacher's guides, workbooks, digital resources, manipulatives

Topic 5
Content Area: Mathematics

Topic Title: Multiplication Facts: Use Patterns	**14 days**

Topic Components

21ˢᵗ Century Themes

Global Awareness	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy		Environmental Literacy

21ˢᵗ Century Skills

Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication	x	Collaboration

Interdisciplinary Connections: Science, Social Studies, Physical Education, Writing
Integration of Technology: Digital Resources are part of this textbook series

Equipment needed: hundreds chart, counters
Topic Vocabulary:

• multiple
• Identity (One) Property of Multiplication

- The Zero Property of Multiplication

Goals/Objectives	Topic 5 Sequence	Formative Assessment Tasks
Students: • Recognize arithmetic patterns in addition or multiplication tables and explain the pattern using the properties of operations. • Recognize the Commutative, Associative, and Distributive Properties as strategies to add and multiply whole numbers. • Fluently multiply and divide within 100, using the relationship between multiplication and division. • Find the value of an unknown (expressed as a letter) in an equation that is a representation of a two- step word problem (with any four operations) and assess the reasonableness of the value. • Recognize arithmetic patterns in addition or multiplication tables and explain the pattern using the properties of operations. • Multiply one-digit whole numbers by multiples of 10 (10 - 90).	1. Review What You Know! 2. Interactive Learning 3. 2 and 5 as Factors 4. Going Digital 5. 9 as a Factor 6. Multiplying with 0 and 1 7. Patterns for Facts 8. 10 as a Factor 9. Multiplying by Multiples of 10 10. Problem Solving: Two-Question Problems 11. Reteaching 12. Topic 5 Test 13. Performance Task	• Teacher observation • Independent practice • Topic test • Performance task

Differentiation

• differentiated worksheets/activities for each lesson
• leveled homework for each lesson
• reteaching resources at the end of each lesson

Resources Provided
- *enVision Math Common Core: Realize Edition* teacher's guides, workbooks, digital resources, manipulatives

Topic 6
Content Area: Mathematics

Topic Title: Multiplication Facts: Use Known Facts	**14 days**

Topic Components

21st Century Themes

Global Awareness	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy		Environmental Literacy

21st Century Skills

Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication	x	Collaboration

Interdisciplinary Connections: Science, Social Studies, Physical Education, Writing
Integration of Technology: Digital Resources are part of this textbook series

Equipment needed: counters
Topic Vocabulary:
- Distributive Property

- Associative (Grouping) Property of Multiplication

Goals/Objectives	Topic 6 Sequence	Formative Assessment Tasks
Students: • Use multiplication within 100 to solve word problems modeled as equal groups or arrays by writing equations to represent equal groups or arrays. •Recognize the Commutative, Associative, and Distributive Properties as strategies to add and multiply whole numbers. •Find the value of an unknown (expressed as a letter) in an equation that is a representation of a two- step word problem (with any four operations) and assess the reasonableness of the value. .	1. Review What You Know! 2. Interactive Learning 3. The Distributive Property 4. 3 as a Factor 5. 4 as a Factor 6. 6 and 7 as Factors 7. Algebra Connections 8. 8 as a Factor 9. Multiplying with 3 Factors 10. Multiplication Facts 11. Multiplying to Find Combinations 12. Problem Solving: Multiple-Step Problems 13. Going Digital 14. Reteaching 15. Topic 6 Test 16. Performance Task	• Teacher observation • Independent practice • Topic test • Performance task

Differentiation

• differentiated worksheets/activities for each lesson
• leveled homework for each lesson
• reteaching resources at the end of each lesson

Resources Provided

• *enVision Math Common Core: Realize Edition* teacher's guides, workbooks, digital resources, manipulatives

Topic 7				
Content Area: Mathematics				
Topic Title: Meanings of Division			**14 days**	
Topic Components				
21st Century Themes				
Global Awareness	x Financial, Economic, Business, and Entrepreneurial Literacy	Civic Literacy	Health Literacy	Environmental Literacy
21st Century Skills				
Creativity and Innovation	x Critical Thinking and Problem Solving	x Communication	x Collaboration	
Interdisciplinary Connections: Science, Social Studies, Physical Education, Writing				
Integration of Technology: Digital Resources are part of this textbook series				
Equipment needed: counters, multiplication chart **Topic Vocabulary:**				

Equipment needed: counters, multiplication chart
Topic Vocabulary:

• division
•

Goals/Objectives	Topic 7 Sequence	Formative Assessment Tasks
Students: •Explain division as a set of objects partitioned	1. Review What You Know! 2. Interactive Learning 3. Division as Sharing	• Teacher observation • Independent practice • Topic test • Performance task

equally into a number of shares (up to 100).

•Use multiplication within 100 to solve word problems modeled as equal groups or arrays by writing equations to represent equal groups or arrays.

•Use multiplication within 100 to solve word problems using measurement quantities by creating drawings or arrays.

•Determine the unknown in a division or multiplication equation with an unknown relating 3 whole numbers up to 100.

•Solve division of whole numbers by representing the problem as an unknown factor problem.

•Recognize arithmetic patterns in addition or multiplication tables and explain the pattern using the properties of operations.

4. Division as Repeated Subtraction
5. Finding Missing Numbers in a Multiplication Table
6. Problem Solving: Choose an Appropriate Equation
7. Writing Division Stories
8. Problem Solving: Use Objects and Draw a Picture
9. Reteaching
10. Topic 7 Test
11. Performance Task

Differentiation

• differentiated worksheets/activities for each lesson
• leveled homework for each lesson

• reteaching resources at the end of each lesson

Resources Provided
- *enVision Math Common Core: Realize Edition* teacher's guides, workbooks, digital resources, manipulatives

Topic 8

Content Area: Mathematics	
Topic Title: Division Facts	**14 days**

Topic Components				

21st Century Themes

Global Awareness	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy		Environmental Literacy

21st Century Skills

	Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication	x	Collaboration

Interdisciplinary Connections: Science, Social Studies, Physical Education, Writing

Integration of Technology: Digital Resources are part of this textbook series

Equipment needed: counters, balance scale
Topic Vocabulary:
- dividend
- divisor
- quotient
- variable

Goals/Objectives	Topic 8 Sequence	Formative Assessment Tasks
Students: •Use multiplication within 100 to solve word problems using measurement quantities by creating drawings or arrays. •Use multiplication within 100 to solve word problems modeled as equal groups or arrays by writing equations to	1. Review What You Know! 2. Interactive Learning 3. Relating Multiplication and Division 4. Fact Families with 2, 3, 4, and 5 5. Algebra Connections 6. Fact Families with 6 and 7 7. Fact Families with 8 and 9 8. Problem Solving: Multiple-Step Problems 9. Making Sense of Multiplication and	• Teacher observation • Independent practice • Topic test • Performance task

represent equal groups or arrays.

•Determine the unknown in a division or multiplication equation with an unknown relating 3 whole numbers up to 100.

•Recognize the Commutative, Associative, and Distributive Properties as strategies to add and multiply whole numbers.

• Solve division of whole numbers by representing the problem as an unknown factor problem.

•Fluently multiply and divide within 100, using the relationship between multiplication and division.

•Find the value of an unknown (expressed as a letter) in an equation that is a representation of a two- step word problem (with any four operations) and assess the reasonableness of the value.

Division Equations
10. Dividing with 0 and 1
11. Multiplication and Division Facts
12. Problem Solving: Draw a Picture and Write a Number Sentence
13. Algebra Connections
14. Reteaching
15. Topic 8 Test
16. Performance Task

Differentiation

• differentiated worksheets/activities for each lesson
• leveled homework for each lesson
• reteaching resources at the end of each lesson

Resources Provided

• *enVision Math Common Core: Realize Edition* teacher's guides, workbooks, digital resources, manipulatives

Unit Overview

Content Area: Mathematics

Unit Title: Number and Operations – Fractions

Target Course/Grade Level: Grade 3

Unit Summary

Students develop an understanding of fractions, beginning with unit fractions. Students view fractions in general as being built out of unit fractions, and they use fractions along with visual fraction models to represent parts of a whole. Students understand that the size of a fractional part is relative to the size of the whole. For example, 1/2 of the paint in a small bucket could be less paint than 1/3 of the paint in a larger bucket, but 1/3 of a ribbon is longer than 1/5 of the same ribbon because when the ribbon is divided into 3 equal parts, the parts are longer than when the ribbon is divided into 5 equal parts. Students are able to use fractions to represent numbers equal to, less than, and greater than one. They solve problems that involve comparing fractions by using visual fraction models and strategies based on noticing equal numerators or denominators.

Source: The introduction to the Common Core Standard for Mathematics. Retrieved from http://www.corestandards.org/Math/Content/3/introduction/

Primary interdisciplinary connections: Science, Social Studies, Physical Education

21ˢᵗ century themes:

* Critical Thinking/Problem Solving
* Communication
* Collaboration

Unit Rationale

Although students come to the topic of fractions with an understanding of what it means to share, fractions present difficulties for many students. Using their own experiences, students build conceptual knowledge of how numbers relate, how to divide a whole, how to manipulate fractions and how to "express and picture the same quantities in a variety of ways." (McConnell, 2011)

Geometric shapes are essential to many facets of our lives, from art to architecture. Learning the mathematical principles that are the basis for "creating, describing, classifying, and manipulating shapes can open up new world for students." (McConnell, 2011, p. 82).

Learning Targets

Standards

* 3.NF.A.1 Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by *a* parts of size 1/*b*.
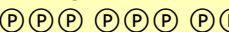
- <u>3.NF.A.2a</u> Represent a fraction 1/*b* on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into *b* equal parts. Recognize that each part has size 1/*b* and that the endpoint of the part based at 0 locates the number 1/*b* on the number line.
- <u>3.NF.A.2b</u> Represent a fraction *a*/*b* on a number line diagram by marking off a lengths 1/*b* from 0. Recognize that the resulting interval has size *a*/*b* and that its endpoint locates the number *a*/*b* on the number line.
- <u>3.NF.A.3a</u> Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
- <u>3.NF.A.3b</u> Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3. Explain why the fractions are equivalent, e.g., by using a visual fraction model.
- <u>3.NF.A.3c</u> Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram*
- <u>3.NF.A.3d</u> Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.
- <u>3.G.A.2</u> Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.*
- <u>3.OA.C.7</u> Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

Content Statements
- Develop understanding of fractions as numbers.
  - Understand a fraction as a number on the number line; represent fractions on a number line diagram.
  - Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
- Reason with shapes and their attributes.
- Multiply and divide within 100.

CPI #	Cumulative Progress Indicator (CPI) from NJDOE Model Curriculum
3.NF.A.1	Interpret the unit fraction *1/b* as the quantity formed by **1** of **b** equal parts of a whole and the fraction **a/b** as the quantity formed by **a** parts *1/b;* e.g., 3 unit fractions of 1/4 add to the quantity 3/4.
3.NF.A.2a	Make a drawing of a number line depicting the position of *1/b* (with **b** = 2, 3, 4, 6, or 8). Represent the unit fraction *1/4* on the number line by dividing the number line between 0 & 1 into 4 equal lengths and naming the point at the end of the first length as the position of unit fraction *1/4*; apply the same method for locating the points 1/2, 1/3, 1/5, 1/6, and 1/8 on the number line.
3.NF.A.2b	Make a drawing of a number line depicting a fraction *a/b* (with *a* < *b* and *b* = 2, 4, 3, 4, 6, or 8).
3.NF.A.3a	Locate equivalent (equal) fractions on a number line (with dominators 2, 3, 4, 6, 8).
3.NF.A.3b	Generate and explain equivalent fractions using visual fraction models, e.g., interpret 1/4 of a group of 12 pennies as 3 pennies: ⓟⓟⓟ ⓟⓟⓟ ⓟⓟⓟ ⓟⓟⓟ(see the 4 equal

	sub-groups as fourths).
3.NF.A.3c	Generate and explain whole numbers as fractions, and locate them as fractions on a number line.
3.NF.A.3d	Compare two fractions with the same numerator or the same denominator using the symbols >, =, <.
3.GA.2	Represent the equal parts of shapes as a unit fraction (e.g., a pizza cut into 8 equal slices has 8 slices and each slice has quantity 1/8 of the whole pizza).
3.OA.C.7	Fluently multiply and divide within 100, using the relationship between multiplication and division.

Unit Essential Questions	**Unit Enduring Understandings**
- Topic 9 - What are different interpretations of a fraction? - Topic 10 - What are different ways to compare fractions?	- Computational fluency includes understanding the meaning and the appropriate use of numerical operations. - The magnitude of numbers affects the outcome of operations on them. - In many cases, there are multiple algorithms for finding a mathematical solution, and those algorithms are frequently associated with different cultures. - Context is critical when using estimation. - One representation may sometimes be more helpful than another; and, used together, multiple representations give a fuller understanding of a problem. - A quantity can be represented numerically in various ways. Problem solving depends upon choosing wise ways. - Numeric fluency includes both the understanding of and the ability to appropriately use numbers. **(source:** http://jaymctighe.com/wordpress/wp-content/uploads/2013/04/NEW-JERSEY-UbD-MAPS.pdf)

Unit Learning Targets
Students will ...
- Interpret the unit fraction *1/b* as the quantity formed by **1** of **b** equal parts of a whole and the fraction *a/b* as the quantity formed by *a* parts *1/b;* e.g., 3 unit fractions of 1/4 add to the quantity 3/4.
- Make a drawing of a number line depicting the position of *1/b* (with *b* = 2, 3, 4, 6, or 8). Represent the unit fraction *1/4* on the number line by dividing the number line between 0 & 1 into 4 equal lengths and naming the point at the end of the first length as the position of unit fraction *1/4*; apply the same method for locating the points 1/2, 1/3, 1/5, 1/6, and 1/8 on the number line.
- Make a drawing of a number line depicting a fraction *a*/*b* (with *a* < *b* and *b* = 2, 4, 3, 4, 6, or 8).
- Locate equivalent (equal) fractions on a number line (with dominators 2, 3, 4, 6, 8).
- Generate and explain equivalent fractions using visual fraction models, e.g., interpret 1/4 of a group of

    12 pennies as 3 pennies: Ⓟ Ⓟ Ⓟ Ⓟ Ⓟ Ⓟ Ⓟ Ⓟ Ⓟ Ⓟ Ⓟ Ⓟ (see the 4 equal sub-groups as fourths).

- Generate and explain whole numbers as fractions, and locate them as fractions on a number line.
- Compare two fractions with the same numerator or the same denominator using the symbols >, =, <.
- Represent the equal parts of shapes as a unit fraction (e.g., a pizza cut into 8 equal slices has 8 slices and each slice has quantity 1/8 of the whole pizza).
- Fluently multiply and divide within 100, using the relationship between multiplication and division.

Evidence of Learning

Summative Assessment (at the end of each topic)
Each topic has a summative test and a performance task.

Teacher Resources:
enVision Math Common Core: Realize Edition. 2015

Formative Assessments

• teacher observation	• "Independent Practice"
• homework	• Topic performance task
• "Review What You Know"	•

Topics

Topic	Timeframe
Topic 9 *Understanding Fractions*	14 days
Topic 10 *Fraction Comparison and Equivalence*	14 days

Teacher Notes:
This unit consists of two topics from the enVision Math Common Core series with 8 lessons per topic. These two topics address the Number and Operations - Fraction domain of the Common Core Standards for Mathematics for Grade 3 students. In addition, these two topics address all eight of the Standards for Mathematical Practice.

Essential questions were taken directly from the textbook series used by the district, *enVision Math Common Core: Realize Edition.*

Enduring understandings were taken from *Overarching Understandings and Essential Questions (New Jersey)* at http://jaymctighe.com/resources/downloads/

Curriculum Development Resources
Click the links below to access additional resources used to design this unit:

NJDOE. "Model Curriculum: Mathematics (K-12) - Grade 3." Model Curriculum: Mathematics (K-12) - Grade 3. New Jersey Dept. of Education, n.d. Web. 27 June 2015. <http://www.state.nj.us/education/modelcurriculum/math/1.shtml>.

Charles, Randall. enVision Math Common Core. Realize ed. Grade 1. Upper Saddle River: Pearson Education, 2015. Print. enVision Math Common Core

Common Core Standards for Mathematics. http://www.corestandards.org/Math/

McConnell, Carolyn. *The Essential Questions Handbook*. New York: Scholastic, 2011. Print.

Topic 9

Content Area: Mathematics	
Topic Title: Understanding Fractions	**14 days**

Topic Components

21st Century Themes

	Global Awareness	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy		Environmental Literacy

21st Century Skills

	Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication	x	Collaboration

Interdisciplinary Connections: Science, Social Studies, Physical Education, Writing

Integration of Technology: Digital Resources are part of this textbook series

Equipment needed: grid paper, crayons, fraction strips, number lines, two-color counters
Topic Vocabulary:
- halves
- thirds
- fourths
- fifths
- sixths
- eighths
- tenths
- twelfths
- fraction
- unit fraction
- denominator
- mixed numbers

Goals/Objectives	Topic 9 Sequence	Formative Assessment Tasks
Students: • Interpret the unit fraction *1/b* as the quantity formed by 1 of *b* equal parts of a whole and the fraction *a/b* as the quantity formed by *a* parts *1/b;* e.g., 3 unit fractions of 1/4 add to the quantity 3/4. • Make a drawing of a number line depicting the position of ***1/b*** (with ***b*** = 2, 3, 4, 6, or 8). Represent the unit fraction *1/4* on the number line by dividing the number line between 0 & 1 into 4 equal lengths and naming the point at the end of the first length as the position of unit fraction *1/4*; apply the same method for locating the points 1/2, 1/3, 1/5, 1/6, and 1/8 on the number line. • Make a drawing of a number line depicting a fraction *a/b* (with *a* < *b* and *b* = 2, 4, 3, 4, 6, or 8). • Represent the equal parts of shapes as a unit fraction (e.g., a pizza cut into 8 equal slices has 8 slices and each slice has quantity 1/8 of the whole pizza).	1. Review What You Know! 2. Interactive Learning 3. Dividing Regions into Parts 4. Fractions and Regions 5. Fractions and Sets 6. Fractional Parts of a Set 7. Fraction Number Lines 8. Locating Fractions on the Number Line 9. Fractions and Length 10. Problem Solving: Writing to Explain 11. Reteaching 12. Topic 9 Test 13. Performance Task	• Teacher observation • Independent practice • Topic test • Performance task
Differentiation		

• differentiated worksheets/activities for each lesson
• leveled homework for each lesson
• reteaching resources at the end of each lesson

Resources Provided
• *enVision Math Common Core: Realize Edition* teacher's guides, workbooks, digital resources, manipulatives

Topic 10

Content Area: Mathematics	
Topic Title: Fraction Comparison and Equivalence	**14 days**

Topic Components

21st Century Themes

Global Awareness	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy		Environmental Literacy

21st Century Skills

	Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication	x	Collaboration

Interdisciplinary Connections: Science, Social Studies, Physical Education, Writing

Integration of Technology: Digital Resources are part of this textbook series

Equipment needed: fraction strips, fraction tiles, number lines, fraction circles
Topic Vocabulary:
• equivalent fractions
• simplest form

Goals/Objectives	Topic 10 Sequence	Formative Assessment Tasks
Students: •Make a drawing of a number line depicting the position of *1/b* (with *b* = 2, 3, 4, 6, or 8). Represent the unit fraction *1/4* on the number line by dividing the number line between 0	1. Review What You Know! 2. Interactive Learning 3. Using Models to Compare Fractions: Same Denominator 4. Using Models to Compare Fractions: Same Numerator 5. Using Fractions	• Teacher observation • Independent practice • Topic test • Performance task

& 1 into 4 equal lengths and naming the point at the end of the first length as the position of unit fraction *1/4*; apply the same method for locating the points 1/2, 1/3, 1/5, 1/6, and 1/8 on the number line.

•Locate equivalent (equal) fractions on a number line (with dominators 2, 3, 4, 6, 8).

•Generate and explain equivalent fractions using visual fraction models, e.g., interpret 1/4 of a group of 12 pennies as 3 pennies: ⓅⓅⓅ ⓅⓅⓅ ⓅⓅⓅ ⓅⓅⓅ (see the 4 equal sub-groups as fourths).

•Generate and explain whole numbers as fractions, and locate them as fractions on a number line.

•Compare two fractions with the same numerator or the same denominator using the symbols >, =, <.

•Fluently multiply and divide within 100, using the relationship between multiplication and division.

6. Comparing Fractions on the Number Line
7. Finding Equivalent Fractions
8. Enrichment
9. Equivalent Fractions and the Number Line
10. Whole Numbers and Fractions
11. Problem Solving: Draw a Picture
12. Reteaching
13. Topic 10 Test
14. Performance Task

Differentiation

• differentiated worksheets/activities for each lesson
• leveled homework for each lesson
• reteaching resources at the end of each lesson

Resources Provided
- *enVision Math Common Core: Realize Edition* teacher's guides, workbooks, digital resources, manipulatives

Unit Overview

Content Area: Mathematics

Unit Title: Geometry

Target Course/Grade Level: Grade 3

Unit Summary

Students describe, analyze, and compare properties of two-dimensional shapes. They compare and classify shapes by their sides and angles, and connect these with definitions of shapes. Students also relate their fraction work to geometry by expressing the area of part of a shape as a unit fraction of the whole.

Source: The introduction to the Common Core Standard for Mathematics. Retrieved from http://www.corestandards.org/Math/Content/3/introduction/

Primary interdisciplinary connections: Science, Social Studies, Physical Education

21st century themes:
- Critical Thinking/Problem Solving
- Communication
- Collaboration

Unit Rationale

Geometric shapes are essential to many facets of our lives, from art to architecture. Learning the mathematical principles that are the basis for "creating, describing, classifying, and manipulating shapes can open up new world for students." (McConnell, 2011, pg 82).

Learning Targets

Standards
- 3.G.A.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
- 3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
- 3.MD.C.7a Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
- 3.MD.C.7d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

Content Statements

- Reason with shapes and their attributes.
- Solve problems involving the four operations, and identify and explain patterns in arithmetic.
- Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

CPI #	Cumulative Progress Indicator (CPI) from NJDOE Model Curriculum
3.G.A.1	Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
3.OA.D.8	Find the value of an unknown (expressed as a letter) in an equation that is a representation of a two- step word problem (with any four operations) and assess the reasonableness of the value.
3.MD.C.7a	Find the area of a rectangular array by counting the number of square units and compare that number with the product of the (whole number) side lengths.
3.MD.C.7d	Recognize area as additive. Find areas of rectilinear figures by decomposing them into non- overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

Unit Essential Questions

- Topic 11
  - How can two-dimensional shapes be described, analyzed, and classified?

Unit Enduring Understandings

- Geometric properties can be used to construct geometric figures.
- Geometric relationships provide a means to make sense of a variety of phenomena.
- Everyday objects have a variety of attributes, each of which can be measured in many ways.
- What we measure affects how we measure it.
- Measurements can be used to describe, compare, and make sense of phenomena.
- Mathematical models can be used to describe and quantify physical relationships.
- Physical models can be used to clarify mathematical relationships.

(source: http://jaymctighe.com/wordpress/wp-content/uploads/2013/04/NEW-JERSEY-UbD-MAPS.pdf)

Unit Learning Targets
Students will ...

- Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals).
- Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
- Find the value of an unknown (expressed as a letter) in an equation that is a representation of a two-

step word problem (with any four operations) and assess the reasonableness of the value.
- Find the area of a rectangular array by counting the number of square units and compare that number with the product of the (whole number) side lengths.
- Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

Evidence of Learning

Summative Assessment (at the end of each topic)
Each topic has a summative test and a performance task.

Teacher Resources:
enVision Math Common Core: Realize Edition. 2015

Formative Assessments

- teacher observation
- homework
- "Review What You Know"

- "Independent Practice"
- Topic performance task
-

Topics

Topic	Timeframe
Topic 11 *Two-Dimensional Shapes and Their Attributes*	14 days

Teacher Notes:
This unit consists of one topic from the enVision Math Common Core series with 5 lessons. This one topics addresses the Geometry domain of the Common Core Standards for Mathematics for Grade 3 students. In addition, this topic addresses all eight of the Standards for Mathematical Practice.

Essential questions were taken directly from the textbook series used by the district, *enVision Math Common Core: Realize Edition.*

Enduring understandings were taken from *Overarching Understandings and Essential Questions (New Jersey)* at http://jaymctighe.com/resources/downloads/

Curriculum Development Resources
Click the links below to access additional resources used to design this unit:

NJDOE. "Model Curriculum: Mathematics (K-12) - Grade 3." Model Curriculum: Mathematics (K-12) - Grade 3. New Jersey Dept. of Education, n.d. Web. 27 June 2015.
<http://www.state.nj.us/education/modelcurriculum/math/1.shtml>.

Charles, Randall. enVision Math Common Core. Realize ed. Grade 1. Upper Saddle River: Pearson Education, 2015. Print. enVision Math Common Core

Common Core Standards for Mathematics. http://www.corestandards.org/Math/

McConnell, Carolyn. *The Essential Questions Handbook*. New York: Scholastic, 2011. Print.

Topic 11

Content Area: Mathematics	
Topic Title: Two-Dimensional Shapes and Their Attributes	**14 days**

Topic Components

21st Century Themes

Global Awareness	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy		Environmental Literacy

21st Century Skills

Creativity and Innovation		x	Critical Thinking and Problem Solving	x	Communication		x	Collaboration

Interdisciplinary Connections: Science, Social Studies, Physical Education, Writing

Integration of Technology: Digital Resources are part of this textbook series

Equipment needed: dot paper
Topic Vocabulary:

- polygon
- side
- vertex
- diagonal
- triangle
- quadrilateral
- Pentagon
- Hexagon
- Octagon
- Decagon
- parallel sides
- Parallelogram
- Rectangle
- right angles
- rhombus
- square

Goals/Objectives	Topic 11 Sequence	Formative Assessment Tasks
Students: •Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). •Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. •Find the value of an unknown (expressed as a letter) in an equation that is a representation of a two- step word problem (with any four operations) and assess the reasonableness of the value. •Find the area of a rectangular array by counting the number of square units and compare that number with the product of the (whole number) side lengths. •Recognize area as additive. Find areas of rectilinear figures by decomposing them into non- overlapping rectangles and adding the areas of the non- overlapping parts, applying this technique to solve real world problems.	1. Review What You Know! 2. Interactive Learning 3. Polygons 4. Mixed Problem Solving 5. Quadrilaterals 6. Classifying Shapes 7. Problem Solving: Make and Test Generalizations 8. Problem Solving: Solve a Simpler Problem 9. Reteaching 10. Topic 11 Test 11. Performance Task	• Teacher observation • Independent practice • Topic test • Performance task

Differentiation

• differentiated worksheets/activities for each lesson
• leveled homework for each lesson
• reteaching resources at the end of each lesson

Resources Provided
• *enVision Math Common Core: Realize Edition* teacher's guides, workbooks, digital resources, manipulatives

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Unit Overview

Content Area: Mathematics

Unit Title: Measurement and Data

Target Course/Grade Level: Grade 3

Unit Summary

Students recognize area as an attribute of two-dimensional regions. They measure the area of a shape by finding the total number of same-size units of area required to cover the shape without gaps or overlaps, a square with sides of unit length being the standard unit for measuring area.

Students understand that rectangular arrays can be decomposed into identical rows or into identical columns. By decomposing rectangles into rectangular arrays of squares, students connect area to multiplication, and justify using multiplication to determine the area of a rectangle.

Students also solve problems with money, metric length, mass, and liquid volume, create bar graphs and line plots. Students also solve problems with customary units of length, weight and capacity. Students investigate angles as parts of geometric shapes.

Primary interdisciplinary connections: Science, Social Studies, Physical Education

21st century themes:
• Critical Thinking/Problem Solving
• Communication
• Collaboration

Unit Rationale

A firm grounding in the big picture of how operations with numbers interrelate and how they are vital tools in life can help students build the positive attitudes that will help them become confident, efficient, and effective problem-solvers (McConnell, 2011)

An accurate and consistent system of measurement is a foundation of our economy and necessary for interaction with others around the globe. Systems of measurement facilitate communication in all aspects of life. (McConnell, 2011)

Geometric shapes are essential to many facets of our lives, from art to architecture. Learning the mathematical principles that are the basis for "creating, describing, classifying, and manipulating shapes can open up new world for students." (McConnell, 2011, pg 82).

Learning Targets

Standards

- 3.MD.A.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.
- 3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).1 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.
- 3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets*.
- 3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.
- 3.MD.C.5a A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.
- 3.MD.C.5b A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units.
- 3.MD.C.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
- 3.MD.C.7a Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
- 3.MD.C.7b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
- 3.MD.C.7c Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.
- 3.MD.C.7d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

- 3.MD.D.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.
- 3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.1
- 3.G.A.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.*

Content Statements

- Solve problems involving measurement and estimation.
- Represent and interpret data.
- Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
- Geometric measurement: recognize perimeter.
- Represent and solve problems involving multiplication and division.
- Reason with shapes and their attributes.

CPI #	Cumulative Progress Indicator (CPI) from NJDOE Model Curriculum
3.MD.A.1	Tell and write time to the nearest minute to solve word problems with addition and subtraction involving time intervals in minutes.
3.MD.A.2	Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).1 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.
3.MD.B.3	Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*
3.MD.B.4	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.
3.MD.C.5a	Find the area of a plane figure understanding that unit squares are used to measure area of a rectilinear drawing.
3.MD.C.5b	Find the area of a plane figure understanding that unit squares are used to measure area of a rectilinear drawing.
3.MD.C.6	Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
3.MD.C.7a	Find the area of a rectangular array by counting the number of square units and compare that number with the product of the (whole number) side lengths.
3.MD.C.7b	Explain the relationship between tiling/multiplying side lengths to find the area of rectangles.
3.MD.C.7c	Use the area model (with rectangles) to explain the Distributive Property.
3.MD.C.7d	Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.
3.MD.D.8	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and

	different perimeters.
3.OA.A.3	•Use multiplication within 100 to solve word problems using measurement quantities by creating drawings or arrays. •Use multiplication within 100 to solve word problems modeled as equal groups or arrays by writing equations to represent equal groups or arrays.
3.G.A.2	Represent the equal parts of shapes as a unit fraction (e.g., a pizza cut into 8 equal slices has 8 slices and each slice has quantity 1/8 of the whole pizza).

Unit Essential Questions	Unit Enduring Understandings

• Topic 12
   o How can lengths of time be measured and found?
• Topic 13
   o How can perimeter be measured and found?
• Topic 14
   o What does area mean?
   o What are different ways to find the area of a shape?
• Topic 15
   o What are the metric units for measuring capacity and mass?
• Topic 16
   o How can data be represented, interpreted, and analyzed?
	• Geometric properties can be used to construct geometric figures.
	• Geometric relationships provide a means to make sense of a variety of phenomena.
	• Everyday objects have a variety of attributes, each of which can be measured in many ways.
	• What we measure affects how we measure it.
	• Measurements can be used to describe, compare, and make sense of phenomena.
	• Mathematical models can be used to describe and quantify physical relationships.
	• Physical models can be used to clarify mathematical relationships.
	
	(source: http://jaymctighe.com/wordpress/wp-content/uploads/2013/04/NEW-JERSEY-UbD-MAPS.pdf)

Unit Learning Targets
Students will ...

- Tell and write time to the nearest minute to solve word problems with addition and subtraction involving time intervals in minutes.
- Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.
- Find the area of a plane figure understanding that unit squares are used to measure area of a rectilinear drawing.
- Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
- Explain the relationship between tiling/multiplying side lengths to find the area of rectangles.
- Use the area model (with rectangles) to explain the Distributive Property.
- Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.
- Use multiplication within 100 to solve word problems modeled as equal groups or arrays by writing equations to represent equal groups or arrays.
- Use multiplication within 100 to solve word problems using measurement quantities by creating

drawings or arrays.
- Represent the equal parts of shapes as a unit fraction (e.g., a pizza cut into 8 equal slices has 8 slices and each slice has quantity 1/8 of the whole pizza).
- Solve one-step word problems by estimating, measuring, and comparing liquid volumes and masses using appropriate tools and units.
- Create and interpret a scaled picture (or bar) graph to represent data in 1- or 2-stp word problems.
- Depict data measured in fourths and halves of an inch with a line plot with scales marked with appropriate units.

Evidence of Learning

Summative Assessment (at the end of each topic)
Each topic has a summative test and a performance task.

Teacher Resources:
enVision Math Common Core: Realize Edition. 2015

Formative Assessments

- teacher observation
- homework
- "Review What You Know"
- "Independent Practice"
- Topic performance task
-

Topics

Topic	Timeframe
Topic 12 *Two-Dimensional Shapes and Their Attributes*	14 days
Topic 13 *Perimeter*	14 days
Topic 14 *Area*	14 days
Topic 15 *Liquid Volume and Mass*	14 days
Topic 16 *Data*	14 days

Teacher Notes:
This unit consists of five topics from the enVision Math Common Core series with 4-11 lessons per topic. These five topics address the Measurement and Data domain of the Common Core Standards for Mathematics for Grade 3 students. In addition, these five topics address all eight of the Standards for Mathematical Practice.

Essential questions were taken directly from the textbook series used by the district, *enVision Math Common Core: Realize Edition.*

Enduring understandings were taken from *Overarching Understandings and Essential Questions (New Jersey)* at http://jaymctighe.com/resources/downloads/

Curriculum Development Resources

Click the links below to access additional resources used to design this unit:

NJDOE. "Model Curriculum: Mathematics (K-12) - Grade 3." Model Curriculum: Mathematics (K-12) - Grade 3. New Jersey Dept. of Education, n.d. Web. 27 June 2015. <http://www.state.nj.us/education/modelcurriculum/math/1.shtml>.

Charles, Randall. enVision Math Common Core. Realize ed. Grade 1. Upper Saddle River: Pearson Education, 2015. Print. enVision Math Common Core

Common Core Standards for Mathematics. http://www.corestandards.org/Math/

McConnell, Carolyn. *The Essential Questions Handbook*. New York: Scholastic, 2011. Print.

Topic 12
Content Area: Mathematics

Topic Title: Time	**14 days**

Topic Components

21st Century Themes

	Global Awareness	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy		Environmental Literacy

21st Century Skills

	Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication	x	Collaboration

Interdisciplinary Connections: Science, Social Studies, Physical Education, Writing

Integration of Technology: Digital Resources are part of this textbook series

Equipment needed: clock models
Topic Vocabulary:
- hour
- half hour
- quarter hour
- minute
- seconds
- A.M.
- P.M.
- elapsed time

Goals/Objectives	Topic 12 Sequence	Formative Assessment Tasks
Students: Tell and write time to the nearest minute to solve word problems with addition and subtraction involving time intervals in minutes.	1. Review What You Know! 2. Interactive Learning 3. Time to the Half Hour and Quarter Hour 4. Time to the Minute 5. Elapsed Time 6. Problem Solving: Work Backward 7. Reteaching 8. Topic 12 Test 9. Performance Task	• Teacher observation • Independent practice • Topic test • Performance task

Differentiation

• differentiated worksheets/activities for each lesson
• leveled homework for each lesson
• reteaching resources at the end of each lesson

Resources Provided
• *enVision Math Common Core: Realize Edition* teacher's guides, workbooks, digital resources, manipulatives

Topic 13
Content Area: Mathematics

Topic Title: Perimeter	**14 days**

Topic Components

21st Century Themes

Global Awareness	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy		Environmental Literacy

21st Century Skills

Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication	x	Collaboration

Interdisciplinary Connections: Science, Social Studies, Physical Education, Writing

Integration of Technology: Digital Resources are part of this textbook series

Equipment needed: grid paper, fraction strips
Topic Vocabulary:

- perimeter

Goals/Objectives	Topic 13 Sequence	Formative Assessment Tasks
Students: Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	1. Review What You Know! 2. Interactive Learning 3. Understanding Perimeter 4. Perimeter of Common Shapes 5. Perimeter and Unknown Side Lengths 6. Different Shapes with the Same Perimeter 7. Problem Solving: Solve a Simpler Problem and Make a Table 8. Reteaching 9. Topic 13 Test 10. Performance Task	• Teacher observation • Independent practice • Topic test • Performance task

Differentiation

• differentiated worksheets/activities for each lesson
• leveled homework for each lesson
• reteaching resources at the end of each lesson

Resources Provided

- *enVision Math Common Core: Realize Edition* teacher's guides, workbooks, digital resources, manipulatives

Topic 14

Content Area: Mathematics

Topic Title: Area	**14 days**

Topic Components

21st Century Themes

	Global Awareness	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy		Environmental Literacy

21st Century Skills

	Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication	x	Collaboration

Interdisciplinary Connections: Science, Social Studies, Physical Education, Writing

Integration of Technology: Digital Resources are part of this textbook series

Equipment needed: grid paper, square tiles
Topic Vocabulary:
- area
- square unit

Goals/Objectives	Topic 14 Sequence	Formative Assessment Tasks
Students: •Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. •Find the area of a plane figure understanding that unit squares are used to measure area of a rectilinear drawing. •Measure areas by counting unit squares	1. Review What You Know! 2. Interactive Learning 3. Covering Regions 4. Area and Units 5. Standard Units 6. Area of Squares and Rectangles 7. Area and the Distributive Property 8. Problem Solving: Solve a Simpler Problem 9. Area of Irregular Shapes 10. Stop and Practice 11. Different Area, Same Perimeter 12. Same Area, Different Perimeter 13. Equal Areas and Fractions 14. Problem Solving: Selecting Appropriate Measurement Units and Tools 15. Reteaching 16. Topic 14 Test 17. Performance Task	• Teacher observation • Independent practice • Topic test • Performance task

(square cm, square m, square in, square ft, and improvised units).

•Explain the relationship between tiling/multiplying side lengths to find the area of rectangles.

•Use the area model (with rectangles) to explain the Distributive Property.

•Recognize area as additive. Find areas of rectilinear figures by decomposing them into non- overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

•Use multiplication within 100 to solve word problems using measurement quantities by creating drawings or arrays.

•Use multiplication within 100 to solve word problems modeled as equal groups or arrays by writing equations to represent equal groups or arrays.

•Represent the equal parts of shapes as a unit fraction.

Differentiation

• differentiated worksheets/activities for each lesson
• leveled homework for each lesson
• reteaching resources at the end of each lesson

Resources Provided

- *enVision Math Common Core: Realize Edition* teacher's guides, workbooks, digital resources, manipulatives

Topic 15

Content Area: Mathematics

Topic Title: Liquid Volume and Mass	**14 days**

Topic Components

21st Century Themes

Global Awareness	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy		Environmental Literacy

21st Century Skills

Creativity and Innovation		x	Critical Thinking and Problem Solving	x	Communication		x	Collaboration

Interdisciplinary Connections: Science, Social Studies, Physical Education, Writing

Integration of Technology: Digital Resources are part of this textbook series

Equipment needed: measuring containers, balance scale, weights

Topic Vocabulary:

- milliliter
- liter
- mass
- gram
- kilogram

Goals/Objectives	Topic 15 Sequence	Formative Assessment Tasks
Students: Solve one-step word problems by estimating, measuring, and comparing liquid volumes and	1. Review What You Know! 2. Interactive Learning 3. Metric Units of Capacity 4. Measuring Capacity	• Teacher observation • Independent practice • Topic test • Performance task

| masses using appropriate tools and units. | 5. Units of Mass
6. Measuring Mass
7. Problem Solving: Draw a Picture
8. Reteaching
9. Topic 15 Test
10. Performance Task | |

Differentiation

• differentiated worksheets/activities for each lesson
• leveled homework for each lesson
• reteaching resources at the end of each lesson

Resources Provided

- *enVision Math Common Core: Realize Edition* teacher's guides, workbooks, digital resources, manipulatives

Topic 16				
Content Area: Mathematics				
Topic Title: Data			**14 days**	
Topic Components				
21st Century Themes				
Global Awareness	x Financial, Economic, Business, and Entrepreneurial Literacy	Civic Literacy	Health Literacy	Environmental Literacy
21st Century Skills				
Creativity and Innovation	x Critical Thinking and Problem Solving	x Communication	x Collaboration	
Interdisciplinary Connections: Science, Social Studies, Physical Education, Writing				
Integration of Technology: Digital Resources are part of this textbook series				
Equipment needed: blank line plots, blank bar graph paper **Topic Vocabulary:** • line plot • pictograph				

Goals/Objectives	Topic 16 Sequence	Formative Assessment Tasks
Students: •Create and interpret a scaled picture (or bar) graph to represent data in 1- or 2-stp word problems. •Depict data measured in fourths and halves of an inch with a line plot with scales marked with appropriate units.	1. Review What You Know! 2. Interactive Learning 3. Metric Units of Capacity 4. Measuring Capacity 5. Units of Mass 6. Measuring Mass 7. Problem Solving: Draw a Picture 8. Reteaching 9. Topic 15 Test 10. Performance Task	• Teacher observation • Independent practice • Topic test • Performance task

Differentiation

• differentiated worksheets/activities for each lesson
• leveled homework for each lesson
• reteaching resources at the end of each lesson

Resources Provided

- *enVision Math Common Core: Realize Edition* teacher's guides, workbooks, digital resources, manipulatives

LESSON REFLECTION

Reflect on the lesson you have developed and rate the degree to which the lesson *Strongly, Moderately* or *Weakly* meets the criteria below.

Lesson Activities:	Strongly	Moderately	Weakly
Are challenging and require higher order thinking and problem solving skills			
Allow for student choice			
Provide scaffolding for acquiring targeted knowledge/skills			
Integrate global perspectives			
Integrate 21st century skills			
Provide opportunities for interdisciplinary connection and transfer of knowledge and skills			
Foster student use of technology as a tool to develop critical thinking, creativity and innovation skills			
Are varied to address different student learning styles and preferences			
Are differentiated based on student needs			

Are student-centered with teacher acting as a facilitator and co-learner during the teaching and learning process			
Provide means for students to demonstrate knowledge and skills and progress in meeting learning goals and objectives			
Provide opportunities for student reflection and self-assessment			
Provide data to inform and adjust instruction to better meet the varying needs of learners			

Curriculum Design Template

Content Area:

Course Title: | **Grade Level:**

Unit Plan 1	Pacing Guide
Unit Plan 1	Pacing Guide
Unit Plan 3	Pacing Guide
Unit Plan 4	Pacing Guide

Unit Plan 5	Pacing Guide
Unit Plan 6	Pacing Guide

Date Created:

Board Approved on: