Curriculum Map

Content Area: Mathematics

Course Title: Grade 4 Mathematics	Grade Level: 4

Unit 1-Place Value, Addition, and Subtraction to One Million	2 weeks
Unit 2-Multiply by 1-Digit Numbers	3 weeks
Unit 3-Multiply 2-Digit Numbers	2 weeks
Unit 4-Divide by 1-Digit Numbers	3 weeks
Unit 5-Factors, Multiples, and Patterns	2 weeks
Unit 6-Fraction Equivalence and Comparison	2 weeks
Unit 7-Add and Subtract Fractions	3 weeks

Unit	Duration
Unit 8-Multiply Fractions by Whole Numbers	**2 weeks**
Unit 9-Relate Fractions and Decimals	**2 weeks**
Unit 10-Two-Dimensional Figures	**2 weeks**
Unit 11-Angles	**2 weeks**
Unit 12-Relative Sizes of Measurement Units	**3 weeks**
Unit 13- Algebra: Perimeter and Area	**2 weeks**

Date Created: **August 2015**

Board Approved on: **August 27, 2015**

Unit 1 Overview

Content Area: Mathematics

Unit 1 Title: Place Value, Addition, and Subtraction to One Million

Grade Level: 4

Unit Summary: Number and Operations in Base Ten: Generalize place value understanding for multi-digit whole numbers.

Primary interdisciplinary connections: Science/Social Studies/Reading/Language Arts

4-PS3-4. Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

21st century themes:
- Information and communication skills
- Higher order thinking skills
- Problem solving skills
- Independent learners
- Real-world connections

CRP4. Communicate clearly and effectively and with reason.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

CRP11. Use technology to enhance productivity.

Learning Targets

Mathematical Practices

CC.K-12.MP.2	Reason abstractly and quantitatively.
CC.K-12.MP.6	Attend to precision.

Unit Essential Questions
- How can you describe the value of a digit?
- How can you read and write numbers through hundred thousands?
- How can you compare and order numbers?
- How can you round numbers?
- How can you rename a whole number?
- How can you add whole numbers?
- How can you subtract whole numbers?
- How can you use the strategy *draw a diagram* to solve comparison problems with addition and subtraction?

Student Learning Objectives
- Model the 10-to-1 relationship among place-value positions in the base-ten number system.

- Read and write whole numbers in standard form, word form, and expanded form.
- Compare and order whole numbers based on the values of the digits in each number.
- Round a whole number to any place.
- Rename whole numbers by regrouping.
- Add whole numbers and determine whether solutions to addition problems are reasonable.
- Subtract whole numbers and determine whether solutions to subtraction problems are reasonable.
- Use the strategy draw a diagram to solve comparison problems with addition and subtraction.

CPI #	Cumulative Progress Indicator (CPI)
CC.4.NBT.1	Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
CC.4.NBT.2	Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, = and > symbols to record the results of comparisons.
CC.4.NBT.3	Use place value understanding to round multi-digit whole numbers to any place.
CC.4.NBT.4	Fluently add and subtract multi-digit whole numbers using the standard algorithm.

Unit Vocabulary

- Digit
- Place value
- Expanded form
- Period
- Standard form
- Word form
- Sum
- Compare
- Equal sign

- Greater than sign
- Less than sign Number line
- Order
- Estimate
- Round
- Regroup
- Addend
- Addition
- Difference

Evidence of Learning

Summative Assessment:

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment

- NJ ASK 4

Benchmark: Go Math Benchmark

Equipment needed: Go Math Student Textbook, Manipulatives Kits; Differentiated Centers
Teacher Resources: wwwk-6.thinkcentral.com

Modifications: (Special education, ELLs, at-risk students, gifted and talented)
- Menus
- Choice Boards
- Tiered Assignments
- Partner work
- Manipulatives
- Flexible grouping
- Individualizing lessons
- Compacting
- Varying question levels

Formative Assessments

- Lesson Quick Check
- Mid-Chapter Checkpoint
- COREK12

Unit 2 Overview

Content Area: Mathematics

Unit 2 Title: Multiply by 1-Digit Numbers

Grade Level: 4

Unit Summary: Operations and Algebraic Thinking Number and Operations in Base Ten: Use the four operations with whole numbers to solve problems.

Primary interdisciplinary connections: Science/Social Studies/Reading/Language Arts

4-ESS3-2. Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.

21st century themes:

- Information and communication skills
- Higher order thinking skills
- Problem solving skills
- Independent learners
- Real-world connections

CRP4. Communicate clearly and effectively and with reason.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

CRP11. Use technology to enhance productivity.

Learning Targets

Mathematical Practices

CC.K-12.MP.1	Make sense of problems and persevere in solving them.
CC.K-12.MP.4	Model with mathematics.

Unit Essential Questions

- How can you model multiplication comparisons?
- How does a model help you solve a comparison problem?
- How does understanding place value help you multiply tens, hundreds and thousands?
- How can you estimate products by rounding and determine if exact answers are reasonable?
- How can you use the Distributive Property to multiply a 2-digit number by a 1-digit number?
- How can you use expanded form to multiply a multi digit number by a 1-digit number?
- How can you use place value and partial products to multiply by a 1-digit number?
- How can you use mental math and properties to help you multiply numbers?
- When can you use the *draw a diagram* strategy to solve a multistep multiplication problem?

- How can you use regrouping to multiply a 2-digit number by a 1-digit number?
- How can you use regrouping to multiply?
- How can you represent and solve multistep problems using equations?

Student Learning Objectives

- Relate multiplication equations and comparison statements.
- Solve problems involving multiplicative comparison and additive comparison.
- Multiply tens, hundreds, and thousands by whole numbers through 10.
- Estimate products by rounding and determine if exact answers to multiplication problems are reasonable.
- Use the Distributive Property to multiply a 2-digit number by a 1-digit number.
- Use expanded form to multiply a multi digit number by a 1-digit number.
- Use place value and partial products to multiply a multi digit number by a 1-digit number.
- Use mental math and properties to multiply a multi digit number by a 1-digit number.
- Use the *draw a diagram* strategy to solve multistep problems.
- Use regrouping to multiply a 2-digit number by a 1-digit number.
- Use regrouping to multiply a multi digit number by a 1-digit number.
- Represent and solve multistep problems using equations.

CPI #	Cumulative Progress Indicator (CPI)
CC.4.OA.1	Interpret a multiplication equation as a comparison, e.g., interpret 35=5x7 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.
CC.4.OA.2	Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
CC.4.NBT.5	Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
CC.4.OA.3	Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
Unit Vocabulary	
• Factor	• Estimate

- Multiply
- Number line
- Place value
- Product
- Estimate round

- Round
- Distributive Property
- Partial product
- Expanded form
- Associative Property of Multiplication
- regroup

Evidence of Learning

Summative Assessment:
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- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 4

Benchmark: Go Math Benchmark
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Teacher Resources: wwwk-6.thinkcentral.com

Modifications: (Special education, ELLs, at-risk students, gifted and talented)
- Menus
- Choice Boards
- Tiered Assignments
- Partner work
- Manipulatives
- Flexible grouping
- Individualizing lessons
- Compacting
- Varying question levels

Formative Assessments

- Lesson Quick Check
- Mid-Chapter Checkpoint
- COREK12

Unit 3 Overview
Content Area: Mathematics
Unit 3 Title: Multiply 2-Digit Numbers
Grade Level: 4
Unit Summary: Operations and Algebraic Thinking Number and Operations in Base Ten: Use the four operations with whole numbers to solve problems. **Primary interdisciplinary connections:** Science/Social Studies/Reading/Language Arts **SL.4.1.D** - Review the key ideas expressed and explain their own ideas and understanding in light of the discussion. **21st century themes:** • Information and communication skills • Higher order thinking skills • Problem solving skills • Independent learners • Real-world connections **CRP4.** Communicate clearly and effectively and with reason. **CRP8.** Utilize critical thinking to make sense of problems and persevere in solving them. **CRP11.** Use technology to enhance productivity.

Learning Targets

Mathematical Practices

CC.K-12.MP.4	Model with mathematics.
CC.K-12.MP.8	Look for and express regularity in repeated reasoning.

Unit Essential Questions

- What strategies can you use to multiply by tens?
- What strategies can you use to estimate products?
- How can you use area models and partial products to multiply 2-digit numbers?
- How can you use place value and partial products to multiply 2-digit numbers?
- How can you use regrouping to multiply 2-digit numbers?
- How can you find and record products of two 2-digit numbers?
- How can you use the strategy *draw a diagram* to solve multistep multiplication problems?

Student Learning Objectives

- Use place value and multiplication properties to multiply by tens.
- Estimate products by rounding or by using compatible numbers.
- Use area models and partial products to multiply 2-digit numbers.
- Use place value and partial products to multiply 2-digit numbers.
- Use regrouping to multiply 2-digit numbers.
- Choose a method to multiply 2-digit numbers.
- Use the strategy *draw a diagram* to solve multistep multiplication problems.

CPI #	Cumulative Progress Indicator (CPI)
CC.4.NBT.5	Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
CC.4.OA.3	Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Unit Vocabulary

- Associative Property of Multiplication
- Factor
- Place value
- Product
- Compatible numbers
- Estimate

- Round
- Partial product
- Commutative Property of Multiplication
- Regroup

Evidence of Learning

Summative Assessment:
- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 4

Benchmark: Go Math Benchmark
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Teacher Resources: wwwk-6.thinkcentral.com

Modifications: (Special education, ELLs, at-risk students, gifted and talented)

- Menus
- Choice Boards
- Tiered Assignments
- Partner work
- Manipulatives
- Flexible grouping
- Individualizing lessons
- Compacting
- Varying question levels

Formative Assessments

- Lesson Quick Check
- Mid-Chapter Checkpoint
- COREK12

Unit 4 Overview

Content Area: Mathematics

Unit 4 Title: Divide by 1-Digit Numbers

Grade Level: 4

Unit Summary: Operations and Algebraic Thinking Number and Operations in Base Ten: Use the four operations with whole numbers to solve problems.

Primary interdisciplinary connections: Science/Social Studies/Reading/Language Arts

4-PS3-4. Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

21st century themes:

- Information and communication skills
- Higher order thinking skills
- Problem solving skills
- Independent learners
- Real-world connections

CRP4. Communicate clearly and effectively and with reason.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

CRP11. Use technology to enhance productivity.

Learning Targets

Mathematical Practices

CC.K-12.MP.2	Reason abstractly and quantitatively.
CC.K-12.MP.4	Model with mathematics.

Unit Essential Questions

- How can you use multiples to estimate quotients?
- How can you use models to divide whole numbers that do not divide evenly?
- How can you use remainders in division problems?
- How can you divide numbers through thousands by whole numbers through 10?
- How can you use compatible numbers to estimate quotients?
- How can you use the Distributive Property to find quotients?
- How can you use repeated subtraction and multiples to find quotients?
- How can you use partial quotients to divide by 1-digit divisors?
- How can you use base-ten blocks to model division with regrouping?
- How can you use place value to know where to place the first digit in the quotient?
- How can you divide multi digit numbers and check your answers?
- How can you use the strategy *draw a diagram* to solve multistep division problems?

Student Learning Objectives

- Use multiples to estimate quotients.
- Use models to divide whole numbers that do not divide evenly.
- Use remainders to solve division problems.
- Divide tens, hundreds, and thousands by whole numbers through 10.
- Use compatible numbers to estimate quotients.
- Use the Distributive Property to find quotients.
- Use repeated subtraction and multiples to find quotients.
- Use partial quotients to divide.
- Use base-ten blocks to model division with regrouping.
- Use place value to determine where to place the first digit of a quotient.
- Divide multi digit numbers by 1-digit divisors.
- Solve problems by using the strategy *draw a diagram*.

CPI #	Cumulative Progress Indicator (CPI)
CC.4.NBT.6	Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
CC.4.OA.3	Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Unit Vocabulary

- Multiple
- Counting number
- Factor
- Multiplication
- Product
- Remainder
- Divide
- Dividend
- division

- Divisor
- Quotient
- Hundreds
- Ones
- Place value
- Tens
- Thousand
- Compatible numbers
- Distributive Property
- Partial quotient

Evidence of Learning

Summative Assessment:

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 4

Benchmark: Go Math Benchmark

Equipment needed: Go Math Student Textbook, Manipulatives Kits; Differentiated Centers

Teacher Resources: wwwk-6.thinkcentral.com

Modifications: (Special education, ELLs, at-risk students, gifted and talented)

- Menus
- Choice Boards
- Tiered Assignments
- Partner work
- Manipulatives
- Flexible grouping
- Individualizing lessons
- Compacting
- Varying question levels

Formative Assessments

- Lesson Quick Check
- Mid-Chapter Checkpoint
- COREK12

Unit 5 Overview

Content Area: Mathematics

Unit 5 Title: Factors, Multiples, and Patterns

Grade Level: 4

Unit Summary: Operations and Algebraic Thinking: Gain familiarity with factors and multiples.

Primary interdisciplinary connections: Science/Social Studies/Reading/Language Arts

SL.4.1.C - Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.

21st century themes:

- Information and communication skills
- Higher order thinking skills
- Problem solving skills
- Independent learners
- Real-world connections

CRP4. Communicate clearly and effectively and with reason.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

CRP11. Use technology to enhance productivity.

Learning Targets

Mathematical Practices

CC.K-12.MP.6	Attend to precision.
CC.K-12.MP.7	Look for and make use of structure.

Unit Essential Questions

- How can you use models to find factors?
- How can you tell whether one number is a factor of another number?
- How can you use the *make a list* strategy to solve problems with common factors?
- How are factors and multiples related?
- How can you tell whether a number is prime or composite?
- How can you make and describe patterns?

Student Learning Objectives

- Find all the factors of a number by using models.
- Determine whether a number is a factor of a given number.
- Solve problems by using the strategy *make a list*.

- Understand the relationship between factors and multiples, and determine whether a number is a multiple of a given number.
- Determine whether a number is prime or composite.
- Generate a number pattern and describe features of the pattern.

CPI #	Cumulative Progress Indicator (CPI)
CC.4.OA.4	Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multip0le of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.
CC.4.OA.5	Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

Unit Vocabulary

- Factor
- Array
- Product
- Divisible
- Common factor

- Common multiple
- Multiple
- Composite number
- Prime number
- Pattern
- term

Evidence of Learning

Summative Assessment:
- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 4

Benchmark: Go Math Benchmark
Equipment needed: Go Math Student Textbook, Manipulatives Kits; Differentiated Centers
Teacher Resources: wwwk-6.thinkcentral.com

Modifications: (Special education, ELLs, at-risk students, gifted and talented)
- Menus
- Choice Boards
- Tiered Assignments
- Partner work
- Manipulatives

- Flexible grouping
- Individualizing lessons
- Compacting
- Varying question levels

Formative Assessments

- Lesson Quick Check
- Mid-Chapter Checkpoint
- COREK12

Unit 6 Overview
Content Area: Mathematics
Unit 6 Title: Fraction Equivalence and Comparison
Grade Level: 4
Unit Summary: Number and Operations-Fractions: Extend understanding of fraction equivalence and ordering. **Primary interdisciplinary connections:** Science/Social Studies/Reading/Language Arts **SL.4.1.C -** Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others. **21st century themes:** • Information and communication skills • Higher order thinking skills • Problem solving skills • Independent learners • Real-world connections **CRP4.** Communicate clearly and effectively and with reason. **CRP8.** Utilize critical thinking to make sense of problems and persevere in solving them. **CRP11.** Use technology to enhance productivity.

Learning Targets

Mathematical Practices

CC.K-12.MP.4	Model with mathematics.
CC.K-12.MP.7	Look for and make use of structure.

Unit Essential Questions
- How can you use models to show equivalent fractions?
- How can you use multiplication to find equivalent fractions?
- How can you write a fraction as an equivalent fraction in simplest form?
- How can you write a pair of fractions as fractions with a common denominator?
- How can you sue the strategy *make a table* to solve problems using equivalent fractions?
- How can you use benchmarks to compare fractions?
- How can you compare fractions?
- How can you order fractions?

Student Learning Objectives

- Use models to show equivalent fractions.
- Use multiplication to generate equivalent fractions.
- Write and identify equivalent fractions in simplest form.
- Use equivalent fractions to represent a pair of fractions as fractions with a common denominator.
- Use the strategy *make a table* to solve problems using equivalent fractions.
- Compare fractions using benchmarks.
- Compare fractions by first writing them as fractions with a common numerator or common denominator.
- Compare and order fractions.

CPI #	Cumulative Progress Indicator (CPI)
CC.4.NF.1	Explain why a fraction a/b is equivalent to a fraction (n x a) (n x b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.
CC.4.NF.2	Compare two fractions with different numerators and different denominators, e.g., by creating common denominators and 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 >, =, <, and justify the conclusions, e.g., by using a visual fraction model.

Unit Vocabulary

• Equivalent fractions	• Factor
• Denominator	• Numerator
• Fraction	• Common denominator
• Numerator	• Common multiple
• Simplest form	• Multiple
• Common factor	• Benchmark
• Denominator	• Common denominator
• Equivalent fractions	• Common numerator

Evidence of Learning

Summative Assessment:

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment

- NJ ASK 4

Benchmark: Go Math Benchmark
Equipment needed: Go Math Student Textbook, Manipulatives Kits; Differentiated Centers
Teacher Resources: wwwk-6.thinkcentral.com

Modifications: (Special education, ELLs, at-risk students, gifted and talented)

- Menus
- Choice Boards
- Tiered Assignments
- Partner work
- Manipulatives
- Flexible grouping
- Individualizing lessons
- Compacting
- Varying question levels

Formative Assessments

- Lesson Quick Check
- Mid-Chapter Checkpoint
- COREK12

Unit 7 Overview

Content Area: Mathematics

Unit 7 Title: Add and Subtract Fractions

Grade Level: 4

Unit Summary: Number and Operations-Fractions: Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Primary interdisciplinary connections: Science/Social Studies/Reading/Language Arts

4-PS4-3. Generate and compare multiple solutions that use patterns to transfer information.

21st century themes:
- Information and communication skills
- Higher order thinking skills
- Problem solving skills
- Independent learners
- Real-world connections

CRP4. Communicate clearly and effectively and with reason.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

CRP11. Use technology to enhance productivity.

Learning Targets

Mathematical Practices

CC.K-12.MP.2	Reason abstractly and quantitatively.
CC.K-12.MP.4	Model with mathematics.
CC.K-12.MP.5	Use appropriate tools strategically.

Unit Essential Questions
- When can you add or subt5rtact parts of a whole?
- How can you write a fraction as a sum of fractions with the same denominators?
- How can you add fractions with like denominators using models?
- How can you subtract fractions with like denominators using models?
- How can you add and subtract fractions with like denominators?
- How can you rename mixed numbers as fractions greater than 1 and rename fractions greater than 1 as mixed numbers?
- How can you add and subtract mixed numbers with like denominators?
- How can you rename a mixed number to help you subtract?
- How can you add fractions with like denominators using the properties of addition?
- How can you use the strategy *act it out* to solve multistep problems with fractions?

Student Learning Objectives

- Understand that to add or subtract fractions they must refer to parts of the same whole.
- Decompose a fraction by writing it as a sum of fractions with the same denominators.
- Use models to represent and find sums involving fractions.
- Use models to represent and find differences involving fractions.
- Solve word problems involving addition and subtraction with fractions.
- Write fractions greater than 1 as mixed numbers and write mixed numbers as fractions greater than 1.
- Add and subtract mixed numbers.
- Rename mixed numbers to subtract.
- Use the properties of addition to add fractions.
- Use the strategy *act it out* to solve multistep fraction problems.

CPI #	Cumulative Progress Indicator (CPI)
CC.4.NF.3	Understand a fraction a/b with a > 1 as a sum of fractions 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: 3/8 = 1/8 +1/8+1/8; 3/8 = 1/8 +2/8; 2 1/8 = 1 +1 +1/8=8/8 +8/8 + 1/8. 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.

Unit Vocabulary	
• Fraction	• Simplest form
• Unit fraction	• Associative Property of Addition
• Denominator	• Commutative Property of Addition
• Numerator	

- Mixed number

Evidence of Learning

Summative Assessment:

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 4

Benchmark: Go Math Benchmark

Equipment needed: Go Math Student Textbook, Manipulatives Kits; Differentiated Centers

Teacher Resources: wwwk-6.thinkcentral.com

Modifications: (Special education, ELLs, at-risk students, gifted and talented)

- Menus
- Choice Boards
- Tiered Assignments
- Partner work
- Manipulatives
- Flexible grouping
- Individualizing lessons
- Compacting
- Varying question levels

Formative Assessments

- Lesson Quick Check
- Mid-Chapter Checkpoint
- COREK12

Unit 8 Overview

Content Area: Mathematics

Unit 8 Title: Multiply Fractions by Whole Numbers

Grade Level: 4

Unit Summary: Number and Operations-Fractions: Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Primary interdisciplinary connections: Science/Social Studies/Reading/Language Arts

4-PS4-3. Generate and compare multiple solutions that use patterns to transfer information.

21st century themes:
- Information and communication skills
- Higher order thinking skills
- Problem solving skills
- Independent learners
- Real-world connections

CRP4. Communicate clearly and effectively and with reason.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

CRP11. Use technology to enhance productivity.

Learning Targets

Mathematical Practices

CC.K-12.MP.2	Reason abstractly and quantitatively.
CC.K-12.MP.7	Look for and make use of structure.

Unit Essential Questions
- How can you write a fraction as a product of a whole number and a unit fraction?
- How can you write a product of a whole number and a fraction as a product of a whole number and a unit fraction?
- How can you use a model to multiply a fraction by a whole number?
- How can you multiply a fraction by a whole number to solve a problem?
- How can you use the strategy draw a diagram to solve comparison problems with fractions?

Student Learning Objectives
- Write a fraction as a product of a whole number and a unit fraction.
- Write a product of a whole number and a fraction as a product of a whole number and a unit fraction.
- Use a model to multiply a fraction by a whole number.
- Multiply a fraction by a whole number to solve a problem.

• Use the strategy *draw a diagram* to solve comparison problems with fractions.	
CPI #	**Cumulative Progress Indicator (CPI)**

CC.4.NF.4	Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.
	
	   a. Understand a fraction a/b as a multiple of 1/b.
	
	   b. Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number.
	
	   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.

Unit Vocabulary

• Fraction • Multiple • Product • Unit fraction • Identity Property of multiplication	

Evidence of Learning

Summative Assessment:
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- NJ ASK 4

Benchmark: Go Math Benchmark
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Modifications: (Special education, ELLs, at-risk students, gifted and talented)
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- Partner work
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- Compacting
- Varying question levels

Formative Assessments

- Lesson Quick Check
- Mid-Chapter Checkpoint
- COREK12

Unit 9 Overview

Content Area: Mathematics

Unit 9 Title: Relate Fractions and Decimals

Grade Level: 4

Unit Summary: Number and Operations-Fractions Measurement and Data: Understand decimal notation for fractions, and compare decimal fractions.

Primary interdisciplinary connections: Science/Social Studies/Reading/Language Arts

4-ESS2-1. Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.

21st century themes:
- Information and communication skills
- Higher order thinking skills
- Problem solving skills
- Independent learners
- Real-world connections

CRP4. Communicate clearly and effectively and with reason.

CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

CRP11. Use technology to enhance productivity.

Learning Targets

Mathematical Practices

CC.K-12.MP.7	Look for a make use of structure.
CC.K-12.MP.8	Look for and express regularity in repeated reasoning.

Unit Essential Questions
- How can you record tenths as fractions and decimals?
- How can you record hundredths as fractions and decimals?
- How can you record tenths and hundredths as fractions and decimals?
- How can you relate fractions, decimals, and money?
- How can you use the strategy *act it out* to solve problems that use money?
- How can you add fractions when the denominators are 10 or 100?
- How can you compare decimals?

Student Learning Objectives
- Record tenths as fractions and as decimals.
- Record hundredths as fractions and as decimals.
- Record tenths and hundredths as fractions and decimals.

- Translate among representations of fractions, decimals, and money.
- Solve problems by using the strategy *act it out*.
- Add fractions when the denominators are 10 or 100.
- Compare decimals to hundredths by reasoning about their size.

CPI #	Cumulative Progress Indicator (CPI)
CC.4.NF.6	Use decimal notation for fractions with denominators 10 or 100.
CC.4.NF.5	Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.
CC.4.MD.2	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.
CC.4.NF.7	Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model.

Unit Vocabulary

- Decimal
- Decimal point
- Tenth

- Hundredth
- Equivalent decimals
- Equivalent fractions

Evidence of Learning

Summative Assessment:

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 4

Benchmark: Go Math Benchmark

Equipment needed: Go Math Student Textbook

Manipulatives Kits; Differentiated Centers

Modifications: (Special education, ELLs, at-risk students, gifted and talented)

- Menus
- Choice Boards
- Tiered Assignments

- Partner work
- Manipulatives
- Flexible grouping
- Individualizing lessons
- Compacting
- Varying question levels

Teacher Resources: wwwk-6.thinkcentral.com

- Lesson Quick Check
- Mid-Chapter Checkpoint
- COREK12

Unit 10 Overview
Content Area: Mathematics
Unit 10 Title: Two-Dimensional Figures
Grade Level: 4
Unit Summary: Operations and Algebraic Thinking Geometry: Generate and analyze patterns. **Primary interdisciplinary connections:** Science/Social Studies/Reading/Language Arts **4-LS1-1.** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. **21st century themes:**   - Information and communication skills   - Higher order thinking skills   - Problem solving skills   - Independent learners   - Real-world connections   **CRP4.** Communicate clearly and effectively and with reason. **CRP8.** Utilize critical thinking to make sense of problems and persevere in solving them. **CRP11.** Use technology to enhance productivity.
Learning Targets
Mathematical Practices

CC.K-12.MP.6	Attend to precision.
CC.K-12.MP.7	Look for and make use of structure.

Unit Essential Questions

- How can you identify and draw points, lines, line segments, rays, and angles?
- How can you classify triangles by the size of their angles?
- How can you identify and draw parallel lines and perpendicular lines?
- How can you sort and classify quadrilaterals?
- How can you check if a shape has line symmetry?
- How do you find lines of symmetry?
- How can you use the strategy *act it out* to solve pattern problems?

Student Learning Objectives

- Identify and draw points, lines, line segments, rays, and angles.
- Classify triangles by the size of their angles.
- Identify and draw parallel lines and perpendicular lines.

- Sort and classify quadrilaterals.
- Determine whether a figure has a line of symmetry.
- Identify and draw lines of symmetry in two-dimensional figures.
- Use the strategy *act it out* to solve pattern problems.

CPI #	Cumulative Progress Indicator (CPI)
CC.4.G.1	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
CC.4.G.2	Classify two-d8imensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angels of a specified size.
CC.4.G.3	Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.
CC.4.OA.5	Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

Unit Vocabulary

- Acute angle
- Angle
- Line
- Line segment
- Obtuse angle
- Point
- Ray
- Right angle
- Straight angle
- Acute triangle
- Obtuse triangle
- Right triangle
- Polygon
- Triangle
- Venn diagram

- Intersecting lines
- Parallel lines
- Perpendicular lines
- Parallelogram
- Rectangle
- Rhombus
- Square
- Trapezoid
- Quadrilateral
- Line of symmetry
- Line symmetry
- Diagonal
- Horizontal
- Vertical
- Hexagon
- Regular polygon

Evidence of Learning

Summative Assessment:

- Chapter Review/Test
- Performance Assessment
- Chapter Test

- Online Assessment
- NJ ASK 4

Benchmark: Go Math Benchmark
Equipment needed: Go Math Student Textbook, Manipulatives Kits; Differentiated Centers
Teacher Resources: wwwk-6.thinkcentral.com

Formative Assessments

- Lesson Quick Check
- Mid-Chapter Checkpoint
- COREK12

Unit 11 Overview
Content Area: Mathematics
Unit 11 Title: Angles
Grade Level: 4
Unit Summary: Measurement and Data: Geometric measurement: understand concepts of angle and measure angles. **Primary interdisciplinary connections:** Science/Social Studies/Reading/Language Arts **4-PS3-4.** Apply scientific ideas to design, test, and refine a device that converts energy from one form to another. **21st century themes:** • Information and communication skills • Higher order thinking skills • Problem solving skills • Independent learners • Real-world connections **CRP4.** Communicate clearly and effectively and with reason. **CRP8.** Utilize critical thinking to make sense of problems and persevere in solving them. **CRP11.** Use technology to enhance productivity.

Learning Targets

Mathematical Practices	
CC.K-12.MP.1	Make sense of problems and persevere in solving them.
CC.K-12.MP.5	Use appropriate tools strategically.

Unit Essential Questions
- How can you relate angles and fractional parts of a circle?
- How are degrees related to fractional parts of a circle?
- How can you use a protractor to measure and draw angles?
- How can you determine the measure of an angle separated into parts?
- How can you use the strategy *draw a diagram* to solve angle measurement problems?

Student Learning Objectives
- Relate angles and fractional parts of a circle.
- Relate degrees to fractional parts of a circle by understanding that an angle that measures n° turns through n/360 of a circle.
- Use a protractor to measure an angle and draw an angle with a given measure.
- Determine the measure of an angle separated into parts.

- Use the strategy draw a diagram to solve angle measurement problems.

CPI #	Cumulative Progress Indicator (CPI)
CC.4.MD.5	Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement. a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called 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.
CC.4.MD.6	Measure angle in whole-number degrees using a protractor. Sketch angles of specified measure.
CC.4.MD.7	Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.

Unit Vocabulary

- Clockwise
- Counterclockwise
- Angle
- Circle
- Ray
- Vertex
- Degree

- Acute angle
- Obtuse angle
- Right angle
- Straight angle
- protractor

Evidence of Learning

Summative Assessment:

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 4

Benchmark: Go Math Benchmark

Equipment needed: Go Math Student Textbook, Manipulatives Kits; Differentiated Centers

Teacher Resources: wwwk-6.thinkcentral.com

Formative Assessments

- Lesson Quick Check
- Mid-Chapter Checkpoint
- COREK12

Unit 12 Overview
Content Area: Mathematics
Unit 12 Title: Relative Sizes of Measurement Units
Grade Level: 4
Unit Summary: Measurement and Data: Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. **Primary interdisciplinary connections:** Science/Social Studies/Reading/Language Arts **4-ESS1-1.** Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in landscape over time. **21st century themes:**   - Information and communication skills   - Higher order thinking skills   - Problem solving skills   - Independent learners   - Real-world connections   **CRP4.** Communicate clearly and effectively and with reason. **CRP8.** Utilize critical thinking to make sense of problems and persevere in solving them. **CRP11.** Use technology to enhance productivity.

Learning Targets	
Mathematical Practices	
CC.K-12.MP.2	Reason abstractly and quantitatively.
CC.K-12.MP.4	Model with mathematics.

Unit Essential Questions
- How can you use benchmarks to understand the relative sizes of measurement units?
- How can you use models to compare customary units of length?
- How can you use models to compare customary units of weight?
- How can you use models to compare customary units of liquid volume?
- How can you make and interpret line plots with fractional data?
- How can you use models to compare metric units of length?
- How can you use models to compare metric units of mass and liquid volume?
- How can you use models to compare units of time?
- How can you use the strategy *draw a diagram* to solve elapsed time problems?
- How can you solve problems involving mixed measures?
- How can you use patterns to write number pairs for measurement units?

Student Learning Objectives

- Use benchmarks to understand the relative sizes of measurement units.
- Use models to compare customary units of length.
- Use models to compare customary units of weight.
- Use models to compare customary units of liquid volume.
- Make and interpret line plots with fractional data.
- Use models to compare metric units of length.
- Use models to compare metric units of mass and liquid volume.
- Use models to compare units of time.
- Use the strategy *draw a diagram* to solve elapsed time problems.
- Solve problems involving mixed measures.
- Use patterns to write number pairs for measurement units.

CPI #	Cumulative Progress Indicator (CPI)
CC.4.MD.1	Know relative sizes of measurement units within one system of units including km, m, cm, kg, g, lb, oz, l, ml, hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.
CC.4.MD.4	Make a line plot to display a data set of measurements in fractions of a unit (1/2, ¼, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots.
CC.4.MD.2	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

Unit Vocabulary

- Kilometer
- Mile
- Benchmark
- Foot
- Inch
- Weight
- Yard
- Ounce
- pound
- ton

- Millimeter
- Centimeter
- Kilometer
- Meter
- Milliliter
- Gram
- Kilogram
- Liter
- Second
- Day

• cup	• Hour
• fluid ounce	• Minute
• gallon	• Month
• half gallon	• Week
• liquid volume	• Year
• pint	• A.M.
• quart	• Elapsed time
• line plot	• P.M.
• decimeter	

Evidence of Learning

Summative Assessment:
- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 4

Benchmark: Go Math Benchmark

Equipment needed: Go Math Student Textbook, Manipulatives Kits; Differentiated Centers

Teacher Resources: wwwk-6.thinkcentral.com

Modifications: (Special education, ELLs, at-risk students, gifted and talented)
- Menus
- Choice Boards
- Tiered Assignments
- Partner work
- Manipulatives
- Flexible grouping
- Individualizing lessons
- Compacting
- Varying question levels

Formative Assessments

- Lesson Quick Check
- Mid-Chapter Checkpoint
- COREK12

Unit 13 Overview
Content Area: Mathematics
Unit 13 Title: Algebra: Perimeter and Area
Grade Level: 4
Unit Summary: Measurement and Data: Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

Primary interdisciplinary connections: Science/Social Studies/Reading/Language Arts
4-PS4-2. Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.
21st century themes:
 	
  • Information and communication skills
  • Higher order thinking skills
  • Problem solving skills
  • Independent learners
  • Real-world connections
CRP4. Communicate clearly and effectively and with reason.
CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
CRP11. Use technology to enhance productivity.

Learning Targets
Mathematical Practices

CC.K-12.MP.1	Make sense of problems and persevere in solving them.
CC.K-12.MP.5	Use appropriate tools strategically.
CC.K-12.MP.7	Look for and make use of structure.

Unit Essential Questions
 	
  • How can you use a formula to find the perimeter of a rectangle?
  • How can you use a formula to find the area of a rectangle?
  • How can you find the area of combined rectangles?
  • How can you find an unknown measure of a rectangle given its area or perimeter?
  • How can you use the strategy *solve a simpler problem* to solve area problems?

Student Learning Objectives
 	
  • Use a formula to find the perimeter of a rectangle.
  • Use a formula to find the area of a rectangle.
  • Find the area of combined rectangles.
  • Given perimeter or area, find the unknown measure of a side of a rectangle.
  • Use the strategy *solve a simpler problem* to solve area problems.

CPI #	Cumulative Progress Indicator (CPI)
CC.4.MD.3	Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

Unit Vocabulary

- Formula
- Perimeter
- Centimeter
- Foot
- Inch
- Length
- Meter
- Width
- yard

- area
- base
- height
- square unit
- kilometer
- mile

Evidence of Learning

Summative Assessment:

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 4

Benchmark: Go Math Benchmark

Equipment needed: Go Math Student Textbook, Manipulatives Kits; Differentiated Centers

Teacher Resources: wwwk-6.thinkcentral.com

Modifications: (Special education, ELLs, at-risk students, gifted and talented)

- Menus
- Choice Boards
- Tiered Assignments
- Partner work
- Manipulatives
- Flexible grouping
- Individualizing lessons
- Compacting
- Varying question levels

Formative Assessments

- Lesson Quick Check
- Mid-Chapter Checkpoint