| Curriculum Map | |
|---|---|
| **Content Area: Mathematics** | |
| **Course Title: Grade 5 Mathematics** | **Grade Level: 5** |

| | |
|---|---|
| **Unit 1-Place Value, Multiplication, and Expressions** | **3 weeks** |
| **Unit 2-Divide Whole Numbers** | **3 weeks** |
| **Unit 3-Add and Subtract Decimals** | **3 weeks** |
| **Unit 4-Multiply Decimals** | **2 weeks** |
| **Unit 5-Divide Decimals** | **2 weeks** |
| **Unit 6-Add and Subtract Decimals with Unlike Denominators** | **3 weeks** |
| **Unit 7-Multiply Fractions** | **3 weeks** |

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|---|---|
| **Unit 8-Divide Fractions** | **2 weeks** |
| **Unit 9-Algebra: Patterns and Graphing** | **2 weeks** |
| **Unit 10-Convert Units of Measure** | **2 weeks** |
| **Unit 11-Geometry and Volume** | **3 weeks** |

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|---|---|
| **Date Created:** | **August 2015** |
| **Board Approved on:** | **August 27, 2015** |

| Unit 1 Overview |
|---|
| **Content Area:** Mathematics |
| **Unit 1 Title:** Place Value, Multiplication, and Expressions |
| **Grade Level:** 5 |
| **Unit Summary:** Operations and Algebraic Thinking: Number and Operations in Base Ten: Write and interpret numerical expressions.<br><br>**Primary interdisciplinary connections:** Science/Social Studies/Reading/Language Arts<br>**5-PS1-1.** Develop a model to describe that matter is made of particles too small to be seen.<br>**21st century themes:**<br>• Information and communication skills<br>• Higher order thinking skills<br>• Problem solving skills<br>• Independent learners<br>• Real-world connections<br>**CRP4.** Communicate clearly and effectively and with reason.<br>**CRP8.** Utilize critical thinking to make sense of problems and persevere in solving them.<br>**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.8 | Look for and express regularity in repeated reasoning. |

**Unit Essential Questions**

- How can you describe the relationship between two place-value positions?
- How do you read, write, and represent whole numbers through hundred millions?
- How can you use properties of operations to solve problems?
- How can you use an exponent to show powers of 10?
- How can you use a basic fact and a pattern to multiply by a 2-digit number?
- How do you multiply by 1-digit numbers?
- How do you multiply by 2-digit numbers?
- How is multiplication used to solve a division problem?
- How can you use the strategy *solve a simpler problem* to help you solve a division problem?
- How can you use a numerical expression to describe a situation?
- In what order must operations be evaluated to find the solution to a problem?

- In what order must operations be evaluated to find a solution when there are parentheses within parentheses?

**Student Learning Objectives**

- Recognize the 10 to 1 relationship among place-value positions.
- Read and write whole numbers through hundred millions.
- Use properties of operations to solve problems.
- Write and evaluate repeated factors in exponent form.
- Use a basic fact and a pattern to multiply mentally by multiples of 10, 100, and 1,000.
- Multiply by 1-digit numbers.
- Multiply by 2-digit numbers.
- Use multiplication to solve division problems.
- Use the strategy *solve a simpler problem* to solve problems.
- Write numerical expressions.
- Use the order of operations to evaluate numerical expressions.
- Evaluate numerical expressions with parentheses, brackets, and braces.

| CPI # | Cumulative Progress Indicator (CPI) |
|---|---|
| CC.5.NBT.1 | Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. |
| CC.5.NBT.6 | Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. |
| CC.5.NBT.2 | Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. |
| CC.5.NBT.5 | Fluently multiply multi-digit whole numbers using the standard algorithm. |
| CC.5.OA.2 | Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. |
| CC.5.OA.1 | Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. |

**Unit Vocabulary**

| | |
|---|---|
| • Multiply | • Base |
| • Place value | • Exponent |
| • Period | • Estimate |
| • Distributive Property | • Inverse operations |

| | |
|---|---|
| • Factor<br>• Product | • Quotient<br>• Numerical expression<br>• Evaluate<br>• Order of operations |

**Evidence of Learning**

**Summative Assessment:**

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 5

**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:** Divide Whole Numbers |
| **Grade Level:** 5 |
| **Unit Summary:** Number and Operations in Base Ten Number and Operations-Fractions: Perform operations with multi-digit whole numbers and with decimals to hundredths.<br><br>**Primary interdisciplinary connections:** Science/Social Studies/Reading/Language Arts<br>**3-5-ETS1-3.** Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.<br>**21st century themes:**<br>• Information and communication skills<br>• Higher order thinking skills<br>• Problem solving skills<br>• Independent learners<br>• Real-world connections<br>**CRP4.** Communicate clearly and effectively and with reason.<br>**CRP8.** Utilize critical thinking to make sense of problems and persevere in solving them.<br>**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. |
| CC.K-12.MP.7 | Look for and make use of structure. |

**Unit Essential Questions**

- How can you tell where to place the first digit of a quotient without dividing?
- How do you solve and check division problems?
- How can you use base-ten blocks to model and understand division of whole numbers?
- How can you use partial quotients to divide by 2-digit divisors?
- How can you use compatible numbers to estimate quotients?
- How can you divide by 2-digit divisors?
- When solving a division problem, when do you write the remainder as a fraction?
- How can you adjust the quotient if your estimate is too high or too low?
- How can the strategy *draw a diagram* help you solve a division problem?

**Student Learning Objectives**

- Place the first digit in the quotient by estimating or using place value**.**
- Divide 3-and 4- digit dividends by 1-digit divisors.
- Model division with 2-digit divisors using base-ten blocks.
- Use partial quotients to divide by 2-digit divisors.
- Estimate quotients using compatible numbers.
- Divide by 2-digit divisors.
- Solve division problems and decide when to write a remainder as a fraction.
- Adjust the quotient if the estimate is too high or too low.
- Solve problems by using the strategy *draw a diagram*.

| | **Cumulative Progress Indicator (CPI)** |
|---|---|
| CC.5.NBT.6 | Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. |
| CC.5.NF.3 | Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. |

**Unit Vocabulary**

- Dividend
- Divisor
- Quotient
- Remainder
- Inverse operations
- Partial quotients
- Compatible numbers
- Estimate

**Evidence of Learning**

**Summative Assessment:**

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 5

**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 3 Overview

**Content Area:** Mathematics

**Unit 3 Title:** Add and Subtract Decimals

**Grade Level:** 5

**Unit Summary:** Number and Operations in Base Ten: Understand the place value system.

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

**9.1.8.A.6** Explain how income affects spending decisions.

**9.1.8.B.2** Construct a simple personal savings and spending plan based on various sources of income.

**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.3 | Construct viable arguments and critique the reasoning of others. |
| CC.K-12.MP.8 | Look for and express regularity in repeated reasoning. |

**Unit Essential Questions**

- How can you describe the relationship between two decimal place-value positions?
- How do you read, write and represent decimals through thousandths?
- How can you use place value to compare and order decimals?
- How can you use place value to round decimals to a given place?
- How can you use base-ten blocks to model decimal addition?
- How can you use base-ten blocks to model decimal subtraction?
- How can you estimate decimal sums and differences?
- How can place value help you add decimals?
- How can place value help you subtract decimals?
- How can you use addition or subtraction to describe a pattern or create a sequence with decimals?

- How can the strategy *make a table* help you organize and keep track of your bank account balance?
- Which method could you choose to find decimal sums and differences?

**Student Learning Objectives**

- Model, read and write decimals to thousandths.
- Read and write decimals through thousandths.
- Compare and order decimals to thousandths using place value.
- Round decimals to any place.
- Model decimal addition using base-ten blocks.
- Model decimal subtraction using base-ten blocks.
- Make reasonable estimates of decimal sums and differences.
- Add decimals using place value.
- Subtract decimals using place value.
- Identify, describe, and create numeric patterns with decimals.
- Solve problems using the strategy *make a table*.
- Choose a method to find a decimal sum or difference.

| CPI # | Cumulative Progress Indicator (CPI) |
|---|---|
| CC.5.NBT.1 | Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. |
| CC.5.NBT.3 | Read, write, and compare decimals to thousandths.<br>a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 x 100 + 4 x 10 + 7 x 1 + 3 x (1/10) ÷ 9 x (1/100) ÷ 2 x (1/1000).<br>b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. |
| CC.5.NBT.4 | Use place value understanding to round decimals to any place. |
| CC.5.NBT.7 | Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. |

**Unit Vocabulary**

| | |
|---|---|
| • Thousandth | • Round |
| • Hundredth | • Benchmark |
| • Tenth | • Sequence |

| | |
|---|---|
| • Place value | • Term |

**Evidence of Learning**

**Summative Assessment:**

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 5

**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 4 Overview | |
|---|---|
| **Content Area:** Mathematics | |
| **Unit 4 Title:** Multiply Decimals | |
| **Grade Level:** 5 | |
| **Unit Summary:** Number and Operations in Base Ten: Understand the place value system.<br><br>**Primary interdisciplinary connections:** Science/Social Studies/Reading/Language Arts<br>**5-PS1-1.** Develop a model to describe that matter is made of particles too small to be seen.<br>**21st century themes:**<br>• Information and communication skills<br>• Higher order thinking skills<br>• Problem solving skills<br>• Independent learners<br>• Real-world connections<br>**CRP4.** Communicate clearly and effectively and with reason.<br>**CRP8.** Utilize critical thinking to make sense of problems and persevere in solving them.<br>**CRP11.** Use technology to enhance productivity. | |
| **Learning Targets** | |
| **Mathematical Practices** | |
| **CC.K-12.MP.7** | Look for and make use of structure. |
| **CC.K-12.MP.8** | Look for and express regularity in repeated reasoning. |
| **Unit Essential Questions**<br>• How can patterns help you place the decimal point in a product?<br>• How can you use a model to multiply a whole number and a decimal?<br>• How can you use drawings and place value to multiply a decimal and a whole number?<br>• How can you use expanded form and place value to multiply a decimal and a whole number?<br>• How can the strategy *draw a diagram* help you solve a decimal multiplication problem?<br>• How can you use a model to multiply decimals?<br>• What strategies can you use to place a decimal point in a product?<br>• How do you know you have the correct number of decimal places in your product? | |
| **Student Learning Objectives**<br>• Find patterns in products when multiplying by powers of 10.<br>• Model multiplication of whole numbers and decimals.<br>• Multiply a decimal and a whole number using drawings and place value. | |

- Use expanded form and place value to multiply a decimal and a whole number.
- Solve problems using the strategy *draw a diagram* to multiply money.
- Model multiplication of decimals.
- Place the decimal point in decimal multiplication.
- Multiply decimals with zeros in the product.

| CPI # | Cumulative Progress Indicator (CPI) |
|---|---|
| CC.5.NBT.2 | Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. |
| CC.5.NBT.7 | Add, subtract, multiply, and divide decimals to hundredths using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. |

**Unit Vocabulary**

- Decimal
- Hundredths
- Multiplication
- Ones
- Patterns
- Place value
- product
- Tenths
- Thousandths
- Expanded form

**Evidence of Learning**

**Summative Assessment:**

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 5

**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:** Divide Decimals |
| **Grade Level:** 5 |
| **Unit Summary:** Number and Operations in Base Ten: Understand the place value system.<br><br>**Primary interdisciplinary connections:** Science/Social Studies/Reading/Language Arts<br>**5-PS1-1.** Develop a model to describe that matter is made of particles too small to be seen.<br>**21st century themes:**<br>• Information and communication skills<br>• Higher order thinking skills<br>• Problem solving skills<br>• Independent learners<br>• Real-world connections<br>**CRP4.** Communicate clearly and effectively and with reason.<br>**CRP8.** Utilize critical thinking to make sense of problems and persevere in solving them.<br>**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 patterns help you place the decimal point in a quotient?
- How can you use a model to divide a decimal by a whole number?
- How can you estimate decimal quotients?
- How can you divide decimals by whole numbers?
- How can you use a model to divide by a decimal?
- How can you place the decimal point in the quotient?
- When do you write a zero in the dividend to find a quotient?
- How do you use the strategy *work backward* to solve multistep decimal problems?

**Student Learning Objectives**

- Find patterns in quotients when dividing by powers of 10.
- Model division of decimals by whole numbers.
- Estimate decimal quotients.

- Divide decimals by whole numbers.
- Model division by decimals.
- Placed the decimal point in decimal division.
- Write a zero in the dividend to find a quotient.
- Solve multistep decimal problems using the strategy *work backward*.

| CPI # | Cumulative Progress Indicator (CPI) |
|---|---|
| CC.5.NBT.2 | Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use 3whole-number exponents to denote powers of 10. |
| CC.5.NBT.7 | Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. |

**Unit Vocabulary**

- Decimal
- Decimal point
- Dividend
- Divisor
- Exponent
- Quotient
- hundredth
- Tenth
- Compatible numbers
- Estimate
- Equivalent fractions
- Remainder

**Evidence of Learning**

**Summative Assessment:**

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 5

**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:** Add and Subtract Fractions with Unlike Denominators |
| **Grade Level:** 5 |
| **Unit Summary:** Number and Operations-Fractions: Use equivalent fractions as a strategy to add and subtract fractions.<br>**Primary interdisciplinary connections:** Science/Social Studies/Reading/Language Arts<br>**SL.5.2** Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.<br>**21st century themes:**<br>• Information and communication skills<br>• Higher order thinking skills<br>• Problem solving skills<br>• Independent learners<br>• Real-world connections<br>**CRP4.** Communicate clearly and effectively and with reason.<br>**CRP8.** Utilize critical thinking to make sense of problems and persevere in solving them.<br>**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 models to add fractions that have different denominators?
- How can you use models to subtract fractions that have different denominators?
- How can you make reasonable estimates of fraction sums and differences?
- How can you rewrite a pair of fractions so that they have a common denominator?
- How can you use a common denominator to add and subtract fractions with unlike denominators?
- How can you add and subtract mixed numbers with unlike denominators?
- How can you use renaming to find the difference of two mixed numbers?
- How can you use addition or subtraction to describe a pattern or create a sequence with fractions?
- How can the strategy work backward help you solve a problem with fractions that involves addition and subtraction?
- How can properties help you add fractions with unlike denominators?

**Student Learning Objectives**

- Use models to add fractions with unlike denominators.
- Use models to subtract fractions with unlike denominators.
- Make reasonable estimates of fraction sums and differences.
- Find a common denominator or a least common denominator to write equivalent fractions.
- Use equivalent fractions to add and subtract fractions.
- Add and subtract mixed numbers with unlike denominators.
- Rename to find the difference of two mixed numbers.
- Identify, describe, and create numeric patterns with fractions.
- Solve problems using the strategy *work backward*.
- Add fractions and mixed numbers with unlike denominators using the properties.

| CPI # | Cumulative Progress Indicator (CPI) |
|---|---|
| CC.5.NF.2 | Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. |
| CC.5.NF.1 | Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. |

**Unit Vocabulary**

- Sum
- Difference
- Benchmark
- Common denominator
- Common multiples
- Equivalent fractions
- Simplest form
- Mixed number

**Evidence of Learning**

**Summative Assessment:**

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 5

**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:** Multiply Fractions |
| **Grade Level:** 5 |
| **Unit Summary:** Number and Operations-Fractions: Apply and extend previous understandings of multiplication and division to multiply and divide fractions.<br><br>**Primary interdisciplinary connections:** Science/Social Studies/Reading/Language Arts<br>**5-PS1-4.** Conduct an investigation to determine whether the mixing of two or more substances results in new substances.<br>**21st century themes:**<br>• Information and communication skills<br>• Higher order thinking skills<br>• Problem solving skills<br>• Independent learners<br>• Real-world connections<br>**CRP4.** Communicate clearly and effectively and with reason.<br>**CRP8.** Utilize critical thinking to make sense of problems and persevere in solving them.<br>**CRP11.** Use technology to enhance productivity. |

| Learning Targets | |
|---|---|
| **Mathematical Practices** | |
| CC.K-12.MP.3 | Construct viable arguments and critique the reasoning of others. |
| CC.K-12.MP.5 | Use appropriate tools strategically. |

**Unit Essential Questions**

- How can you find a fractional part of a group?
- How can you use a model to show the product of a fraction and a whole number?
- How can you find the product of a fraction and a whole number without using a model?
- How can you use an area model to show the product of two fractions?
- How does the size of the product compare to the size of one factor when multiplying fractions?
- How do you multiply fractions?
- How can you use a unit tile to find the area of a rectangle with fractional side lengths?
- How does the size of the product compare to the size of one factor when multiplying fractions greater than one?
- How can you multiply mixed numbers?
- How can you use the strategy *guess, check, and revise* to solve problems with fractions?

**Student Learning Objectives**

- Model to find the fractional part of a group.
- Model the product of a fraction and a whole number.
- Multiply fractions and whole numbers.
- Multiply fractions using models.
- Relate the size of the product compared to the size of one factor when multiplying fractions.
- Multiply fractions.
- Use a model to multiply two mixed numbers and find the area of a rectangle.
- Relate the size of the product to the factors when multiplying fractions greater than one.
- Multiply mixed numbers.
- Solve problems using the strategy *guess, check, and revise.*

| CPI # | Cumulative Progress Indicator (CPI) |
|---|---|
| CC.5.NF.4 | Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.<br>a. Interpret the product (a/b) x q as parts of a partition of q into b equal parts, equivalently, as the result of a sequence of operations a x q ÷ b .<br>b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas. |
| CC.5.NF.5 | Interpret multiplication as scaling (resizing), by:<br>a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.<br>b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case): explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence a/b = (n x a) (n x b) to the effect of multiplying a/b by 1. |
| CC.5.NF.6 | Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem. |

**Unit Vocabulary**

- Denominator
- Numerator
- Product
- Simplest form
- Mixed number

| | |
|---|---|
| • Equivalent fraction | |

**Evidence of Learning**

**Summative Assessment:**

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 5

**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:** Divide Fractions | |
| **Grade Level:** 5 | |
| **Unit Summary:** Number and Operations-Fractions: Apply and extend previous understandings of multiplication and division to multiply and divide fractions.<br><br>**Primary interdisciplinary connections:** Science/Social Studies/Reading/Language Arts<br>**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.<br>**21st century themes:**<br>• Information and communication skills<br>• Higher order thinking skills<br>• Problem solving skills<br>• Independent learners<br>• Real-world connections<br>**CRP4.** Communicate clearly and effectively and with reason.<br>**CRP8.** Utilize critical thinking to make sense of problems and persevere in solving them.<br>**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**<br>• How do you divide a whole number by a fraction and divide a fraction by a whole number?<br>• How can the strategy *draw a diagram* help you solve division problems by writing a multiplication sentence?<br>• How does a fraction represent division?<br>• How can you divide fractions by solving a related multiplication sentence?<br>• How can you use diagrams, equations, and story problems to represent division? | |
| **Student Learning Objectives**<br>• Divide a whole number by a fraction and divide a fraction by a whole number.<br>• Solve problems using the strategy *draw a diagram*.<br>• Interpret a fraction as division and solve whole-number division problems that result in a fraction or mixed number. | |

- Divide a whole number by a fraction and divide a fraction by a whole number.
- Represent division by drawing diagrams and writing story problems and equations.

| CPI # | Cumulative Progress Indicator (CPI) |
|---|---|
| CC.5.NF.3 | Interpret a fraction as division of the numerator by the denominator (a/b =a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. |
| CC.5.NF.7 | Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.<br>a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.<br>b. Interpret division of a whole number by a unit fraction, and compute such quotients.<br>c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. |

**Unit Vocabulary**

- Dividend
- Fraction
- quotient
- Whole number
- Equation

**Evidence of Learning**

**Summative Assessment:**

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 5

**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 9 Overview |
|---|
| **Content Area:** Mathematics |
| **Unit 9 Title:** Algebra: Patterns and Graphing |
| **Grade Level:** 5 |
| **Unit Summary:** Operations and Algebraic Thinking Measurement and Data Geometry: Amalyze patterns and relationships.<br><br>**Primary interdisciplinary connections:** Science/Social Studies/Reading/Language Arts<br>**5-ESS1-2.** Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some starts in the night sky.<br>**21st century themes:**<br>• Information and communication skills<br>• Higher order thinking skills<br>• Problem solving skills<br>• Independent learners<br>• Real-world connections<br>**CRP4.** Communicate clearly and effectively and with reason.<br>**CRP8.** Utilize critical thinking to make sense of problems and persevere in solving them.<br>**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**

- How can a line plot help you find an average with data given in fractions?
- How can you identify and plot points on a coordinate grid?
- How can you use a coordinate grid to display data collected in an experiment?
- How can you use a line graph to display and analyze real-world data?
- How can you identify a relationship between two numerical patterns?
- How can you use the strategy *solve a simpler problem* to help you solve a problem with patterns?
- How can you write and graph ordered pairs on a coordinate grid using two numerical patterns?

**Student Learning Objectives**

- Make and use line plots with fractions to solve problems.
- Graph and name points on a coordinate grid using ordered pairs.
- Collect and graph data on a coordinate grid.
- Analyze and display data in a line graph.
- Use two rules to generate a numerical pattern and identify the relationship between the corresponding terms in the patterns.
- Solve problems using the strategy *solve a simpler problem*.
- Graph the relationship between two numerical patterns on a coordinate grid.

| CPI # | Cumulative Progress Indicator (CPI) |
|---|---|
| CC.5.MD.2 | Make a line plot to display a data set of measurements in fractions of a unit (1/2, ¼, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. |
| CC.5.G.1 | Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate). |
| CC.5.G.2 | Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. |
| CC.5.OA.3 | Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. |

**Unit Vocabulary**

- Data
- Line plot
- Ordered pair
- Origin
- X-axis
- X-coordinate
- Y-axis
- Y-coordinate
- Interval
- Line graph
- Scale

| | |
|---|---|
| **Evidence of Learning** | |
| **Summative Assessment:**<br>• Chapter Review/Test<br>• Performance Assessment<br>• Chapter Test<br>• Online Assessment<br>• NJ ASK 5<br>**Benchmark: Go Math** Benchmark<br>**Equipment needed:** Go Math Student Textbook, Manipulatives Kits; Differentiated Centers<br>**Teacher Resources:** wwwk-6.thinkcentral.com | |
| **Modifications: (Special education, ELLs, at-risk students, gifted and talented)**<br>• Menus<br>• Choice Boards<br>• Tiered Assignments<br>• Partner work<br>• Manipulatives<br>• Flexible grouping<br>• Individualizing lessons<br>• Compacting<br>• Varying question levels | |
| **Formative Assessments**<br>• Lesson Quick Check<br>• Mid-Chapter Checkpoint<br>• COREK12 | |

| Unit 10 Overview |
|---|
| **Content Area:** Mathematics |
| **Unit 10 Title:** Convert Units of Measure |
| **Grade Level:** 5 |
| **Unit Summary**: Measurement and Data: Convert like measurement units within a given measurement system.<br>**Primary interdisciplinary connections:** Science/Social Studies/Reading/Language Arts<br>**5-PS1-2.** Measure and graph quantities to provide evidence that regardless of the type of chance that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.<br>**21st century themes:**<br>• Information and communication skills<br>• Higher order thinking skills<br>• Problem solving skills<br>• Independent learners<br>• Real-world connections<br>**CRP4.** Communicate clearly and effectively and with reason.<br>**CRP8.** Utilize critical thinking to make sense of problems and persevere in solving them.<br>**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.7 | Look for and make use of structure. |

**Unit Essential Questions**

- How can you compare and convert customary units of length?
- How can you compare and convert customary units of capacity?
- How can you compare and convert customary units of weight?
- How can you solve multistep problems that include measurement conversions?
- How can you compare and convert metric units?
- How can you use the strategy *make a table* to help solve problems about customary and metric conversions?
- How can you solve elapsed time problems by converting units of time?

**Student Learning Objectives**

- Compare, contrast, and convert customary units of length.
- Compare, contrast, and convert customary units of capacity.
- Compare, contrast, and convert customary units of weight.

- Convert measurement units to solve multistep problems.
- Compare, contrast, and convert metric units.
- Solve problems about customary and metric conversions using the strategy *make a table.*
- Convert units of time to solve elapsed time problems.

| CPI # | Cumulative Progress Indicator (CPI) |
|---|---|
| CC.5.MD.1 | Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. |

**Unit Vocabulary**

- Foot
- Inch
- Mile
- Yard
- Capacity
- Cup
- Fluid ounce
- Gallon
- Pint
- Quart
- Tablespoon
- Teaspoon
- Ounce
- Pound
- Ton
- Weight
- Decameter
- Centimeter
- Decimeter
- Gram
- Kilogram
- Kilometer
- Liter
- Mass
- Meter
- Milligram
- Milliliter
- Millimeter
- Elapsed time

**Evidence of Learning**

**Summative Assessment:**

- Chapter Review/Test
- Performance Assessment
- Chapter Test
- Online Assessment
- NJ ASK 5

**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 11 Overview | |
|---|---|
| **Content Area:** Mathematics | |
| **Unit 11 Title:** Geometry and Volume | |
| **Grade Level:** 5 | |
| **Unit Summary:** Measurement and Data: Geometric measurement: understand concepts of volume and related volume to multiplication and to addition.<br>**Primary interdisciplinary connections:** Science/Social Studies/Reading/Language Arts<br>**5-PS1-1.** Develop a model to describe that matter is made of particles too small to be seen.<br>**21st century themes:**<br>• Information and communication skills<br>• Higher order thinking skills<br>• Problem solving skills<br>• Independent learners<br>• Real-world connections<br>**CRP4.** Communicate clearly and effectively and with reason.<br>**CRP8.** Utilize critical thinking to make sense of problems and persevere in solving them.<br>**CRP11.** Use technology to enhance productivity. | |
| **Learning Targets** | |
| **Mathematical Practices** | |
| CC.K-12.MP.4 | Model with mathematics. |
| CC.K-12.MP.5 | Use appropriate tools strategically. |
| CC.K-12.MP.6 | Attend to precision. |
| **Unit Essential Questions**<br>• How can you identify and classify polygons?<br>• How can you classify triangles?<br>• How can you classify and compare quadrilaterals?<br>• How can you use the strategy act it out to approximate whether the sides of a figure are congruent?<br>• How can you identify, describe, and classify three-dimensional figures?<br>• What is a unit cube and how can you use it to build a solid figure?<br>• How can you use unit cubes to find the volume of a rectangular prism?<br>• How can you use an everyday object to estimate the volume of a rectangular prism?<br>• How can you find the volume of a rectangular prism?<br>• How can you use a formula to find the volume of a rectangular prism?<br>• How can you use the strategy *make a table* to compare different rectangular prisms with | |

<table>
<tr><td colspan="2">the same volume?<br>• How can you find the volume of rectangular prisms that are combined?</td></tr>
<tr><td colspan="2">Student Learning Objectives<br>• Identify and classify polygons.<br>• Classify and draw triangles using their properties.<br>• Classify and compare quadrilaterals using their properties.<br>• Solve problems using the strategy act it out.<br>• Identify, describe, and classify three-dimensional figures.<br>• Understand unit cubes and how they can be used to build a solid figure.<br>• Count unit cubes that fill a solid figure to find volume.<br>• Estimate the volume of a rectangular prism.<br>• Find the volume of rectangular prisms.<br>• Use a formula to find the volume of a rectangular prism.<br>• Use the strategy make a table to compare volumes.<br>• Find the volume of combined rectangular prisms.</td></tr>
<tr><td>CPI #</td><td>Cumulative Progress Indicator (CPI)</td></tr>
<tr><td>CC.5.MD.3</td><td>Recognize volume as an attribute of solid figures and understand concepts of volume measurement.<br>a. A cube with side length 1 unit, called a “unit cube”, is said to have “one cubic unit” of volume, and can be used to measure volume.<br>b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.</td></tr>
<tr><td>CC.5.MD.4</td><td>Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.</td></tr>
<tr><td>CC.5.MD.5</td><td>Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.<br>a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.<br>b. Apply the formulas V=l x w x h and V-b x h for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.<br>c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.</td></tr>
</table>

| | |
|---|---|
| CC.5.G.3 | Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. |
| CC.5.G.4 | Classify two-dimensional figures in a hierarchy based on properties. |

**Unit Vocabulary**

- Congruent
- Heptagon
- Nonagon
- Polygon
- Regular polygon
- Decagon
- Hexagon
- Octagon
- Pentagon
- Quadrilateral
- Equilateral triangle
- Isosceles triangle
- Scalene triangle
- Acute triangle
- Obtuse triangle
- Right triangle
- Parallel lines
- Parallelogram
- Perpendicular lines
- Rectangle
- Rhombus
- Trapezoid
- Base
- Decagonal prism
- Hexagonal prism
- Lateral face
- Octagonal prism
- Pentagonal prism
- Pentagonal pyramid
- Polyhedron
- Prism
- Pyramid
- Unit cube
- Cubic unit
- Volume

**Evidence of Learning**

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