

*Greenwich-Stow Creek
Partnership Schools
Math Curriculum
Grades Kindergarten-Eight*

Approved by the Board of Education
Stow Creek Board of Education-12-19-2019
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Mathematics » Kindergarten » Introduction

In Kindergarten, instructional time should focus on two critical areas: (1) representing and comparing whole numbers, initially with sets of objects; (2) describing shapes and space. More learning time in Kindergarten should be devoted to number than to other topics.

- 1. Students use numbers, including written numerals, to represent quantities and to solve quantitative problems, such as counting objects in a set; counting out a given number of objects; comparing sets or numerals; and modeling simple joining and separating situations with sets of objects, or eventually with equations such as $5 + 2 = 7$ and $7 - 2 = 5$. (Kindergarten students should see addition and subtraction equations, and student writing of equations in kindergarten is encouraged, but it is not required.) Students choose, combine, and apply effective strategies for answering quantitative questions, including quickly recognizing the cardinalities of small sets of objects, counting and producing sets of given sizes, counting the number of objects in combined sets, or counting the number of objects that remain in a set after some are taken away.
- 2. Students describe their physical world using geometric ideas (e.g., shape, orientation, spatial relations) and vocabulary. They identify, name, and describe basic two-dimensional shapes, such as squares, triangles, circles, rectangles, and hexagons, presented in a variety of ways (e.g., with different sizes and orientations), as well as three-dimensional shapes such as cubes, cones, cylinders, and spheres. They use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes.

Grade K Overview

- **Counting and Cardinality**
 - Know number names and the count sequence.
 - Count to tell the number of objects.
 - Compare numbers.
- **Operations and Algebraic Thinking**
 - Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.
- **Number and Operations in Base Ten**
 - Work with numbers 11-19 to gain foundations for place value.
- **Measurement and Data**
 - Describe and compare measurable attributes.
 - Classify objects and count the number of objects in each category
- **Geometry**
 - Identify and describe shapes.

- Analyze, compare, create, and compose shapes.

- **Mathematical Practices**

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.

Look for and express regularity in repeated

Kindergarten Scope and Sequence

ONGOING ACTIVITIES

- Calendar
- Days in School
- Number Line

ONGOING STANDARDS

Know number names and the count sequence. K.CC.1-3

1. Count to 100 by ones and by tens.
2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

Months	Counting	Identify Numbers	Write Numbers
Sept.-Oct.	0-21	0-10	***
Oct.-Nov.	21-35	10-15	***
Nov.-Jan	35-50	15-20	0-20
Jan.-Feb.	50-70	20-50	20-50
Feb.-March	70-90	50-75	20-75
March-June	90-115	75-100	75-100

Count to tell the number of objects. K.CC.4, K.CC.5

4. Understand the relationship between numbers and quantities; connect counting to cardinality.
 - a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
 - b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
 - c. Understand that each successive number name refers to a quantity that is one larger.
5. Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

Compare numbers. K.CC.6, K.CC.7

6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.

7. Compare two numbers between 1 and 10 presented as written numerals.

Work with numbers 11-19 to gain foundations for place value. K.NBT.1

1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (such as $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones

STANDARDS BY MARKING PERIOD

MARKING PERIOD 1

Identify and describe shapes (*Modified: squares, circles, triangles, rectangles*). K.G.2

2. Correctly name shapes regardless of their orientations or overall size.

Describe and compare measurable attributes. K.MD.1, K.MD.2

1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

2. Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. *For example, directly compare the heights of two children and describe one child as taller/shorter.*

MARKING PERIOD 2

Identify and describe shape (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres). K.G.1-3

1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above*, *below*, *beside*, *in front of*, *behind*, and *next to*.

2. Correctly name shapes regardless of their orientations or overall size.

3. Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).

Analyze, compare, create, and compose shapes. K.G.4-6

4. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts

(e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).

5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

6. Compose simple shapes to form larger shapes. *For example, “Can you join these two triangles with full sides touching to make a rectangle?”*

MARKING PERIOD 3

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. K.OA.1, K.OA.2

1. Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings¹, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.

2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

Classify objects and count the number of objects in each category. K.MD.3

3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

MARKING PERIOD 4

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. K.OA.1-5

1. Represent addition and subtraction with objects, fingers, mental images, drawings¹, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.

2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

3. Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$).

4. For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

5. Demonstrate fluency for addition and subtraction within 5.

KINDERGARTEN MATH UNIT 1

Domain: Counting and Cardinality

Marking Period: Ongoing

Lesson Title: Know number names and the count sequence

Overview of Unit: Students will count to 100 by ones and tens, count forward beginning from any given number, and write and represent numbers 0-20.

Learning Targets—Big Idea and Standards

BIG IDEA(S): Students use numbers, including written numerals, to represent quantities

Standard(s): K.CC.1-3

- Count to 100 by ones and by tens. K.CC.1.
- Count forward beginning from a given number within the known sequence (instead of having to begin at 1). K.CC.2.
- Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). K.CC.3

Essential Questions

Enduring Understandings

- How do you show numbers?
- How do you count numbers?
- How do you write numbers?
- How do you use numbers?

Understanding the size of numbers, using numbers are referents, and developing different ways of thinking about and representing numbers builds number sense

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Key Terms

One, two, match, three, four, five, pairs, and, larger, zero, fewer, and more

Materials and Learning Plan

(Individual district completion)

Materials:

- Number Cubes
- Online Resources
- Text and workbooks
- Standards Practice Book
- Number line

Learning Plan:

Go Math! Series

- Chapter 1 Lessons 1, 4, 6, & 9
- Chapter 3 Lessons 2, 4, 6, & 8
- Chapter 4 Lessons 2 & 4
- Chapter 7 Lessons 2, 4, 6, 8, & 10
- Chapter 8 Lessons 2, 3, 5, 6, 7, & 8
- Play “Bus Stop” (p.12)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ **Other** _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
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Accommodations for Enrichment (G &T):

- Extension activities
- Independent practice in small groups
- Internet activities

KINDERGARTEN MATH UNIT 2

Domain: Counting and Cardinality

Marking Period: Ongoing

Lesson Title: Count to tell the number of objects

Overview of Unit: Students will understand the relationship between numbers and quantities, and count to answer “how many?”

Learning Targets—Big Idea and Standards

BIG IDEA(S): Students use numbers, including written numerals, to represent quantities and to solve

quantitative problems, such as counting objects in a set; counting out a given number of objects, and comparing sets or numerals.

Standard(s): K.CC.4 & 5

- K.CC.4. Understand the relationship between numbers and quantities; connect counting to cardinality.
 - When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
 - Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
 - Understand that each successive number name refers to a quantity that is one larger.
- K.CC.5. Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • What are different ways to count? • Why is counting important? 	<ul style="list-style-type: none"> • There are a variety of ways to show and count numbers. • Counting finds out the answer to “how many” in objects/sets.
Evidence of Learning	
<p>Formative Assessment:</p> <p>Mid- Chapter Checkpoints</p> <p>Summative Assessment:</p> <p>Chapter Review/Tests</p> <p>Differentiation/Customizing Learning (strategies):</p>	

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Number Cubes
- Online Resources
- Text and workbooks
- Standards Practice Book
- Number line

Learning Plan:

Go Math! Series

- Chapter 1 Lessons 1, 3, 5, 8, & 6
- Chapter 3 Lessons 1, 3, 4, 5, & 7
- Chapter 4 Lesson 1
- Chapter 8 Lessons 2, 3, 5, 6, 7, & 8
- Play “Number Line up” (p.88)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary

- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
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Accommodations for Enrichment (G &T):

- Extension activities
- Independent practice in small groups
- Internet activities

KINDERGARTEN MATH UNIT 3

Domain: Counting and Cardinality

Marking Period: Ongoing

Lesson Title: Comparing numbers

Overview of Unit: Students will identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, and compare two numbers between 1 and 10 presented as written numerals.

Learning Targets—Big Idea and Standards

BIG IDEA(S): Students use numbers, including written numerals, to represent quantities and to solve quantitative problems, such as counting objects in a set; counting out a given number of objects and comparing sets or numerals. Students choose, combine, and apply effective strategies for answering quantitative questions, including quickly recognizing the cardinalities of small sets of objects, counting and producing sets of given sizes, and counting the number of objects in combined sets.

Standard(s): K.CC.6 & 7

- K.CC.6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.¹
- K.CC.7. Compare two numbers between 1 and 10 presented as written numerals.

Essential Questions

- How many are in a set?
- How do numbers relate to each other?
- How can we compare and contrast numbers?

Enduring Understandings

- Numbers can represent quantity, position, location and relationships.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Number Cubes
- Online Resources
- Text and workbooks
- Standards Practice Book
- Number line

Learning Plan:

Go Math! Series

- Chapter 2 Lessons 1-5
- Chapter 3 Lesson 9
- Chapter 4 Lessons 5, 6, & 7
- Chapter 8 Lesson 4
- Play “Counting to Blast Off” (p.60)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting

Accommodations for Enrichment (G &T):

- Extension activities
- Independent practice in small groups
- Internet activities

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KINDERGARTEN MATH UNIT 4

Domain: Operations and Algebraic Thinking

Marking Period: 3 & 4

Lesson Title: Understand addition as putting together and adding to, and understanding subtraction as taking apart and taking from.

Overview of Unit: Students will represent and solve addition and subtraction in various ways. Ex: objects, drawings, fingers, mental images, equations, etc.

Learning Targets—Big Idea and Standards

BIG IDEA(S): Students model simple joining and separating situations with sets of objects, or eventually with equations.

Standard(s): K.OA.1-5

- K.OA.1. Represent addition and subtraction up to 10 with objects, fingers, mental images, drawings¹, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
- K.OA.2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.
- K.OA.3. Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$).
- K.OA.4. For any number from 1 to 9, find the number that makes 10 when added to the given

number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

- K.OA.5. Demonstrate fluency for addition and subtraction within 5.

Essential Questions	Enduring Understandings
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<ul style="list-style-type: none"> • Why do I need to add/ subtract? • How can knowing addition and subtraction facts help me? • What are different models of addition and subtraction? 	<ul style="list-style-type: none"> • Computation involves putting together/ taking apart and combining numbers using a variety of approaches.
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Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Number Cubes
- Base Ten Blocks
- Online Resources

- Text and workbooks
- Standards Practice Book
- Number line

Learning Plan:

Go Math! Series

- Chapter 4 Lesson 3
- Chapter 5 Lessons 1-12
- Chapter 6 Lessons 1-7
- Play “Pairs That Make 7” (p.168)
- Play “Spin for More” (p. 224)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
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Accommodations for Enrichment (G &T):

- Extension activities
- Independent practice in small groups
- Internet activities

KINDERGARTEN MATH UNIT 5

Domain: Number and Operations in Base Ten

Marking Period: Ongoing

Lesson Title: Work with numbers 11 – 19 to gain foundations for place value

Overview of Unit: Arrange numbers from 11 – 19 into 10's and 1's to create understanding of place value and help students to understand that numbers are composed of tens and one, two, three, four, five, six, seven, eight, or nine ones.

Learning Targets—Big Idea and Standards

BIG IDEA(S): Place value is the key to all numeration and number sense for real numbers.

Standard(s): K.NBT.1

- K.NBT.1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (such as $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

Essential Questions

Enduring Understandings

- How can place value be used for composing and decomposing numbers?
- How does the position of a digit in a number affect its value?

- Place value is based on groups of 10

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Number Cubes
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book
- Number line

Learning Plan:

Go Math! Series

- Chapter 7 Lessons 3, 5, 7, & 9

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
-

Accommodations for Enrichment (G &T):

- Extension activities
- Independent practice in small groups
- Internet activities

KINDERGARTEN MATH UNIT 6

Domain: Measurement and Data

Marking Period: 1

Lesson Title: Describe and compare measurable attributes

Overview of Unit: Describe measurable attributes of objects, such as length or weight, and directly compare two objects with measurable attributes in common as well as describing differences.

Learning Targets—Big Idea and Standards

BIG IDEA(S): Students describe their physical world using geometric ideas (e.g., shape, orientation, spatial relations) and vocabulary.

Standard(s): K.MD.1-2

- K.MD.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
- K.MD.2. Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. *For example, directly compare the heights of two children and describe one child as taller/shorter.*

Essential Questions

- How can shapes be described?
- How can everyday objects be described using the names of shapes?
- How can solid figures be compared?

Enduring Understandings

- Shapes can be described/compared/sorted by their attributes

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Online Resources
- Text and workbooks
- Standards Practice Book
- Blocks and Shapes

Learning Plan:

Go Math! Series

- Chapter 11 Lessons 1-5
- Play “Connecting Cube Challenge” (p.464)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary

- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
-

Accommodations for Enrichment (G &T):

- Extension activities
- Independent practice in small groups
- Internet activities

KINDERGARTEN MATH UNIT 7

Domain: Measurement and Data	Marking Period: 3
Lesson Title: Classify objects and count the number of objects in each category	
Overview of Unit: Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	
Learning Targets—Big Idea and Standards	
<p>BIG IDEA(S): Students describe their physical world using geometric ideas (e.g., shape, orientation, spatial relations) and vocabulary.</p> <hr/> <p>Standard(s): K.MD.3</p> <ul style="list-style-type: none"> • K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. 	
Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • How can we sort, classify, and order objects? 	<ul style="list-style-type: none"> • Objects can be classified using their geometric attributes.
Evidence of Learning	
Formative Assessment:	

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Online Resources
- Text and workbooks
- Standards Practice Book
- Blocks and Shapes
- Chart and Graph Examples

Learning Plan:

Go Math! Series

- Chapter 12 Lessons 1-6
- Play “At The Farm” (p.492)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
-

Accommodations for Enrichment (G &T):

- Extension activities
- Independent practice in small groups
- Internet activities

KINDERGARTEN MATH UNIT 8

Domain: Geometry

Marking Period: 2

Lesson Title: Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres)

Overview of Unit: Describe objects using the names of shapes and the position of these objects, and identify shapes as two-dimensional or three-dimensional.

Learning Targets—Big Idea and Standards

BIG IDEA(S): Students identify, name, and describe basic two-dimensional shapes, such as squares, triangles, circles, rectangles, and hexagons, presented in a variety of ways (e.g., with different sizes and orientations), as well as three-dimensional shapes such as cubes, cones, cylinders, and spheres.

Standard(s): K.G.1-3

- K.G.1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above*, *below*, *beside*, *in front of*, *behind*, and *next to*.
- K.G.2. Correctly name shapes regardless of their orientations or overall size.

- K.G.3. Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).

Essential Questions

Enduring Understandings

- What is a shape?
- What are the properties of shapes?
- How can we describe shapes?

- Geometry helps us represent, describe, and make sense of our environment.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Online Resources

- Text and workbooks
- Standards Practice Book
- 3-D Blocks and Shapes

Learning Plan:

Go Math! Series

- Chapter 9 Lessons 1, 3, 5, 7, & 9
- Chapter 10 Lessons 1-9
- Play “Number Picture” (p.356)
- Play “Follow The Shapes” (p.412)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
-

Accommodations for Enrichment (G &T):

- Extension activities
- Independent practice in small groups
- Internet activities

KINDERGARTEN MATH UNIT 9

Domain: Geometry

Marking Period: 2

Lesson Title: Analyze, compare, create, and compose shapes

Overview of Unit: Analyze, compare, and create 2 and 3 dimensional shapes and describe similarities and differences, and other attributes. Compose simple shapes to form larger shapes.

Learning Targets—Big Idea and Standards

BIG IDEA(S): Students use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes.

Standard(s): K.G.4-6

- K.G.4. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).
- K.G.5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
- K.G.6. Compose simple shapes to form larger shapes. For example, “Can you join these two triangles with full sides touching to make a rectangle?”

Essential Questions

- How can I put shapes together and take them apart to form other shapes?
- How can you compare two and/or three dimensional shapes using various attributes?

Enduring Understandings

- Geometric properties can be used to construct or compare geometric figures.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Online Resources
- Text and workbooks
- Standards Practice Book
- 3-D Blocks and Shapes

Learning Plan:

Go Math! Series

- Chapter 9 Lessons 2, 4, 6, 8, 10, & 12
- Chapter 10 Lessons 7-9
- Play “Number Picture” (p.356)
- Play “Follow The Shapes” (p.412)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives

<ul style="list-style-type: none"> ● Tools (rulers, measuring cups, etc.) ● Multi-leveled cooperative learning groups 	
<p>Accommodations for Special Education:</p> <ul style="list-style-type: none"> ● Frequent pauses for understanding and focus ● Develop an understanding of key vocabulary ● Use of drawings, maps and graphs ● Engaging dialogue and discussion ● Use of manipulatives ● Tools (rulers, measuring cups, etc.) ● Multi-leveled cooperative learning groups ● Assistance from Special Education teacher in a small group setting ● Refer to student IEP 	
<p>Accommodations for At-Risk Students:</p> <ul style="list-style-type: none"> ● Frequent pauses for understanding and focus ● Develop an understanding of key vocabulary ● Use of drawings, maps and graphs ● Engaging dialogue and discussion ● Use of manipulatives ● Tools (rulers, measuring cups, etc.) ● Multi-leveled cooperative learning groups ● Assistance from Special Education teacher in a small group setting 	
<p>Accommodations for Enrichment (G &T):</p> <ul style="list-style-type: none"> ● Extension activities ● Independent practice in small groups ● Internet activities 	

Mathematics » Grade 1 » Introduction

In Grade 1, instructional time should focus on four critical areas: (1) developing understanding of addition, subtraction, and strategies for addition and subtraction within 20; (2) developing understanding of whole number relationships and place value, including grouping in tens and ones; (3) developing understanding of linear measurement and measuring lengths as iterating length units; and (4) reasoning about attributes of, and composing and decomposing geometric shapes.

- 1. Students develop strategies for adding and subtracting whole numbers based on their prior work with small numbers. They use a variety of models, including discrete objects and length-based models (e.g., cubes connected to form lengths), to model add-to, take-from, put-together, take-apart, and compare situations to develop meaning for the operations of addition and subtraction, and to develop strategies to solve arithmetic problems with these operations. Students understand connections between counting and addition and subtraction (e.g., adding two is the same as counting on two). They use properties of addition to add whole numbers and to create and use increasingly sophisticated strategies based on these properties (e.g., “making tens”) to solve addition and subtraction problems within 20. By comparing a variety of solution strategies, children build their understanding of the relationship between addition and subtraction.
- 2. Students develop, discuss, and use efficient, accurate, and generalizable methods to add within 100 and subtract multiples of 10. They compare whole numbers (at least to 100) to develop understanding of and solve problems involving their relative sizes. They think of whole numbers between 10 and 100 in terms of tens and ones (especially recognizing the numbers 11 to 19 as composed of a ten and some ones). Through activities that build number sense, they understand the order of the counting numbers and their relative magnitudes.
- 3. Students develop an understanding of the meaning and processes of measurement, including underlying concepts such as iterating (the mental activity of building up the length of an object with equal-sized units) and the transitivity principle for indirect measurement.¹
- 4. Students compose and decompose plane or solid figures (e.g., put two triangles together to make a quadrilateral) and build understanding of part-whole relationships as well as the properties of the original and composite shapes. As they combine shapes, they recognize them from different perspectives and orientations, describe their geometric attributes, and determine how they are alike and different, to develop the background for measurement and for initial understandings of properties such as congruence and symmetry.

Grade 1 Overview

- **Operations and Algebraic Thinking**
 - Represent and solve problems involving addition and subtraction.
 - Understand and apply properties of operations and the relationship between addition and subtraction.
 - Add and subtract within 20.

- Work with addition and subtraction equations.

- **Number and Operations in Base Ten**

- Extend the counting sequence.
- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

- **Measurement and Data**

- Measure lengths indirectly and by iterating length units.
- Tell and write time.
- Represent and interpret data.

- **Geometry**

- Reason with shapes and their attributes.

- **Mathematical Practices**

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

¹ Students should apply the principle of transitivity of measurement to make indirect comparisons, but they need not use this technical term.

Scope and Sequence Grade 1

ONGOING REINFORCEMENT/ENRICHMENT

- Calendar 1.MD.4
- Count like coins up to \$1.00 1.OA.5
- Tell and write time to the nearest hour and half-hour 1.MD.3
- Count, read and write numerals 1.NBT.1

MARKING PERIOD 1

1) Add and subtract within 20: 1.OA.5, 1.OA.6

- 5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
- 6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).

2) Understand and apply properties of operations and the relationship between addition and subtraction: 1.OA.3, 1.OA.4

- 3. Apply properties of operations as strategies to add and subtract.² *Examples: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known. (Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$. (Associative property of addition.) (Students need not use formal terms for these properties)*
- 4. Understand subtraction as an unknown-addend problem. *For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8. Add and subtract within 20.*

MARKING PERIOD 2

3) Represent and solve problems involving addition and subtraction: 1.OA.1, 1.OA.2

- 1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.¹
- 2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

4) Work with addition and subtraction equations: 1.OA.7, 1.OA.8

- 7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.
- 8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = _ - 3$, $6 + 6 = _$.*

5) Extend the counting sequence: 1.NBT.1

- 1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

MARKING PERIOD 3

6) Understand place value: 1.NBT.2a, 1.NBT.2.b, 1.NBT.2.c., 1.NBT.3

- 2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
 - 10 can be thought of as a bundle of ten ones — called a “ten.”
 - The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
 - The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).
- 3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.

7) Use place value understanding and properties of operations to add and subtract: 1.NBT.4, 1.NBT.5, 1.NBT.6

- 4. Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models (e.g., base ten blocks) or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.
- 5. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.
- 6. Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

MARKING PERIOD 4

8) Measure lengths indirectly and by iterating length units: 1.MD.1, 1.MD.2

- Order three objects by length; compare the lengths of two objects indirectly by using a third object.
- 2. Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no

gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps*

9) Tell and write time: 1.MD.3

- 3. Tell and write time in hours and half-hours using analog and digital clocks.

10) Represent and interpret data: 1.MD.4

- 4. Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

11) Reason with shapes and their attributes: 1.G.1, 1.G.2, 1.G.3

- 1. Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size) ; build and draw shapes to possess defining attributes.
- 2. Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.¹
- 3. Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

1st Grade Unit 1	
Domain: Operations and Algebraic Thinking	Marking Period: Ongoing/1MP
Lesson Title: Add and subtract within 20	
Overview of Unit: a) Addition and subtraction are connected. Use addition and subtraction within 20 to	

solve word problems. This should involve situations using the concepts of adding to, putting together, taking from, taking apart, and comparing.

b) Solve word problems that call for addition of three whole numbers

Learning Targets—Big Idea and Standards

Big Idea(s): Students develop strategies for adding and subtracting whole numbers based on their prior work with small numbers.

Standard(s): 1.OA.5, 1.OA.6

- 1.OA.5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
- 1.OA.6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).

Essential Questions

Enduring Understandings

- What are different models of and models for addition and subtraction?
- What questions can be answered using addition and/or subtraction?
- What are efficient methods for finding sums and differences?

- Computation involves taking apart and combining numbers using a variety of approaches.
- Flexible methods of computation involve grouping numbers in strategic ways.
- Proficiency with basic facts aids estimation and computation of larger and smaller numbers.

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Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Number Cubes
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book
- Number line

Learning Plan:*Go Math! Series*

- Chapter 1 Lesson 8
- Chapter 2 Lesson 9
- Chapter 3 Lessons 2-12
- Chapter 4 Lessons 1, 4, & 5
- Chapter 5 Lessons 2-10
- Play “Ducky Sums” (p.96)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ **Other** _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs

- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting

- Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Resources: online resources and other RTI activities/procedures for differentiated learning

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- Resources:online lesson offers Advanced activities for Differentiated instruction

1st Grade Unit 2	
Domain: Operations and Algebraic Thinking	Marking Period: 1
Lesson Title: Understand and apply properties of operations and the relationship between addition and subtraction	
Overview of Unit:	
<ul style="list-style-type: none"> a) Understand subtraction as an unknown-addend problem. b) Apply properties of operations as strategies to add and subtract 	

Learning Targets—Big Idea and Standards

Big Idea(s): Students use a variety of models, including discrete objects and length-based models to model add-to, take-from, put-together, take-apart, and compare situations to develop meaning for the operations of addition and subtraction.

Standard(s): 1.OA.3, 1.OA.4

- 1.OA.3. Apply properties of operations as strategies to add and subtract.² *Examples: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known. (Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$. (Associative property of addition.)*
- 1.OA.4. Understand subtraction as an unknown-addend problem. *For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8. Add and subtract within 20.*

Essential Questions

- How do the two operations relate to one another?
- What strategies can be used to solve for unknowns?

Enduring Understandings

- Computation involves taking apart and combining numbers using a variety of approaches.
- Flexible methods of computation involve grouping numbers in strategic ways.
- Proficiency with basic facts aids estimation and computation of larger and smaller numbers.
- Mathematical expressions represent relationships.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Number Cubes
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book
- Number line

Learning Plan:

Go Math! Series

- Chapter 1 Lessons 5, 6, & 8
- Chapter 3 Lessons 1, 10, & 11

- Chapter 4 Lessons 2 & 3
- Play “Under The Sea” (p.152)

Interdisciplinary Connections

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Resources: online resources and other RTI activities/procedures for differentiated learning
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Resources: online resources and other RTI activities/procedures for differentiated learning

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- Each lesson offers Advanced activities for Differentiated instruction

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music
Field Trips _____ Other _____

1st Grade Unit 3

Domain: Operations and Algebraic Thinking

Marking Period: 2

Lesson Title: Represent and solve problems involving addition and subtraction.

Overview of Unit:

- c) Relate counting to addition and subtraction.

Learning Targets—Big Idea and Standards

Big Idea(s): Basic computation facts of addition and subtraction with whole numbers.

Standard(s): 1.OA.1, 1.OA.2

- 1.OA.1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- 1.OA.2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Essential Questions

- What questions can be answered using addition and subtraction?
- What computation tools are best suited to which circumstances?

Enduring Understandings

- Computation involves taking apart and combining numbers using a variety of approaches.
- Flexible methods of computation involve grouping numbers in strategic ways.
- Proficiency with basic facts aids estimation and computation of larger and smaller numbers.
- Mathematical expressions represent relationships.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Number Cubes
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book
- Number line

Learning Plan:

Go Math! Series

- Chapter 1 Lessons 1-4, 7
- Chapter 2 Lessons 1-4, 8
- Chapter 3 Lesson 12
- Chapter 4 Lesson 6
- Chapter 5 Lessons 1 & 7
- Play “Subtraction Slide” (p.12)

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Resources: online resources and other RTI activities/procedures for differentiated learning

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- Each lesson offers Advanced activities for Differentiated instruction

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music
Field Trips _____ Other _____

1st Grade Unit 4

Domain: Operations and Algebraic Thinking

Marking Period: 2

Lesson Title: Work with addition and subtraction equations.

Overview of Unit: Understand the meaning of the equal sign. That is to say, the equal sign does not mean “the answer is”. Rather, it means one side of the equal sign balances the other.

Learning Targets—Big Idea and Standards

Big Idea(s): Students will understand that the equal does not mean the answer is. Students will be able to identify that the equal sign is there to balance out the equation.

Standard(s): 1.OA.7, 1.OA.8

- 1.OA.7. Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.
- 1.OA.8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = _ - 3$, $6 + 6 = _$.*

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • How is an equation like a balance scale? • How can relationships be expressed symbolically? • What strategies can be used to solve for unknowns? 	<ul style="list-style-type: none"> • Mathematical expressions represent relationships. • Number patterns and relationships can be represented using variables.
Evidence of Learning	
<p>Formative Assessment:</p> <p>Mid- Chapter Checkpoints</p>	

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Number Cubes
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book
- Number line

Learning Plan:

Go Math! Series

- Chapter 2 Lessons 5-7
- Chapter 5 Lessons 2-6, & 9
- Chapter 7 Lesson 3
- Chapter 8 Lessons 1 & 9
- Play “Add to Subtract Bingo” (p.184)

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary

<ul style="list-style-type: none"> ● Use of drawings, maps and graphs ● Engaging dialogue and discussion ● Assistance from ESL teacher in a small group setting ● Use of manipulatives ● Tools (rulers, measuring cups, etc.) ● Multi-leveled cooperative learning groups ● Resources: online Spanish resources and other RTI activities/procedures for differentiated learning. 	
<p>Accommodations for Special Education:</p> <ul style="list-style-type: none"> ● Frequent pauses for understanding and focus ● Develop an understanding of key vocabulary ● Use of drawings, maps and graphs ● Engaging dialogue and discussion ● Use of manipulatives ● Tools (rulers, measuring cups, etc.) ● Multi-leveled cooperative learning groups ● Assistance from Special Education teacher in a small group setting ● Resources: online resources and other RTI activities/procedures for differentiated learning. ● Refer to student IEP 	
<p>Accommodations for At-Risk Students:</p> <ul style="list-style-type: none"> ● Frequent pauses for understanding and focus ● Develop an understanding of key vocabulary ● Use of drawings, maps and graphs ● Engaging dialogue and discussion ● Use of manipulatives ● Tools (rulers, measuring cups, etc.) ● Multi-leveled cooperative learning groups ● Assistance from Special Education teacher in a small group setting ● Resources: online resources and other RTI activities/procedures for differentiated learning 	
<p>Accommodations for Enrichment (G&T):</p> <ul style="list-style-type: none"> ● Extension activities ● Independent practice in small groups ● Internet activities ● : Each lesson offers Advanced activities for Differentiated instruction 	
<p>Interdisciplinary Connections</p>	
<p>___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music</p> <p>Field Trips _____ Other _____</p>	

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1st Grade Unit 5	
Domain: Number and Operations in Base Ten	Marking Period: 2
Lesson Title: Extend the counting sequence	
Overview of Unit: Read and write numerals to 120.	
Learning Targets—Big Idea and Standards	
Big Idea(s): Students develop strategies for adding and subtracting whole numbers.	
Standard(s): 1.NBT.1	
<ul style="list-style-type: none">1.NBT.1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.	
Essential Questions	Enduring Understandings

- What do numbers convey?
- What are different ways to count?
- What are efficient ways to count?

- Counting finds out the answer to “how many” in objects/sets.
- Numbers can represent quantity, position, location and relationships.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Number Cubes
- Base Ten Blocks
- Online Resources
- Text and workbooks

- Standards Practice Book
- Number line

Learning Plan:

Go Math! Series

- Chapter 6 Lessons 1, 2, 9, &10
- Play “Show The Numbers” (p. 240)

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-levelled cooperative learning groups
- Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-levelled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-levelled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- : Each lesson offers Advanced activities for Differentiated instruction

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music
 Field Trips _____ Other _____

1st Grade Unit 6

Domain: Number and Operations in Base Ten

Marking Period: 3

Lesson Title: Understand place value.

Overview of Unit: Understand that the two digits of a two-digit number represent amounts of tens and ones.

Learning Targets—Big Idea and Standards

Big Idea(s): Students develop, discuss, and use efficient, and accurate methods to use whole numbers between 10 and 100 in terms of tens and ones

Standard(s): 1.NBT.2 a, b, & c, 1.NBT.3

- 1.NBT.2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
 - 10 can be thought of as a bundle of ten ones — called a “ten.”
 - The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
 - The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).
- 1.NBT.3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • How does the position of a digit in a number affect its value? • In what ways can numbers be composed and decomposed? • How are place value patterns repeated in numbers? • How can relationships be expressed symbolically? 	<ul style="list-style-type: none"> • Place value is based on groups of ten. • Mathematical expressions represent relationships.
<p>Evidence of Learning</p>	
<p>Formative Assessment:</p> <p>Mid- Chapter Checkpoints</p>	

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Number Cubes
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book
- Number line

Learning Plan:

Go Math! Series

- Chapter 6 Lessons 3-8
- Chapter 7 Lessons 1-4
- Play “Rainy Day Bingo” (p. 288)

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary

<ul style="list-style-type: none"> ● Use of drawings, maps and graphs ● Engaging dialogue and discussion ● Assistance from ESL teacher in a small group setting ● Use of manipulatives ● Tools (rulers, measuring cups, etc.) ● Multi-leveled cooperative learning groups ● Resources: online Spanish resources and other RTI activities/procedures for differentiated learning. 	
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<p>Accommodations for Special Education:</p> <ul style="list-style-type: none"> ● Frequent pauses for understanding and focus ● Develop an understanding of key vocabulary ● Use of drawings, maps and graphs ● Engaging dialogue and discussion ● Use of manipulatives ● Tools (rulers, measuring cups, etc.) ● Multi-leveled cooperative learning groups ● Assistance from Special Education teacher in a small group setting ● Resources: online resources and other RTI activities/procedures for differentiated learning. ● Refer to student IEP 	
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<p>Accommodations for At-Risk Students:</p> <ul style="list-style-type: none"> ● Frequent pauses for understanding and focus ● Develop an understanding of key vocabulary ● Use of drawings, maps and graphs ● Engaging dialogue and discussion ● Use of manipulatives ● Tools (rulers, measuring cups, etc.) ● Multi-leveled cooperative learning groups ● Assistance from Special Education teacher in a small group setting ● Resources: online resources and other RTI activities/procedures for differentiated learning 	
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<p>Accommodations for Enrichment (G&T):</p> <ul style="list-style-type: none"> ● Extension activities ● Independent practice in small groups ● Internet activities ● : Each lesson offers Advanced activities for Differentiated instruction 	
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<p>Interdisciplinary Connections</p>

<p>___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music</p> <p>Field Trips _____ Other _____</p>
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1st Grade Unit 7

Domain: Number and Operations in Base Ten

Marking Period: 3

Lesson Title: Use place value understanding and properties of operations to add and subtract.

Overview of Unit:

- a) Add two-digit and one-digit numbers within 100.
- b) Subtract multiples of 10 in the range 10-90.

Learning Targets—Big Idea and Standards

Big Idea(s): Students recognize that each digit in a number is given a place value. Students develop, discuss, and use efficient, and accurate methods to add within 100 and subtract multiples of 10.

Standard(s): 1.NBT.4, 1.NBT.5, 1. NBT.6

- 1.NBT.4. Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models (e.g., base ten blocks) or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.
- 1.NBT.5. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

- 1.NBT.6. Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • How does the position of a digit in a number affect its value? • How are place value patterns repeated in numbers? • How can place value properties aid computation? • What are different models of and models for addition and subtraction? • What are effective methods for finding sums and differences? • How do the four operations relate to one another? • What is the repeating and/or increasing unit in the pattern? • How does finding patterns help in counting and/or computation? 	<ul style="list-style-type: none"> • Place value is based on groups of ten. • Computation involves taking apart and combining numbers using a variety of approaches. • Flexible methods of computation involve grouping numbers in strategic ways. • Proficiency with basic facts aids estimation and computation of larger and smaller numbers. • Patterns can grow and repeat. • Patterns can be generalized.
Evidence of Learning	
<p>Formative Assessment:</p> <p>Mid- Chapter Checkpoints</p> <p>Summative Assessment:</p> <p>Chapter Review/Tests</p> <p>Chapter Tests</p> <p>Differentiation/Customizing Learning (strategies):</p>	

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Number Cubes
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book
- Number line

Learning Plan:

Go Math! Series

- Chapter 7 Lesson 5
- Chapter 8 Lessons 2-9
- Play “Neighborhood Sums” (p. 316)

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Resources: online Spanish resources and other RTI activities/procedures for differentiated

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives

- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Resources: online resources and other RTI activities/procedures for differentiated learning

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- : Each lesson offers Advanced activities for Differentiated instruction

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

1st Grade Unit 7

Domain: Number and Operations in Base Ten

Marking Period: 3

<p>Lesson Title: Use place value understanding and properties of operations to add and subtract.</p>	
<p>Overview of Unit:</p> <p>a) Add two-digit and one-digit numbers within 100. b) Subtract multiples of 10 in the range 10-90.</p>	
<p>Learning Targets—Big Idea and Standards</p>	
<p>Big Idea(s): Students recognize that each digit in a number is given a place value. Students develop, discuss, and use efficient, and accurate methods to add within 100 and subtract multiples of 10.</p> <p>Standard(s): 1.NBT.4, 1.NBT.5, 1. NBT.6</p> <ul style="list-style-type: none"> • 1.NBT.4. Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models (e.g., base ten blocks) or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. • 1.NBT.5. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. • 1.NBT.6. Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. 	
<p>Essential Questions</p>	<p>Enduring Understandings</p>
<ul style="list-style-type: none"> • How does the position of a digit in a 	<ul style="list-style-type: none"> • Place value is based on groups of ten.

number affect its value?

- How are place value patterns repeated in numbers?
- How can place value properties aid computation?
- What are different models of and models for addition and subtraction?
- What are effective methods for finding sums and differences?
- How to the four operations relate to one another?
- What is the repeating and/or increasing unit in the pattern?
- How does finding patterns help in counting and/or computation?

- Computation involves taking apart and combining numbers using a variety of approaches.
- Flexible methods of computation involve grouping numbers in strategic ways.
- Proficiency with basic facts aids estimation and computation of larger and smaller numbers.
- Patterns can grow and repeat.
- Patterns can be generalized.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Number Cubes
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book
- Number line

Learning Plan:*Go Math! Series*

- Chapter 7 Lesson 5
- Chapter 8 Lessons 2-9
- Play “Neighborhood Sums” (p. 316)

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Resources: online Spanish resources and other RTI activities/procedures for differentiated learning

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Resources: online resources and other RTI activities/procedures for differentiated learning
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting

- Resources: online resources and other RTI activities/procedures for differentiated learning

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- Each lesson offers Advanced activities for Differentiated instruction

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

1st Grade Unit 9

Domain: Measurement and Data

Marking Period: 4

Lesson Title: Tell and write time

Overview of Unit: To the hour and half hour using analog and digital clocks.

Learning Targets—Big Idea and Standards

Big Idea(s): Students recognize the need for telling time as it is an important life skill.

Standard(s): 1.MD.3

- 1.MD.3. Tell and write time in hours and half-hours using analog and digital clocks.

Essential Questions

- What are tools of measurement and how are they used?
- How are analog and digital clocks used to tell time?

Enduring Understandings

- Telling time with an analog and digital is an important life skill.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Clock
- Tape Measure/Ruler
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 9 Lessons 6-9

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups

- Assistance from Special Education teacher in a small group setting
- Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Resources: online resources and other RTI activities/procedures for differentiated learning

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- : Each lesson offers Advanced activities for Differentiated instruction

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology
 ___ Music

Field Trips _____

Other _____

1st Grade Unit 10

Domain: Measurement and Data

Marking Period: 4

Lesson Title: Represent and Interpret data

Overview of Unit: Answer questions about the total number of data points, how many in each category, and how many more or less in one category than in the other.

Learning Targets—Big Idea and Standards

Big Idea(s): Some questions can be answered by collecting, representing, and analyzing data, and the question to be answered determines the data to be collected, how best to collect it, and how best to represent it.

Standard(s): 1.MD.4

- 1.MD.4. Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Essential Questions

- How can information be gathered, recorded, and organized?
- What kinds of questions can and cannot be answered from a graph?
- What aspects of a graph help people understand and interpret the data easily?

Enduring Understandings

- Graphs convey data in a concise way.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Graph and Chart Examples
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 10
- Play “Graph Game” (p.412)

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary

- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Resources: online resources and other RTI activities/procedures for differentiated learning

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- : Each lesson offers Advanced activities for Differentiated instruction

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

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1st Grade Unit 11

Domain: Geometry

Marking Period: 4

Lesson Title: Reason with shapes and their attributes

- Overview of Unit:**
- a) Build and design shapes by color, orientation, and overall size.
 - b) Compose two dimensional shapes (rectangles, squares, triangles, trapezoids, half circles, and quarter circles).
 - c) Partition circles and rectangles into two and four equal shares.

Learning Targets—Big Idea and Standards

Big Idea(s): Students compose plane or solid figures and build understanding of part-whole relationships as well as the properties of the original and composite shapes.

Standard(s): 1.G.1, 1.G.2, 1.G.3

- 1.G.1. Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size) ; build and draw shapes to possess defining attributes.
- 1.G.2. Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.1

- 1.G.3. Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • In what ways can items be grouped? • How can fractions be modeled, compared and ordered? • How are common fractions alike and different? • How can plain and solid shapes be described? • How are geometric figures constructed? 	<ul style="list-style-type: none"> • Shapes can be grouped according to their attributes. • Fractions represent part of a whole. • Objects can be described and compared using their geometric attributes.
Evidence of Learning	
<p>Formative Assessment:</p> <p>Mid- Chapter Checkpoints</p> <p>Summative Assessment:</p> <p>Chapter Review/Tests</p> <p>Chapter Tests</p> <p>Differentiation/Customizing Learning (strategies):</p> <ul style="list-style-type: none"> • Work with teacher in small group using intervention activities • Use grab-and-go centers • Use different manipulatives to model problems 	

Materials and Learning Plan

Materials:

- Blocks and Shapes
- 3-D Models and Shapes
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 11 & Chapter 12
- Play “Shape Match Bingo” (p.456)
- Play “Rocket Shapes” (p.484)

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Resources: online Spanish resources and other RTI activities/procedures for differentiated learning

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Resources: online resources and other RTI activities/procedures for differentiated learning
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs

- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Resources: online resources and other RTI activities/procedures for differentiated learning

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- : Each lesson offers Advanced activities for Differentiated instruction

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ **Other** _____

Mathematics » Grade 2 » Introduction

In Grade 2, instructional time should focus on four critical areas: (1) extending understanding of base-ten notation; (2) building fluency with addition and subtraction; (3) using standard units of measure; and (4) describing and analyzing shapes.

- 1. Students extend their understanding of the base-ten system. This includes ideas of counting in fives, tens, and multiples of hundreds, tens, and ones, as well as number relationships involving these units, including comparing. Students understand multi-digit numbers (up to 1000) written in base-ten notation, recognizing that the digits in each place represent amounts of thousands, hundreds, tens, or ones (e.g., 853 is 8 hundreds + 5 tens + 3 ones).
- 2. Students use their understanding of addition to develop fluency with addition and subtraction within 100. They solve problems within 1000 by applying their understanding of models for addition and subtraction, and they develop, discuss, and use efficient, accurate, and generalizable methods to compute sums and differences of whole numbers in base-ten notation, using their understanding of place value and the properties of operations. They select and accurately apply methods that are appropriate for the context and the numbers involved to mentally calculate sums and differences for numbers with only tens or only hundreds.
- 3. Students recognize the need for standard units of measure (centimeter and inch) and they use rulers and other measurement tools with the understanding that linear measure involves an iteration of units. They recognize that the smaller the unit, the more iterations they need to cover a given length.
- 4. Students describe and analyze shapes by examining their sides and angles. Students investigate, describe, and reason about decomposing and combining shapes to make other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.

Grade 2 Overview

• Operations and Algebraic Thinking

- Represent and solve problems involving addition and subtraction.
- Add and subtract within 20.
- Work with equal groups of objects to gain foundations for multiplication.

• Number and Operations in Base Ten

- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

• Measurement and Data

- Measure and estimate lengths in standard units.

- Relate addition and subtraction to length.
- Work with time and money.
- Represent and interpret data.

- **Geometry**

- Reason with shapes and their attributes.

- **Mathematical Practices**

1. 1. Make sense of problems and persevere in solving them.
2. 2. Reason abstractly and quantitatively.
3. 3. Construct viable arguments and critique the reasoning of others.
4. 4. Model with mathematics.
5. 5. Use appropriate tools strategically.
6. 6. Attend to precision.
7. 7. Look for and make use of structure.
8. 8. Look for and express regularity in repeated reasoning.

Grade 2 Scope and Sequence

Ongoing Reinforcement/Enrichment

- Tell and write time from the nearest hour to the nearest 5 minutes
- Identify and count various mixed coins and currency
- Place value tens and ones
- Decipher graphs, bar graphs, tally graphs, pictographs

First Marking Period

Unit 1: Add and subtract within 20: (2.OA.1.2)

2. Fluently add and subtract within 20 using mental strategies.² By end of Grade 2, know from memory all sums of two one-digit numbers.

Unit 2: Understand place value: (2.NBT.2), (2.NBT.4)

2. Count within 1000; skip-count by 5s, 10s, and 100s

4. Compare two-digit numbers based on meanings of tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.

Unit 3: Use place value understanding and properties of operations to add and subtract: (2.NBT.8)

8. Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.

Unit 4: Relate addition and subtraction to length: (2.MD.6)

6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.

Unit 5: Represent and solve problems involving addition and subtraction: (2.OA.1)

1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

Unit 6: Work with time and money: (2.MD.8)

8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?

Second Marking Period

Unit 7: Understand place value: (2.NBT.1)

1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:

- 100 can be thought of as a bundle of ten tens — called a “hundred.”
- The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).

Unit 8: Use place value understanding and properties of operations to add and subtract: (2.NBT.5), (2.NBT.6), (2.NBT.9)

5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
6. Add up to four two-digit numbers using strategies based on place value and properties of operations.
9. Explain why addition and subtraction strategies work, using place value and the properties of operations.

Unit 9: Reason with shapes and their attributes: (2.G.1), (2.G.2), (2.G.3)

1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.¹ Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
2. Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.
3. Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

Unit 10: Work with equal groups of objects to gain foundations for multiplication: (2.OA.3)

3. Determine whether a group of objects (up to 20) has an odd and even number of members, e.g. by pairing objects or counting them by 2’s; write an equation to express an even number as a sum of two equal addends.

Third Marking Period

Unit 11: Work with equal groups of objects to gain foundations for multiplication: (2.OA.4)

4. Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

Unit 12: Work with time and money: (2.MD.7)

7. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.

Unit 13: Measure and estimate lengths in standard units: (2.MD.1), (2.MD.2), (2.MD.3), (2.MD.4)

1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
2. Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.
3. Estimate lengths using units of inches, feet, centimeters, and meters.
4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Unit 14: Relate addition and subtraction to length: (2.MD.5)

5. Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.

Fourth Marking Period

Unit 15: Represent and interpret data: (2.MD.9)

9. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.

Unit 16: Represent and interpret data: (2.MD.10)

10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems¹ using information presented in a bar graph.

Unit 17: Understand place value: (2.NBT.3), (2.NBT.4)

3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded forms

4. Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.

Unit 18: Use place value understanding and properties of operations to add and subtract: (2.NBT.7)

7. Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

Unit 19: Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects: (3.MD.2)

2. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).

2nd Grade Unit 1

Domain: Operations & Algebraic Thinking

Marking Period: 1

Lesson Title: Add and subtract within 20

Overview of Unit: To fluently add & subtract within 20 using mental math

Learning Targets—Big Idea and Standards

Big Idea(s): Students will know from memory all sums of two 1 digit numbers.

Standard(s): 2.OA.2

- 2.OA.2. Fluently add and subtract within 20 using mental strategies.2 By end of Grade 2, know from memory all sums of two one-digit numbers.

Essential Questions

- What are different models of and models for addition and subtraction?
- What questions can be answered using addition and or subtraction?
- What are efficient methods for finding sums and differences?

Enduring Understandings

- Computation involves taking apart and combining numbers using a variety of approaches.
- Flexible methods of computation involve grouping numbers in strategic ways.
- Proficiency with basic facts aids estimation

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

- Accommodations for ELL:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Assistance from ESL teacher in a small group setting
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Special Education:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

- Accommodations for At-Risk Students:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Enrichment (G &T):
 - Extension activities
 - Independent practice in small groups
 - Internet activities
 - Envision 2.0: Each lesson offers Advanced activities for Differentiated instruction

Materials and Learning Plan

Materials:

- Number Line
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 3 Lessons 1-7
- Play “Caterpillar Chase” (p.120)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

2nd Grade Unit 2

Domain: Number and Operations in Base Ten

Marking Period: 1

Lesson Title: Understand place value

Overview of Unit: Compare two digit numbers and skip count by 5's, 10's, & 100's within 1000

Learning Targets—Big Idea and Standards

Big Idea(s): Students will compare two digit numbers and skip count within 100 by 5s and 10s in preparation for three digit numbers and counting to 1000.

Standard(s): 2.NBT.2 & 2.NBT.4

- 2.NBT.2. Count within 1000; skip-count by 5s, 10s, and 100s.
- 2.NBT.4. Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.

Essential Questions

Enduring Understandings

- How does the position of a digit in a number affect its value?
- What are different ways to count?
- How can numbers be expressed, ordered, and compared?

- Numbers can represent quantity, position, location, and relationships.
- Counting finds out the answer to “how many” in objects/sets.
- Place value is based on groups of ten.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems.
- Accommodations for ELL:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion

- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Special Education:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP
- Accommodations for At-Risk Students:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Enrichment (G &T):
 - Extension activities
 - Independent practice in small groups
 - Internet activities
 - Envision 2.0: Each lesson offers Advanced activities for Differentiated instruction

Materials and Learning Plan

Materials:

- Number Line
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 1 Lessons 8 & 9
- Chapter 2 Lessons 11 & 12
- Play “Fish For Digits” (p.56)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ **Other** _____

2nd Grade Unit 3

Domain: Number and Operations in Base Ten

Marking Period: 1

Lesson Title: Use place value understanding and properties of operations to add and subtract

Overview of Unit: To mentally add or subtract 10 or 100 to a given number within 1000.

Learning Targets—Big Idea and Standards

Big Idea(s): Students will select and accurately apply methods that are appropriate for the context and the numbers involved to mentally calculate sums and differences for numbers with only tens or only hundreds.

Standard(s): 2.NBT.8

- 2.NBT.8. Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.

Essential Questions

- How does the position of a digit in a number affect its value?
- How are place value patterns repeated in numbers?

Enduring Understandings

- Place value is based on groups of ten

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems.

- Accommodations for ELL:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Assistance from ESL teacher in a small group setting
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Special Education:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP
- Accommodations for At-Risk Students:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Enrichment (G &T):

- Extension activities
- Independent practice in small groups
- Internet activities
- Envision 2.0: Each lesson offers Advanced activities for Differentiated instruction

Materials and Learning Plan

Materials:

- Number Line
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 2 Lessons 9 & 10
- Play “Fish For Digits” (p.56)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

2nd Grade Unit 4

Domain: Measurement and Data

Marking Period: 1

Lesson Title: Relate Addition and Subtraction to Length

Overview of Unit: To use a number line to represent whole numbers and their sums and differences.

Learning Targets—Big Idea and Standards

Big Idea(s): Students will represent whole numbers on a number line and use a number line in computations when applicable.

Standard(s): 2.MD.6

- 2.MD.6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.

Essential Questions

- What computation tools are best suited to which circumstances?
- What are different models of and models

Enduring Understandings

- Computation involves taking apart and combining numbers using a variety of approaches.

for addition and subtraction?

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems.

Materials and Learning Plan

Materials:

- Number Line
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 8 Lesson 5
- Chapter 9 Lesson 4
- Play “Estimating Length” (p.492)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

2nd Grade Unit 5

Domain: Operations & Algebraic Thinking

Marking Period: 1

Lesson Title: Represent and solve problems involving addition and subtraction

Overview of Unit: Use addition and subtraction within 100 to solve one and two step word problems using drawing and equations with a symbol for the unknown number.

Learning Targets—Big Idea and Standards

Big Idea(s): Students use their understanding of addition to develop fluency with addition and subtraction within 100 and they develop, discuss, and use efficient, accurate, and generalizable methods to compute sums and differences of whole numbers in base-ten notation, using their understanding of place value and the properties of operations.

Standard(s): 2.OA.1

- 2.OA.1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

Essential Questions

Enduring Understandings

- What questions can be answered using addition and or subtraction?
- What strategies can be used to solve for unknowns?
- What information and strategy would you use to solve a multi-step word problem?

- Mathematical expressions represent relationships
- Computation involves taking apart and combining numbers using a variety of approaches.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
 - Use grab-and-go centers
 - Use different manipulatives to model problems.
-
- Accommodations for ELL:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Assistance from ESL teacher in a small group setting
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.
 - Accommodations for Special Education:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting

- Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.

- Refer to student IEP

- Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus

- Develop an understanding of key vocabulary

- Use of drawings, maps and graphs

- Engaging dialogue and discussion

- Use of manipulatives

- Tools (rulers, measuring cups, etc.)

- Multi-leveled cooperative learning groups

- Assistance from Special Education teacher in a small group setting

- Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.

- Accommodations for Enrichment (G &T):

- Extension activities

- Independent practice in small groups

- Internet activities

- Envision 2.0: Each lesson offers Advanced activities for Differentiated instruction

Materials and Learning Plan

Materials:

- Number Line
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 3 Lessons 8 & 9
- Chapter 4 Lessons 9 & 10
- Chapter 5 Lessons 9 - 11
- Play “What is The Sum” (p.172)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ **Other** _____

2nd Grade Unit 6

Domain: Measurement and Data

Marking Period: 1

Lesson Title: Work with Money

Overview of Unit: Use addition and subtraction within 100 to solve one and two step word problems using drawing and equations with a symbol for the unknown number.

Learning Targets—Big Idea and Standards

Big Idea(s): Students understand coins and their values. They will solve word problems involving money using \$ and cent sign appropriately.

Standard(s): 2.MD.8

- 2.MD.8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?

Essential Questions

Enduring Understandings

- How can I represent the same amount of money using different combinations of coins and bills?
- How can I model and solve problems by representing, adding and subtracting amounts of money?
- How can I represent various amount of money using decimal notation and the symbols for cents and dollars?
- How many different ways can I make a specific amount of money using various denominations of coins and bills?

- Proficiency with coins and their values and their ways to combine them.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
 - Use grab-and-go centers
 - Use different manipulatives to model problems.
-
- Accommodations for ELL:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Assistance from ESL teacher in a small group setting
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.
 - Accommodations for Special Education:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
 - Refer to student IEP
 - Accommodations for At-Risk Students:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion

- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Enrichment (G &T):
 - Extension activities
 - Independent practice in small groups
 - Internet activities
- Envision 2.0: Each lesson offers Advanced activities for Differentiated instruction

Materials and Learning Plan

Materials:

- Play Money
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 7 Lessons 1 - 7
- Play “What is The Sum” (p.172)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

2nd Grade Unit 7

Domain: Number and Operations in Base Ten

Marking Period: 2

Lesson Title: Understand place value

Overview of Unit: Use addition and subtraction within 100 to solve one and two step word problems using drawing and equations with a symbol for the unknown number.

Learning Targets—Big Idea and Standards

Big Idea(s): Students understand multi-digit numbers (up to 1000) written in base-ten notation, recognizing that the digits in each place represent amounts of thousands, hundreds, tens, or ones (e.g., 853 is 8 hundreds + 5 tens + 3 ones).

Standard(s): 2.NBT.1

- 2.NBT.1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:
 - 100 can be thought of as a bundle of ten tens — called a “hundred.”
 - The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four,

five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).

Essential Questions

- In what ways can items be grouped?
- How does the position of a digit in a number affect its value?
- In what ways can numbers be composed and decomposed?
- How are place value patterns repeated in numbers?

Enduring Understandings

- Grouping is a way to count, measure, and estimate.
- Place value is based on groups of ten.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
 - Use grab-and-go centers
 - Use different manipulatives to model problems.
-
- Accommodations for ELL:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs

- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Special Education:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP
- Accommodations for At-Risk Students:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Enrichment (G &T):
 - Extension activities
 - Independent practice in small groups
 - Internet activities
 - Envision 2.0: Each lesson offers Advanced activities for Differentiated instruction

Materials and Learning Plan

Materials:

- Number Line
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 2 Lessons 1-5
- Play “Fish For Digits” (p.52)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

2nd Grade Unit 8

Domain: Number and Operations in Base Ten

Marking Period: 2

Lesson Title: Use place value understanding and properties of operations to add and subtract.

Overview of Unit: Use addition and subtraction within 100 to solve one and two step word problems using drawing and equations with a symbol for the unknown number.

Learning Targets—Big Idea and Standards

Big Idea(s): Students use their understanding of addition to develop fluency with addition and subtraction within 100. Students extend their understanding of the base-ten system. This includes number relationships involving these units and their place value.

Standard(s): 2.NBT.5, 2.NBT.6, 2.NBT.9

- 2.NBT.5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
- 2.NBT.6. Add up to four two-digit numbers using strategies based on place value and properties of operations.
- 2.NBT.9 Explain why addition and subtraction strategies work, using place value and the properties of operations.

Essential Questions

- How do number properties assist in computation?
- How do I demonstrate the relationship between numbers, quantities and place value for whole numbers up to 1,000.
- How does understanding place value help you solve double digit addition and subtraction problems?

Enduring Understandings

- Computation involves taking apart and combining numbers using a variety of approaches
- Place value is based on groups of 10.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems.

• Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

• Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.

• Refer to student IEP

• Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion

- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Enrichment (G &T):
 - Extension activities
 - Independent practice in small groups
 - Internet activities
- Envision 2.0: Each lesson offers Advanced activities for Differentiated instruction

Materials and Learning Plan

Materials:

- Number Line
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 4
- Chapter 5
- Play “What is the Sum” (p.172)
- Play “Subtraction Search” (p.228)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

2nd Grade Unit 9

Domain: Geometry

Marking Period: 2

Lesson Title: Reason with shapes and their attributes.

Overview of Unit: Recognize and draw shapes and partition them into equal shares.

Learning Targets—Big Idea and Standards

Big Idea(s): Students describe and analyze shapes by examining their sides and angles. Students investigate, describe, and reason about decomposing and combining shapes to make other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, fractions and symmetry in later grades.

Standard(s): 2.G.1, 2.G.2, 2.G.3

- 2.G.1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.1 Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
- 2.G.2. Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.
- 2.G.3. Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

Essential Questions

Enduring Understandings

- How can plane and solid shapes be described?
- What strategies can be used to verify symmetry and congruency?
- How do I identify and record the fraction of a whole or group?
- How do I make an array?

- Objects can be described and compared using their geometric attributes.
- Fractions are equal parts of a whole.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities

- Use grab-and-go centers
- Use different manipulatives to model problems.

- Accommodations for ELL:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Assistance from ESL teacher in a small group setting
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

- Accommodations for Special Education:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.

- Refer to student IEP
- Accommodations for At-Risk Students:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.

- Accommodations for Enrichment (G &T):
 - Extension activities
 - Independent practice in small groups
 - Internet activities
 - Envision 2.0: Each lesson offers Advanced activities for Differentiated instruction

Materials and Learning Plan

Materials:

- 3-D & 2-D Shapes
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 11
- Play “Count The Sides” (p.508)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

2nd Grade Unit 10

Domain: Operations and Algebraic Thinking

Marking Period: 2

Lesson Title: Work with equal groups of objects to gain foundations for multiplication

Overview of Unit: To determine whether a group of objects is an odd or even number by pairing and counting by 2's.

Learning Targets—Big Idea and Standards

Big Idea(s): Students use skip counting to understand odd and even numbers. They relate skip counting to a foundation of multiplication.

Standard(s): 2.OA.3

- 2.OA.3. Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.

Essential Questions

- In what ways can items be grouped?
- How can I relate what I know about skip counting to help me learn the multiples of 2?
- What are properties of whole numbers?

Enduring Understandings

- Understanding odd and even numbers
- Grouping is a way to count
- Skip counting is a foundation of multiplication

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
 - Use grab-and-go centers
 - Use different manipulatives to model problems.
-
- Accommodations for ELL:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Assistance from ESL teacher in a small group setting
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.
 - Accommodations for Special Education:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
 - Refer to student IEP
 - Accommodations for At-Risk Students:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)

- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Enrichment (G &T):
 - Extension activities
 - Independent practice in small groups
 - Internet activities
- Envision 2.0: Each lesson offers Advanced activities for Differentiated instruction

Materials and Learning Plan

Materials:

- Number Line
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 1 Lessons 1 & 2

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

2nd Grade Unit 11

Domain: Operations and Algebraic Thinking

Marking Period: 3

Lesson Title: Work with equal groups of objects to gain foundations for multiplication

Overview of Unit: To arrange objects in rectangular arrays and write an equation to express the total.

Learning Targets—Big Idea and Standards

Big Idea(s): Students use addition in arranged arrays to formulate their foundation for multiplication.

Standard(s): 2.OA.4

- 2.OA.4. Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

Essential Questions

Enduring Understandings

<ul style="list-style-type: none"> • How can I relate what I know about skip counting to help me learn the multiples of 2, 5, 10? • How are repeated addition and multiplication related? • What are different models of and models for multiplication? 	<ul style="list-style-type: none"> • Skip counting arrays and repeated addition are the foundations of multiplication • Arrays may be represented in various ways to produce similar outcomes

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems.

- Accommodations for ELL:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Assistance from ESL teacher in a small group setting
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)

- Multi-leveled cooperative learning groups
- Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Special Education:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP
- Accommodations for At-Risk Students:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Enrichment (G &T):
 - Extension activities
 - Independent practice in small groups
 - Internet activities
 - Envision 2.0: Each lesson offers Advanced activities for Differentiated instruction

Materials and Learning Plan

Materials:

- Number Line
- Base Ten Blocks
- Online Resources

- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 3 Lessons 10 & 11

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

2nd Grade Unit 12

Domain: Measurement and Data

Marking Period: 3

Lesson Title: Work with Time

Overview of Unit: To tell and write time from analog and digital clocks to the nearest five minutes.

Learning Targets—Big Idea and Standards

Big Idea(s): Students will tell and write time from analog and digital clocks to the nearest five minutes.

Standard(s): 2.MD.7

- 2.MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.

Essential Questions

- What tools and units are used to measure the attributes of time?
- How can I tell time using both digital and clock faces?
- How do I determine the duration of time intervals?
- How do I determine how much time has passed between events?

Enduring Understandings

- Proficient use of analog and digital clocks to tell time and interval of time.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
 - Use grab-and-go centers
 - Use different manipulatives to model problems.
-
- Accommodations for ELL:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Assistance from ESL teacher in a small group setting
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.
 - Accommodations for Special Education:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
 - Refer to student IEP
 - Accommodations for At-Risk Students:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
 - Accommodations for Enrichment (G &T):
 - Extension activities
 - Independent practice in small groups
 - Internet activities
 - Envision 2.0: Each lesson offers Advanced activities for Differentiated instruction

Materials and Learning Plan

Materials:

- Class Clock
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 7 Lessons 8 - 11

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

2nd Grade Unit 13

<p>Domain: Measurement and Data</p>	<p>Marking Period: 3</p>
<p>Lesson Title: Measure and estimate lengths in standard units</p>	
<p>Overview of Unit: Estimate and measure the length of an object by selecting appropriate tools and determine of much longer one object is that another.</p>	
<p>Learning Targets—Big Idea and Standards</p>	
<p>Big Idea(s): Students recognize the need for standard units of measure (centimeter and inch) and they use rulers and other measurement tools with the understanding that linear measure involves an iteration of units.</p> <p>Standard(s): 2.MD.1 - 4</p> <ul style="list-style-type: none"> • 2.MD.1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. • 2.MD.2. Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen. • 2.MD.3. Estimate lengths using units of inches, feet, centimeters, and meters. • 2.MD.4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. 	
<p>Essential Questions</p>	<p>Enduring Understandings</p>
<ul style="list-style-type: none"> • What are tools of measurement and how are they used? 	<ul style="list-style-type: none"> • Proficient use of appropriate tools to

- How do I measure accurately to the nearest inch or centimeter?
- How do I estimate and measure?
- How are units of measure within a standard system related?

- estimate and measure accurately
- Understand the relationship of the units within a standard measurement system

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems.

- Accommodations for ELL:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Assistance from ESL teacher in a small group setting
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Special Education:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs

- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP
- Accommodations for At-Risk Students:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Enrichment (G &T):
 - Extension activities
 - Independent practice in small groups
 - Internet activities
 - Envision 2.0: Each lesson offers Advanced activities for Differentiated instruction

Materials and Learning Plan

Materials:

- Ruler
- Tape Measure
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 8 Lessons 1 – 4 & 6 – 8
- Chapter 9 Lessons 1 – 3 & 5 – 7
- Play “Longer or Shorter” (p.388)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

2nd Grade Unit 14

Domain: Measurement and Data

Marking Period: 3

Lesson Title: Relate addition and subtraction to length

Overview of Unit: Use addition and subtraction within 100 to solve word problems involving lengths.

Learning Targets—Big Idea and Standards

Big Idea(s): Students recognize the need for standard units of measure (centimeter and inch) and they use rulers and other measurement tools with the understanding that linear measure involves an iteration of units. They use their knowledge of addition and subtraction along with measurement to solve word problems.

Standard(s): 2.MD.5

- 2.MD.5. Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.

Essential Questions

- How do I measure accurately to the nearest inch or centimeter?
- How do I compare or combine two lengths?

Enduring Understandings

- Addition and subtraction can be used to compare or combine two lengths
- Proficient use of appropriate tools to measure accurately

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
 - Use grab-and-go centers
 - Use different manipulatives to model problems.
-
- Accommodations for ELL:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Assistance from ESL teacher in a small group setting
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.
 - Accommodations for Special Education:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
 - Refer to student IEP
 - Accommodations for At-Risk Students:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
 - Accommodations for Enrichment (G &T):
 - Extension activities

- Independent practice in small groups
- Internet activities
- Envision 2.0: Each lesson offers Advanced activities for Differentiated instruction

Materials and Learning Plan

Materials:

- Ruler
- Tape Measure
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 8 Lesson 5
- Chapter 9 Lesson 4
- Play “Longer or Shorter” (p.388)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

2nd Grade Unit 15

Marking Period: 4

Lesson Title: Represent and interpret data

Overview of Unit: Gather record and organize data using measurement

Learning Targets—Big Idea and Standards

Big Idea(s): Students will gather, record and organize data using measurement and represent information in a line graph.

Standard(s): 2.MD.9

- 2.MD.9. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.

Enduring Understandings	Essential Questions
<ul style="list-style-type: none"> Measurement can be used to collect data and that data can be analyzed and displayed on line plot 	<ul style="list-style-type: none"> How can information be gathered, recorded, and organized? What data display is appropriate for a given set of data? How do you interpret the data you have collected?
Evidence of Learning	
Materials and Learning Plan	
<p>Materials:</p> <ul style="list-style-type: none"> Charts and Graphs Online Resources Text and workbooks Standards Practice Book <p>Learning Plan:</p> <p><i>Go Math! Series</i></p> <ul style="list-style-type: none"> Chapter 8 Lesson 9 Make Line Plot Graph 	
Interdisciplinary Connections	
<p>___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music</p>	

Field Trips _____

Other _____

2nd Grade Unit 16

Domain: Measurement and Data

Marking Period: 4

Lesson Title: Represent and interpret data

Overview of Unit: Create a picture graph and a bar graph to represent data

Learning Targets—Big Idea and Standards

Big Idea(s): Students will gather, record and organize data using measurement using graphs to represent their data; including bar graph, pictograph etc.

Standard(s): 2.MD.10

- 2.MD.10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems¹ using information presented in a bar graph.

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • How can information be gathered, recorded, and organized? • How does the type of data influence the choice of display? • What kinds of questions can and cannot be answered from a graph? • How does the type of data influence the choice of graph? 	<ul style="list-style-type: none"> • Graphs convey data in a concise way • Data can be displayed by various graphs
Evidence of Learning	
<p>Formative Assessment:</p> <p>Mid- Chapter Checkpoints</p> <p>Summative Assessment:</p> <p>Chapter Review/Tests</p> <p>Chapter Tests</p> <p>Differentiation/Customizing Learning (strategies):</p> <ul style="list-style-type: none"> • Work with teacher in small group using intervention activities • Use grab-and-go centers • Use different manipulatives to model problems. <ul style="list-style-type: none"> • Accommodations for ELL: <ul style="list-style-type: none"> • Frequent pauses for understanding and focus • Develop an understanding of key vocabulary • Use of drawings, maps and graphs 	

- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Special Education:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP
- Accommodations for At-Risk Students:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups

- Assistance from Special Education teacher in a small group setting
- Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Enrichment (G &T):
- Extension activities
- Independent practice in small groups
- Internet activities
- Envision 2.0: Each lesson offers Advanced activities for Differentiated instruction

Materials and Learning Plan

Materials:

- Charts and Graphs
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 10
- Play “Making Tens” (P.468)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

2nd Grade Unit 17

Marking Period: 4

Lesson Title: Understand Place Value

Overview of Unit: Read, write, and compare three digit numbers to 1,000

Learning Targets—Big Idea and Standards

Big Idea(s): Students extend their understanding of the base-ten system, including comparing. Students understand multi-digit numbers (up to 1000) written in base-ten notation, recognizing that the digits in each place represent amounts of thousands, hundreds, tens, or ones (e.g., 853 is 8 hundreds + 5 tens + 3 ones).

Standard(s): 2.NBT.3 & 2. NBT.4

- 2.NBT.3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
- 2.NBT.4. Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.

Enduring Understandings	Essential Questions
<ul style="list-style-type: none"> • Numbers can represent quantity, position, location, and relationships. • Place value is based on groups of ten 	<ul style="list-style-type: none"> • How can numbers be expressed, ordered, and compared? • In what ways can numbers be composed and decomposed? • How are place value patterns repeated in large numbers?
Evidence of Learning	
<p>Formative Assessment:</p> <p>Mid- Chapter Checkpoints</p> <p>Summative Assessment:</p> <p>Chapter Review/Tests</p> <p>Chapter Tests</p> <p>Differentiation/Customizing Learning (strategies):</p> <ul style="list-style-type: none"> • Work with teacher in small group using intervention activities • Use grab-and-go centers • Use different manipulatives to model problems. <ul style="list-style-type: none"> • Accommodations for ELL: • Frequent pauses for understanding and focus • Develop an understanding of key vocabulary 	

- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Special Education:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP
- Accommodations for At-Risk Students:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Enrichment (G &T):
 - Extension activities
 - Independent practice in small groups
 - Internet activities
 - Envision 2.0: Each lesson offers Advanced activities for Differentiated instruction

Materials and Learning Plan

Materials:

- Base Ten Blocks
- Number Line
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 1 Lessons 4 – 7
- Chapter 2 Lessons 4, 6, 7, 8, 11, & 12
- Play “Three In A Row” (P.12)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____

Other _____

Marking Period: 4

Lesson Title: Use place value understanding and properties of operations to add and subtract

Overview of Unit: Add and subtract within 1,000

Learning Targets—Big Idea and Standards

Big Idea(s): Students extend their understanding of the base-ten system, including comparing. Students understand multi-digit numbers (up to 1000) written in base-ten notation, recognizing that the digits in each place represent amounts of thousands, hundreds, tens, or ones (e.g., 853 is 8 hundreds + 5 tens + 3 ones).

Standard(s): 2.NBT.7

- 2.NBT.7. Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

Enduring Understandings

- Flexible methods of computation involve grouping numbers in strategic ways

Essential Questions

- How can I use what I know about number relationships to develop efficient strategies for adding/subtracting multi-digit numbers?
- What is expanded notation and how can I use it to assist in finding the sum or

difference of two whole numbers up to three digits long?

- How do I recognize what strategy to use for a specific problem?

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems.

- Accommodations for ELL:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Assistance from ESL teacher in a small group setting
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

- Accommodations for Special Education:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)

- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP
- Accommodations for At-Risk Students:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.
- Accommodations for Enrichment (G &T):
 - Extension activities
 - Independent practice in small groups
 - Internet activities
- Envision 2.0: Each lesson offers Advanced activities for Differentiated instruction

Materials and Learning Plan

Materials:

- Base Ten Blocks
- Number Line
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 6

- Play “2-Digit Shuffle” (P.280)

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____

Other _____

2nd Grade Unit 19

Domain: Measurement and Data

Marking Period: 4

Lesson Title: Solve problems involving measurement and estimation of intervals o time, liquid volumes, and masses of objects.

Overview of Unit: Measure and estimate liquid volumes and masses of objects

Learning Targets—Big Idea and Standards

Big Idea(s): Students measure and estimate volume and mass. They use their knowledge of addition and subtraction to solve word problems involving mass and volume.

Standard(s): 2.MD.2

- 2.MD.2. Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.

Essential Questions	Enduring Understandings
<ul style="list-style-type: none">• How do I estimate the capacity of common objects?• What tools do I use to measure volume and mass?• When is an estimate more appropriate than an actual measurement?	<ul style="list-style-type: none">• Proficient use of appropriate tools to estimate and measure accurately

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities

- Use grab-and-go centers
- Use different manipulatives to model problems.

- Accommodations for ELL:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Assistance from ESL teacher in a small group setting
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Envision 2.0 Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

- Accommodations for Special Education:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.

- Refer to student IEP
- Accommodations for At-Risk Students:
 - Frequent pauses for understanding and focus
 - Develop an understanding of key vocabulary
 - Use of drawings, maps and graphs
 - Engaging dialogue and discussion
 - Use of manipulatives
 - Tools (rulers, measuring cups, etc.)
 - Multi-leveled cooperative learning groups
 - Assistance from Special Education teacher in a small group setting
 - Envision 2.0 Resources: online resources and other RTI activities/procedures for differentiated learning.

- Accommodations for Enrichment (G &T):
 - Extension activities
 - Independent practice in small groups
 - Internet activities
 - Envision 2.0: Each lesson offers Advanced activities for Differentiated instruction

Materials and Learning Plan

Materials:

- Liquid Measurement Instruments
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 8 Lesson 6
- Chapter 9 Lesson 5

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____ Other _____

Mathematics » Grade 3 » Introduction

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.

- 1. 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.
- 2. 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, $\frac{1}{2}$ of the paint in a small bucket could be less paint than $\frac{1}{3}$ of the paint in a larger bucket, but $\frac{1}{3}$ of a ribbon is longer than $\frac{1}{5}$ 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.
- 3. 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.
- 4. 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.

Grade 3 Overview

- **Operations and Algebraic Thinking**
 - 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.
- **Number and Operations in Base Ten**
 - Use place value understanding and properties of operations to perform multi-digit arithmetic.
- **Number and Operations—Fractions**
 - Develop understanding of fractions as numbers.
- **Measurement and Data**
 - Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.

Represent and interpret data.

 - Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
 - Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.
- **Geometry**
 - Reason with shapes and their attributes.
- **Mathematical Practices**
 1. 1. Make sense of problems and persevere in solving them.
 2. 2. Reason abstractly and quantitatively.
 3. 3. Construct viable arguments and critique the reasoning of others.
 4. 4. Model with mathematics.
 5. 5. Use appropriate tools strategically.
 6. 6. Attend to precision.
 7. 7. Look for and make use of structure.
 8. 8. Look for and express regularity in repeated reasoning.

Scope and Sequence Grade 3

Ongoing Standards

1. 3.OA.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 and/or represent a context in which a total number of objects can be expressed as 5×7 .

2. 3.OA.2. Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe and/or represent a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.
3. 3.OA.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
4. 3.OA.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 $8 \times ? = 48$, $5 = _ \div 3$, $6 \times 6 = ?$

Marking Period 1

1. **Solve problems involving the four operations, and identify and explain patterns in arithmetic.**
 - 3.OA.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.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.*
2. **Use place value understanding and properties of operations to perform multi-digit arithmetic.**
 - 3.NBT.1. Use place value understanding to round whole numbers to the nearest 10 or 100.
 - 3.NBT.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. **Represent and interpret data.**
 - 3.MD.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.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.6 Measure areas by counting unit squares (square cm, square m, square in., square ft, and non-standard units.)

4. Represent and solve problems involving multiplication and division.

- 3.OA.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.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.

5. Understand properties of multiplication and the relationship between multiplication and division.

- 3.OA.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.)

Marking Period 2

6. Developing understanding of multiplication and division and strategies for multiplication and division within 100.

- 3.OA.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.OA.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.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.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
- 3.OA.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.

7. Using operations to identify patterns in arithmetic and to represent and solve problems involving Multiplication and Division.

- 3.OA.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.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.

8. Use properties of operations to perform multi-digit arithmetic.

- 3.NBT.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.

9. Using properties to represent and solve problems involving division.

- 3.OA.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.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.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.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.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.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.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.

Marking Period 3

10. Develop understanding of fractions as numbers.

- 3.NF.1. Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.
- 3.NF.2. Understand a fraction as a number on the number line; represent fractions on a number line diagram.
 - a) 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.
 - b) 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.
- 3.NF.3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
 - a) Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
 - b) 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.
 - c) 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.
 - d) 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.

3rd Grade Unit 1

Domain: Operations & Algebraic Thinking

Marking Period: 1

Lesson Title: Solve problems involving the four operations, and identify and explain patterns in arithmetic.

Overview of Unit: Using number patterns to model and solve addition and subtraction problems.

Learning Targets—Big Idea and Standards

Big Idea(s): Students will describe whole number patterns and model how to use them to solve addition and subtraction problems.

Standard(s): 3.OA.8 & 3.OA.9

- 3.OA.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.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.

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> ● How can you use properties to explain patterns on the addition table? ● How can you draw a diagram to solve one- and two-step addition and subtraction problems? 	<ul style="list-style-type: none"> ● The Commutative and Identity Properties can be used for mental math.

Evidence of Learning

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- GOMath Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- GOMath Resources: online resources and other RTI activities/procedures for differentiated learning.

- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- GoMath Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- GoMATH: Each lesson offers Advanced activities for Differentiated instruction

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____

Other _____

3rd Grade Unit 2

Domain: Number and Operations in Base Ten

Marking Period: 1

Lesson Title: Use place value understanding and properties of operations to perform multi-digit

arithmetic.

Overview of Unit: Using estimation and base ten mental math strategies to solve addition and subtraction problems.

Learning Targets—Big Idea and Standards

Big Idea(s): Students will mentally add and subtract numbers and decide if the answer is reasonable.

Standard(s): 3.NBT.1 & 3. NBT.2

- 3.NBT.1. Use place value understanding to round whole numbers to the nearest 10 or 100.
- 3.NBT.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.

Essential Questions

- How can you round numbers?
- How can you use compatible numbers and rounding to estimate sums?
- What mental math strategies can you use to find sums?
- How can you add two or more addends?
- How can you use place value to add and subtract 3-digit numbers?
- How can you use compatible numbers and rounding to estimate differences?
- What mental math strategies can you use to find differences?

Enduring Understandings

- Estimation and place value can be used for mental math in addition and subtraction.
- By using base ten mental math strategies students can solve 1, 2, and 3 digit addition and subtraction problems.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-levelled cooperative learning groups

- Assistance from Special Education teacher in a small group setting
- Go Math Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Go Math Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- GOMATH: Each lesson offers Advanced activities for Differentiated instruction

3rd Grade Unit 3

Domain: Measurement and Data

Marking Period: 1

Lesson Title: Represent and Interpret Data

Overview of Unit: To use graphs, tallys, and charts to show and interpret data.

Learning Targets—Big Idea and Standards

Big Idea(s): Students will use an array of graphs and bars to interpret data.

Standard(s): 3.MD.3 & 3.MD.4

- 3.MD.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.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.

Essential Questions

- How can you read and interpret data in a picture, bar, or table?
- How can you make a table to organize data and solve problems?
- How can you use a table or graph to solve problems?
- How can you use and make line plots?

Enduring Understandings

- Data charts and graphs are a viable way to represent and solve problems.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- GoMath Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs

- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- GoMath Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- GoMath Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- GoMATH: Each lesson offers Advanced activities for Differentiated instruction

3rd Grade Unit 4

Domain: Operations and Algebraic Thinking

Marking Period: 1

Lesson Title: Represent and solve problems involving multiplication and division.

Overview of Unit: Building foundations for understanding multiplication

Learning Targets—Big Idea and Standards

Big Idea(s): Students will use equal groups, arrays, and skip counting to build foundations for multiplication facts.

Standard(s): 3.OA.1 & 3.OA.3

- 3.OA.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 and/or represent a context in which a total number of objects can be expressed as 5×7 .
- 3.OA.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.

Enduring Understandings

- Multiplication is another form of addition.
- Models can be used to represent multiplication.
- Division is related to subtraction

Essential Questions

- How can you use equal groups to find how many in all?
- How is multiplication like addition? How is it different?
- How can you use a number line to skip count and find how many in all?
- How can you use arrays to model multiplication and find factors?

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- GoMath Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- GoMath Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- GoMath Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- GoMATH: Each lesson offers Advanced activities for Differentiated instruction

3rd Grade Unit 5

Domain: Operations and Algebraic Thinking

Marking Period: 1

Lesson Title: Understand properties of multiplication and the relationship between multiplication and division.

Overview of Unit: Building foundations for understanding multiplication

Learning Targets—Big Idea and Standards

Big Idea(s): Students will begin to use multiplication properties to solve problems.

Standard(s): 3.OA.5

- 3.OA.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.)

Essential Questions

Enduring Understandings

- How can you use the Commutative Property of Multiplication to find products?
- What happens when you multiply a number by 0 or 1?

- The Commutative, Identity, and Zero Properties can be used to commit simple multiplication problems to memory.

Evidence of Learning	
<p>Formative Assessment:</p> <p>Mid- Chapter Checkpoints</p> <p>Summative Assessment:</p> <p>Chapter Review/Tests</p> <p>Chapter Tests</p> <p>Differentiation/Customizing Learning (strategies):</p> <ul style="list-style-type: none">● Work with teacher in small group using intervention activities● Use grab-and-go centers● Use different manipulatives to model problems	
Materials and Learning Plan	
<p>Accommodations for ELL:</p> <ul style="list-style-type: none">● Frequent pauses for understanding and focus● Develop an understanding of key vocabulary● Use of drawings, maps and graphs● Engaging dialogue and discussion● Assistance from ESL teacher in a small group setting● Use of manipulatives● Tools (rulers, measuring cups, etc.)● Multi-leveled cooperative learning groups● GoMath Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.	

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- GoMath Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- GoMath Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- GoMATH: Each lesson offers Advanced activities for Differentiated instruction

Domain: Operations and Algebraic Thinking

Marking Period: 2

Lesson Title: Using Strategies to Multiply

Overview of Unit: Developing understanding of multiplication and division and strategies for multiplication and division within 100.

Learning Targets—Big Idea and Standards

Big Idea(s): Students will begin to use multiplication properties and strategies to solve problems and learn facts.

Standard(s): 3.OA.3, 3.OA.5, 3.OA.7, 3.OA.8, 3.OA.9

- 3.OA.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.OA.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.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.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

- 3.OA.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.

Essential Questions	Enduring Understandings
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- How can you multiply with numbers 2 through 10?
- How can you use the Distributive Property to find products?
- How can you use the Associative Property of Multiplication to find products?
- How can you use properties to explain patterns on the multiplication table?

- Different strategies and properties can be used to commit multiplication facts to memory.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities

- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- GoMath Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Go Math Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion

- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- GoMath Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- GoMATH: Each lesson offers Advanced activities for Differentiated instruction

3rd Grade Unit 7

Domain: Operations and Algebraic Thinking

Marking Period: 2

Lesson Title: Using operations to identify patters in arithmetic and to Represent and solve problems involving Multiplication and Division.

Overview of Unit: Developing understanding of multiplication and division and strategies for multiplication and division within 100.

Learning Targets—Big Idea and Standards

Big Idea(s): Students will use multiplication properties and strategies to explain multiplication and division problems.

Standard(s): 3.OA.4, 3.OA.9

- 3.OA.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.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.

Essential Questions

Enduring Understandings

- What are some ways you can describe a pattern in a table?
- How can you use an array or a multiplication table to find an unknown factor?

- Arrays and tables can be used to find unknown factors.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- GoMath Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting

- GoMath Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- GoMath Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- GoMATH: Each lesson offers Advanced activities for Differentiated instruction

3rd Grade Unit 8

Marking Period: 2

Domain: Numbers and Operations in Base Ten

Lesson Title: Use properties of operations to perform multi-digit arithmetic.

Overview of Unit: Developing understanding of multiplication and division and strategies for multiplication and division within 100.

Learning Targets—Big Idea and Standards

Big Idea(s): Students will use multiplication properties and strategies to explain multiplication problems.

Standard(s): 3.NBT.3

- 3.NBT.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.

Enduring Understandings

- Finding strategies to multiply can strengthen mental math skills.

Essential Questions

- What strategies can you use to multiply with multiples of 10?
- How can you model and record multiplying multiples of 10 by 1-digit whole numbers?

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- GoMath Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Go Math Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- GoMath Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- GoMATH: Each lesson offers Advanced activities for Differentiated instruction

3rd Grade Unit 9

Marking Period: 2

Domain: Operations and Algebraic Thinking

Lesson Title: Using properties to represent and solve problems involving division.

Overview of Unit: Developing understanding of division and strategies for division within 100.

Learning Targets—Big Idea and Standards

Big Idea(s): Students will use division properties and strategies to solve division problems.

Standard(s): 3.OA.2, 3.OA.3, 3.OA.4, 3.OA.5, 3.OA.6, 3.OA.7, 3.OA.8

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

Enduring Understandings	Essential Questions
<ul style="list-style-type: none"> • Division and subtraction are related. • You can use multiplication to solve division problems. Just as using addition to solve subtraction problems. • Division is splitting apart. 	<ul style="list-style-type: none"> • How can you model a division problem to find how many in each group? • How can you model a division problem to find how many equal groups? • How can you use bar models to solve division problems? • How is division related to subtraction? • How can you use arrays to solve division problems?

- What are the rules for dividing with 1 and 0?
- What does dividing by 2 through 9 mean?
- What strategies can you use to divide by 10?

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Materials:

- Math Board
- Counters
- Base Ten Blocks
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

th! Series

- Chapter 6
- Chapter 7

- Chapter 6 Vocabulary Builder
- Chapter 7 Vocabulary Builder

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____

Other _____

3rd Grade Unit 10

Domain: Number and Operations - Fractions

Marking Period: 3

Lesson Title: Develop understanding of fractions as numbers.

Overview of Unit: Developing understanding of fractions, especially unit fractions (fractions with numerator 1).

Learning Targets—Big Idea and Standards

Big Idea(s): Students will use models and other strategies to understand that fractions are numbers.

Standard(s): 3.NF.1, 3.NF.2 (a & b), 3.NF.3 (a, b, c, & d)

- 3.NF.1. Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.
- 3.NF.2. Understand a fraction as a number on the number line; represent fractions on a number line diagram.
 - a) 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.
 - b) 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.
- 3.NF.3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
 - a) Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
 - b) 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.
 - c) 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.
 - d) 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.

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> ● What are equal parts of a whole? ● Why do you need to know how to make equal shares? ● What do the top and bottom numbers of a fraction tell? ● How does a fraction name part of a whole? 	<ul style="list-style-type: none"> ● Discovering that fractions are part of a whole. ● Understanding that you can use fractions to tell how much or how many. ● Comparing fractions.

- When might you use a fraction greater than 1 or a whole number?
- How can a fraction tell how many are in part of a group?
- How can you compare fractions with the same numerator and denominator?
- How can you use models to find equivalent fractions?

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting

- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- GoMath Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Go Math Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- GoMath Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- GoMATH: Each lesson offers Advanced activities for Differentiated instruction

3rd Grade Unit 11

Domain: Measurement and Data

Marking Period: 3

Lesson Title: Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.

Overview of Unit: Developing understanding of the structure of rectangular arrays and of area.

Learning Targets—Big Idea and Standards

Big Idea(s): Students will use different tools and methods to measure time, length, liquid, and mass.

Standard(s): 3.MD.1, 3.MD.2, 3.MD.4, 3.MD.6

- 3.MD.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.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.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. 6 Measure areas by counting unit squares (square cm, square m, square in, square

ft, and non-standard units).

Essential Questions

- How can you tell time to the nearest minute?
- How do you use A.M. and P.M.?
- How can you measure elapsed time?
- How can you measure liquid and mass in metric units?
- How can you use models to solve liquid volume and mass problems?

Enduring Understandings

- Learning how to tell time on an analog clock.
- Matching the proper measurement device with the proper unit.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- GoMath Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- GoMath Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- GoMath Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- GoMATH: Each lesson offers Advanced activities for Differentiated instruction

3rd Grade Unit 12

Domain: Measurement and Data

Marking Period: 3

Lesson Title: Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

Overview of Unit: Developing understanding of the structure of rectangular arrays and of area.

Learning Targets—Big Idea and Standards

Big Idea(s): To understand concepts of area and perimeter and relate them to multiplication.

Standard(s): 3.MD.5, 3.MD.6, 3.MD.7, 3.MD.8

- 3.MD.5. Recognize area as an attribute of plane figures and understand concepts of area measurement.
 - a) 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.
 - b) 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.6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
- 3.MD.7. Relate area to the operations of multiplication and addition.
 - a) 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.
 - b) 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.
 - c) 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.
 - d) 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.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.

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> ● How can you find and measure perimeter? ● How do you find an unknown length? ● How are area and perimeter different? ● How do you find and measure the area of an object? 	<ul style="list-style-type: none"> ● How to solve geometric problems with area and perimeter.
Evidence of Learning	
Formative Assessment: Mid- Chapter Checkpoints	

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- GoMath Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)

- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Go Math Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- GoMath Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- GoMATH: Each lesson offers Advanced activities for Differentiated instruction

3rd Grade Unit 13

Domain: Geometry

Marking Period: 4

Lesson Title: Reason with shapes and their attributes.

Overview of Unit: Describing and analyzing two-dimensional shapes.

Learning Targets—Big Idea and Standards

Big Idea(s): To understand identify and identify 2D and 3D shapes.

Standard(s): 3.G.1, 3.G.2

- 3.G.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.G.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 $\frac{1}{4}$ of the area of the shape.

Essential Questions	Enduring Understandings
<ul style="list-style-type: none">● What are some ways to describe 2D shapes and angles in plane shapes?● How can you use sides and angles to make and describe polygons, quadrilaterals?● How can you draw quadrilaterals?	<ul style="list-style-type: none">● How to describe and classify 2D shapes.

Evidence of Learning

Formative Assessment:

Mid- Chapter Checkpoints

Summative Assessment:

Chapter Review/Tests

Chapter Tests

Differentiation/Customizing Learning (strategies):

- Work with teacher in small group using intervention activities
- Use grab-and-go centers
- Use different manipulatives to model problems

Materials and Learning Plan

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- GoMath Resources: online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- GoMath Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs

- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- GoMath Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practice in small groups
- Internet activities
- GoMATH: Each lesson offers Advanced activities for Differentiated instruction

Grade 4 Unit 1 (VAT Unit 4)

Domain: Numbers and Operations in Base Ten

Marking Period: 1

Lesson Title: Place value for multi-digit whole numbers

Overview of Unit: Students generalize their understanding of place value to 1,000,000, having general knowledge of the magnitude of each place value.

Learning Targets—Big Idea and Standards

Big Idea(s): Students generalize their understanding of place value to 1,000,000, understanding the relative sizes of numbers in each place.

Standard(s):

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 $700 \div 70 = 10$ 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.

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> ● How can numbers be expressed, ordered, and compared? ● How can place value properties aid computation? ● How can relationships be expressed symbolically? ● How can we compare & contrast numbers? 	<ul style="list-style-type: none"> ● Numbers can represent quantity, position, location, & relationships. ● Place value is based on groups of ten. ● Mathematical expressions represent relationships. ● A place-value chart can help you compare whole numbers. You can use math symbols to compare whole numbers.
Evidence of Learning	
<p>Formative and Summative Assessments:</p> <ul style="list-style-type: none"> ● MathBoard Activities ● Daily Online Assessment ● Lesson Quick Check ● Performance Assessments ● Interview Assessments ● Teacher Observation ● Exit Slips ● Teacher-Made Activities and Assessments ● Chapter Tests ● Benchmark Tests 	
Materials and Learning Plan	
<p>Materials</p> <ul style="list-style-type: none"> ● <i>Go Math!</i> Print Materials ● MathBoard ● Counting tape ● Base-ten blocks <p>Learning Plan <i>Go Math!</i> Series:</p> <ul style="list-style-type: none"> ● Chapter 1 <p>Differentiation:</p> <ul style="list-style-type: none"> ● <i>Go Math!</i> Teacher’s Resource Masters: Reteach, Practice, Enrich ● <i>Go Math! Strategic Intervention Guide</i> ● <i>Go Math! Intensive Intervention Guide</i> ● <i>Go Math!</i> ELL Activities ● HMH Mega Math and other interactive online math games ● Centers/Math Games ● Work with teacher in small group using intervention activities 	

- Manipulatives, diagrams, and other modeling tools

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music
Field Trips _____
Other _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G & T)

- Extension activities
- Independent practice in small groups
- Internet activities
- Each lesson offers Advanced activities for Differentiated Instruction

Grade 4 Unit 2 (VAT Unit 1)	
Domain: Operations and Algebraic Thinking	Marking Period: 1
Lesson Title: Operations with whole numbers	
Overview of Unit: <ul style="list-style-type: none"> ● Use addition, subtraction, multiplication, and division to solve problems ● Understand the properties of multiplication and division ● Multiply and divide within 100 	
Learning Targets—Big Idea and Standards	
Big Idea(s): Develop understandings and strategies for the four operations	
Standard(s): <p>4.OA.1 Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.</p> <p>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.</p> <p>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.</p>	

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> ● How can you use the four operations with whole numbers to solve problems? 	<ul style="list-style-type: none"> ● Students will understand a multiplication equation as a comparison. Ex. $35=5*7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. ● Students will use drawings and equations using a symbol for the unknown to represent a problem to distinguish a multiplication comparison from an addition comparison. ● Students solve multistep word problems posed with whole numbers and having-whole number answers for all four operations. This includes interpreting remainders. ● Students represent these problems using equations with letters standing for the unknown quantity.
Evidence of Learning	
<p>Formative and Summative Assessments:</p> <ul style="list-style-type: none"> ● MathBoard Activities ● Daily Online Assessment ● Lesson Quick Check ● Performance Assessments ● Interview Assessments ● Teacher Observation ● Exit Slips ● Teacher-Made Activities and Assessments ● Chapter Tests ● Benchmark Tests 	
Materials and Learning Plan	
<p>Materials</p> <ul style="list-style-type: none"> ● <i>Go Math!</i> Print Materials ● MathBoard ● Counting tape ● Base-ten blocks ● Grid paper (see <i>eTeacher Resources</i>) ● Color pencils ● Counters 	

Learning Plan

Go Math! Series:

- Chapter 2
- Chapter 3
- Chapter 4

Differentiation:

- *Go Math!* Teacher's Resource Masters: Reteach, Practice, Enrich
- *Go Math! Strategic Intervention Guide*
- *Go Math! Intensive Intervention Guide*
- *Go Math!* ELL Activities
- HMH Mega Math and other interactive online math games
- Centers/Math Games
- Work with teacher in small group using intervention activities
- Manipulatives, diagrams, and other modeling tools

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____

Other _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G & T)

- Extension activities
- Independent practice in small groups
- Internet activities
- Each lesson offers Advanced activities for Differentiated Instruction

Grade 4 Unit 3 (VAT Unit 5)	
Domain: Numbers and Operations in Base Ten	Marking Period: 2
Lesson Title: Place value and properties of operations	
Overview of Unit: Students will use their understandings of place value and multi-step operations to complete arithmetic problems.	
Learning Targets—Big Idea and Standards	
Big Idea(s): 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.	
Standard(s):	
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.

Essential Questions

- What are efficient methods for finding sums and differences?
- What are different models of and models for multiplication and division?
- What are efficient methods for finding products and quotients?

Enduring Understandings

- Computation involves taking apart and combining numbers using variety of approaches;
- Flexible methods of computation involve grouping numbers in strategic ways
- Proficiency with basic facts aids estimation and computation of larger and smaller numbers.

Evidence of Learning

Formative and Summative Assessments:

- MathBoard Activities
- Daily Online Assessment
- Lesson Quick Check
- Performance Assessments
- Interview Assessments
- Teacher Observation
- Exit Slips
- Teacher-Made Activities and Assessments
- Chapter Tests
- Benchmark Tests

Materials and Learning Plan

Materials

- *Go Math!* Print Materials
- MathBoard
- Counting tape
- Base-ten blocks
- Grid paper (see *eTeacher Resources*)
- Color pencils
- Counters

Learning Plan

Go Math! Series:

- Chapter 2
- Chapter 3
- Chapter 4

Differentiation:

- *Go Math!* Teacher's Resource Masters: Reteach, Practice, Enrich
- *Go Math! Strategic Intervention Guide*
- *Go Math! Intensive Intervention Guide*
- *Go Math!* ELL Activities
- HMH Mega Math and other interactive online math games
- Centers/Math Games
- Work with teacher in small group using intervention activities
- Manipulatives, diagrams, and other modeling tools

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music
Field Trips _____
Other _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives

- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G & T)

- Extension activities
- Independent practice in small groups
- Internet activities
- Each lesson offers Advanced activities for Differentiated Instruction

Grade 4 Unit 4 (VAT Unit 2)	
Domain: Operations and Algebraic Thinking	Marking Period: 2
Lesson Title: Factors and Multiples	
Overview of Unit: Develop understanding of fractions as numbers	
Learning Targets—Big Idea and Standards	
Big Idea(s): Develop an understanding of fractions and fraction equivalence.	
Standard(s):	
<p>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.</p>	
Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> ● What are factors and multiples? 	<ul style="list-style-type: none"> ● Students will find all factors for a whole number in the range 1-100. ● Students will recognize that a whole number is a multiple of each of its factors and determine whether a given whole number in 1-100 is prime or composite. ● Students will determine whether a given whole number in the range 1-100 is a

multiple of a given one-digit number.

Evidence of Learning

Formative and Summative Assessments:

- MathBoard Activities
- Daily Online Assessment
- Lesson Quick Check
- Performance Assessments
- Interview Assessments
- Teacher Observation
- Exit Slips
- Teacher-Made Activities and Assessments
- Chapter Tests
- Benchmark Tests

Materials and Learning Plan

Materials

- *Go Math!* Print Materials
- MathBoard
- Counting tape
- Grid paper (see *eTeacher Resources*)
- Color pencils
- Square tiles

Learning Plan

Go Math! Series:

- Chapter 5

Differentiation:

- *Go Math!* Teacher's Resource Masters: Reteach, Practice, Enrich
- *Go Math! Strategic Intervention Guide*
- *Go Math! Intensive Intervention Guide*
- *Go Math!* ELL Activities
- HMH Mega Math and other interactive online math games
- Centers/Math Games
- Work with teacher in small group using intervention activities
- Manipulatives, diagrams, and other modeling tools

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music
Field Trips _____

Other _____	
Grade 4 Unit 5 (VAT Unit 3)	
Domain: Operations and Algebraic Thinking	Marking Period: 2
Lesson Title: Operations with whole numbers	
Overview of Unit: Solve problems by identifying and explaining patterns in addition, subtraction, multiplication, and division problems	
Learning Targets—Big Idea and Standards	
<p>Big Idea(s):</p> <p>Generate algebraic rules and use all four operations to describe patterns</p>	
<p>Standard(s):</p> <p>4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. <i>For example, given the rule “Add 3” and the starting number 1, 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.</i></p>	
Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> ● Where are patterns in nature, architecture, music, words, and numbers? ● What is the repeating and/or increasing unit in the pattern? ● What strategies can be used to continue a sequence? ● How does finding patterns help in counting and/or computation? ● How can change be best represented? ● How are patterns of change related to the behavior of functions? 	<ul style="list-style-type: none"> ● Patterns can be found in many forms. ● Patterns can grow and repeat. ● Patterns can be generalized. ● Algebraic representation can be used to generalize patterns and relationships. ● Patterns and relationships can be represented graphically, numerically, symbolically, or even verbally.

Evidence of Learning

Formative and Summative Assessments:

- MathBoard Activities
- Daily Online Assessment
- Lesson Quick Check
- Performance Assessments
- Interview Assessments
- Teacher Observation
- Exit Slips
- Teacher-Made Activities and Assessments
- Chapter Tests
- Benchmark Tests

Materials and Learning Plan

Materials

- *Go Math!* Print Materials
- MathBoard
- Counting tape
- Grid paper (see *eTeacher Resources*)
- Color pencils
- Square tiles

Learning Plan

Go Math! Series:

- Chapter 5

Differentiation:

- *Go Math!* Teacher's Resource Masters: Reteach, Practice, Enrich
- *Go Math! Strategic Intervention Guide*
- *Go Math! Intensive Intervention Guide*
- *Go Math!* ELL Activities
- HMH Mega Math and other interactive online math games
- Centers/Math Games
- Work with teacher in small group using intervention activities
- Manipulatives, diagrams, and other modeling tools

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____

Other _____

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Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G & T)

- Extension activities
- Independent practice in small groups
- Internet activities
- Each lesson offers Advanced activities for Differentiated Instruction

Grade 4 Unit 6	
Domain: Number and Operations- Fractions	Marking Period: 2

Lesson Title: Equivalent fractions and ordering	
Overview of Unit: Students will understand equivalent fractions and how to use them to perform operations.	
Learning Targets—Big Idea and Standards	
Big Idea(s): Students develop understanding of fraction equivalence and operations with fractions.	
Standard(s):	
<ul style="list-style-type: none"> ● 4.NF.1 Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. ● 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. 	
Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> ● How many ways can we use models to determine and compare equivalent fractions? ● How would you compare and order whole numbers, fractions and decimals through hundredths? 	<ul style="list-style-type: none"> ● Fractions represent parts of wholes. ● Knowing common multiples and common factors can help determine equivalent fractions. ● By putting numbers in the same form we can determine order (least to greatest/ greatest to least).
Evidence of Learning	
Formative and Summative Assessments:	
<ul style="list-style-type: none"> ● MathBoard Activities ● Daily Online Assessment ● Lesson Quick Check ● Performance Assessments 	

- Interview Assessments
- Teacher Observation
- Exit Slips
- Teacher-Made Activities and Assessments
- Chapter Tests
- Benchmark Tests

Materials and Learning Plan

Materials

- *Go Math!* Print Materials
- MathBoard
- Counting tape
- Fraction strips (see *eTeacher Resources*)
- Color pencils

Learning Plan

Go Math! Series:

- Chapter 6

Differentiation:

- *Go Math!* Teacher’s Resource Masters: Reteach, Practice, Enrich
- *Go Math! Strategic Intervention Guide*
- *Go Math! Intensive Intervention Guide*
- *Go Math!* ELL Activities
- HMH Mega Math and other interactive online math games
- Centers/Math Games
- Work with teacher in small group using intervention activities
- Manipulatives, diagrams, and other modeling tools

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____

Other _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups

- Online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G & T)

- Extension activities
- Independent practice in small groups
- Internet activities
- Each lesson offers Advanced activities for Differentiated Instruction

Grade 4 Unit 7	
Domain: Number and Operations - Fractions	Marking Period: 2
Lesson Title: Number and Operations - Fractions	
Overview of Unit: Adding, subtracting, multiplying, breaking down fractions and understanding mixed numbers.	

Learning Targets—Big Idea and Standards

Big Idea(s): Students develop understanding of fraction equivalence and operations with fractions.

Standard(s):

- 4.NF.3** Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.
- Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
 - Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples:* $3/8 = 1/8 + 1/8 + 1/8$; $3/8 = 1/8 + 2/8$; $2\ 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8$.
 - Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
 - Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.
- 4.NF.4** Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.
- Understand a fraction a/b as a multiple of $1/b$. *For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.*
 - Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. *For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as $6/5$. (In general, $n \times (a/b) = (n \times a)/b$.)*
 - Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. *For example, if each person at a party will eat $3/8$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?*

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> ● How are common fractions, decimals and percents alike and different? ● How is computation with rational numbers similar and different to whole number computation? ● How are equivalent fractions built by applying and extending previous understandings of operations on whole numbers? 	<ul style="list-style-type: none"> ● Fractions, decimals, and percents express a relationship between two numbers. ● Add & subtract mixed numbers with like denominator by replacing mixed numbers with equivalent fractions. ● Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. ● Understand a fraction a/b as a multiple of $1/b$. <i>For example, use a visual fraction model to represent $5/4$ as the product of</i>

$5x(1/4)$ recording the conclusion by the equation $5/4+5x(1/4)$

Evidence of Learning

Formative and Summative Assessments:

- MathBoard Activities
- Daily Online Assessment
- Lesson Quick Check
- Performance Assessments
- Interview Assessments
- Teacher Observation
- Exit Slips
- Teacher-Made Activities and Assessments
- Chapter Tests
- Benchmark Tests

Materials and Learning Plan

Materials

- *Go Math!* Print Materials
- MathBoard
- Counting tape
- Fraction circles (see *eTeacher Resources*)
- Color pencils

Learning Plan

Go Math! Series:

- Chapter 7
- Chapter 8

Differentiation:

- *Go Math!* Teacher's Resource Masters: Reteach, Practice, Enrich
- *Go Math! Strategic Intervention Guide*
- *Go Math! Intensive Intervention Guide*
- *Go Math!* ELL Activities
- HMH Mega Math and other interactive online math games
- Centers/Math Games
- Work with teacher in small group using intervention activities
- Manipulatives, diagrams, and other modeling tools

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____
Other _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G & T)

- Extension activities
- Independent practice in small groups
- Internet activities
- Each lesson offers Advanced activities for Differentiated Instruction

Domain: Numbers and Operations-Fractions		Marking Period: 3	
Lesson Title: Understand and Compare Decimal Notation for Fractions			
Overview of Unit: Understand unit decimal notation for fractions, and compare decimal fractions. Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.			
Learning Targets—Big Idea and Standards			
Big Idea(s):			
Standard(s):			
<p>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 100.2 <i>For example, express $3/10$ as $30/100$, and add $3/10 + 4/100 = 34/100$.</i></p> <p>4.NF.6 Use decimal notation for fractions with denominators 10 or 100. <i>For example, rewrite 0.62 as $62/100$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</i></p> <p>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.</p>			
Essential Questions		Enduring Understandings	
<ul style="list-style-type: none"> ● How can fractions be modeled, compared, and ordered? ● How does the position of a digit in a number affect its value? ● Demonstrate an understanding of place value concepts. ● Demonstrate a sense of the relative magnitude of numbers. 		<ul style="list-style-type: none"> ● Place value is based on groups of ten. ● Fractions, decimals, and percents express a relationship between two numbers. ● Refers not only to whole numbers, but also to fractions and decimals. 	
Evidence of Learning			
Formative and Summative Assessments:			
<ul style="list-style-type: none"> ● MathBoard Activities 			

- Daily Online Assessment
- Lesson Quick Check
- Performance Assessments
- Interview Assessments
- Teacher Observation
- Exit Slips
- Teacher-Made Activities and Assessments
- Chapter Tests
- Benchmark Tests

Materials and Learning Plan

Materials

- *Go Math!* Print Materials
- MathBoard
- Counting tape
- Coins
- Bills (see *eTeacher Resources*)

Learning Plan

Go Math! Series:

- Chapter 9

Differentiation:

- *Go Math!* Teacher’s Resource Masters: Reteach, Practice, Enrich
- *Go Math! Strategic Intervention Guide*
- *Go Math! Intensive Intervention Guide*
- *Go Math!* ELL Activities
- HMH Mega Math and other interactive online math games
- Centers/Math Games
- Work with teacher in small group using intervention activities
- Manipulatives, diagrams, and other modeling tools

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music
Field Trips _____
Other _____

Grade 4 Unit 9

Domain: Measurement and Data

Marking Period: 3

Lesson Title: Measurement and conversion of measurements

Overview of Unit: Students will use models to divide with fractions, whole numbers, mixed numbers, as well as use place values, properties of operations, and the relationship of division to multiplication while performing conversions with measurements.

Learning Targets—Big Idea and Standards

Big Idea(s): 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.

Standard(s):

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

4.MD.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.*

Essential Questions

- How do units within a system relate to each other?
- How are conversions made within units?
- How are the four operations used to solve problems involving measurement?

Enduring Understandings

- Everyday objects have a variety of attributes, each of which can be measured in many ways.
- What we measure affects how we measure it. (4.5A4; 4.5A6)**
- Measurements can be used to describe, compare, and make sense of phenomena.
- Area and perimeter formulas can be used to find measurement.

Evidence of Learning

Formative and Summative Assessments:

- MathBoard Activities
- Daily Online Assessment
- Lesson Quick Check
- Performance Assessments
- Interview Assessments
- Teacher Observation
- Exit Slips
- Teacher-Made Activities and Assessments
- Chapter Tests
- Benchmark Tests

Materials and Learning Plan

Materials

- *Go Math!* Print Materials
- MathBoard
- Counting tape
- 1-inch grid paper (see *eTeacher Resources*)
- 1-centimeter grid paper (see *eTeacher Resources*)
- Scissors
- Tape
- Meterstick

Learning Plan

Go Math! Series:

- Chapter 12
- Chapter 13

Differentiation:

- *Go Math!* Teacher's Resource Masters: Reteach, Practice, Enrich
- *Go Math! Strategic Intervention Guide*
- *Go Math! Intensive Intervention Guide*
- *Go Math!* ELL Activities
- HMH Mega Math and other interactive online math games
- Centers/Math Games
- Work with teacher in small group using intervention activities
- Manipulatives, diagrams, and other modeling tools

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music
Field Trips _____
Other _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G & T)

- Extension activities
- Independent practice in small groups
- Internet activities
- Each lesson offers Advanced activities for Differentiated Instruction



Grade 4 Unit 10

Domain: Measurement and Data

Marking Period: 3

Lesson Title: Represent and Interpret Data

Overview of Unit: Students develop understanding of fraction equivalence and operations with fractions. They recognize that two different fractions can be equal (e.g., $15/9 = 5/3$), and they develop methods for generating and recognizing equivalent fractions to include modeling them as data sets.

Learning Targets—Big Idea and Standards

Big Idea(s): Students develop understanding of fraction equivalence and operations with fractions. They recognize that two different fractions can be equal (e.g., $15/9 = 5/3$), and they develop methods for generating and recognizing equivalent fractions to include modeling them as data sets.

Standard(s):

4MD.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.*

Essential Questions

Enduring Understandings

How is computation with rational numbers similar and different to whole number computation?
How do you represent and interpret data using a line plot?

Fractions, decimals, and percents express a relationship between two numbers.
Make a line plot to display a set of measurements in fractions of a unit ($1/2$, $1/4$, $1/8$)

Evidence of Learning

Formative and Summative Assessments:

- MathBoard Activities
- Daily Online Assessment
- Lesson Quick Check
- Performance Assessments
- Interview Assessments
- Teacher Observation

- Exit Slips
- Teacher-Made Activities and Assessments
- Chapter Tests
- Benchmark Tests

Materials and Learning Plan

Materials

- *Go Math!* Print Materials
- MathBoard
- Counting tape
- 1-inch grid paper (see *eTeacher Resources*)
- 1-centimeter grid paper (see *eTeacher Resources*)
- Scissors
- Tape
- Meterstick

Learning Plan

Go Math! Series:

- Chapter 12
- Chapter 13

Differentiation:

- *Go Math!* Teacher’s Resource Masters: Reteach, Practice, Enrich
- *Go Math! Strategic Intervention Guide*
- *Go Math! Intensive Intervention Guide*
- *Go Math!* ELL Activities
- HMH Mega Math and other interactive online math games
- Centers/Math Games
- Work with teacher in small group using intervention activities
- Manipulatives, diagrams, and other modeling tools

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____

Other _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives

- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G & T)

- Extension activities
- Independent practice in small groups
- Internet activities
- Each lesson offers Advanced activities for Differentiated Instruction

Grade 4 Unit 11 (VAT Unit 12)	
Domain: Geometry	Marking Period:
Lesson Title: Draw and identify lines and angles and classify shapes	
Overview of Unit: Understanding that geometric figures can be analyzed and classified based on their properties.	

Learning Targets—Big Idea and Standards

Big Idea(s): Understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

Standard(s):

4.G.1 Draw points, lines, line segments, rays, 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 specified 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-symmetric figures and draw lines of symmetry.

Essential Questions

- How do geometric relationships help us solve problems?
- What situations can be analyzed using transformations and symmetries?
- How are geometric figures constructed?
- What strategies can be used to verify symmetry and congruency?
- How can measurements be used to solve problems?

Enduring Understandings

- Understand and apply concepts involving lines, angles, and circles.
- Shape and area can be conserved during mathematical transformations.
- Points, lines and planes are the foundation of geometry.
- Describe and use geometric transformations.

Evidence of Learning

Formative and Summative Assessments:

- MathBoard Activities
- Daily Online Assessment
- Lesson Quick Check
- Performance Assessments
- Interview Assessments
- Teacher Observation
- Exit Slips
- Teacher-Made Activities and Assessments
- Chapter Tests
- Benchmark Tests

Materials and Learning Plan

Materials

- *Go Math!* Print Materials
- MathBoard
- Counting tape
- Isometric and square dot paper (see *eTeacher Resources*)
- Straightedge
- Color pencils
- Pattern blocks
- Tracing paper

Learning Plan

Go Math! Series:

- Chapter 10

Differentiation:

- *Go Math!* Teacher's Resource Masters: Reteach, Practice, Enrich
- *Go Math!* Strategic Intervention Guide
- *Go Math!* Intensive Intervention Guide
- *Go Math!* ELL Activities
- HMH Mega Math and other interactive online math games
- Centers/Math Games
- Work with teacher in small group using intervention activities
- Manipulatives, diagrams, and other modeling tools

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology ___ Music

Field Trips _____

Other _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G & T)

- Extension activities
- Independent practice in small groups
- Internet activities
- Each lesson offers Advanced activities for Differentiated Instruction

Grade 4 Unit 12 (VAT Unit 11)	
Domain: Measurement and Data	Marking Period: 4
Lesson Title: Geometric measurement: understand concepts of angle and measure angles.	
Overview of Unit: Find and sketch angles of different geometric shapes -Use protractors to identify angles	
Learning Targets—Big Idea and Standards	

Big Idea(s):

Understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

Standard(s):

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 $\frac{1}{360}$ of a circle is called a “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.

Essential Questions

- How can plane and solid shapes be described?
- What is an angle and how is it measured?
- How do you solve addition and subtraction problems to find unknown angles on a diagram?

Enduring Understandings

- Objects can be described and compared using their geometric attributes.
- Points, lines, and planes are the foundation of geometry.
- Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint.
- Understand concepts of angle measurement.
- An angle is measured with reference to a circle, with its center at the common endpoint of the rays.
- Measure angles in whole-number degrees using a protractor.
- Use real world math problems to solve equations with a symbol for the unknown angle measure.

Evidence of Learning

Formative and Summative Assessments:

- MathBoard Activities
- Daily Online Assessment
- Lesson Quick Check
- Performance Assessments
- Interview Assessments
- Teacher Observation
- Exit Slips
- Teacher-Made Activities and Assessments
- Chapter Tests
- Benchmark Tests

Materials and Learning Plan

Materials

- *Go Math!* Print Materials
- MathBoard
- Counting tape
- Fraction circles (see *eTeacher Resources*)
- Protractor
- Scissors

Learning Plan

Go Math! Series:

- Chapter 11

Differentiation:

- *Go Math!* Teacher’s Resource Masters: Reteach, Practice, Enrich
- *Go Math! Strategic Intervention Guide*
- *Go Math! Intensive Intervention Guide*
- *Go Math!* ELL Activities
- HMH Mega Math and other interactive online math games
- Centers/Math Games
- Work with teacher in small group using intervention activities
- Manipulatives, diagrams, and other modeling tools

Interdisciplinary Connections

___ English Language Arts ___ Social Studies ___ Science ___ PE ___ Art ___ Technology
___ Music
Field Trips _____
Other _____

Accommodations for ELL:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Assistance from ESL teacher in a small group setting
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Online Spanish resources and other RTI activities/procedures for differentiated learning.

Accommodations for Special Education:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.
- Refer to student IEP

Accommodations for At-Risk Students:

- Frequent pauses for understanding and focus
- Develop an understanding of key vocabulary
- Use of drawings, maps and graphs
- Engaging dialogue and discussion
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Multi-leveled cooperative learning groups
- Assistance from Special Education teacher in a small group setting
- Math Resources: online resources and other RTI activities/procedures for differentiated learning.

Accommodations for Enrichment (G & T)

- Extension activities
- Independent practice in small groups
- Internet activities
- Each lesson offers Advanced activities for Differentiated Instruction

5th Grade Unit 1

Domain: Numbers and Operations in Base Ten

Marking Period: 1

Lesson Title: Understand the Place Value System

Overview of Unit:

- Being able to identify the value of each number in its place and its relation to other digits within place value
- Be able to multiply and divide with powers of ten
- Read, write, estimate, and compare decimals to thousands

Learning Targets—Big Idea and Standards

Big Idea(s):

- Extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations
- Students develop understanding of why division procedures work based on the meaning of base-ten numerals and properties of operations. They finalize fluency with multi-digit addition, subtraction, multiplication, and division. They apply their understandings of models for decimals, decimal notation, and properties of operations to add and subtract decimals to hundredths. They develop fluency in these computations, and make reasonable estimates of their results. Students use the relationship between decimals and fractions, as well as the relationship between finite decimals and whole numbers (i.e., a finite decimal multiplied by an appropriate power of 10 is a whole number), to understand and explain why the procedures for multiplying and dividing finite decimals make sense. They compute products and quotients of decimals to hundredths efficiently and accurately.

Standard(s): 5.NBT.1, 5.NBT.2, 5.NBT.3, 5.NBT.4

- 5.NBT.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $1/10$ of what it represents in the place to its left.
- 5.NBT.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
- 5.NBT.3 Read, write, and compare decimals to thousandths.
 - Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.

- Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.
- 5.NBT.4 Use place value understanding to round decimals to any place.

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> ● How are places in a multi-digit number organized? ● What is the pattern in the number of zeros of the product when multiplying a number by the powers of ten? ● What is the pattern of the placement of the decimal change when multiplying or dividing by powers of ten? ● How is a decimal read, written, and compared to the thousandths place? ● How does place value assist in rounding decimals to any place given? 	<ul style="list-style-type: none"> ● Every place value has an important role in how we read and understand a number. A digit in one place represents 10 times as much as it represents in the place to its right and $1/10$ of what it represents in the place to its left. ● Patterns occur when multiplying and dividing decimals by powers of ten. ● Whole-number exponents can be used to denote powers of ten. ● The placement of the decimal changes depending on the power. ● Digits are compared by place value using $<$, $>$, and $=$ to record the results. ● Use the number to the left to determine whether your place value should increase by one or remain the same. (0-4= remain the same; 5-9= increase by one) All digits to the right of your number will turn to zero.

Evidence of Learning

Evidence of Learning	
<p>Assessments:</p> <ul style="list-style-type: none">● Summative and formative assessments● Unit tests● Teacher/student conferencing● Homework Review● Class discussion of essential questions● Teacher observation● Student/teacher conferencing● Projects <p>Accommodations for ELL:</p> <ul style="list-style-type: none">● Visual models/drawings● Use of manipulatives● Tools (rulers, measuring cups, etc.)● Guided and Strategy Groups● Multi-leveled cooperative learning groups● Small group instruction and assistance <p>Accommodations for Special Education:</p> <ul style="list-style-type: none">● Visual models/drawings● Use of manipulatives● Tools (rulers, measuring cups, etc.)● Guided and Strategy Groups● Multi-leveled cooperative learning groups● Small group instruction and assistance● Assistance from Special Education teacher in a small group setting● Refer to student IEP <p>Accommodations for At Risk Students:</p> <ul style="list-style-type: none">● Visual models/drawings● Use of manipulatives● Tools (rulers, measuring cups, etc.)● Guided and Strategy Groups● Multi-leveled cooperative learning groups● Go- Math Reteach activities <p>Accommodations for Enrichment:</p> <ul style="list-style-type: none">● Internet activities● Multi-leveled cooperative learning groups● Go- Math Enrichment activities	

Interdisciplinary Connections

__ Interdisciplinary Standards: NJSLS

NJSLSA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

NJSLSA.W2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content

NJSLSA.L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking

Career Ready Practices

CRP2. Apply appropriate academic and technical skills.

CRP3. Attend to personal health and financial well-being.

CRP4. Communicate clearly and effectively and with reason.

CRP5. Consider the environmental, social and economic impacts of decisions.

CRP6. Demonstrate creativity and innovation.

CRP7. Employ valid and reliable research strategies

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.

NJSLS Technology Standards:

8.1: Computer and Information Literacy

- All students will use computer applications to gather and organize information to solve problems.

8.2: Technology Education

- All students will develop an understanding of the nature and impact of technology, engineering, technological design, and the designed world as they relate to the individual society, and the environment.

8.1.5.E.1 - Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.

8.1.5.A.1 - Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

8.2.5.C.4 - Collaborate and brainstorm with peers to solve a problem evaluating all solutions to provide the best results with supporting sketches or models.

In this unit, the following NJSLS 21st Century Standards are addressed:

9.1 Personal Financial Literacy

- This standard outlines the important fiscal knowledge, habits, and skills that must be mastered

in order for students to make informed decisions about personal finance. Financial literacy is an integral component of a student's college and career readiness, enabling students to achieve fulfilling, financially-secure, and successful careers.

9.1.8.A.2 - Relate how career choices, education choices, skills, entrepreneurship, and economic conditions affect income.

9.1.8.B.2 - Construct a simple personal savings and spending plan based on various sources of income.

9.2 Career Awareness, Exploration, and Preparation

- This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about post-secondary and career options, career planning, and career requirements.

9.2.8.B.4 - Evaluate how traditional and nontraditional careers have evolved regionally, nationally, and globally.

9.2.8.B.1- Research careers within the 16 Career Clusters® and determine attributes of career success

5th Grade Unit 2	
Domain: Numbers and Operations in Base Ten	Marking Period: 1
Lesson Title: Operations with Whole Numbers and Decimals	
Overview of Unit:	
<ul style="list-style-type: none"> • Perform operations with multi-digit whole numbers and with decimals to thousandths. 	
Learning Targets—Big Idea and Standards	
<p>Big Idea(s):</p> <hr/> <ul style="list-style-type: none"> • Extend division to 2-digit divisors, integrating decimal fractions into the place value system, developing understanding of operations with decimals to thousandths, and developing fluency with whole number and decimal operations • Students develop understanding of why division procedures work based on the meaning of base-ten numerals and properties of operations. They finalize fluency with multi-digit addition, subtraction, multiplication, and division. They apply their understandings of models for decimals, decimal notation, and properties of operations to add and subtract decimals to thousandths. They develop fluency in these computations, and make reasonable estimates of their results. Students use the relationship between decimals and fractions, as well as the relationship between finite decimals and whole numbers (i.e., a finite decimal multiplied by an appropriate power of 10 is a whole number), to understand and explain why the procedures for multiplying and dividing finite decimals make sense. They compute products and 	

quotients of decimals to thousandths efficiently and accurately.

Standard(s): 5.NBT.5, 5.NBT.6, 5.NBT.7

- 5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.
- 5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
- 5.NBT.7 Add, subtract, multiply, and divide decimals to thousandths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Essential Questions

Enduring Understandings

- How do I read and write decimal numbers in tenths, hundredths, and thousandths?
- How do I identify and write equivalent decimals?
- How do I compare and order decimals?
- How do I round decimals?
- How do I estimate sums and differences of decimals?
- How do I add and subtract decimals?
- How do I multiply decimals?
- How do I divide decimals?

- Decimal values (through thousandths)
- Equivalent decimals
- Order and comparing of decimals
- Rounding of decimals
- Estimating and solving sums and differences of decimals
- Multiplying and dividing of decimals
- Real world application involving decimals

Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Student/teacher conferencing
- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups

- Multi-leveled cooperative learning groups
- Small group instruction and assistance

Accommodations for Special Education:

- Visual models/drawings
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- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At Risk Students:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Go- Math Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
- Go- Math Enrichment activities

Materials and Learning Plan

Materials:

- MathBoard
- Online Resources
- Text and workbooks
- Standards Practice Book
- Base-Ten Blocks
- Color Pencils
- Decimal Models (eTeacher Resources)

Learning Plan:

Go Math! Series

- Chapter 1, Lessons 3, 7, 8, 9
- Chapter 2, Lessons 1-9 (All)
- Chapter 3, Lessons 5-12
- Chapter 4, Lessons 1-8 (All)
- Chapter 5, Lessons 2-8

Interdisciplinary Connections

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9.1.8.A.2 - Relate how career choices, education choices, skills, entrepreneurship, and economic conditions affect income.

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- This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about post-secondary and career options, career planning, and career requirements.

9.2.8.B.4 - Evaluate how traditional and nontraditional careers have evolved regionally, nationally, and globally.

9.2.8.B.1- Research careers within the 16 Career Clusters® and determine attributes of career success

5th Grade Unit 3

Domain: Operations and Algebraic Thinking

Marking Period: 1

Lesson Title: Write and Interpret Numerical Expressions

Overview of Unit:

- Apply order of operations rules to interpret numerical expressions.

Learning Targets—Big Idea and Standards

Big Idea(s):

- Relationships among numbers and number systems are means of representing real world quantities.

Standard(s): 5.OA.1, 5.OA.2

- 5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
- 5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical

expressions without evaluating them. *For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.*

Essential Questions

- What steps need to be followed to solve numerical expressions?
- What is the importance of Order of Operations?

Enduring Understandings

- Order of operations is imperative for a universal understanding of mathematics.
- Simplify numerical expressions using the order of operation rules.

Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Student/teacher conferencing
- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At Risk Students:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups

- Go- Math Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
- Go- Math Enrichment activities

Materials and Learning Plan

Materials:

- MathBoard
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 1, Lessons 10, 11, 12

Interdisciplinary Connections

Interdisciplinary Standards: NJSL

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NJLSA.L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking

Career Ready Practices

- CRP2. Apply appropriate academic and technical skills.
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- CRP5. Consider the environmental, social and economic impacts of decisions.
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- CRP7. Employ valid and reliable research strategies

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NJSL Technology Standards:

8.1: Computer and Information Literacy

- All students will use computer applications to gather and organize information to solve problems.

8.2: Technology Education

- All students will develop an understanding of the nature and impact of technology, engineering, technological design, and the designed world as they relate to the individual society, and the environment.

8.1.5.E.1 - Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.

8.1.5.A.1 - Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

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In this unit, the following NJSL 21st Century Standards are addressed:

9.1 Personal Financial Literacy

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9.1.8.A.2 - Relate how career choices, education choices, skills, entrepreneurship, and economic conditions affect income.

9.1.8.B.2 - Construct a simple personal savings and spending plan based on various sources of income.

9.2 Career Awareness, Exploration, and Preparation

- This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about post-secondary and career options, career planning, and career requirements.

9.2.8.B.4 - Evaluate how traditional and nontraditional careers have evolved regionally, nationally, and globally.

9.2.8.B.1- Research careers within the 16 Career Clusters® and determine attributes of career success

5th Grade Unit 4

Domain: Operations and Algebraic Thinking

Marking Period: 2

Lesson Title: Patterns and Relationships

Overview of Unit:

- Find patterns and explain relationships among numbers

Learning Targets—Big Idea and Standards

Big Idea(s):

- Relationships among numbers and number systems are means of representing real world quantities.

Standard(s): 5.OA.3

- 5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. *For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.*

Essential Questions

- Why is it important to look for a pattern?
- What can we learn from looking at patterns?
- How do you use an expression to create a function table?
- How do symbols, tables of numbers and graphs help us to understand mathematics?
- How do we write, locate, and interpret corresponding terms in an expression?

Enduring Understandings

- Identify relationships between corresponding terms from two patterns.
- Understand how to graph ordered pairs on a coordinate plane.
- Use symbols, tables of numbers, and graphs to help us understand mathematics.

● Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Student/teacher conferencing
- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives

- Tools (rulers, measuring cups, etc.)
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- Multi-leveled cooperative learning groups
- Go- Math Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
- Go- Math Enrichment activities

Materials and Learning Plan

Materials:

- MathBoard
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 9, Lessons 5, 6, 7

Interdisciplinary Connections

 Interdisciplinary Standards: NJSLS

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- This standard outlines the importance of being knowledgeable about one's interests and talents,

and being well informed about post-secondary and career options, career planning, and career requirements.

9.2.8.B.4 - Evaluate how traditional and nontraditional careers have evolved regionally, nationally, and globally.

9.2.8.B.1- Research careers within the 16 Career Clusters® and determine attributes of career success

5th Grade Unit 5

Domain: Numbers and Operations-Fractions

Marking Period: 2

Lesson Title: Use Equivalent Fractions as a Strategy to Add and Subtract Fractions

Overview of Unit:

- Add and subtract fractions with like and unlike denominators

Learning Targets—Big Idea and Standards

Big Idea(s):

- Students apply their understanding of fractions and fraction models to represent the addition and subtraction of fractions with unlike denominators as equivalent calculations with like denominators. They develop fluency in calculating sums and differences of fractions, and make reasonable estimates of them.

Standard(s): 5.NF.1, 5.NF.2

- 5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example, $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$. (In general, $\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$.)*
- 5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *For example, recognize an incorrect result $\frac{2}{5} + \frac{1}{2} = \frac{3}{7}$, by observing that $\frac{3}{7} < \frac{1}{2}$.*

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> ● How are fractions and whole numbers related? ● How do we find equivalent fractions? ● Why should we simplify fractions? ● How can we model addition and subtraction of fractions? ● How do we use benchmark numbers to estimate sums and differences of fractions? ● How can we find common denominators by using various strategies? ● How are fractions compared? ● How do you add and subtract common fractions and mixed numbers with unlike denominators? 	<ul style="list-style-type: none"> ● Fractions can represent whole numbers. ● Equivalent fractions name the same amount. ● Unlike denominator fractions can be added and subtracted. ● Common denominators can be found using different methods. ● Fractions can be compared using different methods. ● Fractions and mixed numbers with unlike denominators can be added or subtracted. ● Simplifying fractions create smaller numbers. ● Use benchmark fractions to estimate sums and differences.

Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
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- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
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Accommodations for Special Education:

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- Refer to student IEP

Accommodations for At Risk Students:

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- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Go- Math Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
- Go- Math Enrichment activities

Materials and Learning Plan

Materials:

- MathBoard
- Online Resources
- Text and workbooks
- Standards Practice Book
- Fraction Strips (eTeacher Resources)

Learning Plan:

Go Math! Series

- Chapter 6 Lessons 1-10 (All)

Interdisciplinary Connections

Interdisciplinary Standards: NJSL

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9.2.8.B.1- Research careers within the 16 Career Clusters® and determine attributes of career success

5th Grade Unit 6

Domain: Numbers and Operations-Fractions

Marking Period: 2 and 3

Lesson Title: Apply and Expend Previous Understandings of Multiplication and Division to Multiply and Divide Fractions

Overview of Unit:

- Multiply and divide fractions

Learning Targets—Big Idea and Standards

Big Idea(s):

- Students also use the meaning of fractions, of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for multiplying and dividing fractions make sense. (Note: this is limited to the case of dividing unit fractions by whole numbers and whole numbers by unit fractions.)

Standard(s): 5.NF.3, 5.NF.4, 5.NF.5, 5.NF.6, 5.NF.7

- 5.NF.3 Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. *For example, interpret $3/4$ as the result of dividing 3 by 4, noting that $3/4$ multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size $3/4$. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?*
- 5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
 - Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. *For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.)*
 - Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas

of rectangles, and represent fraction products as rectangular areas.

- 5.NF.5 Interpret multiplication as scaling (resizing), by:
 - Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.
 - Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.
- 5.NF.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
- 5.NF.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.¹
 - Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for $(1/3) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$.*
 - Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$.*
 - Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, how much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $1/3$ -cup servings are in 2 cups of raisins?*

¹ Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> ● How can we model division and multiplication of fractions? ● How do we use benchmark numbers to estimate products and quotients of fractions? ● How are fractions and decimals related (compare)? ● How do you interpret the product and quotient for reasonableness? ● How are multiplication and division of fractions related? 	<ul style="list-style-type: none"> ● Fractions are not changed when multiplied or divided by one. ● Fractions can be multiplied and divided. ● Fractions can be compared. ● Fractions and decimals can be used interchangeably. ● Simplifying fractions reduces to lowest terms. ● When dividing by a fraction less than one the quotient is greater than the dividend. ● A division expression with a fraction divisor can be changed to an equivalent multiplication expression. ● Use reasoning to check answers to multiplication and division of fractions.

Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Student/teacher conferencing
- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
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- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At Risk Students:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Go- Math Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
- Go- Math Enrichment activities

Materials and Learning Plan

Materials:

- MathBoard
- Online Resources
- Text and workbooks

- Standards Practice Book
- Counters
- Fraction Strips (eTeacher Resources)
- Fraction Circles

Learning Plan:

Go Math! Series

- Chapter 2, Lessons 7
- Chapter 7, Lessons 1-10 (All)
- Chapter 8, Lessons 1-5 (All)

Interdisciplinary Connections

__ Interdisciplinary Standards: NJSL

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NJLSA.W2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content

NJLSA.L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking

Career Ready Practices

CRP2. Apply appropriate academic and technical skills.

CRP3. Attend to personal health and financial well-being.

CRP4. Communicate clearly and effectively and with reason.

CRP5. Consider the environmental, social and economic impacts of decisions.

CRP6. Demonstrate creativity and innovation.

CRP7. Employ valid and reliable research strategies

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.

NJSLS Technology Standards:

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- All students will use computer applications to gather and organize information to solve problems.

8.2: Technology Education

- All students will develop an understanding of the nature and impact of technology, engineering, technological design, and the designed world as they relate to the individual society, and the environment.

8.1.5.E.1 - Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.

8.1.5.A.1 - Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

8.2.5.C.4 - Collaborate and brainstorm with peers to solve a problem evaluating all solutions to provide the best results with supporting sketches or models.

In this unit, the following NJSL 21st Century Standards are addressed:

9.1 Personal Financial Literacy

- This standard outlines the important fiscal knowledge, habits, and skills that must be mastered in order for students to make informed decisions about personal finance. Financial literacy is an integral component of a student's college and career readiness, enabling students to achieve fulfilling, financially-secure, and successful careers.

9.1.8.A.2 - Relate how career choices, education choices, skills, entrepreneurship, and economic conditions affect income.

9.1.8.B.2 - Construct a simple personal savings and spending plan based on various sources of income.

9.2 Career Awareness, Exploration, and Preparation

- This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about post-secondary and career options, career planning, and career requirements.

9.2.8.B.4 - Evaluate how traditional and nontraditional careers have evolved regionally, nationally, and globally.

9.2.8.B.1- Research careers within the 16 Career Clusters[®] and determine attributes of career success

5th Grade Unit 7

Domain: Geometry

Marking Period: 3

Lesson Title: Graph Points on the Coordinate Plane to Solve Real-World and Mathematical Problems.

Overview of Unit:

- A coordinate plane is created by a pair of perpendicular lines, called axes, and points in the coordinate plane are identified using ordered pairs of numbers (x,y) .

Learning Targets—Big Idea and Standards

Big Idea(s):

- Use the coordinate plane to graph and solve problems.

Standard(s): 5.G.1, 5.G.2

- Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x -axis and x -coordinate, y -axis and y -coordinate).
- Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

Essential Questions

- What are the labels of the perpendicular lines that make up the coordinate plane?
- Where is the location of the origin?
- How do you find the location of the given ordered pair?
- Where is the first quadrant located on a coordinate plane?

Enduring Understandings

- A coordinate system can be used to locate points
- The origin is located at the intersection of the x and y axes.
- Some problem solving situations require that we create a coordinate plane and locate coordinates in the first quadrant.

- Graphs can be interpreted

Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Student/teacher conferencing
- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At Risk Students:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Go- Math Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
- Go- Math Enrichment activities

Materials and Learning Plan

Materials:

- Online Resources
- Text and workbooks
- Standards Practice Book
- MathBoard
- Paper Cup
- Water
- Fahrenheit Thermometer
- Ice Cubes
- Stopwatch

Learning Plan:

Go Math! Series

- Chapter 9, Lessons 2, 3, 4, 7

Interdisciplinary Connections

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CRP11. Use technology to enhance productivity.

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8.1.5.A.1 - Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

8.2.5.C.4 - Collaborate and brainstorm with peers to solve a problem evaluating all solutions to provide the best results with supporting sketches or models.

In this unit, the following NJSL 21st Century Standards are addressed:

9.1 Personal Financial Literacy

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9.1.8.A.2 - Relate how career choices, education choices, skills, entrepreneurship, and economic conditions affect income.

9.1.8.B.2 - Construct a simple personal savings and spending plan based on various sources of income.

9.2 Career Awareness, Exploration, and Preparation

- This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about post-secondary and career options, career planning, and career requirements.

9.2.8.B.4 - Evaluate how traditional and nontraditional careers have evolved regionally, nationally, and globally.

9.2.8.B.1- Research careers within the 16 Career Clusters® and determine attributes of career success

5th Grade Unit 8

Domain: Geometry

Marking Period: 3 and 4

Lesson Title: Classify Two-Dimensional Figures into Categories Based on their Properties

Overview of Unit:

- Two dimensional figures have attributes that can be used for classifying them into categories

Learning Targets—Big Idea and Standards

Big Idea(s):

- Understanding two-dimensional figures and their properties

Standard(s): 5.G.3, 5.G.4

- 5.G.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.
- 5.G.4 Classify two-dimensional figures in a hierarchy based on properties.

Essential Questions

- How do we use geometry to help us make sense of the world?
- What is unique about each geometric shape?
- How do we talk about and classify different shapes?

Enduring Understandings

- Objects can be compared based on their dimensionality
- Characteristics of various polygons can be compared and contrasted
- The study of geometry requires thinking and doing.
- Geometry requires visualization, spatial reasoning, and geometric modeling to solve problems.
- Two-dimensional shapes can be described and classified by their properties.

Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Student/teacher conferencing
- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance

Accommodations for Special Education:

- Visual models/drawings
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- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At Risk Students:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Go- Math Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
- Go- Math Enrichment activities

Materials and Learning Plan

Materials:

- MathBoard
- Online Resources
- Text and workbooks
- Standards Practice Book
- Centimeter Ruler
- Protractor
- Quadrilaterals (from eTeacher Resources)
- Scissors
- Tracing Paper
- Centimeter Cubes

Learning Plan:

Go Math! Series

- Chapter 11, Lessons 1, 2, 3, 4

Interdisciplinary Connections

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- This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about post-secondary and career options, career planning, and career requirements.

9.2.8.B.4 - Evaluate how traditional and nontraditional careers have evolved regionally, nationally, and globally.

9.2.8.B.1- Research careers within the 16 Career Clusters[®] and determine attributes of career success

5th Grade Unit 9

Domain: Measurement and Data

Marking Period: 4

Lesson Title: Volume

Overview of Unit:

- Understand concepts of volume and relate volume to multiplication and to addition

Learning Targets—Big Idea and Standards

Big Idea(s):

- Students recognize volume as an attribute of three-dimensional space. They understand that volume can be measured by finding the total number of same-size units of volume required to fill the space without gaps or overlaps. They understand that a 1-unit by 1-unit by 1-unit cube is the standard unit for measuring volume. They select appropriate units, strategies, and tools for solving problems that involve estimating and measuring volume. They decompose three-dimensional shapes and find volumes of right rectangular prisms by viewing them as decomposed into layers of arrays of cubes. They measure necessary attributes of shapes in order to determine volumes to solve real world and mathematical problems.

Standard(s): 5.MD.3, 5.MD.4, 5.MD.5

- 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 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 non-standard units.
- 5.MD.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
 - c. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.
 - d. Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real

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

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • What is volume and what units do you use to express it? • How do you derive and use the formula for the volume of a cube or rectangular prism? • How are two-dimensional polygons used to form three-dimensional shapes? • How do I identify the vertices, edges and faces of a three-dimensional shape? • How are prisms named? • What parts of a prism are congruent? • What characteristics can I use to classify three-dimensional shapes? 	<ul style="list-style-type: none"> • To demonstrate an ability to calculate and explain correct solutions to real world problems. • Three dimensional figures can be classified by their two-dimensional faces. • Volume can be calculated by applying an algebraic formula. • Volume of three-dimensional objects is expressed in cubic units. • Three dimensional figures have parts called vertices, faces, and edges • Three dimensional figures can be constructed from cube nets.

Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Student/teacher conferencing
- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)

- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At Risk Students:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Go- Math Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
- Go- Math Enrichment activities

Materials and Learning Plan

Materials:

- Rectangular Prism Nets A and B (from eTeacher Resources)
- Two Different-Sized Boxes
- Centimeter Cubes
- Online Resources
- Text and workbooks
- Standards Practice Book
- MathBoard

Learning Plan:

Go Math! Series

- Chapter 11, Lessons 5, 6, 7, 8, 9, 10, 11, 12

Interdisciplinary Connections

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globally.

9.2.8.B.1- Research careers within the 16 Career Clusters® and determine attributes of career success

5 th Grade Unit 10	
Domain: Measurement and Data	Marking Period: 4
Lesson Title: Measurement Unit Conversions	
Overview of Unit: <ul style="list-style-type: none">● Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step, real world problems (ie. Inches to yards; centimeters to kilometers).	
Learning Targets—Big Idea and Standards	
Big Idea(s): <ul style="list-style-type: none">● Convert measurements to solve problems using a singular measurement system.	
Standard(s): 5.MD.1 <ul style="list-style-type: none">● Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	
Essential Questions	Enduring Understandings
<ul style="list-style-type: none">● How does measurement keep our world organized?● What is a precise measurement?● How might measurement errors occur?	<ul style="list-style-type: none">● Measurement processes are used in everyday life to describe and quantify the world.● Measurements in the real world are

- How do you convert units within the standard system? Metric system?
- How do you determine which tool to use for a specific measurement?
- How do you know which measurement is the most appropriate?
- When is it appropriate to be accurate and when is it appropriate to estimate a measurement?

approximate, in part because of the instruments used and because of human error in reading the scales of the instruments.

- Measurement is a process that assigns appropriate numerical values to spatial and physical attributes.
- Common benchmarks help with recognition of reasonable measurements.
- Measurement is useful for determining relationships within and among geometric shapes.

Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation
- Student/teacher conferencing
- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
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- Small group instruction and assistance

Accommodations for Special Education:

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- Small group instruction and assistance
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- Refer to student IEP

Accommodations for At Risk Students:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Go- Math Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
- Go- Math Enrichment activities

Materials and Learning Plan

Materials:

- MathBoard
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 10, Lessons 1-7 (All)

Interdisciplinary Connections

Interdisciplinary Standards: NJSL

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9.1 Personal Financial Literacy

- This standard outlines the important fiscal knowledge, habits, and skills that must be mastered in order for students to make informed decisions about personal finance. Financial literacy is an integral component of a student's college and career readiness, enabling students to achieve fulfilling, financially-secure, and successful careers.

9.1.8.A.2 - Relate how career choices, education choices, skills, entrepreneurship, and economic conditions affect income.

9.1.8.B.2 - Construct a simple personal savings and spending plan based on various sources of income.

9.2 Career Awareness, Exploration, and Preparation

- This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about post-secondary and career options, career planning, and career requirements.

9.2.8.B.4 - Evaluate how traditional and nontraditional careers have evolved regionally, nationally, and globally.

9.2.8.B.1- Research careers within the 16 Career Clusters® and determine attributes of career success

5th Grade Unit 11

Domain: Measurement and Data

Marking Period: 4

Lesson Title: Represent and Interpret Data

Overview of Unit:

- Represent and interpret data using line plots to solve problems

Learning Targets—Big Idea and Standards

Big Idea(s):

- Interpret data.

Standard(s): 5.MD.2

- 5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*

Essential Questions

- How can collecting, organizing, and displaying data help us analyze information and make reasonable predictions and informed decision?

Enduring Understandings

- Students collect, organize, and display data using appropriate statistical and graphical methods.

Evidence of Learning

Assessments:

- Summative and formative assessments
- Unit tests
- Teacher/student conferencing
- Homework Review
- Class discussion of essential questions
- Teacher observation

- Student/teacher conferencing
- Projects

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Assistance from Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for At Risk Students:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, measuring cups, etc.)
- Guided and Strategy Groups
- Multi-leveled cooperative learning groups
- Go- Math Reteach activities

Accommodations for Enrichment:

- Internet activities
- Multi-leveled cooperative learning groups
- Go- Math Enrichment activities
-

Materials and Learning Plan

Materials:

- MathBoard
- Online Resources
- Text and workbooks
- Standards Practice Book

Learning Plan:

Go Math! Series

- Chapter 9, Lesson 1

Interdisciplinary Connections

__ Interdisciplinary Standards: NJSL

NJLSA.R1. Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

NJLSA.W2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content

NJLSA.L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking

Career Ready Practices

CRP2. Apply appropriate academic and technical skills.

CRP3. Attend to personal health and financial well-being.

CRP4. Communicate clearly and effectively and with reason.

CRP5. Consider the environmental, social and economic impacts of decisions.

CRP6. Demonstrate creativity and innovation.

CRP7. Employ valid and reliable research strategies

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.

NJSL Technology Standards:

8.1: Computer and Information Literacy

- All students will use computer applications to gather and organize information to solve problems.

8.2: Technology Education

- All students will develop an understanding of the nature and impact of technology, engineering, technological design, and the designed world as they relate to the individual society, and the environment.

8.1.5.E.1 - Use digital tools to research and evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.

8.1.5.A.1 - Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

8.2.5.C.4 - Collaborate and brainstorm with peers to solve a problem evaluating all solutions to provide the best results with supporting sketches or models.

In this unit, the following NJSL 21st Century Standards are addressed:

9.1 Personal Financial Literacy

- This standard outlines the important fiscal knowledge, habits, and skills that must be mastered in order for students to make informed decisions about personal finance. Financial literacy is an integral component of a student's college and career readiness, enabling students to achieve fulfilling, financially-secure, and successful careers.

9.1.8.A.2 - Relate how career choices, education choices, skills, entrepreneurship, and economic conditions affect income.

9.1.8.B.2 - Construct a simple personal savings and spending plan based on various sources of income.

9.2 Career Awareness, Exploration, and Preparation

- This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about post-secondary and career options, career planning, and career requirements.

9.2.8.B.4 - Evaluate how traditional and nontraditional careers have evolved regionally, nationally, and globally.

9.2.8.B.1- Research careers within the 16 Career Clusters® and determine attributes of career success

GRADE 6
UNIT 1: OPERATIONS AND STATISTICAL VARIABILITY
OVERVIEW...

This unit builds on the students' understanding of number system concepts from previous grades to extend to division of a fraction by a fraction, operations with decimals, and multi-digit division.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Compute quotients of fractions.	6.NS.1
2	Construct visual fraction models to represent quotients and explain the relationship between multiplication and division of fractions.	6.NS.1
3	Solve real-world problems involving quotients of fractions and interpret the solutions in the context given.	6.NS.1
4	Fluently add, subtract, multiply and divide multi-digit decimals and whole numbers using standard algorithms.	6.NS.2; 6.NS.3
5	Use positive and negative numbers to describe quantities in real-world situations.	6.NS.5
6	Calculate, compare, and interpret measures of center and variability in a data set to answer a statistical question. (Including median, mean, interquartile range, mean absolute deviation and overall pattern).	6.SP.1; 6.SP.2; 6.SP.3; 6.SP.5c,d

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Selected Opportunities for Connections to Mathematical Practices

1. **Make sense of problems and persevere in solving them.**
SLO #3 Involve problems that include several givens or those that must be carefully deconstructed before they can be solved.
2. **Reason abstractly and quantitatively.**
3. **Construct viable arguments and critique the reasoning of others.**
4. **Model with mathematics.**
SLO #2 Visual fraction models are required.
5. **Use appropriate tools strategically.**
SLO #2 Tools will include diagrams, words, and equations.
6. **Attend to precision.**
SLO #6 The use of precise language is needed when answering statistical questions.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

All content presented at this grade level has connections to the standards for mathematical practices.

Bold type identifies possible starting points for connections to the SLOs in this unit.

CODE #	NJ Student Learning Objective Standards
6.NS.1	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. <i>For example, create a story context for $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$. In general, $(a/b) \div (c/d) = (ad/bc)$ How much chocolate will each person get if 3 people share $1\frac{1}{2}$ lb of chocolate equally? How many $3/4$-cup servings are in $2/3$ of a cup of yogurt? How wide is a rectangular strip of land with length $3/4$ mi and area $1/2$ square mi.?</i>
6.NS.2	Fluently divide multi-digit numbers using the standard algorithm.
6.NS.3	Fluently add, subtract, multiply, and divide multi-digit decimals using the standards algorithm for each operation.
6.NS.5	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts explaining the meaning of 0 in each situation.
6.SP.1	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. <i>For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.</i>
6.SP.2	Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
6.SP.3	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
6.SP.5	Summarize numerical data sets in relation to their context, such as by: c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviation from the overall pattern with reference to the context in which the data were gathered. d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • What does it mean for a number to have value? • When is estimation used? • What are ways that whole numbers, decimals, and fractions can be computed? • How are multiplication and division of fractions modeled? • How do measures of variability to describe a data set? • How do measures of center describe a data set? • What does it mean for a number to be positive or negative? • What is the difference between a statistical and non-statistical question? 	<ul style="list-style-type: none"> • Numbers have relative value. • Positive and negative numbers describe quantities in real-world situations. • Standard algorithms provide for fluent computation. • A non-statistical question has one answer, while a statistical question has many answers. • Data can be summarized and displayed using dots, plots, and histograms. • Mean, median, mode, and range are measures of central tendency.
Evidence of Learning—District Assessment Tools	
<ul style="list-style-type: none"> • Model Curriculum Unit Assessment • Teacher-made tests and quizzes • Publisher’s tests and quizzes • Teacher observation • Daily assignments 	
District Learning Plan and Materials	
<p>Materials: Text: <i>Big Ideas Math</i> <i>Big Ideas</i> Record and Practice Journal <i>Big Ideas</i> Assessment Book See <i>Big Ideas</i> Materials List</p> <p>Learning Plan: <i>Big Ideas Math 2014</i> Chapter 2: Fractions & Decimals Chapter 6: Integers & the Coordinate Plane Chapter 9: Statistical Measures</p> <p>Web-based activities Interactive Whiteboard Lessons Online Lesson Video</p> <p>Differentiation: <i>Big Ideas</i> Website- “Differentiating the Lesson” *Game Closet</p>	

*Intensive Intervention Activities

*Lesson Tutorials (videos)

*Skills Review Handbook

*Basic Skills Handbook

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and

Performing Arts Technology

Field Trips _____ Other _____ -

GRADE 6
UNIT 2: EXPRESSIONS
OVERVIEW...

This unit employs the students' understanding of the concepts involving integers in Unit 1 to understand and apply rational number concepts in real-world contexts through writing and solving expressions.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Use mathematical language to identify parts of an expression.	6.EE.2
2	Write and evaluate numerical expressions involving whole number exponents.	6.EE.1
3	Read, write, and evaluate expressions in which letters stand for numbers (Including formulas that arise from real-world contexts).	6.EE.2
4	Apply the properties of operations to generate equivalent expressions (Including the distributive property; for example, <i>express $36 + 8$ as $4(9 + 2)$ and $y + y + y = 3y$.</i>	6.EE.3, 6.NS.4
5	Identify when two expressions are equivalent; for example, <i>Are the two expressions equal? $81 + 18$ and $9(9 + 2)$.</i>	6.EE.4
6	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two numbers less than or equal to 12.	6.NS.4

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Selected Opportunities for Connection to Mathematical Practices

1. Make sense of problems and persevere in solving them.
 2. Reason abstractly and quantitatively.
 3. **Construct viable arguments and critique the reasoning of others.**
SLO 5 Listen to arguments of others about the equivalence of two expressions and decide if they make sense. Ask useful questions to clarify.
 4. **Model with mathematics.**
SLOs 1, 2, and 3 Use expressions that arise from real-world context
 5. Use appropriate tools strategically.
 6. Attend to precision.
 7. Look for and make use of structure.
 8. **Look for and express regularity in repeated reasoning.**
SLO 4 Generate equivalent expressions using properties of operations.
- All of the content presented at this grade level has connections to the standards for mathematical practices.*

Bold type identifies possible starting points for connections to the SLOs in this unit.

Code #	NJ Student Learning Objective Standards
6.EE.1	Write and evaluate numerical expressions involving whole number exponents.
6.EE.2	<p>Read, write, and evaluate expressions in which letters stand for numbers.</p> <p>a. Write expressions that record operations with numbers and with letters standing for numbers. <i>For example, express the calculation “Subtract y from 5” as $5 - y$.</i></p> <p>b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. <i>For example, describe the expression $2(8 + 7)$ as a product of two factors; view $(8 + 7)$ as both a single entity and a sum of two terms.</i></p> <p>c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). <i>For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = 1/2$.</i></p>
6.EE.3	Apply the properties of operations to generate equivalent expressions. <i>For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.</i>
6.EE.4	Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). <i>For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for.</i>
6.NS.4	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. <i>For example, express $36 + 8$ as $4(9 + 2)$.</i>

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • What do the different parts of an expression represent? • How is an expression used to represent a real-world problem? • What does it mean to evaluate expressions involving variables? • How can properties of operations be used to create equivalent expressions? • What are ways to determine if two expressions are equivalent? • How does one find the GCF and LCM of two whole numbers? 	<ul style="list-style-type: none"> • Problems can be represented and solved using algebraic expressions. • Various properties of operations can be used to solve expressions involving variables. • Expressions in different forms can be equivalent. • GCF and LCM can be used in different types of problems; such as those including distributive property and fractions.
Evidence of Learning—District Assessment Tools	
<ul style="list-style-type: none"> • Model Curriculum Unit Assessment • Teacher-made tests and quizzes • Publisher’s tests and quizzes • Teacher observation • Daily assignments 	
District Learning Plan and Materials	
<p>Materials: Text: <i>Big Ideas Math</i> <i>Big Ideas</i> Record and Practice Journal <i>Big Ideas</i> Assessment Book See <i>Big Ideas</i> Materials List</p> <p>Learning Plan: <i>Big Ideas Math 2014</i> Chapter 1: Numerical Expressions & Factors Chapter 3: Algebraic Expressions & Factors</p> <p>Web-based activities Interactive Whiteboard Lessons Online Lesson Video</p> <p>Differentiation: <i>Big Ideas</i> Website- “Differentiating the Lesson” *Game Closet *Intensive Intervention Activities *Lesson Tutorials (videos) *Skills Review Handbook *Basic Skills Handbook</p> <p>Web-based Activities</p>	

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-levelled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-levelled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-levelled cooperative learning groups
- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and

Performing Arts Technology

Field Trips _____ Other _____ -

GRADE 6
UNIT 3: EQUATIONS & INEQUALITIES
OVERVIEW...

This unit strengthens students' abilities to reason about and solve real-world one-variable equations and inequalities. Geometry is also explored through problems involving area, surface area and volume.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Use variables to represent numbers and write expressions when solving real world or mathematical problems.	6.EE.6
2	Solve an equation or inequality to answer the question: which values from a specified set, if any, make the equation or inequality true? and check the solution using substitution to determine whether a given number in a specified set makes an equation or inequality true. (including formulas $V=lwh$ and $V=bh$)	6.EE.5
3	Write and solve one step equations that represent real world or mathematical problems.	6.EE.7
4	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real world or mathematical problem and represent them on a number line diagram.	6.EE.8
5	Find the area of right triangles, other triangles, special quadrilaterals and polygons by composing into rectangles or decomposing into triangles and other shapes to solve real world or mathematical problems.	6.G.1
6	Represent three dimensional figures using nets made of rectangles and triangles, and use the nets to find the surface area of the figures in the context of solving real world and mathematical problems.	6.G.4
7	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes. Show that the volume is the same as it would be if found by multiplying the edge lengths of the prism. Apply the formulas $V= lwh$ and $V = Bh$ to find the volume of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	6.G.2

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Selected Opportunities for Connection to Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. **Construct viable arguments and critique the reasoning of others.**

SLO #3 Order and justify steps to reach a solution to a one step equation.

4. Model with mathematics.
SLO #6 The use of 2-D nets to solve surface area problems.

5. Use appropriate tools strategically.

6. Attend to precision.
SLO #2 Real-world context involving careful attention to units of measure.

7. Look for and make use of structure.

8. Look for and express regularity in repeated reasoning.
SLO #1 The use of variables to represent real-world context over time.

All of the content presented at this grade level has connections to the standards for mathematical practices.

Bold type identifies possible starting points for connections to the SLOs in this unit.

Code #	NJ Student Learning Objective Standards
6.EE.5	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
6.EE.6	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
6.EE.7	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers.
6.EE.8	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.
6.G.1	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
6.G.2	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
6.G.4	Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • What values, if any, make equations and inequalities true? • How can an expression be written with variables to represent real-world problems? • How are equations and inequalities written and solved? • How are number lines used to represent solutions to inequalities? • What are different ways to find the area of polygons? • How are nets used to find the surface area of solid figures? • How is the formula for the volume of a rectangular prism related to filling the rectangular prism with unit cubes? 	<ul style="list-style-type: none"> • Equations and inequalities can have one or more solutions that make them true. • Algorithms can be used to solve equations and inequalities. • The area of a polygon can be found in multiple ways, including the use of formulas and diagrams. • The volume of solid figures can be found by using a formula or filling it with unit cubes.
Evidence of Learning—District Assessment Tools	
<ul style="list-style-type: none"> • Model Curriculum Unit Assessment • Teacher-made tests and quizzes • Publisher’s tests and quizzes • Teacher observation • Daily assignments 	
District Learning Plan and Materials	
<p>Materials: Text: <i>Big Ideas Math</i> <i>Big Ideas</i> Record and Practice Journal <i>Big Ideas</i> Assessment Book See <i>Big Ideas</i> Materials List</p> <p>Learning Plan: <i>Big Ideas Math 2014</i> Chapter 3: Algebraic Expressions & Properties Chapter 7: Equations & Inequalities Chapter 4: Areas of Polygons Chapter 8: Surface Area & Volume</p> <p>Web-based activities Interactive Whiteboard Lessons Online Lesson Video</p> <p>Differentiation: <i>Big Ideas</i> Website- “Differentiating the Lesson”</p>	

- *Game Closet
- *Intensive Intervention Activities
- *Lesson Tutorials (videos)
- *Skills Review Handbook
- *Basic Skills Handbook

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-levelled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-levelled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-levelled cooperative learning groups
- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and Performing Arts Technology

Field Trips _____ Other _____

GRADE 6
UNIT 4: Rational Numbers
OVERVIEW...

This unit focuses on the students' understanding of rational numbers. Students solve real-world problems through graphing on the coordinate plane and summarize and display data in different types of graphs.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Locate positive and negative rational numbers on the number line and explain the meaning of absolute value of a rational number as indicating locations on opposite sides of zero on the number line.	6.NS.6 6.NS.7
2	Write and compare rational numbers using inequality signs.	6.NS.7
3	Plot ordered pairs in all four quadrants on the coordinate plane and describe their reflections.	6.NS.6
4	Interpret and explain absolute value as magnitude for a positive or negative quantity in a real-world situation.	6.NS.7
5	Solve real world problems mathematically by graphing points in all four quadrants of the coordinate plane. Use the absolute value of the differences of their coordinates to find distances between points with the same first coordinate or same second coordinate.	6.NS.8
6	Draw polygons in the coordinate plane given the coordinates of the vertices and use the coordinates to solve real world distance, perimeter, and area problems.	6.G.3
7	Display numerical data in plots on the number line (including dot plots, histograms, and box plots) and summarize in relation to their context.	6.SP.4 6.SP.5a,b

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Selected Opportunities for Connection to Mathematical Practices

1. Make sense of problems and persevere in solving them.
 - 2. Reason abstractly and quantitatively.**
SLO #2 Use inequality symbols to make comparisons.
 3. Construct viable arguments and critique the reasoning of others.
 - 4. Model with mathematics.**
SLO #6 Represent polygons on a coordinate plane.
 - 5. Use appropriate tools strategically.**
SLO #7 Use spreadsheets when working with data sets with a large quantity of data points.
 6. Attend to precision.
 7. Look for and make use of structure.
 8. Look for and express regularity in repeated reasoning.
- All of the content presented at this grade level has connections to the standards for mathematical practices.*

Bold type identifies possible starting points for connections to the SLOs in this unit.

Code #	NJ Student Learning Objective Standards
6.NS.6	<p>Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.</p> <ol style="list-style-type: none"> a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., $-(-3) = 3$, and that 0 is its own opposite. b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
6.NS.7	<p>Understand ordering and absolute value of rational numbers.</p> <ol style="list-style-type: none"> a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right. b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C. c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. For example, for an account balance of -30 dollars, write $-30 = 30$ to describe the size of the debt in dollars. d. Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.

6.NS.8	Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.
6.G.3	Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.
6.SP.4	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
6.SP.5	Summarize numerical data sets in relation to their context, such as by: <ul style="list-style-type: none"> a. Reporting the number of observations. b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • How are positive and negative rational numbers plotted on a number line? • What is absolute value? • How is an inequality symbol used to write and compare rational numbers? • How does the coordinate plane integrate geometry and algebra? • What data displays bring clarity to collections of data? 	<ul style="list-style-type: none"> • Positive and negative rational numbers can be located on a number line. • Absolute value is a distance from zero on a number line. • Inequality symbols can be used to compare numbers. • The coordinate plane and transformations across it can be used to precisely represent points and geometric figures. • Numerical data can be summarized and analyzed through use of data displays.
Evidence of Learning—District Assessment Tools	
<ul style="list-style-type: none"> • Model Curriculum Unit Assessment • Teacher-made tests and quizzes • Publisher’s tests and quizzes • Teacher observation • Daily assignments 	
District Learning Plan and Materials	
<p>Materials: Text: <i>Big Ideas Math</i> <i>Big Ideas</i> Record and Practice Journal <i>Big Ideas</i> Assessment Book</p>	

See *Big Ideas* Materials List

Learning Plan:

Big Ideas Math 2014 Chapter 6: Integers & the Coordinate Plane
Chapter 10: Data Displays

Web-based activities

Interactive Whiteboard Lessons

Online Lesson Video

Differentiation:

Big Ideas Website- "Differentiating the Lesson"

- *Game Closet
- *Intensive Intervention Activities
- *Lesson Tutorials (videos)
- *Skills Review Handbook
- *Basic Skills Handbook

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Reduced assignments

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and
Performing Arts Technology
Field Trips _____ Other _____ -

GRADE 6
UNIT 5: RATIO AND PROPORTION
OVERVIEW...

This unit develops students' understanding of ratios and proportions, creating a foundation for one of the major 7th grade topics, analyzing proportional relationships. Students are also introduced to the concepts of dependent and independent variables.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Explain the relationship of two quantities or measures of a given ratio and use ratio language to describe the relationship between the two quantities. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." <i>"For every vote candidate A received, candidate C received nearly three votes."</i>	6.RP.1
2	Use rate language in the context of a ratio relationship to describe a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$. For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar." "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger."	6.RP.2
3	Use ratio and rate reasoning to solve real world and mathematical problems which include making tables of equivalent ratios, solving unit rate problems, finding percent of a quantity as a rate per 100.	6.RP.3
4	Use ratio and rate reasoning to convert measurement units (manipulate and transform units appropriately when multiplying or dividing quantities).	6.RP.3
5	Use variables to represent two quantities that change in relationship to one another in a real world problem and write an equation to express one quantity, thought of as the dependent variable, in terms of another quantity, thought of as the independent variable.	6.EE.9
6	Analyze the relationship between the dependent and independent variables in an equation using graphs and tables. For example, in a problem involving motion at constant speed,	6.EE.9

	list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.	
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Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Selected Opportunities for Connections to Mathematical Practices
<ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. SLO #5 Relating variables to real world context. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. SLO #6 Use graphs and tables to represent a dependent/independent relationship. 5. Use appropriate tools strategically. 6. Attend to precision. SLO #4 Converting measures. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning. <p><i>All of the content presented at this grade level has connections to the standards for mathematical practices.</i></p>

Bold type identifies possible starting points for connections to the SLOs in this unit.

Code #	NJ Student Learning Objective Standards
6.RP.1	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." <i>"For every vote candidate A received, candidate C received nearly three votes."</i>
6.RP.2	Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. <i>For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar." "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger."</i>
6.RP.3	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. <ol style="list-style-type: none"> a. Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. b. Solve unit rate problems including those involving unit pricing and constant speed. <i>For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?</i> c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $30/100$ times the quantity); solve problems involving finding the whole, given a part and the percent. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

6.EE.9	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.
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Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • What is the relationship between a ratio and a rate, and how are ratios used in real world context? • How are ratios and rates modeled? • How are ratios and rates used to convert measurement units? • What is the significance of a variable in an equation? • How are equations used to represent one quantity in terms of another quantity? • What is the relationship between independent and dependent variables? 	<ul style="list-style-type: none"> • Ratios and rates are used to compare quantities. • Understanding ratio and proportional strategies can help solve problems. • Ratios and rates are comparisons using division. • Variables are used to represent quantities that change in real world context. • Equations show how dependent variables are influenced by independent variables.
Evidence of Learning—District Assessment Tools	
<ul style="list-style-type: none"> • Model Curriculum Unit Assessment • Teacher-made tests and quizzes • Publisher’s tests and quizzes • Teacher observation • Daily assignments 	
District Learning Plan and Materials	
<p>Materials: Text: <i>Big Ideas Math</i> <i>Big Ideas</i> Record and Practice Journal <i>Big Ideas</i> Assessment Book See <i>Big Ideas</i> Materials List</p> <p>Learning Plan: <i>Big Ideas Math 2014</i> Chapter 5: Ratios & Rates Chapter 7: Equations & Inequalities Web-based activities</p>	

Interactive Whiteboard Lessons

Online Lesson Video

Differentiation:

Big Ideas Website- "Differentiating the Lesson"

- *Game Closet
- *Intensive Intervention Activities
- *Lesson Tutorials (videos)
- *Skills Review Handbook
- *Basic Skills Handbook

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and
Performing Arts Technology
Field Trips _____ Other _____ -

GRADE 7
UNIT 1: The Number System
OVERVIEW...

This unit builds on the students' understanding of number concepts to develop fluency with addition, subtraction, multiplication and division of rational numbers and to use these skills in a problem solving content.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Describe and model, on a horizontal and vertical number line, real-world situations in which rational numbers are combined.	7.NS.1
2	Apply the additive inverse property to subtraction problems and develop the argument that the distance between two points is the absolute value of the difference between their coordinates.	7.NS.1
3	Explain why a divisor cannot be zero and why division of integers results in a rational number.	7.NS.2
4	Model the multiplication and division of signed numbers using real-world contexts, such as taking multiple steps backwards.	7.NS.2
5	Convert a rational number to a decimal using long division and explain in oral or written language why the decimal is either a terminating or repeating decimal.	7.NS.2
6	Apply properties of operations as strategies to add, subtract, multiply, and divide rational numbers.	7.NS.2 7.NS.3
7	Solve mathematical and real-world problems involving addition, subtraction, multiplication, and division of rational numbers.	7.NS.3

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Selected Opportunities for Connection to Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. **Construct viable arguments and critique the reasoning of others.**
SLO #3 Present oral and written arguments.
4. **Model with mathematics.**
SLOs #1 and #4 Apply the mathematics to describe situations that arise from their environments.
5. Use appropriate tools strategically.
6. Attend to precision.
7. **Look for and make use of structure.**
SLO #6 Discern a structure then perform calculations appropriate for the structure.

8. Look for and express regularity in repeated reasoning.

All of the content presented at this grade level has connections to the standards for mathematical practices.

Bold type identifies possible starting points for connections to the SLOs in this unit.

Code #	NJ Student Learning Objective Standards
7.NS.1	<p>Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.</p> <ol style="list-style-type: none"> Describe situations in which opposite quantities combine to make 0. For example, in the first round of a game, Maria scored 20 points. In the second round of the same game, she lost 20 points. What is her score at the end of the second round? Understand $p + q$ as the number located a distance q from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts. Apply properties of operations as strategies to add and subtract rational numbers
7.NS.2	<p>Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <ol style="list-style-type: none"> Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts. Apply properties of operations as strategies to multiply and divide rational numbers. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.
7.NS.3	<p>Solve real-world and mathematical problems involving the four operations with rational numbers.</p>

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • When are negative and positive numbers used and why are they important? • What strategies are most useful in helping develop algorithms for computing with rational numbers? • What properties help simplify and help evaluate rational numbers? • How can rational numbers be applied in solving real-world situations? 	<ul style="list-style-type: none"> • Negative numbers are used to represent quantities that are less than zero. • Absolute value is useful in ordering and graphing positive and negative numbers. • Algorithms provide series of steps that, if done properly, will produce correct answers in addition, subtraction, multiplication and division of positive and negative rational numbers. • Long division is used to convert fractions to decimals.
Evidence of Learning—District Assessment Tools	
<ul style="list-style-type: none"> • Model Curriculum Unit Assessment • Teacher-made tests and quizzes • Publisher’s tests and quizzes • Teacher observation • Exam View • Daily assignments 	
District Learning Plan and Materials	
<p>Materials: Text: <i>Big Ideas Math</i> <i>Big Ideas Record and Practice Journal</i> <i>Big Ideas Assessment Book</i> See <i>Big Ideas</i> Materials List</p> <p>Learning Plan: <i>Big Ideas Math 2014</i> Chapter 1: Integers Chapter 2: Rational Numbers</p> <p>Web-based activities Interactive Whiteboard Lessons On-line Lesson Video</p> <p>Differentiation: Big Ideas Website—“Differentiating the Lesson”</p> <ul style="list-style-type: none"> • Game Closet • Intensive Intervention Activities • Lesson Tutorials (Videos) 	

- Skills Review Handbook
- Basic Skills Handbook

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and
 Performing Arts Technology
 Field Trips _____ Other _____ -

GRADE 7
UNIT 2: Expressions and Equations
OVERVIEW...

This unit builds on the completion of work with rational numbers in unit one to develop success with problem solving and fluency with rewriting linear expressions and solving linear equations. Students use properties of operations to generate equivalent expressions.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Apply the properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients (including additive and multiplicative inverse, distributive, commutative, and associative properties).	7.EE.1 7.EE.2
2	Use equivalent expressions to demonstrate the relationship between quantities and determine simpler solutions to a problem, such as $a + 0.05a = 1.05a$ means that "increase by 5%" is the same as "multiply by 1.05."	7.EE.2
3	Solve multi-step real life and mathematical problems with rational numbers in any form (fractions, decimals, percents) by applying properties of operations and converting rational numbers between forms as needed, and then assess the reasonableness of results using mental computation and estimation strategies.	7.EE.3
4	Use variables to represent quantities in a real-world or mathematical problem by constructing simple equations and inequalities to represent problems. <i>Equations of the form $px + q = r$ and $p(x + q) = r$ and inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers.</i>	7.EE.4
5	Fluently solve equations and inequalities and graph the solution set of the inequality; interpret the solutions in the context of the problem.	7.EE.4

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Selected Opportunities for Connection to Mathematical Practices

1. **Make sense of problems and persevere in solving them.**
SLO 4 Compare arithmetic and algebraic solutions to the same real-world problems.
 2. **Reason abstractly and quantitatively.**
SLO 2 Find simpler but equivalent expressions
 3. Construct viable arguments and critique the reasoning of others.
 4. Model with mathematics.
 5. Use appropriate tools strategically.
 6. Attend to precision.
 7. **Look for and make use of structure.**
SLO 1 Examine the formation of rational expressions then perform appropriate arithmetic operations.
 8. Look for and express regularity in repeated reasoning.
- All of the content presented at this grade level has connections to the standards for mathematical practices.*

Bold type identifies possible starting points for connections to the SLOs in this unit.

Code #	NJ Student Learning Objective Standards
7.EE.1	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
7.EE.2	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. <i>For example, $a + 0.05a = 1.05a$ means that “increase by 5%” is the same as “multiply by 1.05.”</i>
7.EE.3	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional $\frac{1}{10}$ of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.
7.EE.4	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. <ol style="list-style-type: none"> a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width? b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the

	inequality and interpret it in the context of the problem. For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.
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Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • What is an algebraic expression versus an equation? • How are various properties, such as order of operations, used to simplify, evaluate, and expand algebraic expressions, equations and inequalities? • Are there other forms of expressions that can be written to help solve a problem? • How can inequalities be used to model real-world situations? 	<ul style="list-style-type: none"> • An algebraic expression/equation uses variables to represent an unknown quantity. • The properties of real numbers are true for algebraic as well as numeric expressions. • Solutions to inequalities represent a range of values. • Mathematical inverses are used to maintain balance while solving an equation. • Estimation skills are used to determine the reasonableness of answers.
Evidence of Learning—District Assessment Tools	
<ul style="list-style-type: none"> • Model Curriculum Unit Assessment • Teacher-made tests and quizzes • Publisher’s tests and quizzes • Teacher observation • Daily assignments 	
District Learning Plan and Materials	
<p>Materials: Text: <i>Big Ideas Math</i> <i>Big Ideas Record and Practice Journal</i> <i>Big Ideas Assessment Book</i> See <i>Big Ideas</i> Materials List</p> <p>Learning Plan <i>Big Ideas Math 2014</i> Chapter 3: Expressions and Equations Chapter 4: Inequalities</p> <p>Web-based activities Interactive Whiteboard Lessons On-line Lesson Video</p>	

Differentiation:

Big Ideas Website—"Differentiating the Lesson"

- Game Closet
- Intensive Intervention Activities
- Lesson Tutorials (Videos)
- Skills Review Handbook
- Basic Skills Handbook

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and
Performing Arts Technology
Field Trips _____ Other _____ -

GRADE 7
UNIT 3: Ratios and Proportions
OVERVIEW...

This unit builds on the students' understanding of combining rational number arithmetic and linear expressions and equations concepts. The standards in this unit require students to analyze proportional relationships and use them in problem solving. The geometry standards provide opportunities for students to use proportional reasoning in context.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Calculate and interpret unit rates of various quantities involving ratios of fractions that contain like and different units using real world examples such as speed and unit price. <i>For example, if a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $\frac{1/2}{1/4}$ miles per hour, equivalently 2 miles per hour.</i>	7.RP.1
2	Determine if a proportional relationship exists between two quantities e.g. by testing for equivalent ratios in a table or graph on the coordinate plane and observing whether the graph is a straight line through the origin.	7.RP.2
3	Identify the constant of proportionality (unit rate) from tables, graphs, equations, diagrams, and verbal descriptions.	7.RP.2
4	Write equations to model proportional relationships in real world problems. <i>For example, if a recipe that serves 6 people calls for $2\frac{1}{2}$ cups of sugar. How much sugar is needed if you are serving only 2 people?</i>	7.RP.2
5	Represent real world problems with proportions on a graph and describe how the graph can be used to explain the values of any point (x, y) on the graph including the points (0, 0) and (1, r), recognizing that r is the unit rate.	7.RP.2
6	Solve multi-step ratio and percent problems using proportional relationships, including scale drawings of geometric figures, simple interest, tax, markups and markdowns, gratuities and commissions, and fees.	7.RP.3, 7.G.1
7	Use freehand, mechanical (i.e. ruler, protractor) and technological tools to draw geometric shapes with given conditions (e.g. scale factor), focusing on constructing triangles.	7.G.2

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Selected Opportunities for Connection to Mathematical Practices

- 1. Make sense of problems and persevere in solving them.**
SLO 6 Use proportional relationships in real world context.
 - 2. Reason abstractly and quantitatively.**
SLO 7 Notice geometric conditions that determine a unique triangle.
 3. Construct viable arguments and critique the reasoning of others.
 - 4. Model with mathematics.**
SLO 6 Represent proportional relationships symbolically.
 - 5. Use appropriate tools strategically.**
SLO 7 Use technology when available.
 6. Attend to precision.
 7. Look for and make use of structure.
 8. Look for and express regularity in repeated reasoning.
- All of the content presented at this grade level has connections to the standards for mathematical practices.*

Bold type identifies possible starting points for connections to the SLOs in this unit.

Code #	NJ Student Learning Objective Standards
7.RP.1	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. <i>For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles per hour, equivalently 2 miles per hour.</i>
7.RP.2	Recognize and represent proportional relationships between quantities. <ol style="list-style-type: none"> a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. c. Represent proportional relationships by equations. <i>For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$.</i> d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.
7.RP.3	Use proportional relationships to solve multistep ratio and percent problems. <i>Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.</i>
7.G.1	Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
7.G.2	Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Essential Questions	Enduring Understandings
<ul style="list-style-type: none">• How can proportional relationships be described using an equation?• How can proportions be used to solve multi-step ratio and percent problems?• What is the constant of proportionality?• Can proportions be used to describe relationships between geometric figures?	<ul style="list-style-type: none">• A unit rate is a value of a denominator of one.• Proportional relationships can be represented using words, rules, tables and graphs.• Written descriptions, tables, graphs, and equations are useful in representing and investigating relationships between varying quantities.
Evidence of Learning—District Assessment Tools	
<ul style="list-style-type: none">• Model Curriculum Unit Assessment• Teacher-made tests and quizzes• Publisher’s tests and quizzes• Teacher observation• Daily assignments	
District Learning Plan and Materials	
<p>Materials: Text: <i>Big Ideas Math</i> <i>Big Ideas Record and Practice Journal</i> <i>Big Ideas Assessment Book</i> See <i>Big Ideas</i> Materials List</p> <p>Learning Plan: <i>Big Ideas Math 2014</i> Chapter 5: Ratios and Proportions Chapter 6: Percents Chapter 7: Constructions and Scale Drawings</p> <p>Web-based activities Interactive Whiteboard Lessons On-line Lesson Video</p> <p>Differentiation: Big Ideas Website—“Differentiating the Lesson”</p> <ul style="list-style-type: none">• Game Closet	

- Intensive Intervention Activities
- Lesson Tutorials (Videos)
- Skills Review Handbook
- Basic Skills Handbook

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and Performing Arts Technology

Field Trips _____ Other Financial Literacy _____

GRADE 7
UNIT 4: Statistics and Probability
OVERVIEW...

In this unit the students will continue to use ratios and proportional reasoning in multi-step ratio and percent problems. The standards from the statistics and probability domain will support the use of proportional reasoning in context through random sampling, comparative inferences and chance processes.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Solve multi-step ratio and percent problems using proportional relationships (<i>simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error</i>).	7RP.3
2	Distinguish between valid and invalid samples from a population by determining if the sample is representative of the subgroups within the population (<i>e.g. if the class had 50% girls and the sample had 25% girls, then the number of girls was not representative of the whole population</i>).	7RP.3, 7.SP.1
3	Use random sampling to produce a representative sample, develop valid inferences about a population with an unknown characteristic of interest, and compare the variation in estimates using multiple samples of the same and different size.	7.SP.1 7.SP.2
4	Visually and numerically compare the means and variations of two distinct populations (such as the mean height of different sports teams) to draw informal comparative inferences about measures of center and variability using graphical representations and statistical calculations.	7.SP.3 7.SP.4
5	Interpret and express the likelihood of a chance event as a number between 0 and 1, relating that the probability of an unlikely event happening is near 0, a likely event is near 1, and 1/2 is neither likely nor unlikely.	7.SP.5
6	Conduct experimental probability events that are both uniform (<i>rolling a number cube multiple times</i>) and non-uniform (<i>tossing a paper cup to see if it lands up or down</i>) to collect and analyze data to make predictions for the approximate relative frequency of chance events.	7RP.3, 7.SP.6
7	Develop uniform and non-uniform theoretical probability models by listing the probabilities of all possible outcomes in an event, for instance, the probability of the number cube landing on each	7.SP.7

	number being $\frac{1}{6}$. Then, conduct an experiment of the event using frequencies to determine the probabilities of each outcome and use the results to explain possible sources of discrepancies in theoretical and experimental probabilities.	
8	Design a simulation of a compound probability event and determine the sample space using organized lists, tables, and tree diagrams, calculate the fractional probabilities for each outcome in the sample space, and conduct the simulation using the data collected to determine the frequencies of the outcomes in the sample space.	7.SP.8

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Selected Opportunities for Connection to Mathematical Practices

- 1. Make sense of problems and persevere in solving them.**
SLO 1 Use problems that have several givens or must be decomposed before solving.
 - 2. Reason abstractly and quantitatively.**
SLO 2 Present an argument and provide supporting justification
 3. Construct viable arguments and critique the reasoning of others.
 - 4. Model with mathematics.**
SLO 5 Determine probability experimentally.
 5. Use appropriate tools strategically.
 6. Attend to precision.
 7. Look for and make use of structure.
 8. Look for and express regularity in repeated reasoning.
- All of the content presented at this grade level has connections to the standards for mathematical practices.*

Bold type identifies possible starting points for connections to the SLOs in this unit.

Code #	NJ Student Learning Objective Standards
7.RP.3	Use proportional relationships to solve multistep ratio and percent problems. <i>Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.</i>
7.SP.1	Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
7.SP.2	Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. <i>For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.</i>
7.SP.3	Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. <i>For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.</i>
7.SP.4	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. <i>For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.</i>
7.SP.5	Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
7.SP.6	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. <i>For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.</i>
7.SP.7	<p>Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.</p> <p>a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. <i>For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.</i></p> <p>b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. <i>For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies</i></p>

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • In what ways are sample statistics related to the corresponding population parameters? • How can you accurately can you predict future events based on a random sample? • How can measures of center be used to analyze data? • How can variation be described within a data set? • How can outcomes of events be identified, predicted and described in terms of values from 0 to 1? • When do I use multiplication or addition to determine the probability of an event happening? • How can use and design a simulation to generate frequencies for compound events? 	<ul style="list-style-type: none"> • Data displays such as organized lists, tables, tree diagrams, and simulation can be used to determine and display compound events. • Using values of 0 to 1 in terms of the likelihood of an event occurring. • Recognize when to use the proper measure of center and measures of variation. • Develop a probability model by observing frequencies in data generated from a chance process. • Determine when one event does/doesn't affect the outcome of another event. • When two compound independent events occur, use multiplication to determine their probability. • Recognize addition would be used to combine the products of compound events when looking for final percentage.
Evidence of Learning—District Assessment Tools	
<ul style="list-style-type: none"> • Model Curriculum Unit Assessment • Teacher-made tests and quizzes • Publisher's tests and quizzes • Teacher observation • Daily assignments 	
District Learning Plan and Materials	
<p>Materials: Text: <i>Big Ideas Math</i> <i>Big Ideas Record and Practice Journal</i> <i>Big Ideas Assessment Book</i> See <i>Big Ideas</i> Materials List</p> <p>Learning Plan: <i>Big Ideas Math 2014</i> Chapter 5: Ratios and Proportions Chapter 6: Percents Chapter 7: Constructions and Scale Drawings</p> <p>Web-based activities Interactive Whiteboard Lessons On-line Lesson Video</p>	

Differentiation:

Big Ideas Website—"Differentiating the Lesson"

- Game Closet
- Intensive Intervention Activities
- Lesson Tutorials (Videos)
- Skills Review Handbook
- Basic Skills Handbook

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and
Performing Arts Technology
Field Trips _____ Other _____ -

GRADE 7
UNIT 5: Geometry
OVERVIEW...

This unit builds on the students' understanding through drawing, constructing, and describing geometrical figures using angle measures, area, surface area and volume. The fluency standards in Unit 3 are repeated to extend to geometric concepts.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Use variables to represent quantities in a real-world or mathematical problem; write and fluently solve simple equations and inequalities, interpret the solutions in the context of the problem and graph the solution set on a number line. [Please note this unit addresses standard 7.EE.4 again to assess fluency.]	7.EE.4
2	Use tools strategically to solve multi-step real-world and mathematical problems involving positive and negative rational numbers in any form (converting between forms as needed) and determine the reasonableness of the answers. [Please note this unit addresses standard 7.EE.3 again to assess fluency.]	7.EE.3
3	Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	7.G.6 7.EE.3 7.EE.4
4	Write and solve simple algebraic equations involving supplementary, complementary, vertical, and adjacent angles for multi-step problems and finding the unknown measure of an angle in a figure.	7.G.5
5	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	7.G.4
6	Describe, using drawings or written descriptions, the 2-dimensional figures that result when 3-dimensional figures (right rectangular prisms and pyramids) are sliced from multiple angles given both concrete models and a written description of the 3-dimensional figure.	7.G.3

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Selected Opportunities for Connection to Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. **Reason abstractly and quantitatively.**
SLO 4 Represent problems involving geometric concepts algebraically.
3. Construct viable arguments and critique the reasoning of others.
4. **Model with mathematics.**
SLO 3 Use geometric models of 3-D objects.
5. **Use appropriate tools strategically.**
SLO 2 Represent problems involving real-world circumstances using the number line.
6. Attend to precision.
7. Look for and make use of structure.
8. **Look for and express regularity in repeated reasoning.**
SLO 5 Apply the correct formula when solving problems.

All of the content presented at this grade level has connections to the standards for mathematical practices.

Bold type identifies possible starting points for connections to the SLOs in this unit.

Code #	NJ Student Learning Objective Standards
7.EE.3	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional $\frac{1}{10}$ of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.
7.EE.4	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. c. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width? d. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p , q , and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.
7.G.3	Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.
7.G.5	Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
7.G.4	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.

7.G.6	Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.
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Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • What results when a plane intersects with a three-dimensional figure? • How do side lengths and angles measures impact the construction of shapes? • What are the formulas for area and circumference of a circle? • How to use facts about supplementary, complementary, adjacent and vertical angles to find missing angle measures? • How to use area, volume and surface area of two and three-dimensional objects to solve real-world and mathematical problems? 	<ul style="list-style-type: none"> • Missing angle measures can be found using angle relationships through understanding properties of supplementary and complementary angles. • Determine properties of 3-dimensional objects in terms of the cube root. • Area is the amount of space an object takes up. • Volume is the capacity an object holds. • Knowing how to substitute, solve and label correctly using the following formulas: <ol style="list-style-type: none"> 1.) $A = \pi r^2$ 2.) $C = 2\pi r$ or $C = \pi d$ 3.) $V = lwh$ 4.) $SA = 2(lw) + 2(wh) + 2(lh)$
<ul style="list-style-type: none"> • Model Curriculum Unit Assessment • Teacher-made tests and quizzes • Publisher’s tests and quizzes • Teacher observation • Daily assignments 	
District Learning Plan and Materials	
<p>Materials: Text: <i>Big Ideas Math</i> <i>Big Ideas Record and Practice Journal</i> <i>Big Ideas Assessment Book</i> See <i>Big Ideas</i> Materials List</p> <p>Learning Plan: <i>Big Ideas Math 2014</i> Chapter 8: Circles and Areas Chapter 9: Surface Area and Volumes</p> <p>Web-based activities Interactive Whiteboard Lessons On-line Lesson Video</p>	

Differentiation:

Big Ideas Website—"Differentiating the Lesson"

- Game Closet
- Intensive Intervention Activities
- Lesson Tutorials (Videos)
- Skills Review Handbook
- Basic Skills Handbook

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and
Performing Arts Technology
Field Trips _____ Other _____ -

GRADE 8
UNIT 1: Geometry and the Coordinate Plane
OVERVIEW...

(Model Curriculum Unit 1) This Unit focuses on transformations of geometric figures in the coordinate plane, as well as relationships between angles.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Verify experimentally the properties of rotations, reflections, and translations. <ul style="list-style-type: none"> • Lines are transformed to lines and line segments to line segments of the same length. • Angles are transformed to angles of the same measure. • Parallel lines are transformed to parallel lines. 	8.G.1
2	Apply an effective sequence of rotations, reflections, and translations to prove that two dimensional figures are congruent.	8.G.2
3	Use the coordinate plane to locate pre-images of two-dimensional figures and determine the coordinates of a resultant image after applying dilations, rotations, reflections, and translations.	8.G.3
4	Recognize dilation as a reduction or an enlargement of a figure and determine the scale factor.	8.G.3
5	Apply an effective sequence of transformations to determine similar figures in which corresponding angles are congruent and corresponding sides are proportional. Write similarity statements based on such transformations.	8.G.4
6	Justify facts about angles created when parallel lines are cut by a transversal.	8.G.5
7	Justify facts about the exterior angles of a triangle, the sum of the measures of the interior angles of a triangle and the angle-angle relationship used to identify similar triangles.	8.G.5

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Selected Opportunities for Connection to Mathematical Practices

Make sense of problems and persevere in solving them.

Reason abstractly and quantitatively.

SLOs 2 and 5 Use a correct sequence of transformations and the definition of similarity to verify that two geometric figures are similar.

Construct viable arguments and critique the reasoning of others.

SLOs 6 and 7 write informal arguments to justify facts, communicate them to others, and respond to the arguments of others.

Model with mathematics.

All of the SLOs for this unit will require the students to use two dimensional models to illustrate the relationships between the geometric figures.

Use appropriate tools strategically.

Attend to precision.

Look for and make use of structure.

Look for and express regularity in repeated reasoning.

SLO 3 Determine the coordinates of an image using the coordinates of its pre-image after a transformation.

All of the content presented at this grade level has connections to the standards for mathematical practices.

Bold type identifies possible starting points for connections to the SLOs in this unit. Major Content Supporting Content Additional Content (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • How are the properties of transformations applied to prove that two- dimensional figures are congruent? • How are coordinates used to describe the effect of transformations on two-dimensional figures? • What is dilation and how does this transformation affect a figure in the coordinate plane? • How are the angle sum and exterior angles of triangles, the angles created when parallel lines are cut by a transversal, and the angle-angle relationship used to identify similar triangles? 	<p>A two-dimensional figure is congruent to another if the second can be obtained by a series of transformations.</p> <p>Transformations of a two-dimensional figure on the coordinate plane will involve a change in coordinates.</p> <p>Dilation is a transformation that changes the size of a figure, but not the shape. If the second figure can be obtained from the first by a sequence of transformations, they are similar.</p> <p>Use informal arguments to establish facts about the angle sum and exterior angles of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle relationship used to identify similar triangles.</p>

Evidence of Learning—District Assessment Tools

Model Curriculum Unit Assessment
Teacher-made tests and quizzes
Publisher’s tests and quizzes
Teacher observation
Daily assignments

District Learning Plan and Materials

Materials:

Text: Big Ideas Math

Big Ideas Record and Practice Journal

Big Ideas Assessment Book

See Big Ideas Materials List

Learning Plan:

Big Ideas Math 2014 Chapter 2: Transformations

Chapter 3: Angles and Triangles

Web-based activities

Interactive Whiteboard Lessons

On-line Lesson Video

Differentiation:

Big Ideas Website—"Differentiating the Lesson"

- Game Closet
- Intensive Intervention Activities
- Lesson Tutorials (Videos)
- Skills Review Handbook
- Basic Skills Handbook

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and
Performing Arts Technology Field Trips _____
Other _____

GRADE 8
UNIT 2: Equations
OVERVIEW...

(Model Curriculum Unit 4) This Unit deepens students' understanding of Algebraic concepts by making connections between proportional relationships, lines, and linear equations; analyzing and solving linear equations and pairs of simultaneous linear equations; using functions to model relationships between quantities.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Graph and analyze the different representations of proportional relationships and interpret the unit rate as the slope of the graph which indicates the rate of change.	8.EE.5
2	Derive the equation of a line ($y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b) and use similar triangles to explain why the slope (m) is the same between any two points on a non-vertical line in the coordinate plane.	8.EE.6
3	Solve linear equations in one variable with rational number coefficients that might require expanding expressions using the distributive property and/or combining like terms, including examples with one solution, infinite solutions, or no solution.	8.EE.7
4	Solve systems of linear equations in two variables by inspection, algebraically, and/or graphically (estimate solutions) to demonstrate solutions correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.	8.EE.8
5	Construct a function to model the linear relationship between two variables and determine the rate of change and initial value of the real world data it represents from either graphs or tabulated values.	8.F.4
6	Sketch a graph of a function from a qualitative description and give a qualitative description of a graph of a function.	8.F.5

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Selected Opportunities for Connection to Mathematical Practices

1. Make sense of problems and persevere in solving them.
 - 2. Reason abstractly and quantitatively.**
SLO 1 Describe the relationship between the slope of a graph and the rate of change in proportional relationships.
 - 3. Construct viable arguments and critique the reasoning of others.**
SLOs 3 and 4 Determine and justify the steps to the solution to equations.
 - 4. Model with mathematics.**
SLO 6 Create a graph from a description of a real-world condition and give a real-world context for a graphic display.
 5. Use appropriate tools strategically.
 6. Attend to precision.
 7. Look for and make use of structure.
 8. Look for and express regularity in repeated reasoning.
- All of the content presented at this grade level has connections to the standards for mathematical practices.*

Bold type identifies possible starting points for connections to the SLOs in this unit.

Code #	NJ Student Learning Objective Standards
8.EE.5	Graph proportional relationships, interpreting the unit rate as the slope of a graph. Compare two different proportional relationships represented in different ways. <i>For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.</i>
8.EE.6	Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b .
8.EE.7	Solve linear equations in one variable. <ol style="list-style-type: none"> a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers). b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.
8.EE.8	Analyze and solve pairs of simultaneous linear equations. <ol style="list-style-type: none"> a. Understand the solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection.
8.F.4	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and

	in terms of its graph or a table of values.
8.F.5	Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g. where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • How can the rate of change be determined through the slope of a graph? • How can similar triangles be used to demonstrate slope? • What strategies are used to solve linear equations in one variable? • What does it mean to solve a system of linear equations? • How does a function, graph, or table of values model a linear relationship? • How does a graph that exhibits the qualitative features of a function that has been described verbally? 	<ul style="list-style-type: none"> • Linear functions are defined by constant slope. • Slope (m) is the same between any two distinct points on a non-vertical line in the coordinate plane. • There are a variety of strategies that can be used to solve linear equations in one variable. • The solutions of equations correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. • The functional relationship between two quantities can be qualitatively described through a graph.
Evidence of Learning—District Assessment Tools	
<ul style="list-style-type: none"> • Model Curriculum Unit Assessment • Teacher-made tests and quizzes • Publisher’s tests and quizzes • Teacher observation • Daily assignments 	
District Learning Plan and Materials	
<p>Materials:</p> <p>Text: Big Ideas Math Big Ideas Record and Practice Journal Big Ideas Assessment Book See Big Ideas Materials List</p> <p>Learning Plan:</p> <p><i>Big Ideas Math 2014</i>: Chapter 1: Equations Chapter 4: Graphing and Writing Linear Equations Chapter 5: Systems of Linear Equations Chapter 6: Functions Section 6:3 Linear Functions</p>	

Section 6.5 Analyzing and Sketching Graphs

Web-based activities

Interactive Whiteboard Lessons

On-line Lesson Video

Differentiation:

Big Ideas Website—"Differentiating the Lesson"

Game Closet

Intensive Intervention Activities

Lesson Tutorials (Videos)

Skills Review Handbook

Basic Skills Handbook

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and
Performing Arts Technology
Field Trips _____ Other _____ -

**GRADE 8
UNIT 3: Functions
OVERVIEW...**

(Model Curriculum Unit 3) This Unit deepens students' understanding of Algebraic concepts by defining, evaluating, and comparing functions; investigating patterns of association in bivariate data.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Define linear functions as a rule that assigns one output to each input and determine if data represented as a graph or in a table is a function.	8.F.1
2	Compare two functions each represented in a different way (numerically, verbally, graphically, and algebraically) and draw conclusions about their properties (rate of change and intercepts).	8.F.2
3	Utilize equations, graphs, and tables to classify functions as linear or non-linear, recognizing that $y = mx + b$ is linear with a constant rate of change.	8.F.3
4	Using a linear equation to model real life problems then solve it by interpreting the meaning of the slope and the intercept.	8.SP.3
5	Construct and interpret scatter plots for bivariate measurement data and identify and interpret data patterns (clustering, outliers, positive or negative association, possible lines of best fit, and nonlinear association).	8.SP.1 8.SP.2
6	Construct frequency/relative frequency tables to analyze and describe possible associations between two variables.	8.SP.4

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Selected Opportunities for Connection to Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. **Reason abstractly and quantitatively.**
SLO 2 Use functions that are represented in different ways to Identify and compare the rates of change and the intercepts of each.
3. Construct viable arguments and critique the reasoning of others.
4. **Model with mathematics.**
SLOs 4, 5 and 6 Use equations, scatter plots, and frequency tables to model relationships between real-world quantities.
5. Use appropriate tools strategically.
6. Attend to precision.
7. **Look for and make use of structure.**
SLO 2 Identify the rate of change and the intercepts of functions represented in different ways.
8. Look for and express regularity in repeated reasoning.

All of the content presented at this grade level has connections to the standards for mathematical practices.

Bold type identifies possible starting points for connections to the SLOs in this unit.

Code #	NJ Student Learning Objective Standards
8.F.1	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.
8.F.2	Compare properties (e.g., rate of change, intercepts, domain, and range) of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.
8.F.3	Interpret the equation $y=mx +b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function $A = s^2$ giving the area of a square as a function of its side lengths is not linear because its graph contains the points (1, 1), (2, 4), and (3, 9) which are not on a straight line.
8.SP.1	Construct and interpret scatter plot for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
8.SP.2	Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit (i.e., line of best fit) by judging the closeness of the data points to the line.
8.SP.3	Use the equation of a linear model to solve problems in the context of bivariate data interpreting the slope and intercept. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.
8.SP.4	Understand the patterns of association can also be seen in bivariate categorical data by displaying the frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Essential Questions	Enduring Understandings
<p>How can a rule be used to define a linear function? In what ways can functions be compared? How equations, graphs, and tables be used to classify functions as linear and nonlinear? How are scatter plots constructed and interpreted to show data patterns? How are frequency/relative frequency tables used to analyze and describe possible associations between two variables?</p>	<p>Linear functions assign one output to each input. Functions can be compared numerically, verbally, graphically, and algebraically. If a function has a constant rate of change, it is linear. Data patterns can be interpreted by determining clustering, outliers, positive or negative association, possible lines of best fit and nonlinear association. Frequency and relative frequency tables can be used to analyze and describe possible associations between two variables.</p>
Evidence of Learning—District Assessment Tools	
<ul style="list-style-type: none"> • Model Curriculum Unit Assessment • Teacher-made tests and quizzes • Publisher’s tests and quizzes • Teacher observation • Daily assignments 	

District Learning Plan and Materials

Materials:

Text: Big Ideas Math

Big Ideas Record and Practice Journal

Big Ideas Assessment Book

See Big Ideas Materials List

Learning Plan:

Big Ideas Math 2014 Chapter 6: Functions

Sections 6.1- 6.4

Chapter 9: Data Analysis and Displays

Web-based activities

Interactive Whiteboard Lessons

On-line Lesson Video

Differentiation:

Big Ideas Website—"Differentiating the Lesson"

- Game Closet
- Intensive Intervention Activities
- Lesson Tutorials (Videos)
- Skills Review Handbook
- Basic Skills Handbook

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and
Performing Arts Technology

Field Trips _____ Other: Consumer Education/Economics

GRADE 8
UNIT 4: The Number System
OVERVIEW...

(Model Curriculum Unit 2) This unit explores the notion of irrational numbers and how they are different than rational numbers. Students use scientific notation to represent very large or very small numbers and use properties of exponents while working with numerical expressions.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Compare rational and irrational numbers to demonstrate that the decimal expansion of irrational numbers do not repeat; show that every rational number has a decimal expansion which eventually repeats and covert such decimals into rational numbers.	8.NS.1
2	Use rational numbers to approximate and locate irrational numbers on a number line and estimate the value of expressions involving irrational numbers.	8.NS.2
3	Apply the properties of integer exponents to simplify and write equivalent numerical expressions.	8.EE.1
4	Use scientific notation to estimate and express the values of very large or very small numbers and compare their values (how many times larger/smaller is one than the other).	8.EE.3
5	Perform operations using numbers expressed in scientific notation, including problems where both decimals and scientific notation are used (interpret scientific notation generated when technology has been used for calculations).	8.EE.4
6	In real-world problem solving situations choose units of appropriate size for measurement of very small and very large quantities.	8.EE.4

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks)

Code #	NJ Student Learning Objective Standards
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Selected Opportunities for Connection to Mathematical Practices
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1. Make sense of problems and persevere in solving them.
 SLO 6 Use problems that describe complex real-world conditions.

2. Reason abstractly and quantitatively.
 3. Construct viable arguments and critique the reasoning of others.
 4. Model with mathematics.
 5. Use appropriate tools strategically.

6. Attend to precision.
 SLO 6 Determine appropriate sized units for a given context.

7. Look for and make use of structure.
 SLO 3 Examine the form of expressions involving integer exponents and apply the correct property of exponents to create equivalent expressions .

8. Look for and express regularity in repeated reasoning.
 SLO 1 Explain orally or in written language the difference between a rational and an irrational number.

All of the content presented at this grade level has connections to the standards for mathematical practices.

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • What is the difference between a rational number and an irrational number? • What is the purpose of scientific notation? • How is scientific notation used appropriately? • How can exponential expressions be simplified? 	<p>Rational numbers are integers or have decimal expansions that eventually terminate or repeat.</p> <p>Scientific notation is used to express the value of very large or very small numbers. Scientific notation provides a way to represent very large and very small numbers in real-world situations.</p> <p>Properties of integer exponents provide ways to produce equivalent numerical expressions.</p>

Evidence of Learning—District Assessment Tools

- Model Curriculum Unit Assessment
- Teacher-made tests and quizzes
- Publisher’s tests and quizzes
- Teacher observation
- Daily assignment

8.NS.1	Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.
8.NS.2	Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions. For example, by truncating the decimal expansion of the square root of 2, show that the square root of 2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.
8.EE.1	Know and apply the properties of integer exponents to generate equivalent numerical expressions.
8.EE.3	Use numbers expressed in the form of a single digit times an integer power of 10 estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3×10^8 and the population of the world as 7×10^9 and determine that the world population is more than 20 times larger.
8.EE.4	Perform operations with numbers expressed in scientific notation, including problems where both decimals decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities. Interpret scientific notation that has been generated by technology.

District Learning Plan and Materials

Materials:

Text: Big Ideas Math

Big Ideas Record and Practice Journal

Big Ideas Assessment Book

See Big Ideas Materials List

Learning Plan:

Big Ideas Math 2014 Chapter 7: Real Numbers and the Pythagorean Theorem

Section 7.4: Approximating Square Roots

Chapter 10: Exponents and Scientific Notation

Web-based activities

Interactive Whiteboard Lessons

On-line Lesson Video

Differentiation:

Big Ideas Website—"Differentiating the Lesson"

- Game Closet
- Intensive Intervention Activities
- Lesson Tutorials (Videos)
- Skills Review Handbook
- Basic Skills Handbook

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-level cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-level cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-level cooperative learning groups
- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and
Performing Arts Technology
Field Trips _____
Other _____

GRADE 8
UNIT 5: Geometry and the Pythagorean Theorem
OVERVIEW...

(Model Curriculum Unit 5) This unit brings together the understanding of concepts that involve radicals and integer exponents with the Pythagorean Theorem.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Evaluate square roots and cubic roots of small perfect squares and cubes respectively and use square and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$ where p is a positive rational number..	8.EE.2
2	Identify $\sqrt{2}$ as irrational	8.EE.2
3	Explain a proof of the Pythagorean Theorem and its converse.	8.G.6
4	Utilize the Pythagorean Theorem to determine unknown side lengths of right triangles in two and three dimensions to solve real-world and mathematical problems	8.G.7
5	Use the Pythagorean Theorem to determine the distance between two points in the coordinate plane.	8.G.8
6	Know and apply the appropriate formula for the volume of a cone, a cylinder, or a sphere to solve real-world and mathematical problems.	8.G.9

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks). **Selected Opportunities for Connection to Mathematical Practices**

1. Make sense of problems and persevere in solving them.

SLO 6 Involve problems that must be constructed and deconstructed in order to solve.

2.Reason abstractly and quantitatively.

3.Construct viable arguments and critique the reasoning of others.

SLO 3 Explain the difference between the Pythagorean Theorem and its converse. Listen to or read the explanations of others and pose questions that will clarify or improve the explanations.

4.Model with mathematics.

SLO 5 Use the coordinates of a figure represented on a coordinate plane to determine the length of a missing side.

5.Use appropriate tools strategically.

6.Attend to precision.

7.Look for and make use of structure.

8.Look for and express regularity in repeated reasoning.

All of the content presented at this grade level has connections to the standards for mathematical practices.

Bold type identifies possible starting points for connections to the SLOs in this unit.

Code #	NJ Student Learning Objective Standards
8.EE.2	Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$ where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that the square root of 2 is irrational.
8.G.6	Explain a proof of the Pythagorean Theorem and its converse.
8.G.7	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two or three dimensions.
8.G.8	Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
8.G.9	Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • What are perfect squares and cubes and how are they represented symbolically? • What is an irrational number? • What is the Pythagorean Theorem and its converse? <ul style="list-style-type: none"> • How can the Pythagorean Theorem be proved? • What are real-life applications of the Pythagorean Theorem? • How are volume formulas used in real-world and mathematical problem solving? 	<ul style="list-style-type: none"> • Knowledge of square and cube is sometimes helpful when solving equations. • The square root of 2 is an irrational number because it does not repeat or terminate. • The Pythagorean Theorem is used to determine the distance between two points in the coordinate plane and to find unknown side lengths of right triangles in two and three dimensions when solving real-world and mathematical problems. • Volume formulas are used to solve real-world and mathematical problems.
Evidence of Learning—District Assessment Tools	
<ul style="list-style-type: none"> • Model Curriculum Unit Assessment • Teacher-made tests and quizzes • Publisher’s tests and quizzes • Teacher observation • Daily assignments 	

District Learning Plan and Materials

Materials:

Text: Big Ideas Math
Big Ideas Record and Practice Journal
Big Ideas Assessment Book
See Big Ideas Materials List

Learning Plan:

Big Ideas Math 2014 Chapter 7: Real Numbers and the Pythagorean Theorem
Sections 7.1-7.3, 7.5
Chapter 8: Volume and Similar Solids

Web-based activities
Interactive Whiteboard Lessons
On-line Lesson Video

Differentiation:

Big Ideas Website—"Differentiating the Lesson"
Game Closet
Intensive Intervention Activities
Lesson Tutorials (Videos)
Skills Review Handbook
Basic Skills Handbook

Web-based Activities
(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support
Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and
Performing Arts Technology

Field Trips _____ Other: Consumer
Education

GRADE 8 ALGEBRA
UNIT 1: Relationships between Quantities and Reasoning with Equations
OVERVIEW...

This unit equips students with an understanding of properties and procedures for solving linear equations and inequalities.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Solve multi-step problems that can be represented algebraically with accurate and appropriately defined units, scales, and models (such as graphs, tables, and data displays).	N.Q.1, N.Q.2
2	Interpret terms, factors, coefficients, and expressions (including complex linear and exponential expressions) in terms of context.	A.SSE.1
3	Solve linear equations and inequalities in one variable (including literal equations). Justify each step in the process and solution.	A.CED.4, A.REI.3
4	Create linear equations and inequalities in one variable and use them to solve problems. Justify each step in the process and the solution.	A.CED.1, A.REI.1, A.REI.3
5	Create linear equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	A.CED.2
6	Model and describe constraints with linear equations and inequalities, absolute value and compound inequalities, and systems of equations and/or inequalities to determine if solutions are viable or non-viable.	A.CED.3, A.REI.1
7	Construct a viable argument to justify a solution method.	A.REI.1
8	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equation.	A.CED.4
9	Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change.	F.IF.6
10	Graph the solution to a linear inequality in two variables as a half plane (excluding the boundary in the case of a strict inequality.)	A.REI.12
11	For linear relationships, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing the key features.	F.IF.4

Major Supporting Additional (identified by PARCC Model Content Frameworks)

Selected Opportunities for Connections to Mathematical Practices

1. Make sense of problems and persevere in solving them. *
 2. Reason abstractly and quantitatively.
SLO 4 Determine the relationship between domain and range of a function and explain the connection to the inputs and outputs.
 3. Construct viable arguments and critique the reasoning of others.
 4. Model with mathematics. *
 5. Use appropriate tools strategically.
 6. Attend to precision.
 7. Look for and make use of structure.
 8. Look for and express regularity in repeated reasoning.
SLO 5 Describing the regularity in the way terms cancel can lead to a general formula for a geometric sequence.
- *MP.1 and MP.4 are overarching practices relevant to Algebra 1. (PARCC Model Content Frameworks)
All of the content presented in this course has connections to the standards for mathematical practices.

Code #	NJ Student Learning Objective Standards
N.Q.1	Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
N.Q.2	Define appropriate quantities for the purpose of descriptive modeling.
A.CED.1	Create equations and inequalities in one variable and use them to solve problems. <i>Include equations arising from linear functions.</i>
A.CED.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
A.CED.3	Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. <i>For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.</i>
A.CED.4	Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. <i>For example, rearrange Ohm's law $V = IR$ to highlight resistance R.</i>
A.REI.1	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
A.REI.3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
FIF.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. <i>Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and</i>

minimums; symmetries; end behavior; and periodicity. ★

Major Content (Identified by PARCC Model Content Frameworks, “widely relevant content”).

Essential Questions	Enduring Understandings
<ul style="list-style-type: none">• How can you use inductive reasoning to describe rules in mathematics?• How can you solve a multi-step equation and check the reasonableness of your answer?• In what three ways are linear relationships modeled?• How can the slope of a line be used to describe the rate of change between independent and dependent variables?• How does this concept extend to the relationship between parallel and perpendicular lines?• How and why should linear equations be changed from one form to another	<ul style="list-style-type: none">• Linear relationships can be represented through the use of equations, tables of values, and graphs.• Linear equations take on various forms...slope-intercept, point-slope, and standard.• Slope is a ratio that indicates a relationship between independent and dependent variables and is graphed as “rise over run.”• Because parallel lines never intersect, they have the same slope but different y-intercepts.• The slopes of perpendicular lines are negative reciprocals of one another.

Evidence of Learning—District Assessment Tools

- Model Curriculum Unit Assessment
- Teacher-made tests and quizzes
- Publisher’s tests and quizzes
- Teacher observation
- Daily assignments

District Learning Plan and Materials

Materials:

Text: *Big Ideas Math*

Big Ideas Record and Practice Journal

Big Ideas Assessment Book

See *Big Ideas* Materials List

Learning Plan:

Big Ideas Math 2014 Chapter 1: Solving Linear Equations

Chapter 2: Graphing and Writing Linear Equations

Chapter 3: Solving Linear Inequalities

Web-based activities

Interactive Whiteboard Lessons

Online Lesson Video

Differentiation:

Big Ideas Website- "Differentiating the Lesson"

- *Game Closet
- *Intensive Intervention Activities
- *Lesson Tutorials (videos)
- *Skills Review Handbook
- *Basic Skills Handbook

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-levelled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-levelled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-levelled cooperative learning groups
- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

 x English Language Arts Social Studies **x** Science PE and Health Fine and

Performing Arts _____
 Technology Field Trips _____
 Other _____

GRADE 8 ALGEBRA
UNIT 2: Linear Relationships and Functions
Overview...

This unit will prepare students to use different methods to solve systems of linear equation. Students will recognize the properties of linear functions and use functional notation.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Solve systems of linear equations in two variables graphically and algebraically. <i>Methods of solution will include elimination and substitution.</i>	A.REI.5, A.REI.6
2	Find approximate solutions of linear equations by making a table of values, using technology to graph and successive approximations.	A.REI.11
3	Graph equations, inequalities, and systems of inequalities in two variables and explain that the solution to an equation is all points along the line, the solution to a system of linear functions is the point of intersection, and the solution to a system of inequalities is the intersection of the corresponding half-planes. ★	A.REI.11, A.REI.12
4	Explain and interpret the definition of functions including domain and range and how they are related; correctly use function notation in a context and evaluate functions for inputs and their corresponding outputs. <i>Determination will be made using a vertical line test and/or mapping diagram.</i>	F.IF.1, F.IF.2
5	Write a function for a geometric sequence defined recursively, whose domain is a subset of the integers.	F.IF.3
6	Graph functions by hand (in simple cases) and with technology (in complex cases) to describe linear relationships between two quantities and identify, describe, and compare domain and other key features in one or multiple representations. ★	F.IF.5, F.IF.7, F.IF.9, A.REI.11
7	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	F.IF.9

Major **Supporting** **Additional** (identified by PARCC Model Content Frameworks)

Bold Type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Selected Opportunities for Connections to Mathematical Practices	
<p>1. Make sense of problems and persevere in solving them. *</p> <p>2. Reason abstractly and quantitatively.</p> <p style="padding-left: 20px;">SLO 4 Determine the relationship between domain and range of a function and explain the connection to the inputs and outputs.</p> <p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics. *</p> <p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p> <p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p> <p style="padding-left: 20px;">SLO 5 Describing the regularity in the way terms cancel can lead to a general formula for a geometric sequence.</p> <p>*MP.1 and MP.4 are overarching practices relevant to Algebra 1. (PARCC Model Content Frameworks)</p> <p><i>All of the content presented in this course has connections to the standards for mathematical practices.</i></p>	

Bold type identifies possible starting points for connections to the SLOs in this unit.

Code #	NJ Student Learning Objective Standards
A.REI.5	Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.
A.REI.6	Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.
A.REI.11	Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. ★
A.REI.12	Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.
F.IF.1	Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.
F.IF.2	Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

F.IF.3	Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. <i>For example, the Fibonacci sequence is defined recursively by $f(0) = f(1) = 1$, $f(n+1) = f(n) + f(n-1)$ for $n \geq 1$.</i>
F.IF.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. <i>For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.</i> ★
F.IF.7	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.★
F.IF.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). <i>For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.</i>

Major Supporting Additional (identified by PARCC Model Content Frameworks)

Bold Type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • What does the solution to a system of linear equations/inequalities represent? • What methods are used to solve systems of linear equations? • Why does a system of linear equations have one solution, no solution, or infinitely many solutions? • What is a linear function? • How can you determine the domain and range of a function? 	<ul style="list-style-type: none"> • The solution to a system of equations is a single point, whereas the solution to a system of inequalities is the region where the shading overlaps in a half-plane. • Systems of equations/inequalities can be solved by using methods of graphing, elimination, and substitution. • Graphing calculators provide precise solutions to systems of equations/inequalities. • A function is a rule that assigns to each input exactly one output. • In every function, the domain is a set of all input values and the range is a set of all output values.
Evidence of Learning—District Assessment Tools	
<ul style="list-style-type: none"> • Model Curriculum Unit Assessment • Teacher-made tests and quizzes • Publisher’s tests and quizzes • Teacher observation • Daily assignments 	
District Learning Plan and Materials	
Materials:	

Text: *Big Ideas Math*

Big Ideas Record and Practice Journal

Big Ideas Assessment Book

See *Big Ideas* Materials List

Learning Plan:

Big Ideas Math 2014 Chapter 4: Solving Systems of Linear Equations

Chapter 5: Linear Functions

Web-based activities

Interactive Whiteboard Lessons

Online Lesson Video

Differentiation:

Big Ideas Website- "Differentiating the Lesson"

*Game Closet

*Intensive Intervention Activities

*Lesson Tutorials (videos)

*Skills Review Handbook

*Basic Skills Handbook

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups

- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and
Performing Arts Technology Field Trips _____
Other _____

GRADE 8 ALGEBRA
UNIT 3: Nonlinear Relationships and Functions
Overview...

In this unit, the learner will explore the properties of exponential functions, including growth and decay. The learner will compare and contrast the stages of quadratic functions, as well as perform operations with polynomials. The learner will demonstrate fluency with the properties of square roots and the properties of exponents.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Interpret parts of expressions in terms of context including those that represent square and cube roots; use the structure of an expression to identify ways to rewrite it. ★	A.SSE.1, A.SSE.2
2	Manipulate expressions using factoring, completing the square and properties of exponents to produce equivalent forms that highlight particular properties such as the zeros or the maximum or minimum value of the function. ★	A.SSE.3
3	Perform addition, subtraction and multiplication with polynomials and relate it to arithmetic operations with integers.	A.APR.1
4	Write linear and exponential functions (e.g. growth/decay and arithmetic and geometric sequences) from graphs, tables, or a description of the relationship, recursively and with an explicit formula, and describe how quantities increase linearly and exponentially over equal intervals.	F.BF.2
6	Create linear and quadratic equations that represent a relationship between two or more variables. Graph equations on the coordinate axes with labels and scale.	A.CED.2,
7	Derive the quadratic formula by completing the square and recognize when there are no real solutions.	A.REI.4
8	Solve quadratic equations in one variable using a variety of methods [including inspection (e.g. $x^2 = 81$), factoring, completing the square, and the quadratic formula].	A.REI.4

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Selected Opportunities for Connection to Mathematical Practices

- 1. Make sense of problems and persevere in solving them. ***
- 2. Reason abstractly and quantitatively.**
SLO 1 Analyze expressions by examining their parts in context.
- 3. Construct viable arguments and critique the reasoning of others.**
SLO 7 Examine the steps in the derivation of the quadratic formula to determine if they are logical and ask questions to improve the clarify.

4. **Model with mathematics.** *
 5. Use appropriate tools strategically.
 6. Attend to precision.
 7. **Look for and make use of structure.**
SLO 2 Look for structural similarities when writing equivalent expressions.
 8. **Look for and express regularity in repeated reasoning.**
SLO 4 Determine the relationship between quantities over time and express the relationship in a general algebraic abstract expression
- *MP.1 and MP.4 are overarching practices relevant to Algebra 1. (PARCC Model Content Frameworks)
All of the content presented in this course has connections to the standards for mathematical practices.

Bold type identifies possible starting points for connections to the SLOs in this unit.

Code #	NJ Student Learning Objective Standards
A.SSE.1	Interpret expressions that represent a quantity in terms of its context. ★ a. Interpret parts of an expression, such as terms, factors, and coefficients. b. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret $P(1+r)^n$ as the product of P and a factor not depending on P.
A.SSE.2	Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.
A.SSE.3	Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. ★ a. Factor a quadratic expression to reveal the zeros of the function it defines. b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines. c. Use the properties of exponents to transform expressions for exponential functions. For example the expression $1.15t$ can be rewritten as $(1.151/12)^{12t} \approx 1.012^{12t}$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.
F.BF.2	Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms. ★
A.APR.1	Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.
A.CED.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
A.REI.4	Solve quadratic equations in one variable. a. Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form. b. Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and

	write them as $a \pm bi$ for real numbers a and b .
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Major Content **Supporting Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • What are the characteristics of an exponential function? • What properties are used to simplify exponential expressions/functions/equations? • How do you multiply and divide square roots? • Why is it beneficial to arrange polynomials in standard form? • How does the parent function, $y = ax^2$, serve as the basis of graphing and analyzing the shape of the data of a quadratic function? • How are the domain and range determined in a quadratic function? 	<ul style="list-style-type: none"> • Exponential growth and decay occur when a quantity increases or decreases by the same factor over equal intervals of time. • Standard form of polynomials (arranging polynomials in decreasing order of exponents) provides structure when simplifying, combining, and factoring polynomial expressions. • Factored form of polynomial equations leads to their solutions. • The zero-product property is used to solve polynomial equations and the solutions are called roots. • The following characteristics impact the graph of a quadratic function: axis of symmetry, minimum and maximum points, the focus of the parabola, upward and downward orientation, and the x and y-intercepts. • The graph of a quadratic function provides a visual representation of domain and range.

Evidence of Learning—District Assessment Tools

- Model Curriculum Unit Assessment
- Teacher-made tests and quizzes
- Publisher’s tests and quizzes
- Teacher observation
- Daily assignments

District Learning Plan and Materials

Materials:
Text: *Big Ideas Math*

Big Ideas Record and Practice Journal

Big Ideas Assessment Book

See *Big Ideas* Materials List

Learning Plan:

Big Ideas Math 2014 Chapter 6: Exponential Equations and Functions

Chapter 7: Polynomial Equations and Factoring

Chapter 8: Graphing Quadratic Functions

Web-based activities

Interactive Whiteboard Lessons

Online Lesson Video

Differentiation:

Big Ideas Website- "Differentiating the Lesson"

*Game Closet

*Intensive Intervention Activities

*Lesson Tutorials (videos)

*Skills Review Handbook

*Basic Skills Handbook

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups

- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and
Performing Arts Technology Field Trips _____
Other Financial Literacy _____

GRADE 8 ALGEBRA
UNIT 4: Pythagorean Theorem and Data Displays
Overview...

In this unit the learner will examine the properties of the Pythagorean Theorem. The learner will also investigate patterns of association in bivariate data in terms of scatterplots and two-way tables.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Explain a proof of the Pythagorean Theorem and its converse.	8.G.6
2	Utilize the Pythagorean Theorem to determine unknown side lengths of right triangles in two and three dimensions to solve real-world and mathematical problems	8.G.7
3	Use the Pythagorean Theorem to determine the distance between two points in the coordinate plane.	8.G.8
4	Summarize and interpret categorical data for two categories in two-way frequency tables; recognize associations and trends in the data.	8.SP.4, S.ID.5
5	Represent and describe data for two variables on a scatter plot, fit a function to the data, analyze residuals (in order to informally assess fit), and use the function to solve problems. <i>Uses a given function or choose a function suggested by the context. Emphasize linear and exponential models.</i>	8.SP.1, S.ID.6
6	Interpret the slope, intercept and correlation coefficient (compute using technology) of a linear model.	S.ID.7 S.ID.8
7.	Use graphing calculator to interpret the linear regression and provide slope, y-intercept, and correlation coefficient.	S.ID.8
8.	Distinguish between correlation and causation in a data context.	S.ID.9
9.	Fit a function to the data(including the use of technology); use functions fitted to data to solve problems in the context of data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.	S.ID.6a
10.	Fit a linear function for a scatter plot that suggests a linear association.	S.ID.6.C
11.	Compute (using technology) and interpret the correlation coefficient of a linear fit.	S.ID.8
12.	Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data.	S.ID.5

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Selected Opportunities for Connection to Mathematical Practices

1. Construct viable arguments and critique the reasoning of others.

SLO 3 Explain the difference between the Pythagorean Theorem and its converse. Listen to or read the explanations of others and pose questions that will clarify or improve the explanations.

2. Model with mathematics.

SLO 5 Use the coordinates of a figure represented on a coordinate plane to determine the length of a missing side.

3. Use appropriate tools strategically.
4. Attend to precision.
5. Look for and make use of structure.
6. Look for and express regularity in repeated reasoning.

All of the content presented at this grade level has connections to the standards for mathematical practices.

Bold type identifies possible starting points for connections to the SLOs in this unit.

Code #	NJ Student Learning Objective Standards
8.SP.1	Construct and interpret scatter plot for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
8.SP.4	Understand the patterns of association can also be seen in bivariate categorical data by displaying the frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. <i>For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?</i>
8.G.6	Explain a proof of the Pythagorean Theorem and its converse.
8.G.7	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two or three dimensions.
8.G.8	Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
SID.5	Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data
SID.6	Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. <ol style="list-style-type: none"> a. Fit a function to the data (including with the use of technology); use functions fitted to data to solve problems in the context of the data. <i>Use given functions or choose a function suggested by the context. Emphasize linear and exponential models.</i> b. Informally assess the fit of a function by plotting and analyzing residuals. c. Fit a linear function for a scatter plot that suggests a linear association.
SID.8	Compute (using technology) and interpret the correlation coefficient of a linear fit.

SID.9	Distinguish between correlation and causation.
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Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> • How are the lengths of the sides of right triangle related? • What is the converse of the Pythagorean theorem and how is it used? • How can you find the distance between two points on a coordinate plane? • How can you use scatter-plots and lines of fit to predict an event? • How can you find a line that best models the data set? • How can you read and make a two-way table? 	<ul style="list-style-type: none"> • The proof of the Pythagorean theorem justifies its relationship to the side lengths of right triangles, and provides the algorithms developed by the theorem. • In any right triangle, the sum of the squares of the lengths of the legs is equal to the square of the length of the hypotenuse: $a^2 + b^2 = c^2$ • If the equation $a^2 + b^2 = c^2$ is true for the side lengths of a triangle, then the triangle is a right triangle. • The distance formula is used to find the distance between two points on a coordinate plane. • A scatterplot will show if a relationship exists between two data sets, and that relationship may be positive or negative. • Linear regression provides a precise line of fit called a <i>line of best fit</i>, which is used to model a set of data. • Two-way tables display two categories of data collected from the same source. Each entry in the table is called a joint frequency.

Evidence of Learning—District Assessment Tools
<ul style="list-style-type: none"> • Model Curriculum Unit Assessment • Teacher-made tests and quizzes • Publisher’s tests and quizzes • Teacher observation • Daily assignments
District Learning Plan and Materials

Materials:

Text: *Big Ideas Math*

Big Ideas Record and Practice Journal

Big Ideas Assessment Book

See *Big Ideas* Materials List

Learning Plan:

Big Ideas Math 2014 Chapter 10, Sections 3 and 4

Chapter 12, Sections 5, 6, and 7

Calculator Enrichment Activities, teacher-directed with TI 84 software

Web-based activities

Interactive Whiteboard Lessons

Online Lesson Video

Differentiation:

Big Ideas Website- "Differentiating the Lesson"

*Game Closet

*Intensive Intervention Activities

*Lesson Tutorials (videos)

*Skills Review Handbook

*Basic Skills Handbook

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)

- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

English Language Arts Social Studies Science PE and Health Fine and
Performing Arts Technology Field Trips _____
Other _____

GRADE 8 ALGEBRA
UNIT 5: Solutions to Quadratic and Square Root Functions
Overview...

In this unit the learner will recognize second degree equations as quadratic and will use different methods to determine their solutions. The learner will also examine the graphs of square root functions and solutions to their equations.

#	NJ STUDENT LEARNING OBJECTIVES	CORRESPONDING SLO
1	Solve quadratic equations in one variable.	A.REI.4
2	Solve quadratic equations using square roots and completing the square. Use the quadratic formula to recognize the discriminant as a procedure to determine the number of real solutions.	A.REI.4b
3	Solve systems of linear and quadratic equations in two variables by both substitution and elimination.	A.REI.7
4	Recognize square root functions as shifting functions defined by half a parabola translated along either the x- or y-axis.	FIF.4
5	Simplify radical expressions by either rationalizing the denominator or applying the conjugate to the denominator.	FIF.4
6	Solve square root equations using a five-step procedure that concludes with a check of your answer to determine the extraneous solutions.	N.RN.2

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Selected Opportunities for Connections to Mathematical Practices

1. Make sense of problems and persevere in solving them. *
2. Reason abstractly and quantitatively.
 SLO 4 Determine the relationship between domain and range of a function and explain the connection to the inputs and outputs.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics. *
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

All of the content presented in this course has connections to the standards for mathematical practices.

Code #	NJ Student Learning Objective Standards
A.REI.7	Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. <i>For example, find the points of intersection between the line $y = -3x$ and the circle $x^2 + y^2 = 3$.</i>
A.REI.4	Solve quadratic equations in one variable. <ol style="list-style-type: none"> Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form. Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b.
FIF.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. <i>Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.</i> ★
N.RN.2	Rewrite expressions involving radicals and rational exponents using the properties of exponents.

Major Content **Supporting Content** **Additional Content** (Identified by PARCC Model Content Frameworks).

Bold type indicates grade level fluency requirements. (Identified by PARCC Model Content Frameworks).

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> What methods can be used to solve a quadratic equation in one variable? How can you determine the number of solutions of a quadratic equation? What is the shape of the data of a square root function? How can you solve an equation that contains square roots? When is a radical expression in its simplest form? 	<ul style="list-style-type: none"> A quadratic equation is a nonlinear equation that can be written in the standard form $ax^2 + bx + c = 0$ Solutions of a quadratic equation can be found factoring, graphing, using square roots, completing the square, and using the quadratic formula. Discriminants can be used to determine the number of solutions of a quadratic equation. A square root function is a function that contains a square root with the independent variable in the radicand. The process of simplifying radical expressions is called <i>rationalizing the denominator</i>.

Evidence of Learning—District Assessment Tools

- Model Curriculum Unit Assessment
- Teacher-made tests and quizzes
- Publisher’s tests and quizzes
- Teacher observation
- Daily assignments

District Learning Plan and Materials

Materials:

Text: *Big Ideas Math*

Big Ideas Record and Practice Journal

Big Ideas Assessment Book

See *Big Ideas* Materials List

Learning Plan:

Big Ideas Math 2014 Chapter 9

Chapter 10, Sections 1 and 2

Web-based activities

Interactive Whiteboard Lessons

Online Lesson Video

Differentiation:

Big Ideas Website- “Differentiating the Lesson”

*Game Closet

*Intensive Intervention Activities

*Lesson Tutorials (videos)

*Skills Review Handbook

*Basic Skills Handbook

Web-based Activities

(Study Island, Khan Academy, Big Ideas...)

Big Ideas ELL Support

Vocabulary Cards

Accommodations for ELL:

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Small group instruction and assistance
- Reduced assignments

Accommodations for Special Education:

- Visual models/drawings

- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Assistance from the Special Education teacher in a small group setting
- Refer to student IEP

Accommodations for at Risk Students (504):

- Visual models/drawings
- Use of manipulatives
- Tools (rulers, calculators, measuring cups, etc.)
- Guided and strategy groups
- Multi-leveled cooperative learning groups
- Reduced assignments

Accommodations for Enrichment (G&T):

- Extension activities
- Independent practices in small groups
- Internet activities

Interdisciplinary Connections

English Language Arts
 Social Studies
 Science
 PE and Health
 Fine and Performing Arts
 Technology
 Field Trips _____ Other _____