Greenwich-Stow Creek Partnership Schools

Fourth Grade

Math Curriculum

Approved by the Board of Education

Stow Creek Board of Education: 8-22-2024

Greenwich Board of Education: 8-21-2024

Mathematics » Grade 4 » Introduction

In Grade 4, instructional time should focus on four critical areas: (1) developing understanding and accuracy and efficiency, with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends; (2) developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers; (3) 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.

1. Students generalize their understanding of place value to 1,000,000, understanding the relative sizes of numbers in each place. They apply their understanding of models for multiplication (equal-sized groups, arrays, area models), place value, and properties of operations, in particular the distributive property, as they develop, discuss, and use efficient, accurate, and generalizable methods to compute products of multi-digit whole numbers. Depending on the numbers and the context, they select and accurately apply appropriate methods to estimate or mentally calculate products. They develop fluency with efficient procedures for multiplying whole numbers; understand and explain why the procedures work based on place value and properties of operations; and use them to solve problems. Students apply their understanding of models for division, place value, properties of operations, and the relationship of division to multiplication as they develop, discuss, and use efficient, accurate, and generalizable procedures to find quotients involving multi-digit dividends. They select and accurately apply appropriate methods to estimate and mentally calculate quotients, and interpret remainders based upon the context.
2. 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. Students extend previous understandings about how fractions are built from unit fractions, composing fractions from unit fractions, decomposing fractions into unit fractions, and using the meaning of fractions and the meaning of multiplication to multiply a fraction by a whole number.
3. Students describe, analyze, compare, and classify two-dimensional shapes. Through building, drawing, and analyzing two-dimensional shapes, students deepen their understanding of properties of two-dimensional objects and the use of them to solve problems involving symmetry.

Grade 4 Overview

- **Operations and Algebraic Thinking**
  - Use the four operations with whole numbers to solve problems.
  - Gain familiarity with factors and multiples.
  - Generate and analyze patterns.

- **Number and Operations in Base Ten**
  - Generalize place value understanding for multi-digit whole numbers.
  - Use place value understanding and properties of operations to perform multi-digit arithmetic.

- **Number and Operations – Fractions**
  - Extend understanding of fraction equivalence and ordering.
  - Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
  - Understand decimal notation for fractions and compare decimal fractions.

- **Measurement**
  - Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.
  - Geometric measurement: understand concepts of angle and measure angles.

- **Data Literacy**
  - Organize data and understand data visualizations.
  - Represent and interpret data.

- **Geometry**
  - Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

Grade 4 2023 NJSLS-Math

Operations and Algebraic Thinking 4.OA

A. Use the four operations with whole numbers to solve problems

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.

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.

3. Solve multi-step 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.

B. Gain familiarity with factors and multiples

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.

C. Generate and analyze patterns

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. 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.

Number and Operations in Base Ten 4.NBT

A. Generalize place value understanding for multi-digit whole numbers

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.

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.

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

B. Use place value understanding and properties of operations to perform multi-digit arithmetic

4. With accuracy and efficiency, add and subtract multi-digit whole numbers using the standard algorithm.

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.

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 model.

Number and Operations - Fractions 4.NF

A. Extend understanding of fractions equivalence and ordering

1. Explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $\frac{(n \times a)}{(n \times b)}$ 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.

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 $\frac{1}{2}$. 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.

B. Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers

1. Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$.

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

   b. 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: $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$; $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$; $2\frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$.

c. 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.

d. 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.

2. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

a. Understand a fraction $\frac{a}{b}$ as a multiple of $\frac{1}{b}$. For example, use a visual fraction model to represent $\frac{5}{4}$ as the product $5 \times \frac{1}{4}$, recording the conclusion by the equation $\frac{5}{4} = 5 \times (\frac{1}{4})$.

b. Understand a multiple of $\frac{a}{b}$ as a multiple of $\frac{1}{b}$, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (\frac{2}{5})$ as $6 \times \frac{1}{5}$, recognizing this product as $\frac{6}{5}$. In general, $n \times \left(\frac{a}{b}\right) = \frac{(n \times a)}{b}$.

c. 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 $\frac{3}{8}$ 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?

C. Understand decimal notation for fractions and compare decimal fraction

1. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express $\frac{3}{10}$ as $\frac{30}{100}$ and add $\frac{3}{10} + \frac{4}{100} = \frac{34}{100}$. (Clarification: Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators in general is not a requirement at this grade.)

2. Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $\frac{62}{100}$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

3. 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.

Measurement 4.M

A. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit

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), ...

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.

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.

B. Geometric measurement: understand concepts of angle and measure angles

4. 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 $\frac{1}{360}$ th 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.

5. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

6. 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.

Data Literacy 4.DL

A. Organize data and understand data visualizations

1. Create data-based questions, generate ideas based on the questions, and then refine the questions.
2. Develop strategies to collect various types of data and organize data digitally.
3. Understand that subsets of data can be selected and analyzed for a particular purpose.
4. Analyze visualizations of a single data set, share explanations and draw conclusions that the data supports.

B. Represent and interpret measurement data

5. Make a line plot to display a data set of measurements in fractions of a unit (½, ¼, ⅛). 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.

Geometry 4.G

A. Draw and identify lines and angles, and classify shapes by properties of their lines and angles

1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
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.
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.

4th Grade Unit 1	
Domain: Operations and Algebraic Thinking **(**Multiplication and Division)	**Marking Period: 1, 2, and Ongoing**
Cluster Heading: Use the four operations with whole numbers to solve problems.. Gain familiarity with factors and multiples. Generate and analyze patterns.	
Overview of Unit: To Understand the properties of multiplication and the relationship between multiplication and division.	

Learning Targets—Modules and Standards

Unit 1 Place Value and whole number operations

Module 1- Place Value of Whole Numbers

Lesson 1.1 Understand place value relationships

■ 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.

Lesson 1.2 Read and Write Numbers

■ 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.

Lesson 1.3 Regroup and rename numbers

■ 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

Lesson 1.4 Compare and order Numbers

■ 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.

Lesson 1.5 Use Place Value Understanding to Round Numbers

■ Use place value understanding to round multi-digit whole numbers to any place.

Module 2: Addition and Subtraction of Whole Numbers

Lesson 2.1 Add Whole Numbers and Assess Reasonableness

■ Fluently add and subtract multi-digit whole numbers using the standard algorithm.

Lesson 2.2 Subtract Whole Numbers and Assess Reasonableness

■ Fluently add and subtract multi-digit whole numbers using the standard algorithm.

Lesson 2.3 Use Addition and Subtraction to Solve Comparison Problems

■ Fluently add and subtract multi-digit whole numbers using the standard algorithm.

Lesson 2.4 Apply the Perimeter Formula for Rectangles

■ Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

Operations and Algebraic Thinking 4.OA

A. Use the four operations with whole numbers to solve problems

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.

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.

3. Solve multi-step 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.

B. Gain familiarity with factors and multiples

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.

C. Generate and analyze patterns

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. 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.

Essential Ideas	Enduring Understandings
• How can you show a number using base ten blocks? • What is the value of each digit in a number? • How can a number line help compare numbers? • How do you use the marks on the number line to place a number on the number line? • How does estimating help you determine if your answer is reasonable? • When you write an equation, what does the plus sign tell you? • What is the perimeter of a rectangle? • What are some ways that you can find the perimeter of a rectangle?	1. Read and write multi-digit numbers in different ways and describe the values of digits in a number. 2. Use visual representations to group and name multi-digit whole numbers. 3. Use place-value charts and number lines to compare and order whole numbers. 4. Round whole numbers and recognize rounding as an estimation strategy 5. Determine reasonableness of sums and differences. 6. Add and subtract whole numbers using understanding of place value. 7. Add and subtract to solve comparison problems. 8. Determine if an equation is true and find an unknown number in an equation. 9. Use the perimeter formula for rectangles.

Evidence of Learning

Formative Assessment- 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
- Computer based programs/learning games (Sumdog, Aleks, 99 Math, IXL…)

Materials and Learning Plan

Materials:

- **Counters, Cubes, White Boards, Number Lines, Square Tiles, 1-Centimeter Grid Paper, Inch Rulers,**

Vocabulary: Period, expanded form, standard form, regroup, estimate, round, formula

Learning Plan:

Module 1 Lessons 1-5

Module 2 Lessons 1-4

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
- INTO 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
- INTO 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
- INTOMATH: Each lesson offers Advanced activities for Differentiated instruction

Interdisciplinary Connections
RI.CR.4.1. Refer to details and examples as textual evidence when explaining what an informational text says explicitly and make relevant connections when drawing inferences from the text. **SL.II.4.2**. Paraphrase portions of a text read aloud or information presented in diverse media and formats **L.KL.4.1**. Use knowledge of language and its conventions when writing, speaking, reading, or listening. **4-ESS2-2** Analyze and interpret data from maps to describe patterns of Earth's features **4-PS3-1** Use evidence to construct an explanation relating the speed of an object to the energy of that object
Integration of 21st Century Skills: Career Readiness, Life Literacy, and Key Skills
☒9.1 Personal Financial Literacy ☐Financial Health: *Financial Psychology, Civic Financial Responsibility* ☒Financial Landscape: *Financial Institutions, Economic & Government Influences* ☐Money Management: *Planning & Budgeting, Risk Management & Insurance, Credit and Debit Management, Credit Profile* **☒9.2 Career Awareness and Planning** **☒9.4 Life Literacies and Key Skills** ☐Creativity and Innovation ☒Critical Thinking and Problem Solving ☐Global and Cultural Awareness
Effective Integration of Technology: Computer Science and Design Thinking & Life Literacies and Key Skills
☐8.1 Computer Science **☒8.2 Design Thinking** **☐9.4 Life Literacies and Key Skills** ☐Digital Citizenship ☐Information and Media Literacy ☐Technology Literacy
Effective Integration of Media Arts: Visual and Performing Arts Performance Standards

☒**1.2 Media Arts**

☒Creating - Conceive, Develop, and/or Construct

☒Performing - Integrate, Practice, and/or Present

☒Responding - Perceive, Evaluate, and/or Interpret

☐Connecting - Synthesize and/or Relate

4th Grade Unit 2	
Domain: Operations and Algebraic Thinking **(**Multiplication and Division)	**Marking Period: 1, 2, and Ongoing**
Cluster Heading: Use the four operations with whole numbers to solve problems.. Gain familiarity with factors and multiples. Generate and analyze patterns.	
Overview of Unit: To Understand the properties of multiplication and the relationship between multiplication and division.	

Learning Targets—Modules and Standards

Unit 2 Multiplication and Division Problems

Module 3: Interpret and Solve Problem Situations

Lesson 3.1 Explore Multiplicative Comparisons

■ Interpret a multiplication equation as a comparison

■ Multiply or divide to solve word problems involving multiplicative comparison

Lesson 3.2 Distinguish Between Multiplicative and Additive Comparisons

■ 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.

Lesson 3.3 Use Division to Solve Multiplicative Comparison Problems

■ 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

Lesson 3.4: Use Comparisons to Solve Problem Situations

■ 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

Lesson 3.5 Solve Multistep Problems with Multiplication and Division

■ 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

Module 4: Mental Math and Estimation Strategies

Lesson 4.1 Explore Multiplication Patterns with Tens, Hundreds, and Thousands
■ 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.

Lesson 4.2 Explore Division Patterns with Tens, Hundreds, and Thousands
■ 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.

Lesson 4.3 Estimate Products by 1-Digit Numbers
■ Use place value understanding to round multi-digit whole numbers to any place

Lesson 4.4 Estimate Quotients Using Compatible Numbers
■ 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.

Lesson 4.5 Use Mental Math Strategies for Multiplication and Division
■ 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

Module 5: Multiply by 1-Digit Numbers

Lesson 5.1 Represent Multiplication
● 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

Lesson 5.2 Use Area Models and the Distributive Property to Multiply
● 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.

Lesson 5.3 Multiply Using Expanded Form
● 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.

Lesson 5.4 Multiply Using Partial Products

● 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.

Lesson 5.5 Use Place Value to Multiply 2-Digit Numbers

● 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.

Lesson 5.6 Multiply 3-Digit and 4-Digit Numbers

● 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.

Lesson 5.7 Use Equations to Solve Multistep Problems

● 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.

Module 6: Understand Division by 1-Digit Numbers

Lesson 6.1 Represent Division

■ 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.

Lesson 6.2 Investigate Remainders

■ 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

Lesson 6.3 Interpret Remainders

■ 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.

Lesson 6.4 Use Area Models and the Distributive Property to Divide

■ 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

Lesson 6.5 Divide Using Repeated Subtraction

■ 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.

Lesson 6.6 Divide Using Partial Quotients

■ 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.

Module 7: Divide by 1-Digit Numbers

Lesson 7.1 Represent Division with Regrouping
■ 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.

Lesson 7.2 Divide by 1-Digit Numbers
■ 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.

Lesson 7.3 Divide by 1-Digit Numbers
■ 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.

Lesson 7.4 Solve Multistep Multiplication and Division Problems
■ 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.

Operations and Algebraic Thinking 4.OA

A. Use the four operations with whole numbers to solve problems

4. 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.

5. 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.

6. Solve multi-step 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.

B. Gain familiarity with factors and multiples

5. 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.

C. Generate and analyze patterns

6. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1, 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.

Essential Ideas	Enduring Understandings
• Identify the different numbers in the problem. What does each number represent? • How could you find the value of n in the multiplication equation without using division? • How do you know whether this is a multiplicative or additive comparison problem? • How can you use base-ten blocks to show 8 × 7, 8 × 70, and 8 × 700? • How are showing a multiplication problem in an area model and writing a number in expanded form similar? • When you record the multiplication, how does that show the partial products? • What information will you use to solve the problem? • How can you use division to solve a problem? • For the division problem, what are the partial quotients, and how are they represented in your area model? • Why do you have to regroup to divide 56 by 4? • How can you use base-ten blocks to represent division of a 3-digit number? • How can you check that your answer is reasonable? • What operations did you use to solve a problem?	1. Interpret multiplication as a comparison. 2. Use visual models and equations to represent multiplicative comparisons 3. Distinguish between additive and multiplicative comparison problems 4. Solve multiplicative comparison problems using division. 5. Use visual models and equations to solve multiplicative and additive comparison problems 6. Use drawings and equations to represent problems. 7. Identify and use patterns when multiplying by multiples of 10, 100, and 1,000. 8. Divide multiples of 10, 100, and 1,000 by 1-digit numbers. 9. Connect area models and the Distributive Property to multiply whole numbers using strategies based on place value and properties of operations. 10. Solve multistep word problems involving multiplication of whole numbers. 11. Find whole number quotients and remainders with up to 4-digit dividends and 1-digit divisors. 12. Illustrate and explain the calculations by using equations, rectangular arrays, and area models 13. Connect concrete and visual models to using place value to solve division problems with regrouping.

● Could you have done different steps to solve the problem?	14. Use place value and the relationship between multiplication and division to find whole-number quotients and remainders

Evidence of Learning

Formative Assessment- 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
- Computer based programs/learning games (Sumdog, Aleks, 99 Math, IXL…)

Materials and Learning Plan

Materials:
1-inch grid paper, number lines, base ten blocks, White boards

Vocabulary: Inverse Operations
Learning Plan:
Module 3 Lessons 1-5
Module 4 Lessons 1-5
Module 5 Lessons 1-7
Module 6 Lessons 1-6
Module 7 Lessons 1-4

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
- INTOMath 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
- INTOMath 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
- INTOMATH: Each lesson offers Advanced activities for Differentiated instruction

Interdisciplinary Connections

RI.CR.4.1. Refer to details and examples as textual evidence when explaining what an informational text says explicitly and make relevant connections when drawing inferences from the text.
SL.II.4.2. Paraphrase portions of a text read aloud or information presented in diverse media and formats
L.KL.4.1. Use knowledge of language and its conventions when writing, speaking, reading, or listening.
4-ESS2-2 Analyze and interpret data from maps to describe patterns of Earth's features.
4-ESS3-2 Generate and compare multiple solutions to reduce the impacts of natural Earth processes and climate change have on humans.
3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

6.1.5.GeoPP.2: Describe how landforms, climate and weather, and availability of resources have impacted where and how people live and work in different regions of New Jersey and the United States

Integration of 21st Century Skills: Career Readiness, Life Literacy, and Key Skills

☒9.1 Personal Financial Literacy

☐Financial Health: *Financial Psychology, Civic Financial Responsibility*
☐Financial Landscape: *Financial Institutions, Economic & Government Influences*
☒Money Management: *Planning & Budgeting, Risk Management & Insurance, Credit and Debit Management, Credit Profile*

☒9.2 Career Awareness and Planning

☒9.4 Life Literacies and Key Skills

☐Creativity and Innovation
☒Critical Thinking and Problem Solving
☐Global and Cultural Awareness

Effective Integration of Technology: Computer Science and Design Thinking & Life Literacies and Key Skills

☐8.1 Computer Science

☒**8.2 Design Thinking**

☒**9.4 Life Literacies and Key Skills**

☐Digital Citizenship
☐Information and Media Literacy
☒Technology Literacy

Effective Integration of Media Arts: Visual and Performing Arts Performance Standards

☒**1.2 Media Arts**

☐Creating - Conceive, Develop, and/or Construct
☐Performing - Integrate, Practice, and/or Present
☐Responding - Perceive, Evaluate, and/or Interpret
☒Connecting - Synthesize and/or Relate

4th Grade Unit 3	
Domain: Operations and Algebraic Thinking	**Marking Period: 1, 2, and Ongoing**

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

Overview of Unit: Multiply by 2-Digit Numbers. Apply Multiplication to Area

Learning Targets—Modules and Standards

Operations and Algebraic Thinking

Unit 3 Extend and Apply Multiplication

Module 8: Multiply by 2-Digit Numbers

Lesson 8.1 Multiply with Tens
■ Use strategies to multiply with tens.

Lesson 8.2 Connect Concepts and Skills

● Use strategies to estimate products.
● Use place value understanding to round multi-digit whole numbers to any place.

Lesson 8.3 Connect Concepts and Skills
● Use area models and partial products to multiply two 2-digit numbers.

Lesson 8.4 Multiply Using Partial Products
■ Use place value and partial products to multiply two 2-digit numbers.

Lesson 8.5 Multiply with Regrouping
● Use regrouping to multiply two 2-digit numbers
Lesson 8.6 Choose a Multiplication Strategy
● Solve multistep problems and assess the reasonableness of solutions.

Module 9: Apply Multiplication to Area

Lesson 9.1 Apply the Area Formula to Rectangles
● Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

Lesson 9.2 Find the Area of Combined Rectangles
● Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

Lesson 9.3 Find Unknown Measures
● Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

Lesson 9.4 Solve Area Problems
● Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

Operations and Algebraic Thinking 4.OA

A. Use the four operations with whole numbers to solve problems

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.

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.

3. Solve multi-step 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.

B. Gain familiarity with factors and multiples

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.

C. Generate and analyze patterns

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. 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.

Measurement 4.M

A. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit

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), ...

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.

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 Ideas	Enduring Understandings
• What steps did you take when using place value to find the product? • How do you round 11 and 23 to the nearest ten? • How could you solve 15 × 14 using the Distributive Property? • How would the area model change if each factor increased? • What are the four multiplication facts used to find the product of 14 and 32?	1. Use strategies to multiply with tens. 2. Use strategies to estimate products. 3. Use area models and partial products to multiply two 2-digit numbers. 4. Use place value and partial products to multiply two 2-digit numbers. 5. Use regrouping to multiply two 2-digit numbers 6. Use different strategies to multiply two 2-digit numbers.

● What two operations are needed in order to calculate the answer to this problem? ● How can you use multiplication to find the area of the rectangle? ● What is a formula for the area of a figure made of two combined rectangles? ● If the area of a rectangle is 30 square units and the length of the rectangle is 10 units, what is the width of the rectangle? ● How would the method change if three rectangular areas were present?	7. Solve multistep problems and assess the reasonableness of solutions 8. Apply the area formula to find the area of rectangles. 9. Find the area of combined rectangles using addition or subtraction and the area formula. 10. Solve problems involving unknown measures in rectangles 11. Use the area formula to solve problems.

Evidence of Learning

Formative Assessment- 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
- Computer based programs/learning games (Sumdog, Aleks, 99 Math, IXL…)

Materials and Learning Plan

Materials:
1-inch grid paper, number lines, base ten blocks, White boards

Vocabulary: Compatible Numbers, base, height
Learning Plan:
Module 8 Lessons 1-7
Module 9 Lessons 1-4

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
- INTOMath 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
- INTOMath 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
- INTOMath 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
- INTOMATH: Each lesson offers Advanced activities for Differentiated instruction

Interdisciplinary Connections

RI.CR.4.1. Refer to details and examples as textual evidence when explaining what an informational text says explicitly and make relevant connections when drawing inferences from the text.
SL.II.4.2. Paraphrase portions of a text read aloud or information presented in diverse media and formats
L.KL.4.1. Use knowledge of language and its conventions when writing, speaking, reading, or listening
3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
6.1.5.GeoSV.2: Use maps to explain the impact of location and place on the relationships between places in New Jersey, the United States and other countries
6.1.5.GeoPP.2: Describe how landforms, climate and weather, and availability of resources have impacted where and how people live and work in different regions of New Jersey and the United States

Integration of 21st Century Skills: Career Readiness, Life Literacy, and Key Skills

☒9.1 Personal Financial Literacy

☐Financial Health: *Financial Psychology, Civic Financial Responsibility*

☒Financial Landscape: *Financial Institutions, Economic & Government Influences*

☐Money Management: *Planning & Budgeting, Risk Management & Insurance, Credit and Debit Management, Credit Profile*

☒9.2 Career Awareness and Planning

☒9.4 Life Literacies and Key Skills

☐Creativity and Innovation
☒Critical Thinking and Problem Solving
☒Global and Cultural Awareness

Effective Integration of Technology: **Computer Science and Design Thinking & Life Literacies and Key Skills**

☒8.1 Computer Science
☐8.2 Design Thinking

☒9.4 Life Literacies and Key Skills

☐Digital Citizenship
☐Information and Media Literacy
☒Technology Literacy

Effective Integration of Media Arts: **Visual and Performing Arts Performance Standards**

☒1.2 Media Arts

☒Creating - Conceive, Develop, and/or Construct
☒Performing - Integrate, Practice, and/or Present
☒Responding - Perceive, Evaluate, and/or Interpret
☐Connecting - Synthesize and/or Relate

4rd Grade Unit 4

Domain: Number and Operations - Fractions
Marking Period: 3-4 and ongoing

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

Overview of Unit: Understand Fractions as Numbers, Relate Shapes, Fractions, and Area, Compare Fractions, Understand Equivalent Fractions

Learning Targets—Big Idea and Standards

Number and Operations-Fractions
Unit 4 Fractions and Decimals

Module 10: Algebraic Thinking: Number Theory

Lesson 10.1 Describe Equal Parts of a Whole
■ 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.

Lesson 10.2 Identify Factors
■ 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.

Lesson 10.3 Generate Multiples Using Factors
■ 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.

Lesson 10.4 Identify Prime and Composite Numbers
■ 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.

Lesson 10.5 Generate and Analyze Number Patterns
■ 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

Module 11: Fraction Equivalence and Comparison
Lesson 11.1 Compare Fractions Using Visual Models
■ 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

Lesson 11.2 Compare Fractions Using Benchmarks
■ 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
Lesson 11.3 Explain Fraction Equivalence Using Visual Models

■ Explain why a fraction a/b is equivalent to a fraction (n × a)/(n × 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.

Lesson 11.4 Generate Equivalent Fractions

■ Explain why a fraction a/b is equivalent to a fraction (n × a)/(n × 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.

Lesson 11.5 Use Common Multiples to Write Equivalent Fractions

■ Explain why a fraction a/b is equivalent to a fraction (n × a)/(n × 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.

Lesson 11.6 Compare Fractions Using Common Numerators and Denominators

■ 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

Lesson 11.7 Use Comparisons to Order Fractions

■ 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

Module 12: Relate Fractions and Decimals

Lesson 12.1 Represent Tenths as Fractions and Decimals

■ Use decimal notation for fractions with denominators 10 or 100.

Lesson 12.2 Represent Hundredths as Fractions and Decimals

■ Use decimal notation for fractions with denominators 10 or 100.

Lesson 12.3 Identify Equivalent Fractions and Decimals

■ 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.

Lesson 12.4 Compare Decimals

■ 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

Lesson 12.5 Relate Fractions, Decimals, and Money

■ Use decimal notation for fractions with denominators 10 or 100.

Lesson 12.6 Solve Multistep Money Problems

■ 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.

Module 13: Use Fractions to Understand Angles

Lesson 13.1 Explore Lines, Rays, and Angles

■ Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

Lesson 13.2 Explore Angles

■ Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "onedegree angle," and can be used to measure angles

Lesson 13.3 Relate Angles to Fractional Parts of a Circle

■ Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "onedegree angle," and can be used to measure angles

Lesson 13.4 Relate Degrees to Fractional Parts of Circles

■ Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "onedegree angle," and can be used to measure angles

■Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: An angle that turns through n one-degree angles is said to have an angle measure of n degrees.

Lesson 13.5 Measure and Draw Angles Using a Protractor

■Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures

■ Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

Lesson 13.6 Join and Separate Angles

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

Lesson 13.7 Find Unknown Angle Measures

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

Number and Operations - Fractions 4.NF

A. Extend understanding of fractions equivalence and ordering

1. Explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $\frac{(n \times a)}{(n \times b)}$ 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.

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 $\frac{1}{2}$. 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.

B. Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers

1. Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$.

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

   b. 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: $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$; $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$; $2\frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$.

   c. 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.

   d. 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.

2. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

a. Understand a fraction $\frac{a}{b}$ as a multiple of $\frac{1}{b}$. For example, use a visual fraction model to represent $\frac{5}{4}$ as the product $5 \times \frac{1}{4}$, recording the conclusion by the equation $\frac{5}{4} = 5 \times (\frac{1}{4})$.

b. Understand a multiple of $\frac{a}{b}$ as a multiple of $\frac{1}{b}$, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (\frac{2}{5})$ as $6 \times \frac{1}{5}$, recognizing this product as $\frac{6}{5}$. In general, $n \times \left(\frac{a}{b}\right) = \frac{(n \times a)}{b}$.

c. 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 $\frac{3}{8}$ 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?

C. Understand decimal notation for fractions and compare decimal fractions

1. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express $\frac{3}{10}$ as $\frac{30}{100}$ and add $\frac{3}{10} + \frac{4}{100} = \frac{34}{100}$. (Clarification: Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators in general is not a requirement at this grade.)

2. Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $\frac{62}{100}$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

3. 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.

Measurement 4.M

A. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit

4. 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), ...

5. 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.

6. 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.

B. Geometric measurement: understand concepts of angle and measure angles

4. 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 $\frac{1}{360}$ th 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.

5. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

6. 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.

Geometry 4.G

A. Draw and identify lines and angles, and classify shapes by properties of their lines and angles

1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

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.

Enduring Understandings	Essential Ideas

• How does your visual model help you decide whether 40 objects can be set in 5 equal rows? • What does multiple of 4 mean? • Are the numbers 10 and 11 prime or composite? How do you know? • How can you use visual fraction models to compare 4 /5 and 7/ 8? • Explain how to determine, without using a model, if 4/ 6 is greater than or less than 7/8 • How do the visual models help you explain why 1 /2 and 3 /6 are equivalent fractions? • Why can you multiply the numerator and denominator by the same number without changing the value of the fraction? • Is 36 a common multiple of 3 and 4? How do you know? • After you wrote the equivalent fraction, how did you compare the two fractions with a common denominator? • What common denominator could you use to compare all three fractions? • How is a fraction similar to a decimal? • How does a digit in tenths compare to the same digit in hundredths? • How can you use the hundredths models to decide which decimal is greater? • How does the hundredths model help you determine how to write the money amount as a fraction? • How does working in cents make this problem easier? • How is a line segment similar to a ray? How are they different? • When comparing two angles, which is more important, the length of the rays or the distance between the rays? Why? • How does the visual model help you name the fractional measure of each angle? • What if the whole circle were divided into 6 equal parts? What would be the fractional measure of one part? • What unit of measure do you use to measure an angle? • How do you know that a fractional turn of a circle is an angle? • How would you use a protractor to draw an angle that measures 60°?	**1.** Use concrete and visual models to identify all the factors of numbers up to 100. **2.** Use division and divisibility rules to determine if a number is a factor of a given number. **3.** Use factors to determine if a number is a multiple of a given number, and list multiples of the given number. **4.** Use factors and division to identify prime and composite numbers **5.** Use a rule to find numbers in a pattern and identify other features of the pattern not stated in the rule. **6.** Use visual models to compare fractions with unlike numerators and denominators. **7.** Use benchmarks to compare fractions with different numerators and different denominators. **8.** Use visual fraction models to explain why two fractions are or are not equivalent. **9.** Use multiplication and division to identify and generate equivalent fractions. **10.** Use common multiples to represent a pair of fractions as equivalent fractions with common denominators or common numerators. **11.** Write equivalent fractions to compare fractions using common numerators or common denominators **12.** Record tenths as fractions and as decimals. **13.** Record hundredths as fractions and as decimals. **14.** Express equivalent fractions as decimals. **15.** Compare decimals using visual models, number lines, or place value **16.** Find relationships among fractions, decimals, and money. **17.** Identify, name, and draw points, lines, line segments, rays, and angles. **18.** Measure an angle using unit angles **19.** Measure an angle as it relates to the fractional parts of a circle. **20.** Use a protractor to measure and draw angles **21.** Use the relationship between the known angles to find the measure of unknown angles.

● How did joining the angles help you see the relationship between the measures of the separate angles and the measure of the original angle? ● How can you use an equation to check your answer to the problem?	

Evidence of Learning

Formative Assessment- 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
- Computer based programs/learning games (Sumdog, Aleks, 99 Math, IXL…)

Materials and Learning Plan

Materials:
Straight edge, Fraction circles, Protractors, rulers, fraction strips, 1-inch grid paper, White boards, number lines, decimal models

Vocabulary: array, composite, divisible, factor pair, multiple, prime, common denominator, common factor, decimal, place value, line, ray, endpoint, degree, obtuse, right angle, acute, reflex, vertex, tenth, hundredth
Learning Plan:
Module 10 Lessons 1-5
Module 11 Lessons 1-7
Module 12 Lessons 1-6
Module 13 Lessons 1-7

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
- INTOMath 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
- INTOMath 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
- INTOMath 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
- INTOMATH: Each lesson offers Advanced activities for Differentiated instruction

Interdisciplinary Connections

RI.CR.4.1. Refer to details and examples as textual evidence when explaining what an informational text says explicitly and make relevant connections when drawing inferences from the text.
SL.II.4.2. Paraphrase portions of a text read aloud or information presented in diverse media and formats
L.KL.4.1. Use knowledge of language and its conventions when writing, speaking, reading, or listening
4-PS3-4 Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.
4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
6.1.5.HistorySE.1: Examine multiple accounts of early European explorations of North America including major land and water routes, reasons for exploration, and the impact the exploration had

Integration of 21st Century Skills: Career Readiness, Life Literacy, and Key Skills

☒9.1 Personal Financial Literacy

☐Financial Health: *Financial Psychology, Civic Financial Responsibility*
☐Financial Landscape: *Financial Institutions, Economic & Government Influences*
☒Money Management: *Planning & Budgeting, Risk Management & Insurance, Credit and Debit Management, Credit Profile*

☒9.2 Career Awareness and Planning

☒9.4 Life Literacies and Key Skills
☒Creativity and Innovation
☒Critical Thinking and Problem Solving
☐Global and Cultural Awareness

Effective Integration of Technology: Computer Science and Design Thinking & Life Literacies and Key Skills

☒8.1 Computer Science
☐8.2 Design Thinking

☒9.4 Life Literacies and Key Skills
☐Digital Citizenship
☐Information and Media Literacy
☒Technology Literacy

Effective Integration of Media Arts: Visual and Performing Arts Performance Standards

☒1.2 Media Arts
☐Creating - Conceive, Develop, and/or Construct
☐Performing - Integrate, Practice, and/or Present
☒Responding - Perceive, Evaluate, and/or Interpret
☒Connecting - Synthesize and/or Relate

4th Grade Unit 5	

Domain: Number and Operations - Fractions	**Marking Period: 3-4**

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

Overview of Unit: Add and subtract fractions with like denominators. Add and subtract mixed numbers. Multiply fractions by whole numbers.

Learning Targets—Big Idea and Standards

Number and Operations - Fractions

Unit 5 Operations with fractions

Module 14: Understand Addition and Subtraction of Fractions with Like Denominators

Lesson 14.1 Decompose Fractions into Sums

■ 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.

Lesson 14.2 Join Parts of the Same Whole

■ Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

Lesson 14.3 Represent Addition of Fractions

■ 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.

Lesson 14.4 Separate Parts of the Same Whole

■ Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

Lesson 14.5 Represent Subtraction of Fractions

■ 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.

Lesson 14.6 Add Fractional Parts of 10 and 100

■ 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.

Module 15: Add and Subtract Fractions and Mixed Numbers with Like Denominators

Lesson 15.1 Add and Subtract Fractions to Solve Problems

■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.

Lesson 15.2 Rename Fractions and Mixed Numbers

■ 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.

Lesson 15.3 Add and Subtract Mixed Numbers to Solve Problems

■ 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.

Lesson 15.4 Rename Mixed Numbers to Subtract

■ 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.

Lesson 15.5 Apply Properties of Addition to Add Fractions and Mixed Numbers

■ 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.

Lesson 15.6 Practice Solving Fraction Problems

■ 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.

Module 16: Multiply Fractions by Whole Numbers

Lesson 16.1: Understand Multiples of Unit Fractions

■ Understand a fraction a/b as a multiple of 1/b

Lesson 16.2 Find Multiples of Fractions

■ Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number

■ 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.

Lesson 16.3 Represent Multiplication of a Fraction by a Whole Number

■ 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.

■ Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number

Lesson 16.4 Solve Problems Using Multiplication of a Fraction or Mixed Number by a Whole Number

■ 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.

Number and Operations - Fractions 4.NF

A. Extend understanding of fractions equivalence and ordering

1. Explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $\frac{(n \times a)}{(n \times b)}$ 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.

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 $\frac{1}{2}$. 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.

B. Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers

1. Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$.

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

   b. 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: $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$; $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$; $2\frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$.

   c. 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.

   d. 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.

2. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

   a. Understand a fraction $\frac{a}{b}$ as a multiple of $\frac{1}{b}$. For example, use a visual fraction model to represent $\frac{5}{4}$ as the product $5 \times \frac{1}{4}$, recording the conclusion by the equation $\frac{5}{4} = 5 \times (\frac{1}{4})$.

   b. Understand a multiple of $\frac{a}{b}$ as a multiple of $\frac{1}{b}$, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (\frac{2}{5})$ as $6 \times \frac{1}{5}$, recognizing this product as $\frac{6}{5}$. In general, $n \times \left(\frac{a}{b}\right) = \frac{(n \times a)}{b}$.

c. 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 $\frac{3}{8}$ 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?

C. Understand decimal notation for fractions and compare decimal fractions

3. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express $\frac{3}{10}$ as $\frac{30}{100}$ and add $\frac{3}{10} + \frac{4}{100} = \frac{34}{100}$. (Clarification: Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators in general is not a requirement at this grade.)

4. Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $\frac{62}{100}$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

5. 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.

Operations and Algebraic Thinking 4.OA

A. Use the four operations with whole numbers to solve problems

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.

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.

Solve multi-step 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.

B. Gain familiarity with factors and multiples

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.

Essential Ideas	Enduring Understandings
● How do you determine how many patties they have from the equation? ● How do you know how many pieces of the fraction model to shade when you are showing the total amount of sugar in the recipe? What does the shading represent? ● Why do you cross pieces off in a visual fraction model for subtraction? ● How do you know this is a subtraction problem? ● What quantity will you represent with a fraction? ● What addition equation could you write for this problem that groups the whole numbers together and the fractions together? ● Which method for subtracting mixed numbers do you prefer and why? ● How could you check the answer to this problem? ● How can you write a repeated addition equation to show how much drink mix is needed for each jug? ● How can you represent 3 /10 as a sum of unit fractions? ● How does knowing the multiples of 3 help you check your answer?	● Write fractions in multiple ways as the sum of fractions with the same denominator. ● Solve word problems involving addition of fractions with like denominators using visual models. ● Solve word problems involving subtraction of fractions with like denominators using visual representations. ● Use a common denominator of 100 to add two fractions with denominators of 10 and 100. ● Apply skills in adding and subtracting fractions with like denominators to those whose numerators are greater than their denominators. ● Rename mixed numbers as fractions greater than one and vice versa by using representations such as visual models or fractions bars. ● Add and subtract mixed numbers with like denominators. ● Rename mixed numbers to subtract. ● Write a fraction as a multiple of a whole number and a unit fraction. ● Write the product of a whole number and a fraction as the product of a whole number and a unit fraction. ● Use a visual representation to find the product of a whole number and a fraction, and model it with numbers and symbols. ● Find the solutions to problems involving multiplication of fractions or mixed numbers and whole numbers.
Evidence of Learning	
Formative Assessment- 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 ● Computer based programs/learning games (Sumdog, Aleks, 99 Math, IXL…)	

Materials and Learning Plan
Materials: **Fraction circles, fraction strips, 1-inch grid paper, White boards, number lines** **Vocabulary: Unit fraction, common denominator, Mixed number, multiple** **Learning Plan:** **Module 14 Lessons 1-6** **Module 15 Lessons 1-6** **Module 16 Lessons 1-4**
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 ● INTOMath 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 ● INTOMath 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

- INTOMath 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
- INTOMATH: Each lesson offers Advanced activities for Differentiated instruction

Interdisciplinary Connections

RI.CR.4.1. Refer to details and examples as textual evidence when explaining what an informational text says explicitly and make relevant connections when drawing inferences from the text.
SL.II.4.2. Paraphrase portions of a text read aloud or information presented in diverse media and formats
L.KL.4.1. Use knowledge of language and its conventions when writing, speaking, reading, or listening
3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
4-PS3-2 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents
6.1.5.GeoSV.2: Use maps to explain the impact of location and place on the relationships between places in New Jersey, the United States and other countries.
6.1.5.GeoPP.2: Describe how landforms, climate and weather, and availability of resources have impacted where and how people live and work in different regions of New Jersey and the United States

Integration of 21st Century Skills: Career Readiness, Life Literacy, and Key Skills

☒9.1 Personal Financial Literacy

☒Financial Health: *Financial Psychology, Civic Financial Responsibility*
☐Financial Landscape: *Financial Institutions, Economic & Government Influences*
☒Money Management: *Planning & Budgeting, Risk Management & Insurance, Credit and Debit Management, Credit Profile*

☐9.2 Career Awareness and Planning

☒9.4 Life Literacies and Key Skills

☒Creativity and Innovation
☒Critical Thinking and Problem Solving
☐Global and Cultural Awareness

Effective Integration of Technology: Computer Science and Design Thinking & Life Literacies and Key Skills

☒8.1 Computer Science
☐8.2 Design Thinking

☒9.4 Life Literacies and Key Skills

☐Digital Citizenship
☐Information and Media Literacy
☒Technology Literacy

Effective Integration of Media Arts: Visual and Performing Arts Performance Standards

☒1.2 Media Arts

☐Creating - Conceive, Develop, and/or Construct
☐Performing - Integrate, Practice, and/or Present
☐Responding - Perceive, Evaluate, and/or Interpret
☒Connecting - Synthesize and/or Relate

4th Grade Unit 6	
Domain: Geometry	**Marking Period: 3-4**
Cluster Heading: Draw and identify lines and angles and classify shapes by properties of their lines and angles.	
Overview of Unit: Developing understanding of two-dimensional figures. Understand symmetry and patterns	

Learning Targets—Big Idea and Standards

Geometry
Unit 6: Two-Dimensional Figures and Symmetry

Module 17: Two-Dimensional Figures

Lesson 17.1 Identify and Draw Perpendicular and Parallel Lines

■ Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

■ 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

Lesson 17.2 Identify and Classify Triangles by Angles

■ Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
■ 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

Lesson 17.3 Identify and Classify Triangles by Sides
■ Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
■ 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

Lesson 17.4 Identify and Classify Quadrilaterals
■ Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
■ 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

Lesson 17.5 Measure and Draw Angles of Two-Dimensional Figures
■ Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
■ Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

Module 18: Symmetry and Patterns
Lesson 18.1 Recognize Lines of Symmetry
■ 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.

Lesson 18.2 Identify and Draw Lines of Symmetry
■ 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.

Lesson 18.3 Generate and Identify Shape Patterns
■ 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.

Geometry 4.G

A. Draw and identify lines and angles, and classify shapes by properties of their lines and angles

1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

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.

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 Ideas	**Enduring Understandings**
● How can lines be both intersecting lines and perpendicular lines? ● How does the classification of an angle change if you rotate the triangle? ● How can you classify triangle QRS ? ● Is there a type of quadrilateral that is both a rectangle and rhombus? ● How will your angle measure be affected if you place the center point of the protractor to the left of the vertex of an angle? ● How do you know if you have found all of the lines of symmetry? ● How many lines of symmetry does the triangle have? ● How can you describe how the figures change in the pattern?	● Identify and draw perpendicular and parallel lines. ● Identify and classify triangles by the size of their angles. ● Identify and classify triangles by their side lengths. ● Identify and classify quadrilaterals. ● Measure and draw angles of two-dimensional figures ● Identify and describe line symmetry in two-dimensional figures. ● Find or draw a line of symmetry in two-dimensional figures. ● Identify, describe, and extend patterns involving shapes.

Evidence of Learning

Formative Assessment- 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
- Computer based programs/learning games (Sumdog, Aleks, 99 Math, IXL…)

Materials and Learning Plan

Materials:
Protractor, centimeter ruler, 1 centimeter grid, scissors, 1-inch grid paper, White boards, number lines

Vocabulary: parallel, perpendicular, acute, obtuse, equilateral, isosceles, scalene, parallelogram, rhombus, trapezoid, quadrilateral, line of symmetry.

Learning Plan:
Module 17 Lessons 1-6
Module 18 Lessons 1-6

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
- INTOMath 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
- INTOMath 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
- INTOMath 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
- INTOMATH: Each lesson offers Advanced activities for Differentiated instruction

Interdisciplinary Connections

RI.CR.4.1. Refer to details and examples as textual evidence when explaining what an informational text says explicitly and make relevant connections when drawing inferences from the text.
SL.II.4.2. Paraphrase portions of a text read aloud or information presented in diverse media and formats
L.KL.4.1. Use knowledge of language and its conventions when writing, speaking, reading, or listening
4-ESS3-2 Generate and compare multiple solutions to reduce the impacts of natural Earth processes and climate change have on humans.
3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
4-PS3-2 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.

Integration of 21st Century Skills: Career Readiness, Life Literacy, and Key Skills

☒9.1 Personal Financial Literacy

- ☐Financial Health: *Financial Psychology, Civic Financial Responsibility*
- ☐Financial Landscape: *Financial Institutions, Economic & Government Influences*
- ☒Money Management: *Planning & Budgeting, Risk Management & Insurance, Credit and Debit Management, Credit Profile*

☐9.2 Career Awareness and Planning

☒9.4 Life Literacies and Key Skills

- ☒Creativity and Innovation
- ☐Critical Thinking and Problem Solving
- ☐Global and Cultural Awareness

Effective Integration of Technology: Computer Science and Design Thinking & Life Literacies and Key Skills

☒8.1 Computer Science
☒8.2 Design Thinking

☐9.4 Life Literacies and Key Skills

- ☐Digital Citizenship
- ☐Information and Media Literacy
- ☐Technology Literacy

Effective Integration of Media Arts: Visual and Performing Arts Performance Standards

☒1.2 Media Arts

- ☐Creating - Conceive, Develop, and/or Construct
- ☒Performing - Integrate, Practice, and/or Present

☒Responding - Perceive, Evaluate, and/or Interpret
☒Connecting - Synthesize and/or Relate

4th Grade Unit 7	
Domain: Measurement/Data Literacy	**Marking Period: 3-4**

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

Overview of Unit: Understand relative Sizes of Customary Measurement Units and metric units. Solve Problems with Time and Measurement

Learning Targets—Big Idea and Standards

Measurement/Data Literacy

Unit 7: Measurement, Data, and Time

Module 19: Relative Sizes of Customary Measurement Units

Lesson 19.1 Identify Customary Measurement Benchmarks

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

Lesson 19.2 Compare Customary Units of Length

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

Lesson 19.3 Compare Customary Units of Weight

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

Lesson 19.4 Compare Customary Units of Liquid Volume

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

Lesson 19.5 Represent and Interpret Measurement Data in Line Plots

■ 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.
■ 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.

Module 20: Relative Sizes of Metric Measurement Units
Lesson 20.1 Identify Metric Measurement Benchmarks
■ Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.

Lesson 20.2 Compare Metric Units of Length
■ Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table
Lesson 20.3 Compare Metric Units of Mass and Liquid Volume
■ Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table
Lesson 20.4 Solve Problems Using Measurements
■ 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
Module 21: Solve Problems with Time and Measurement
Lesson 21.1 Compare Units of Time
■ Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table

Lesson 21.2 Solve Problems Involving Elapsed Time
■ 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

Lesson 21.3 Solve Problems Involving Start Time and End Time
■ 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

Lesson 21.4 Practice with Mixed Measure
■ 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

Measurement 4.M

A. Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit

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), ...

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.

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.

B. Geometric measurement: understand concepts of angle and measure angles

4. 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 $\frac{1}{360}^{\text{th}}$ 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.

5. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

6. 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.

Data Literacy 4.DL

A. Organize data and understand data visualizations

1. Create data-based questions, generate ideas based on the questions, and then refine the questions.
2. Develop strategies to collect various types of data and organize data digitally.
3. Understand that subsets of data can be selected and analyzed for a particular purpose.
4. Analyze visualizations of a single data set, share explanations and draw conclusions that the data supports.

B. Represent and interpret measurement data

Make a line plot to display a data set of measurements in fractions of a unit (½, ¼, ⅛). 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 Ideas	Enduring Understandings
• What do you use to measure about 1 inch? about 1 foot? about 1 yard? • Which is longer, one inch or one foot? • How does knowing the relationships of the customary units of liquid volume help you compare the units? • What other data could you gather from the line plot? • In what metric units would you measure the length of a book? • Which is shortest: 1 centimeter, 1 decimeter, or 1 meter? • How can you decide which unit to use to measure the mass of an object? • Which is greater: 1 gallon or 1 quart? • A meeting starts at 3:07 and ends at 3:43. How can you find the elapsed time without using a number line? • How can a number line help you find when the game starts?	• Use benchmarks to describe the relative sizes of customary measurement units. • Use visual representations to describe and compare customary units of length • Use visual representations to describe and compare customary units of weight • Use visual representations to describe and compare customary units of liquid volume • Make and interpret line plots with fractional data. • Use benchmarks to describe the relative sizes of metric measurement units • Use visual representations to describe and compare metric units of length. • Use visual representations to describe and compare metric units of mass and liquid volume. • Solve problems involving metric and customary units of measure. • Use visual representations and reasoning to compare measurements of time • Solve problems involving elapsed time. • Solve problems involving mixed measures.

Evidence of Learning

Formative Assessment- 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
- Computer based programs/learning games (Sumdog, Aleks, 99 Math, IXL…)

Materials and Learning Plan

Materials: square tiles, inch ruler, yard stick, meter sticks, base-ten blocks, measuring cups, 1-liter containers, clock face, Number Lines (by Ones)

Vocabulary: cup, gallon, liquid volume, mile, ounce, pint, pound, quart, ton, weight, fluid ounce, decimeter, gram, kilogram, kilometer, liter, milliliter, millimeter, milligram, second, elapsed time
Learning Plan:
Module 19 Lessons 1-5
Module 20 Lessons 1-4
Module 21 Lessons 1-4

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
- INTOMath 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

- INTOMath 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
- INTOMath 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
- INTOMATH: Each lesson offers Advanced activities for Differentiated instruction

Interdisciplinary Connections

RI.CR.4.1. Refer to details and examples as textual evidence when explaining what an informational text says explicitly and make relevant connections when drawing inferences from the text.
SL.II.4.2. Paraphrase portions of a text read aloud or information presented in diverse media and formats
L.KL.4.1. Use knowledge of language and its conventions when writing, speaking, reading, or listening
RI.MF.4.6. Use evidence to show how graphics and visuals (e.g., illustrations, charts, graphs, diagrams, timelines, animations) support central ideas
4-ESS3-1 Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.
4-ESS3-2 Generate and compare multiple solutions to reduce the impacts of natural Earth processes and climate change have on humans.
3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

Integration of 21st Century Skills: Career Readiness, Life Literacy, and Key Skills

☒9.1 Personal Financial Literacy

☒Financial Health: *Financial Psychology, Civic Financial Responsibility*
☐Financial Landscape: *Financial Institutions, Economic & Government Influences*
☒Money Management: *Planning & Budgeting, Risk Management & Insurance, Credit and Debit Management, Credit Profile*

☒9.2 Career Awareness and Planning

☒**9.4 Life Literacies and Key Skills**

☐Creativity and Innovation

☒Critical Thinking and Problem Solving

☒Global and Cultural Awareness

Effective Integration of Technology: Computer Science and Design Thinking & Life Literacies and Key Skills

☒**8.1 Computer Science**

☐**8.2 Design Thinking**

☐**9.4 Life Literacies and Key Skills**

☐Digital Citizenship

☐Information and Media Literacy

☐Technology Literacy

Effective Integration of Media Arts: Visual and Performing Arts Performance Standards

☒**1.2 Media Arts**

☐Creating - Conceive, Develop, and/or Construct

☐Performing - Integrate, Practice, and/or Present

☐Responding - Perceive, Evaluate, and/or Interpret

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