

Pine Hill Public Schools

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| Content Area: | | Mathematics | |
| Course Title/ Grade Level: | | Grade 4 Math | |
| Unit 1: | Numeration (Topic 1) | Duration: | 3 weeks |
| Unit 2: | Adding & Subtracting Whole Numbers (Topic 2) | Duration: | 1 week, 4 days |
| Unit 3: | Multiplication and Division: Meanings and Facts | Duration: | 2 weeks, 2 days |
| Unit 4: | Number Sense: Multiplying by 1-digit Numbers | Duration: | 1 week, 1 day |
| Unit 5: | Developing Fluency: Multiplying by 1-digit numbers | Duration: | 2 weeks |
| Unit 6: | Multiplying by 2-digit | Duration: | 2 weeks |
| Unit 7: | Number Sense: Dividing by 1-Digit Divisors | Duration: | 1 week, 1 day |
| Unit 8: | Developing Fluency: Dividing by 1-Digit Divisors | Duration: | 2 weeks |
| Unit 9: | Fraction Equivalence and Ordering | Duration: | 2 weeks, 2 days |
| Unit 10: | Adding and Subtracting Fractions and Mixed Numbers with Like Denominators | Duration: | 2 weeks, 3 days |
| Unit 11: | Extending Fraction Concepts | Duration: | 2 weeks, 1 day |
| Unit 12: | Measurement Units and Conversions | Duration: | 2 weeks, 3 days |
| Unit 13: | Lines, Angles, and Shapes | Duration: | 2 weeks, 3 days |
| Unit 14: | Area and Perimeter | Duration: | 3 days |
| Unit 15: | Patterns and Expressions/ also teach Supplemental Lesson 17.4A Solving Problems Involving Line Plots | Duration: | 3 weeks |
| Unit 16: | Equations (Topic 18) | Duration: | 1 week, 2 days |
| Unit 17: | Operations with Decimals- Topic 13 | Duration: | 2 weeks, 2 days |
| BOE Approval Date: | | August 28, 2012 | |

**Pine Hill Public Schools
Mathematics Curriculum**

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|---|--|--------------------------------|
| Unit Title: Numeration (Topic 1) | | Unit #: 1 |
| Course or Grade Level: 4 th grade | | Length of Time: 3 weeks |
| Date Created: 01/18/12 | | BOE Approval Date: |
| Pacing | <p>Week #1- 1 day benchmark assessment administration Week #2- 3 days benchmark assessment administration Week #2- Lessons 1.1 & 1.2 Week #3- Supplemental lessons 1.3A, 1.3, 1.4, 1.5 & 1.6 Week #4- Supplemental lesson 1.7A, 1.7, Review and Topic Test 2013-2014 Dates: Sep. 5 through Sep. 26</p> <p>Daily Warm-up: Windows/Test Prep:</p> | |
| Essential Questions | <ul style="list-style-type: none"> • What are different ways to represent numbers? • What are the different forms in which to express a number? • What is the relationship between digits in a whole number? • How can place value help us compare and order numbers? • What is rounding whole numbers? • How do the relationships among dollars, dimes, and pennies represent decimal numeration? • What is the best way to count money? • How can we use counting up to make change? • How can we organize a list of outcomes to insure all possible outcomes are noted? | |
| Content | <ul style="list-style-type: none"> • Thousands (lesson 1.1) • Millions (lesson 1.2) • Place Value Relationships (Supplemental lesson 1.3A) • Comparing & Ordering Whole Numbers (lesson 1.3) • Rounding Whole Numbers (lesson 1.4) • Using Money to Understand Decimals (lesson 1.5) • Counting Money & Making Change (lesson 1.6) • Solving Problems Involving Money (Supplemental lesson 1.7A) • Problem Solving : Make an Organized List (lesson 1.7) | |
| Skills | <ul style="list-style-type: none"> • Represent numbers with place-value blocks and number lines • Write numbers in standard form, expanded form, and word form • Represent numbers in the millions using a place-value chart. • Write numbers in expanded form using periods to help write the numbers in word form • Learn how digits within a multi-digit whole number relate to each other by their place value • Apply their knowledge of place value to compare and order numbers • Show how to use place value to round whole numbers • Use place value charts to read, write, and compare decimals in tenths and hundredths using money • Convert a collection of coins and bills into a total amount and make change • Solver real-world problems that involve money and giving change by counting • Systematically find and record all possible outcome for a situation. | |
| Assessments | <ul style="list-style-type: none"> • Formative : Daily Quick Check; Topic Test; Anecdotal Records; Teacher Observation; Independent Practice; Problem Solving • Summative : Daily Spiral Review; Placement Test; Mid-Year Benchmark; End of Year Benchmark | |
| Interventions / differentiated instruction | <ul style="list-style-type: none"> • Error Intervention • Differentiated Instruction – Intervention, On-Level, and Advanced • Leveled Homework – Reteach, Practice, and Enrichment • Center Activities | |

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| | <ul style="list-style-type: none"> • Special Needs • Below Level • ELL Strategies |
| Inter-disciplinary Connections | <ul style="list-style-type: none"> ▪ Altering word problems to reflect current classroom themes ▪ Theme based center activities ▪ Connecting reading strategies to problems solving |
| Lesson resources / activities | <ul style="list-style-type: none"> • Pearsonsuccesnet.com • E-tools • Smartboard • Student Text • Workbook • Teacher Text • Manipulatives |
| Common Core State Standards | |
| Grade or Conceptual Category (HS only): Fourth Grade | |
| Domain (name and #): 4.NBT Numbers and Operations in Base Ten | |
| Cluster: Generalize place value understanding for multi-digit whole numbers | 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 |
| | 4.NBT.2 Read and write multi-digit whole numbers using base ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons |
| | 4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place |
| Domain (name and #): 4.MD Measurement and Data | |
| Cluster: Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit | 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 measurement quantities using diagrams such as number line diagrams that feature a measurement scale. |
| Domain (name and #) 4.OA Operations and Algebraic Thinking | |
| Cluster: Use the four operations with whole numbers to solve problems | 4.OA.3 Solve multi-step word problems posed with whole numbers and having whole numbers 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. |
| Math Practices: <ul style="list-style-type: none"> • Make sense of problems and persevere in solving them • Reason abstractly and quantitatively • Construct viable arguments and critique the reasoning of others • Model with mathematics • Use appropriate tools strategically • Attend to precision • Look for and make use of structure • Look for and express regularity in repeated reasoning | |
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21st Century Themes

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|--|------------------|---|---|--|----------------|--|-----------------|
| | Global Awareness | X | Financial, Economic, Business, and Entrepreneurial Literacy | | Civic Literacy | | Health Literacy |
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21st Century Skills

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|--|------------------------------|---|--|---|------------------------------------|--|----------------------|
| | Creativity and Innovation | X | Critical Thinking and Problem Solving | X | Communication and Collaboration | | Information Literacy |
| | Media Literacy | | ICT Literacy | X | Life and Career Skills | | |

**Pine Hill Public Schools
Mathematics Curriculum**

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|---|---|---------------------------------------|
| Unit Title: Adding & Subtracting Whole Numbers (Topic 2) | | Unit #: 2 |
| Course or Grade Level: 4 th grade | | Length of Time: 1 week, 4 days |
| Date Created: 01/18/12 | | BOE Approval Date: |
| Pacing | Week #1- Lesson 2.1 Week #2- Lessons 2.2, 2.4, 2.5, 2.6 & 2.7 Week #3- Review and Topic Test 2013-2014 Dates: Sep. 27 through Oct. 8 Daily Warm-up: Windows/Test Prep | |
| Essential Questions | <ul style="list-style-type: none"> • How can we use the properties to make mental calculations easier? • How can we use estimation to mentally compute “near to” answers? • How can we use place value to perform the standard addition and subtraction algorithms? • What are some strategies for representing the information in a word problem? | |
| Content | <ul style="list-style-type: none"> • Using Mental Math to Add & Subtract (Lesson 2.1) • Estimating Sums & Differences of Whole Numbers (Lesson 2.2) • Adding Whole Numbers (Lesson 2.4) • Subtracting Whole Numbers (Lesson 2.5) • Subtracting Across Zeros (Lesson 2.6) • Problem Solving : Draw a Picture & Write an Equation (Lesson 2.7) | |
| Skills | <ul style="list-style-type: none"> • Apply a variety of methods to add and subtract whole numbers mentally. • Round whole numbers to estimate sums and differences. • Add numbers to hundred thousands with and without regrouping • Subtract numbers to thousands with and without regrouping • Subtract numbers with zeros to thousands • Use a picture or diagram to translate an everyday situation into a number sentence or equation. | |
| Assessments | <ul style="list-style-type: none"> • Formative : Daily Quick Check; Topic Test; Anecdotal Records; Teacher Observation; Independent Practice; Problem Solving • Summative : Daily Spiral Review; Placement Test; Mid-Year Benchmark; End of Year Benchmark | |
| Interventions / differentiated instruction | <ul style="list-style-type: none"> • Error Intervention • Differentiated Instruction – Intervention, On-Level, and Advanced • Leveled Homework – Reteach, Practice, and Enrichment • Center Activities • Special Needs • Below Level • ELL Strategies | |
| Inter-disciplinary Connections | <ul style="list-style-type: none"> ▪ Altering word problems to reflect current classroom themes ▪ Theme based center activities ▪ Connecting reading strategies to problems solving | |
| Lesson resources / activities | <ul style="list-style-type: none"> • Pearsonsuccesnet.com • E-tools • Smartboard • Student Text • Workbook • Teacher Text • Manipulatives | |

Common Core State Standards

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| Grade or Conceptual Category (HS only): Fourth grade | | | | | | | |
| Domain (name and #): 4.NBT Numbers and Operations in Base Ten | | | | | | | |
| Cluster: Generalize place value understanding for multi-digit whole numbers | | 4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place | | | | | |
| Domain (name and #): 4.NBT Numbers and Operations in Base Ten | | | | | | | |
| Cluster: Use place value understanding and properties of operations to perform multi-digit arithmetic | | 4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm | | | | | |
| Domain (name and #) 4.OA Operations and Algebraic Thinking | | | | | | | |
| Cluster: Use the four operations with whole numbers to solve problems | | 4.OA .3 Solve multi-step word problems posed with whole numbers and having whole numbers 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. | | | | | |
| Math Practices: | | | | | | | |
| <ul style="list-style-type: none"> • Make sense of problems and persevere in solving them • Reason abstractly and quantitatively • Construct viable arguments and critique the reasoning of others • Model with mathematics • Use appropriate tools strategically • Attend to precision • Look for and make use of structure • Look for and express regularity in repeated reasoning | | | | | | | |
| <u>21st Century Themes</u> | | | | | | | |
| | Global Awareness | X | Financial, Economic, Business, and Entrepreneurial Literacy | | Civic Literacy | | Health Literacy |
| <u>21st Century Skills</u> | | | | | | | |
| | Creativity and Innovation | X | Critical Thinking and Problem Solving | X | Communication and Collaboration | | Information Literacy |
| | Media Literacy | | ICT Literacy | X | Life and Career Skills | | |

**Pine Hill Public Schools
Mathematics Curriculum**

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| Unit Title: Take lessons from topics 3 and 4 to create unit: Multiplication and Division: Meanings and Facts | | Unit #: 3 |
| Course or Grade Level: 4 th grade | | Length of Time: 2 weeks, 2 days |
| Date Created: 01/18/12 | | BOE Approval Date: |
| Pacing | Week #1- Lessons 3.1 & 3.2 Week #2- Lessons 3.3, 3.4, 3.5, & 4.1 Week #3- Lessons 4.2, 4.3, 4.4, 3.7, & Review Week #4- Topic Test 2013-2014 Dates: Oct. 9 through Oct. 28 Daily Warm-up: Windows/Test Prep: Please make sure to include concepts from topic 17, <i>Data and Graphs</i> . | |
| Essential Questions | <ul style="list-style-type: none"> • What are two ways to think about multiplication? • What are patterns we can see and use in our basic facts? • How can we use the properties of multiplication solve equations? • What are two ways to think about division? • How can we use the inverse relationship between multiplication and division to solve division facts? • What are the special division rules about 0 and 1? • What are some strategies for representing the information in a word problem? | |
| Content | <ul style="list-style-type: none"> • Meanings of Multiplication (Lesson 3.1) • Patterns for Facts (Lesson 3.2) • Multiplication Properties (Lesson 3.3) • 3 and 4 as Factors (Lesson 3.4) • 6, 7 and 8 as Factors (Lesson 3.5) • Meanings of Division (Lesson 4.1) • Relating Multiplication & Division (Lesson 4.2) • Special Quotients (Lesson 4.3) • Using Multiplication Facts to Find Division Facts (Lesson 4.4) • Problem Solving : Draw a Picture & Write an Equation (Lesson 3.7) | |
| Skills | <ul style="list-style-type: none"> • Recognize multiplication as repeated addition of equal groups, used in arrays and comparisons • Use patterns to find products with factors of 2,5, and 9 • Use multiplication properties to simplify computation • Use the Distributive Property and other multiplication properties to simplify multiplication problems by rewriting one of the factors as a sum of two numbers • Use and draw models to solve division problems • Use arrays to write and complete multiplication and division fact families • Use multiplication facts with 0 and 1 to learn about special division rules with 0 and 1 • Identify multiplication facts related to division facts in order to solve division problems • Draw pictures to problem solve multiplication situations and use their pictures to write numbers sentences | |
| Assessments | <ul style="list-style-type: none"> • Formative : Daily Quick Check; Topic Test; Anecdotal Records; Teacher Observation; Independent Practice; Problem Solving • Summative : Daily Spiral Review; Placement Test; Mid-Year Benchmark; End of Year Benchmark | |
| Interventions / differentiated instruction | <ul style="list-style-type: none"> • Error Intervention • Differentiated Instruction – Intervention, On-Level, and Advanced • Leveled Homework – Reteach, Practice, and Enrichment • Center Activities • Special Needs • Below Level • ELL Strategies | |

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| Inter-disciplinary Connections | <ul style="list-style-type: none"> ▪ Altering word problems to reflect current classroom themes ▪ Theme based center activities ▪ Connecting reading strategies to problems solving |
| Lesson resources / activities | <ul style="list-style-type: none"> • Pearsonsuccesnet.com • E-tools • Smartboard • Student Text • Workbook • Teacher Text • Manipulatives |
| Common Core State Standards | |
| Grade or Conceptual Category (HS only): Fourth grade | |
| Domain (name and #): 4.OA Operations and Algebraic Thinking | |
| Cluster: Use the four operations with whole numbers to solve problems Gain familiarity with factors and multiples | 4.OA.1 Interpret a multiplication equation as a comparison, e.g. interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations |
| | 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 |
| | 4.OA.4 Find all factor pairs for a whole number in the range 1 – 100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given 1-digit number. Determine whether a given whole number in the range 1-100 is prime or composite. |
| Cluster: Generate and analyze patterns | 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. |

Math Practices:

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

21st Century Themes

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|--|---|---|---|---------------------------------|--|----------------------|
| Global Awareness | X | Financial, Economic, Business, and Entrepreneurial Literacy | | Civic Literacy | | Health Literacy |
| <u>21st Century Skills</u> | | | | | | |
| Creativity and Innovation | X | Critical Thinking and Problem Solving | X | Communication and Collaboration | | Information Literacy |
| Media Literacy | | ICT Literacy | X | Life and Career Skills | | |

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**Pine Hill Public Schools
Mathematics Curriculum**

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| Unit Title: Take lessons from topic 5 to create unit: Number Sense: Multiplying by 1-digit Numbers | | Unit #: 4 |
| Course or Grade Level: 4 th grade | | Length of Time: 1 week, 1 day |
| Date Created: 01/18/12 | | BOE Approval Date: |
| Pacing | Week #1- Lessons 5.1, 5.2, & 5.3 Week #2- Lesson 5.4, Review & Topic Test 2013-2014 Dates: Oct. 29 through Nov. 6 Daily Warm-up: Windows/Test Prep | |
| Essential Questions | <ul style="list-style-type: none"> • How can you use place value patterns and basic facts to multiply by multiples of 10 or 100. • What strategies can be used to multiply mentally? • What are two ways to estimate products? • What are some ways to determine the reasonableness of an answer? | |
| Content | <ul style="list-style-type: none"> • Multiplying by Multiples of 10 and 100 (Lesson 5.1) • Using Mental Math to Multiply (Lesson 5.2) • Using Rounding to Estimate (Lesson 5.3) • Problem Solving : Reasonableness (Lesson 5.4) | |
| Skills | <ul style="list-style-type: none"> • Use basic multiplication facts and number patterns to multiply by multiples of 10 and 100 • Use compatible numbers with adjustment, breaking apart, and other strategies to multiply numbers mentally • Use compatible numbers and rounding to estimate solutions to multiplication problems • Check for reasonableness by making sure their calculations answer the questions asked and by using estimation to make sure the calculation was performed correctly | |
| Assessments | <ul style="list-style-type: none"> • Formative : Daily Quick Check; Topic Test; Anecdotal Records; Teacher Observation; Independent Practice; Problem Solving • Summative : Daily Spiral Review; Placement Test; Mid-Year Benchmark; End of Year Benchmark | |
| Interventions / differentiated instruction | <ul style="list-style-type: none"> • Error Intervention • Differentiated Instruction – Intervention, On-Level, and Advanced • Leveled Homework – Reteach, Practice, and Enrichment • Center Activities • Special Needs • Below Level • ELL Strategies | |
| Inter-disciplinary Connections | <ul style="list-style-type: none"> ▪ Altering word problems to reflect current classroom themes ▪ Theme based center activities ▪ Connecting reading strategies to problems solving | |
| Lesson resources / activities | <ul style="list-style-type: none"> • Pearsonsuccesnet.com • E-tools • Smartboard • Student Text • Workbook • Teacher Text • Manipulatives | |
| Common Core State Standards | | |
| Grade or Conceptual Category (HS only): Fourth grade | | |
| Domain (name and #): 4.NBT Numbers and Operations in Base Ten | | |

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| Cluster: Generalize place value understanding for multi-digit whole numbers | 4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place |
| Cluster: Use place value understanding and properties of operations to perform multi-digit arithmetic | 4.NBT.5 Multiply a whole number of up to four digits by a 1-digit whole number, and multiply two 2-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. |
| Domain (name and #): 4.OA Operations and Algebraic Thinking | |
| Cluster: Use the four operations with whole numbers to solve problems | 4.OA.3 Solve multi-step word problems posed with whole numbers and having whole numbers 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. |

Math Practices:

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

21st Century Themes

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|------------------|---|---|--|----------------|--|-----------------|
| Global Awareness | X | Financial, Economic, Business, and Entrepreneurial Literacy | | Civic Literacy | | Health Literacy |
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21st Century Skills

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|---------------------------|---|---------------------------------------|---|---------------------------------|--|----------------------|
| Creativity and Innovation | X | Critical Thinking and Problem Solving | X | Communication and Collaboration | | Information Literacy |
| Media Literacy | | ICT Literacy | X | Life and Career Skills | | |

**Pine Hill Public Schools
Mathematics Curriculum**

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|--|--|--------------------------------|
| Unit Title: Take lessons from topic 5 to create unit: Developing Fluency: Multiplying by 1-digit numbers | | Unit #: 5 |
| Course or Grade Level: 4th grade | | Length of Time: 2 weeks |
| Date Created: 01/18/12 | | BOE Approval Date: |
| Pacing | Week #1- Lessons 5.5, 5.6A, 5.6, 5.8A (2 days) Week #2- Lessons 5.8A, 5.8, Review, Topic Test 2013-2014 Dates: Nov. 11 through Nov. 22 Daily Warm-up: Windows/Test Prep | |
| Essential Questions | <ul style="list-style-type: none"> • What is the expanded algorithm for multiplying? • What is the standard multiplication algorithm? • How is regrouping used in the standard multiplication algorithm? • How do we apply the standard algorithm to 3-digit by 1-digit and 4-digit by 1-digit multiplication? • What are some strategies for representing the information in a word problem? | |
| Content | <ul style="list-style-type: none"> • Using an Expanded Algorithm (Lesson 5.5) • Connecting the Expanded and Standard Algorithms (Supplemental lesson 5.6A) • Multiplying 2-Digit by 1-Digit Numbers (Lesson 5.6) • Multiplying 3- and 4 -Digit by 1-Digit Numbers (Supplemental lesson 5.8A, replaces 5.7) • Problem Solving : Draw a Picture & Write an Equation (Lesson 5.8) | |
| Skills | <ul style="list-style-type: none"> • Record multiplication using an expanded algorithm • Multiply 2-digit numbers by 1-digit numbers using paper-and-pencil methods • Used the standard algorithm to multiply 3- and 4-digit numbers by 1-digit numbers? • Solve problems using the problem-solving strategies “Draw a Picture” and “Write an Equation” | |
| Assessments | <ul style="list-style-type: none"> • Formative : Daily Quick Check; Topic Test; Anecdotal Records; Teacher Observation; Independent Practice; Problem Solving • Summative : Daily Spiral Review; Placement Test; Mid-Year Benchmark; End of Year Benchmark | |
| Interventions / differentiated instruction | <ul style="list-style-type: none"> • Error Intervention • Differentiated Instruction – Intervention, On-Level, and Advanced • Leveled Homework – Reteach, Practice, and Enrichment • Center Activities • Special Needs • Below Level • ELL Strategies | |
| Inter-disciplinary Connections | <ul style="list-style-type: none"> ▪ Altering word problems to reflect current classroom themes ▪ Theme based center activities ▪ Connecting reading strategies to problems solving | |
| Lesson resources / activities | <ul style="list-style-type: none"> • Pearsonsuccesnet.com • E-tools • Smartboard • Student Text • Workbook • Teacher Text • Manipulatives | |

Grade or Conceptual Category (HS only): Fourth grade

Domain (name and #): 4.NBT Numbers and Operations in Base Ten

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| Cluster: Generalize place value understanding for multi-digit whole numbers | 4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place |
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| Cluster: Use place value understanding and properties of operations to perform multi-digit arithmetic | 4.NBT.5 Multiply a whole number of up to four digits by a 1-digit whole number, and multiply two 2-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. |
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Domain (name and #): 4.OA Operations and Algebraic Thinking

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| Cluster: Use the four operations with whole numbers to solve problems | 4.OA.3 Solve multi-step word problems posed with whole numbers and having whole numbers 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. |
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- Math Practices:**
- Make sense of problems and persevere in solving them
 - Reason abstractly and quantitatively
 - Construct viable arguments and critique the reasoning of others
 - Model with mathematics
 - Use appropriate tools strategically
 - Attend to precision
 - Look for and make use of structure
 - Look for and express regularity in repeated reasoning

21st Century Themes

| | | | | | | |
|------------------|---|---|--|----------------|--|-----------------|
| Global Awareness | X | Financial, Economic, Business, and Entrepreneurial Literacy | | Civic Literacy | | Health Literacy |
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21st Century Skills

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|---------------------------|---|---------------------------------------|---|---------------------------------|--|----------------------|
| Creativity and Innovation | X | Critical Thinking and Problem Solving | X | Communication and Collaboration | | Information Literacy |
| Media Literacy | | ICT Literacy | X | Life and Career Skills | | |

**Pine Hill Public Schools
Mathematics Curriculum**

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|--|---|--------------------------------|
| Unit Title: Take lessons from topic 7 to create unit: Multiplying by 2-digit Numbers | | Unit #: 6 |
| Course or Grade Level: 4 th grade | | Length of Time: 2 weeks |
| Date Created: 01/18/12 | | BOE Approval Date: |
| Pacing | Week #1- Lesson 7.1, Lessons 7.2, & Supplemental Lesson 7.4A Week #2- 7.4, & 7.5 (2 days), 7.7, Review Week #3- Review & Topic Test 2013-2014 Dates: Nov. 25 through Dec. 11 Daily Warm-up: Windows/Test Prep: Please make sure to include concepts from | |
| Essential Questions | <ul style="list-style-type: none"> • How do we use basic facts and place value patterns to mentally multiply by a power of ten. • What are two ways to estimate products. • How do we use an array to model an expanded algorithm? • How do we extend the algorithm for multiplying by a 1-digit number to multiplying by a 2-digit number? • How is regrouping used in the standard algorithm? • How do we solve two-question problems? | |
| Content | <ul style="list-style-type: none"> • Using Mental Math to Multiply 2-Digit Numbers (Lesson 7.1) • Estimating Products (Lesson 7.2) • Arrays & an Expanded Algorithm (Supplemental lesson 7.4A, replaces 7.3) • Multiplying 2-Digit Numbers by Multiples of Ten (Lesson 7.4) • Multiplying 2-Digit by 2-Digit Numbers (Lesson 7.5) • Problem Solving : Two-Question Problems (Lesson 7.7) | |
| Skills | <ul style="list-style-type: none"> • Discover and understand patterns used to multiply by 10 and 100. Use these patterns to solve problems involving multiples of 10 and 100. • Use rounding and compatible numbers to estimate solutions to multiplication problems • Use an expanded algorithm to multiply 2-digit numbers by 2-digit numbers to find the product • Use grids and patterns to multiply 2-digit numbers and multiples of ten. • Use partial products to multiply 2-digit numbers by 2-digit numbers and find the products. • Solve two-question problems | |
| Assessments | <ul style="list-style-type: none"> • Formative : Daily Quick Check; Topic Test; Anecdotal Records; Teacher Observation; Independent Practice; Problem Solving • Summative : Daily Spiral Review; Placement Test; Mid-Year Benchmark; End of Year Benchmark | |
| Interventions / differentiated instruction | <ul style="list-style-type: none"> • Error Intervention • Differentiated Instruction – Intervention, On-Level, and Advanced • Leveled Homework – Reteach, Practice, and Enrichment • Center Activities • Special Needs • Below Level • ELL Strategies | |
| Inter-disciplinary Connections | <ul style="list-style-type: none"> ▪ Altering word problems to reflect current classroom themes ▪ Theme based center activities ▪ Connecting reading strategies to problems solving | |
| Lesson resources / activities | <ul style="list-style-type: none"> • Pearsonsuccesnet.com • E-tools • Smartboard • Student Text • Workbook | |

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| | <ul style="list-style-type: none"> • Teacher Text • Manipulatives |
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Common Core State Standards

Grade or Conceptual Category (HS only): Fourth Grade

Domain (name and #): 4.OA Operations and Algebraic Thinking

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| <p>Cluster: Use the four operations with whole numbers to solve problems</p> <p>Generate and analyze patterns</p> | <p>4.OA.3 Solve multi-step word problems posed with whole numbers and having whole numbers answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p> |
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Domain (name and #): 4.NBT Numbers and Operations in Base Ten

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| <p>Cluster: Generalize place value understanding for multi-digit whole numbers</p> <p>Use place value understanding and properties of operations to perform multi-digit arithmetic</p> | <p>4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place</p> <p>4.NBT.5 Multiply a whole number of up to four digits by a 1-digit whole number, and multiply two 2-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.</p> |
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- Math Practices:**
- Make sense of problems and persevere in solving them
 - Reason abstractly and quantitatively
 - Construct viable arguments and critique the reasoning of others
 - Model with mathematics
 - Use appropriate tools strategically
 - Attend to precision
 - Look for and make use of structure
 - Look for and express regularity in repeated reasoning

21st Century Themes

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|--|------------------|---|---|--|----------------|--|-----------------|
| | Global Awareness | X | Financial, Economic, Business, and Entrepreneurial Literacy | | Civic Literacy | | Health Literacy |
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21st Century Skills

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|--|---------------------------|---|---------------------------------------|---|---------------------------------|--|----------------------|
| | Creativity and Innovation | X | Critical Thinking and Problem Solving | X | Communication and Collaboration | | Information Literacy |
| | Media Literacy | | ICT Literacy | X | Life and Career Skills | | |

**Pine Hill Public Schools
Mathematics Curriculum**

Unit Title: Take lessons from topic 8 to create unit: Number Sense: **Dividing by 1-Digit Divisors** **Unit #: 7**

Course or Grade Level: 4th grade **Length of Time:** 1 week, 1 day

Date Created: 01/18/12 **BOE Approval Date:**

Pacing
 Week #1- Lessons 8.1 & 8.2
 Week #2- Supplemental lesson 8.3A; Lessons 8.3, 8.4, Review & Topic Test
 2013-2014 Dates: Dec. 12 through Dec. 20
Daily Warm-up: Windows/Test Prep

Essential Questions

- How do you use basic facts and place value patterns to solve division problems?
- What are two ways to estimate quotients?
- How can you multiply by powers of ten to get an estimate of the quotient in a multi-digit division problem?
- How do we interpret and use the remainder?

Content

- Using Mental Math to Divide (Lesson 8.1)
- Estimating Quotients (Lesson 8.2)
- Estimating Quotients for Greater Dividends (supplemental lesson 8.3A)
- Dividing with Remainders (Lesson 8.3)
- Connecting Models & Symbols (Lesson 8.4)

Skills

- Use basic facts and patterns of zeros to solve division problems with 3-digit dividends and 1-digit divisors
- Use compatible numbers and rounding to estimate quotients
- Estimate quotients of multi-digit division problems using multiplication facts and place-value concepts
- Divide whole numbers by 1-digit divisors resulting in quotients with remainders

Assessments

- Formative : Daily Quick Check; Topic Test; Anecdotal Records; Teacher Observation; Independent Practice; Problem Solving
- Summative : Daily Spiral Review; Placement Test; Mid-Year Benchmark; End of Year Benchmark

Interventions / differentiated instruction

- Error Intervention
- Differentiated Instruction – Intervention, On-Level, and Advanced
- Leveled Homework – Reteach, Practice, and Enrichment
- Center Activities
- Special Needs
- Below Level
- ELL Strategies

Inter-disciplinary Connections

- Altering word problems to reflect current classroom themes
- Theme based center activities
- Connecting reading strategies to problems solving

Lesson resources / activities

- Pearsonsuccesnet.com
- E-tools
- Smartboard
- Student Text
- Workbook
- Teacher Text
- Manipulatives

Common Core State Standards

Grade or Conceptual Category (HS only): Fourth grade

Domain (name and #): 4.OA Operations and Algebraic Thinking

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| Cluster: Use the four operations with whole numbers to solve problems | 4.OA.3 Solve multi-step word problems posed with whole numbers and having whole numbers 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. |
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Domain (name and #): 4.NBT Numbers and Operations in Base Ten

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| Cluster: Use place value understanding and properties of operations to perform multi-digit arithmetic | 4.NBT.5 Multiply a whole number of up to four digits by a 1-digit whole number, and multiply two 2-digit numbers using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. 4.NBT.6 Find whole number quotients and remainders with up to 4-digit dividends and 1-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. |
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- Math Practices:**
- Make sense of problems and persevere in solving them
 - Reason abstractly and quantitatively
 - Construct viable arguments and critique the reasoning of others
 - Model with mathematics
 - Use appropriate tools strategically
 - Attend to precision
 - Look for and make use of structure
 - Look for and express regularity in repeated reasoning

21st Century Themes

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|--|------------------|---|---|--|----------------|--|-----------------|
| | Global Awareness | X | Financial, Economic, Business, and Entrepreneurial Literacy | | Civic Literacy | | Health Literacy |
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21st Century Skills

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|--|---------------------------|---|---------------------------------------|---|---------------------------------|--|----------------------|
| | Creativity and Innovation | X | Critical Thinking and Problem Solving | X | Communication and Collaboration | | Information Literacy |
| | Media Literacy | | ICT Literacy | X | Life and Career Skills | | |

**Pine Hill Public Schools
Mathematics Curriculum**

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|--|--|--------------------------------|
| Unit Title: Take lessons from topic 8 to create unit: Developing Fluency: Dividing by 1-Digit Divisors | | Unit #: 8 |
| Course or Grade Level: 4th grade | | Length of Time: 2 weeks |
| Date Created: 01/18/12 | | BOE Approval Date: |
| Pacing | Week #1- Supplemental lessons 8.3B & 8.3C Week #2- lessons 8.5, 8.6 (2 days), 8.7, Supplemental Lesson 8.8A (2 days total) Week #3- Supplemental Lesson 8.8A, Review & Topic Test 2013-2014 Dates: Jan. 2 through Jan. 15 Daily Warm-up: Windows/Test Prep: Please make sure to include concepts | |
| Essential Questions | <ul style="list-style-type: none"> • How can you use division to solve repeated subtraction situations. • How can you use a division algorithm different than the standard division algorithm to solve repeated subtraction situations? • How do divide using the standard division algorithm? • How do you decide where to start dividing? | |
| Content | <ul style="list-style-type: none"> • Using Objects to Divide : Division as Repeated Subtraction (Supplemental lesson 8.3B) • Division as Repeated Subtraction (supplemental lesson 8.3C) • Dividing 2-Digit by 1-Digit Numbers (Lesson 8.5) • Dividing 3-Digit by 1-Digit Numbers (Lesson 8.6) • Deciding Where to Start Dividing (Lesson 8.7) • Dividing 4-Digit by 1-Digit Numbers (Supplemental lesson 8.8A) | |
| Skills | <ul style="list-style-type: none"> • Use repeated subtraction to model division • Record division as repeated subtraction • Use place value to understand the algorithm of long division • Use the standard algorithm to divide a 2-digit number by a 1-digit number • Use the standard algorithm to divide 3-digit numbers by 1-digit numbers • Properly decide where to begin dividing • Estimate and find quotients for 4-digit dividends and 1-digit divisors | |
| Assessments | <ul style="list-style-type: none"> • Formative : Daily Quick Check; Topic Test; Anecdotal Records; Teacher Observation; Independent Practice; Problem Solving • Summative : Daily Spiral Review; Placement Test; Mid-Year Benchmark; End of Year Benchmark | |
| Interventions / differentiated instruction | <ul style="list-style-type: none"> • Error Intervention • Differentiated Instruction – Intervention, On-Level, and Advanced • Leveled Homework – Reteach, Practice, and Enrichment • Center Activities • Special Needs • Below Level • ELL Strategies | |
| Inter-disciplinary Connections | <ul style="list-style-type: none"> ▪ Altering word problems to reflect current classroom themes ▪ Theme based center activities ▪ Connecting reading strategies to problems solving | |
| Lesson resources / activities | <ul style="list-style-type: none"> • Pearsonsuccesnet.com • E-tools • Smartboard • Student Text • Workbook • Teacher Text | |

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| | <ul style="list-style-type: none"> Manipulatives |
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Common Core State Standards

Grade or Conceptual Category (HS only): Fourth grade

Domain (name and #): 4.OA Operations and Algebraic Thinking

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| Cluster: Use the four operations with whole numbers to solve problems | 4.OA.3 Solve multi-step word problems posed with whole numbers and having whole numbers 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. |
| Gain familiarity with factors and multiples | 4.OA.4 Find all factor pairs for a whole number in the range 1 – 100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given 1-digit number. Determine whether a given whole number in the range 1-100 is prime or composite. |

Domain (name and #): 4.NBT Numbers and Operations in Base Ten

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| Cluster: Generalize place value understanding for multi-digit whole numbers | 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 |
| Use place value understanding and properties of operations to perform multi-digit arithmetic | <p>4.NBT.5 Multiply a whole number of up to four digits by a 1-digit whole number, and multiply two 2-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.</p> <p>4.NBT.6 Find whole number quotients and remainders with up to 4-digit dividends and 1-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.</p> |

- Math Practices:**
- Make sense of problems and persevere in solving them
 - Reason abstractly and quantitatively
 - Construct viable arguments and critique the reasoning of others
 - Model with mathematics
 - Use appropriate tools strategically
 - Attend to precision
 - Look for and make use of structure
 - Look for and express regularity in repeated reasoning

21st Century Themes

| | | | | | | | |
|--|------------------|---|---|--|----------------|--|-----------------|
| | Global Awareness | X | Financial, Economic, Business, and Entrepreneurial Literacy | | Civic Literacy | | Health Literacy |
|--|------------------|---|---|--|----------------|--|-----------------|

21st Century Skills

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|--|---------------------------|---|---------------------------------------|---|---------------------------------|--|----------------------|
| | Creativity and Innovation | X | Critical Thinking and Problem Solving | X | Communication and Collaboration | | Information Literacy |
| | Media Literacy | | ICT Literacy | X | Life and Career Skills | | |

**Pine Hill Public Schools
Mathematics Curriculum**

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|--|--|--|
| Unit Title: Take lessons from topics 8 and 10 to create unit: Fraction Equivalence and Ordering | | Unit #: 9 |
| Course or Grade Level: 4 th grade | | Length of Time: 2 weeks, 2 days |
| Date Created: 01/18/12 | | BOE Approval Date: |
| Pacing | Week #1- Lessons 8.8 & 8.9, Week #2- Common Core Online Lesson 11.3, Lessons 10.4, Supplemental Lesson 10.5A, 10.7 (2 days total) Week #3-Lessons 10.7, 10.8 (2 days), 10.9, Review Week #4- Topic Test 2013-2014 Dates: Jan. 16 through Feb. 3 Daily Warm-up: Windows/Test Prep: Please make sure to include concepts from | |
| Essential Questions | <ul style="list-style-type: none"> • How can you use multiplication to find all of the factors of a number? • How can you sort numbers by their factors? • How can you find the multiples of a number? • How can you find two fractions that name the same part of a whole? • What does it mean for two fractions to be equivalent? • How can you use benchmark fractions to compare fractions? • How can you use equivalent fractions to compare and order fractions? • How do you write a good math explanation? | |
| Content | <ul style="list-style-type: none"> • Factors (Lesson 8.8) • Prime and Composite Numbers (Lesson 8.9) • Multiples (from Common Core Edition online lesson 11.3) • Equivalent Fractions (Lesson 10.4) • Number Lines and Equivalent Fractions (Supplemental Lesson 10.5A) • Comparing Fractions (Lesson 10.7) • Ordering Fractions (Lesson 10.8) • Problem Solving: Writing to Explain (Lesson 10.9) | |
| Skills | <ul style="list-style-type: none"> • Factor whole numbers • Identify prime and composite numbers • Find the multiples of a number • Use models and objects to show equivalent fractions • Use a number line to identify and write equivalent fractions • Use benchmark fractions to compare fractions with unlike denominators • Use common denominators and equivalent fractions to compare fractions with unlike denominators • Write to explain whether an answer is correct or not | |
| Assessments | <ul style="list-style-type: none"> • Formative : Daily Quick Check; Topic Test; Anecdotal Records; Teacher Observation; Independent Practice; Problem Solving • Summative : Daily Spiral Review; Placement Test; Mid-Year Benchmark; End of Year Benchmark | |
| Interventions / differentiated instruction | <ul style="list-style-type: none"> • Error Intervention • Differentiated Instruction – Intervention, On-Level, and Advanced • Leveled Homework – Reteach, Practice, and Enrichment • Center Activities • Special Needs • Below Level • ELL Strategies | |
| Inter-disciplinary Connections | <ul style="list-style-type: none"> ▪ Altering word problems to reflect current classroom themes ▪ Theme based center activities ▪ Connecting reading strategies to problems solving | |

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| Lesson resources / activities | <ul style="list-style-type: none"> • Pearsonsuccesnet.com • E-tools • Smartboard • Student Text • Workbook • Teacher Text • Manipulatives |
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Common Core State Standards

Grade or Conceptual Category (HS only): Fourth grade

Domain (name and #): 4.NF Numbers and Operations - Fractions

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| Cluster: Extend understanding of fraction equivalence and ordering | <p>4.NF.1 Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principal to recognize and generate equivalent fractions.</p> <p>4.NF.2 Compare two fractions with different numerators and different denominators e.g. by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$ and justify the conclusions, e.g. by using a visual fraction model</p> |
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Domain (name and #): 4.OA Operations and Algebraic Thinking

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| Gain familiarity with factors and multiples | <p>4.OA.4 Find all factor pairs for a whole number in the range 1 – 100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given 1-digit number. Determine whether a given whole number in the range 1-100 is prime or composite</p> |
| Generate and Analyze Patterns | <p>4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.</p> |

- Math Practices:**
- Make sense of problems and persevere in solving them
 - Reason abstractly and quantitatively
 - Construct viable arguments and critique the reasoning of others
 - Model with mathematics
 - Use appropriate tools strategically
 - Attend to precision
 - Look for and make use of structure
 - Look for and express regularity in repeated reasoning

21st Century Themes

| | | | | | | |
|------------------|---|---|--|----------------|--|-----------------|
| Global Awareness | X | Financial, Economic, Business, and Entrepreneurial Literacy | | Civic Literacy | | Health Literacy |
|------------------|---|---|--|----------------|--|-----------------|

21st Century Skills

| | | | | | | |
|---------------------------|---|---------------------------------------|---|---------------------------------|--|----------------------|
| Creativity and Innovation | X | Critical Thinking and Problem Solving | X | Communication and Collaboration | | Information Literacy |
| Media Literacy | | ICT Literacy | X | Life and Career Skills | | |

**Pine Hill Public Schools
Mathematics Curriculum**

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|---|--|--|
| Unit Title: Take lessons from topics 10,11, & Common Core Online topic 12 to create unit: Adding and Subtracting Fractions and Mixed Numbers with Like Denominators | | Unit #: 10 |
| Course or Grade Level: 4 th grade | | Length of Time: 2 weeks, 3 days |
| Date Created: 01/18/12 | | BOE Approval Date: |
| Pacing | Week #1- Common Core Online Lessons 12.1, 12.2, 12.3 & 12.4 Week #2- Lessons 12.5, 10.6, Supplemental Lessons 11.5A & 11.5B Week #3- Supplemental Lessons 11.5C & 11.1A., Review Week #4- Topic Test 2013-2014 Dates: Feb. 4 through Feb. 24 Daily Warm-up: Windows/Test Prep | |
| Essential Questions | <ul style="list-style-type: none"> • How can you use fraction strips to add fractions? • How can you add fractions with like denominators? • How can you use fraction strips to subtract fractions? • How can you subtract fractions with like denominators? • How can you use a number line to add and subtract fractions? • How can you name whole regions and parts of a region in two ways? • How do you use models to add and subtract mixed numbers? • How can you add and subtract mixed numbers? • How can we use addition to represent a fraction in a variety of ways? • What operation is needed to solve a problem with fractions? | |
| Content | <ul style="list-style-type: none"> • Modeling Addition of Fractions (Common Core Online Edition Lesson 12.1) • Adding Fractions with Like Denominators (Common Core Online Edition Lesson 12.2) • Modeling Subtraction of Fractions (Common Core Online Edition Lesson 12.3) • Subtracting Fractions with Like Denominators (Common Core Online Edition Lesson 12.4) • Adding and Subtracting on the Number Line (Common Core Online Edition Lesson 12.5) • Improper Fractions and Mixed Numbers (Lesson 10.6) • Modeling Addition and Subtraction of Mixed Numbers (Supplemental Lesson 11.5A) • Adding Mixed Numbers (Supplemental Lesson 11.5B) • Subtracting Mixed Numbers (Supplemental Lesson 11.5C) • Decomposing and Composing Fractions (Supplemental Lesson 11.1A) | |
| Skills | <ul style="list-style-type: none"> • Use models to add fractions with like denominators • Use computational procedures to add fractions with like denominators and solve problems • Use models to subtract fractions with like denominators • Use computational procedures to subtract fractions with like denominators and solve problems • Use the number line to add and subtract fractions with like denominators • Identify and write mixed numbers as improper fractions and improper fractions as mixed numbers • Use models to add and subtract mixed numbers • Use models and computational procedures to add mixed numbers • Use models and computational procedures to subtract mixed numbers • Decompose fractions and represent them as compositions of fractions in a variety of ways • Draw a picture and write an equation to solve a problem | |
| Assessments | <ul style="list-style-type: none"> • Formative : Daily Quick Check; Topic Test; Anecdotal Records; Teacher Observation; Independent Practice; Problem Solving • Summative : Daily Spiral Review; Placement Test; Mid-Year Benchmark; End of Year Benchmark | |

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| Interventions / differentiated instruction | <ul style="list-style-type: none"> • Error Intervention • Differentiated Instruction – Intervention, On-Level, and Advanced • Leveled Homework – Reteach, Practice, and Enrichment • Center Activities • Special Needs • Below Level • ELL Strategies |
| Inter-disciplinary Connections | <ul style="list-style-type: none"> ▪ Altering word problems to reflect current classroom themes ▪ Theme based center activities ▪ Connecting reading strategies to problems solving |
| Lesson resources / activities | <ul style="list-style-type: none"> • Pearsonsuccesnet.com • E-tools • Smartboard • Student Text • Workbook • Teacher Text • Manipulatives |

Common Core State Standards

Grade or Conceptual Category (HS only): Fourth grade

Domain (name and #): 4.NF Numbers and Operations - Fractions

Cluster: Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers

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

c. Add and subtract mixed numbers with like denominators, e.g. by replacing each mixed number with an equivalent fractions, 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

Math Practices:

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

21st Century Themes

| | | | | | | |
|------------------|---|---|--|----------------|--|-----------------|
| Global Awareness | X | Financial, Economic, Business, and Entrepreneurial Literacy | | Civic Literacy | | Health Literacy |
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21st Century Skills

| | | | | | | |
|---------------------------|---|---------------------------------------|---|---------------------------------|--|----------------------|
| Creativity and Innovation | X | Critical Thinking and Problem Solving | X | Communication and Collaboration | | Information Literacy |
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| | Media Literacy | | ICT Literacy | X | Life and Career Skills |
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**Pine Hill Public Schools
Mathematics Curriculum**

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| Unit Title: Take lessons from topics 11 & 12 to create unit: Extending Fraction Concepts | | Unit #: 11 |
| Course or Grade Level: 4 th grade | | Length of Time: 2 weeks, 1 day |
| Date Created: 01/18/12 | | BOE Approval Date: |
| Pacing | Week #1- Supplemental Lesson 11.5D, 11.5E & 11.5F, Lesson 12.3 Week #2 Lesson 12.4 & Supplemental Lesson 12.5A, Lessons 12.1, 12.2, 12.6 Week #3- Review & Topic Test 2013-2014 Dates: Feb. 25 through Mar. 11 Daily Warm-up: Windows/Test Prep: Please make sure to include concepts from lesson | |
| Essential Questions | <ul style="list-style-type: none"> • How can you describe a fraction using a unit fraction? • How can you find the product of a fraction multiplied by a whole number? • When do you need to multiply a fraction by a whole number? • How can you write a fraction as a decimal? • How can you locate points for fractions and decimals on a number line? • How can you use equivalent fractions to change a fraction to a decimal? • What are some ways to represent decimals? • How do you compare decimals? • How can you draw a picture to solve a problem? | |
| Content | <ul style="list-style-type: none"> • Fractions as Multiples of Unit Fractions : Using Models (Supplemental Lesson 11.5D) • Multiplying a Fraction by a Whole Number : Using Models (Supplemental Lesson 11.5E) • Multiplying a Fraction by a Whole Number : Using Symbols (Supplemental Lesson 11.5F) • Fractions and Decimals (Lesson 12.3) • Fractions and Decimals on a Number Line (Lesson 12.4) • Equivalent Fractions and Decimals (Supplemental Lesson 12.5A) • Decimal Place Value (Lesson 12.1) • Comparing and Ordering Decimals (Lesson 12.2) • Problem Solving: Draw a Picture (Lesson 12.6) | |
| Skills | <ul style="list-style-type: none"> • Use unit fractions and multiplication to describe fractions that are multiples of the unit fractions • Multiply a fraction by a whole number using models • Multiply a whole number and a fraction to solve problems • Understand how to write fractions as decimals and decimals as fractions • Learn to locate and name fractions and decimals on a number line • Understand how to use equivalent fractions to write fractions as decimals • Use models and place value charts to represent decimals to hundredths. Read and write decimals in expanded, standard, and word form • Use models and place value charts to compare decimals to hundredths. Use greater-than and less-than symbols to order numbers • Solve problems using the strategy Draw a Picture. | |
| Assessments | <ul style="list-style-type: none"> • Formative : Daily Quick Check; Topic Test; Anecdotal Records; Teacher Observation; Independent Practice; Problem Solving • Summative : Daily Spiral Review; Placement Test; Mid-Year Benchmark; End of Year Benchmark | |
| Interventions / differentiated instruction | <ul style="list-style-type: none"> • Error Intervention • Differentiated Instruction – Intervention, On-Level, and Advanced • Leveled Homework – Reteach, Practice, and Enrichment • Center Activities • Special Needs • Below Level | |

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| | <ul style="list-style-type: none"> • ELL Strategies |
| Inter-disciplinary Connections | <ul style="list-style-type: none"> ▪ Altering word problems to reflect current classroom themes ▪ Theme based center activities ▪ Connecting reading strategies to problems solving |
| Lesson resources / activities | <ul style="list-style-type: none"> • Pearsonsuccesnet.com • E-tools • Smartboard • Student Text • Workbook • Teacher Text • Manipulatives |
| Common Core State Standards | |
| Grade or Conceptual Category (HS only): Fourth grade | |
| Domain (name and #): 4.NF Numbers and Operations - Fractions | |
| Cluster: Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers | #. Standard: |
| | 4.NF.3 Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$ |
| | 4.NF.3a Understand addition and subtraction of fractions as joining and separating parts referring to the same whole |
| | 4.NF.3b 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 |
| | 4.NF.3c 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 |
| | 4.NF.3d Solve word problems involving addition and subtraction of fractions, referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem |
| | 4.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number |
| | 4.NF.4a Understand a fraction a/b as a multiple of $1/b$. |
| | 4.NF.4b Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number |
| | 4.NF.4c 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 |
| Cluster: Understand decimal notation for fractions, and compare decimal fractions | 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 |
| | 4.NF.6 Use decimal notation for fractions with denominators 10 or 100. |
| | 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 |
| Domain (name and #): 4.MD Measurement and Data | |
| Cluster: Solve problems involving measurement and | 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. <i>For example know that 1 ft is 12 times as long as 1 in. Express the length of a</i> |

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| conversion of measurements from a larger unit to a smaller unit | <p>4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1,12) (2,24), (3,36), ...</p> <p>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</p> |
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Math Practices:

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

21st Century Themes

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| Global Awareness | X | Financial, Economic, Business, and Entrepreneurial Literacy | | Civic Literacy | | Health Literacy |
|------------------|---|---|--|----------------|--|-----------------|

21st Century Skills

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|---------------------------|---|---------------------------------------|---|---------------------------------|--|----------------------|
| Creativity and Innovation | X | Critical Thinking and Problem Solving | X | Communication and Collaboration | | Information Literacy |
| Media Literacy | | ICT Literacy | X | Life and Career Skills | | |

**Pine Hill Public Schools
Mathematics Curriculum**

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|--|---|--|
| Unit Title: Take lessons from topic 16 to create unit: Measurement Units and Conversions | | Unit #: 12 |
| Course or Grade Level: 4 th grade | | Length of Time: 2 weeks, 3 days |
| Date Created: 01/18/12 | | BOE Approval Date: |
| Pacing | Week #1-Lessons 16.1, 16.2, & 16.3 Week #2- Lessons 16.4, 16.5, 16.6, 16.7, & 16.8 Week #3- Lesson 16.9, Supplemental Lesson 16.12A, Lesson 16.12, Review & Topic Test 2013-2014 Dates: Mar. 12 through March 28 Daily Warm-up: Windows/Test Prep | |
| Essential Questions | <ul style="list-style-type: none"> • How do you estimate and measure length? • How do you measure capacity with customary units? • How do you measure weight? • How do you change customary units? • How do you estimate and measure length using metric units? • How do you measure capacity with metric units? • How do you measure mass? • How do you change metric units? • How do you compare units of time? • How can the relationship between quantities in a measurement problem be represented using a diagram that can help to solve the problem? • How can you work backward to solve a problem? | |
| Content | <ul style="list-style-type: none"> • Using Customary Units of Length (Lesson 16.1) • Customary Units of Capacity (Lesson 16.2) • Units of Weight (Lesson 16.3) • Changing Customary Units (Lesson 16.4) • Using Metric Units of Length (Lesson 16.5) • Metric Units of Capacity (Lesson 16.6) • Units of Mass (Lesson 16.7) • Changing Metric Units (Lesson 16.8) • Units of Time (Lesson 16.9) • Solving Measurement Problems (Supplemental Lesson 16.12a) • Problem Solving : Work Backward (Lesson 16.12) | |
| Skills | <ul style="list-style-type: none"> • Estimate and measure length by choosing the most appropriate unit of length • Estimate fluently with customary capacity units (cups, pints, quarts, and gallons) • Compare the relative sizes of capacity measurements • Estimate fluently and measure with units of weight • Convert between customary units • Estimate and measure length to the nearest centimeter, and choose the most appropriate metric unit for measuring length • Estimate fluently with milliliters and liters • Measure capacity using these metric units • Estimate and measure with units of mass – grams and kilograms • Convert between metric units • Compare several different units of time and freely convert from one unit of time to another • Use diagrams to show data and analyze how the quantities are related to solve real-world measurement problems • Solve problems that require finding the original times, measurements, or quantities that led to a result that is given | |

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| Assessments | <ul style="list-style-type: none"> Formative : Daily Quick Check; Topic Test; Anecdotal Records; Teacher Observation; Independent Practice; Problem Solving Summative : Daily Spiral Review; Placement Test; Mid-Year Benchmark; End of Year Benchmark |
| Interventions / differentiated instruction | <ul style="list-style-type: none"> Error Intervention Differentiated Instruction – Intervention, On-Level, and Advanced Leveled Homework – Reteach, Practice, and Enrichment Center Activities Special Needs Below Level ELL Strategies |
| Inter-disciplinary Connections | <ul style="list-style-type: none"> Altering word problems to reflect current classroom themes Theme based center activities Connecting reading strategies to problems solving |
| Lesson resources / activities | <ul style="list-style-type: none"> Pearsonsuccessnet.com E-tools Smartboard Student Text Workbook Teacher Text Manipulatives |

Common Core State Standards

Grade or Conceptual Category (HS only): Fourth grade

Domain (name and #): 4.MD Measurement and Data

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| Cluster: Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit | #. Standard: |
| | 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. |
| | 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 |

Math Practices:

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

21st Century Themes

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|------------------|---|---|--|----------------|--|-----------------|
| Global Awareness | X | Financial, Economic, Business, and Entrepreneurial Literacy | | Civic Literacy | | Health Literacy |
|------------------|---|---|--|----------------|--|-----------------|

21st Century Skills

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|---------------------------|---|---------------------------------------|---|---------------------------------|--|----------------------|
| Creativity and Innovation | X | Critical Thinking and Problem Solving | X | Communication and Collaboration | | Information Literacy |
| Media Literacy | | ICT Literacy | X | Life and Career Skills | | |

**Pine Hill Public Schools
Mathematics Curriculum**

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|---|---|--|
| Unit Title: Take lessons from topic 9 to create unit: Lines, Angles, and Shapes | | Unit #: 13 |
| Course or Grade Level: 4th grade | | Length of Time: 2 weeks, 3 days |
| Date Created: 01/18/12 | | BOE Approval Date: |
| Pacing | <p>Week #1-Lessons 9.1, 9.2, Supplemental Lessons 9.3A & 9.3B, Lesson 9.3 Week #2- Supplemental Lesson 9.4A, Lessons 9.4, 9.5, 9.6 & 19.5 Week #3- Lesson 9.7, Review & Topic Test 2013-2014 Dates: Mar. 31 through April 17</p> <p>Daily Warm-up: Windows/Test Prep: Please make sure to include concepts from lesson 19.5 <i>Line Symmetry</i>. Line symmetry is included under standard 4.G.3</p> | |
| Essential Questions | <ul style="list-style-type: none"> • What are some important geometric names for lines? • What geometric terms describe types of angles? • How do you find the measure of an angle using equivalent fractions? • How are angles measured? • How can you draw an angle? • How can you add and subtract to find unknown angle measures? • How do you identify polygons? • How can you classify triangles? • How can you classify quadrilaterals? • How can you test generalizations? | |
| Content | <ul style="list-style-type: none"> • Points, Lines, and Planes (Lesson 9.1) • Line Segments, Rays, and Angles (Lesson 9.2) • Understanding Angles and Unit Angles (Supplemental Lesson 9.3A) • Measuring with Unit Angles (Supplemental Lesson 9.3B) • Measuring Angles (Lesson 9.3) • Adding and Subtracting Angle Measures (Supplemental Lesson 9.4A) • Polygons (Lesson 9.4) • Triangles (Lesson 9.5) • Quadrilaterals (Lesson 9.6) • Line Symmetry (Lesson 19.5) • Problem Solving: Make and Test Generalizations (Lesson 9.7) | |
| Skills | <ul style="list-style-type: none"> • Identify and describe points, lines, and planes • Learn geometric terms to describe parts of lines and types of angles • Use unit angles and fractions of a circle to find angle measures • Use a smaller angle to measure a larger angle by repeating the unit • Measure and draw angles • Find unknown angle measures by adding and subtracting • Identify polygons • Identify and classify triangles • Identify quadrilaterals • Solve problems by making and testing generalizations | |
| Assessments | <ul style="list-style-type: none"> • Formative : Daily Quick Check; Topic Test; Anecdotal Records; Teacher Observation; Independent Practice; Problem Solving • Summative : Daily Spiral Review; Placement Test; Mid-Year Benchmark; End of Year Benchmark | |
| Interventions / differentiated instruction | <ul style="list-style-type: none"> • Error Intervention • Differentiated Instruction – Intervention, On-Level, and Advanced • Leveled Homework – Reteach, Practice, and Enrichment • Center Activities • Special Needs | |

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| | <ul style="list-style-type: none"> • Below Level • ELL Strategies |
| Inter-disciplinary Connections | <ul style="list-style-type: none"> ▪ Altering word problems to reflect current classroom themes ▪ Theme based center activities ▪ Connecting reading strategies to problems solving |
| Lesson resources / activities | <ul style="list-style-type: none"> • Pearsonsuccesnet.com • E-tools • Smartboard • Student Text • Workbook • Teacher Text • Manipulatives |
| Common Core State Standards | |
| Grade or Conceptual Category (HS only): Fourth grade | |
| Domain (name and #): 4.MD Measurement and Data | |
| Cluster: Geometric measurement: understand concepts of angle and measure angle | 4.MD.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement <ul style="list-style-type: none"> a. An angle is measured with reference to a circle with its center at the common endpoint of the rays by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “1-degree angle,” and can be used to measure angles b. An angle that turns through n 1-degree angles is said to have an angle measure of n degrees |
| | 4.MD.6 Measure angles in whole number degrees using a protractor. Sketch angles of specified measure. |
| | 4.MD.7 Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measure 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. |
| Domain (name and #): 4.G Geometry | |
| Cluster: Draw and identify lines and angles, and classify shapes by properties of their lines and angles | 4.G.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in 2-dimensional figures. |
| | 4.G.2 Classify 2-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category and identify right triangles. |
| Math Practices: <ul style="list-style-type: none"> • Make sense of problems and persevere in solving them • Reason abstractly and quantitatively • Construct viable arguments and critique the reasoning of others • Model with mathematics • Use appropriate tools strategically • Attend to precision • Look for and make use of structure | |

- Look for and express regularity in repeated reasoning

21st Century Themes

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|--|------------------|---|---|--|----------------|--|-----------------|
| | Global Awareness | X | Financial, Economic, Business, and Entrepreneurial Literacy | | Civic Literacy | | Health Literacy |
|--|------------------|---|---|--|----------------|--|-----------------|

21st Century Skills

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|--|------------------------------|---|--|---|------------------------------------|--|----------------------|
| | Creativity and Innovation | X | Critical Thinking and Problem Solving | X | Communication and Collaboration | | Information Literacy |
| | Media Literacy | | ICT Literacy | X | Life and Career Skills | | |

**Pine Hill Public Schools
Mathematics Curriculum**

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|---|--|-------------------------------|
| Unit Title: Take lessons from topic 14 to create unit: Area and Perimeter | | Unit #: 14 |
| Course or Grade Level: 4th grade | | Length of Time: 3 days |
| Date Created: 01/18/12 | | BOE Approval Date: |
| Pacing | <p>Week #1-Lesson 14.2 & 14.6, Supplemental Lesson 14.7A (No topic test scheduled. Please use formative assessment to assess these skills.) 2013-2014 Dates: Apr. 28 through April 30</p> <p>Daily Warm-up: Windows/Test Prep</p> | |
| Essential Questions | <ul style="list-style-type: none"> • How do you measure the amount of space a figure covers? • How do you find the distance around an object? • How can perimeter and area formulas be used to solve problems? | |
| Content | <ul style="list-style-type: none"> • Areas of Squares and Rectangles (Lesson 14.2) • Perimeter (Lesson 14.6) • Solving Perimeter and Area Problems (Supplemental Lesson 14.7A) | |
| Skills | <ul style="list-style-type: none"> • Find the area of rectangles by counting square units or by using a formula • Find the perimeter of a polygon by adding the lengths of the sides or by using a formula • Use the formulas for perimeter and area of rectangles to solve real-world problems | |
| Assessments | <ul style="list-style-type: none"> • Formative: Daily Quick Check; Topic Test; Anecdotal Records; Teacher Observation; Independent Practice; Problem Solving • Summative : Daily Spiral Review; Placement Test; Mid-Year Benchmark; End of Year Benchmark | |
| Interventions / differentiated instruction | <ul style="list-style-type: none"> • Error Intervention • Differentiated Instruction – Intervention, On-Level, and Advanced • Leveled Homework – Reteach, Practice, and Enrichment • Center Activities • Special Needs • Below Level • ELL Strategies | |
| Inter-disciplinary Connections | <ul style="list-style-type: none"> ▪ Altering word problems to reflect current classroom themes ▪ Theme based center activities ▪ Connecting reading strategies to problems solving | |
| Lesson resources / activities | <ul style="list-style-type: none"> • Pearsonsuccesnet.com • E-tools • Smartboard • Student Text • Workbook • Teacher Text • Manipulatives | |
| Common Core State Standards | | |
| Grade or Conceptual Category (HS only): Fourth grade | | |
| Domain (name and #): 4.MD Measurement and Data | | |
| | 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 | |

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| | two-column table. |
| | 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 |

Domain (name and #): 4.OA Operations and Algebraic Thinking

Cluster:
Use the four operations with whole numbers to solve problems

#. Standard:
4.OA.3 Solve multi-step word problems posed with whole numbers and having whole number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Math Practices:

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

21st Century Themes

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|------------------|---|---|--|----------------|--|-----------------|
| Global Awareness | X | Financial, Economic, Business, and Entrepreneurial Literacy | | Civic Literacy | | Health Literacy |
|------------------|---|---|--|----------------|--|-----------------|

21st Century Skills

| | | | | | | |
|---------------------------|---|---------------------------------------|---|---------------------------------|--|----------------------|
| Creativity and Innovation | X | Critical Thinking and Problem Solving | X | Communication and Collaboration | | Information Literacy |
| Media Literacy | | ICT Literacy | X | Life and Career Skills | | |

**Pine Hill Public Schools
Mathematics Curriculum**

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|--|---|--------------------------------|
| Unit Title: Take lessons from topic 6 to create unit: Patterns and Expressions/ also teach Supplemental Lesson 17.4A Solving Problems Involving Line Plots | | Unit #: 15 |
| Course or Grade Level: 4 th grade | | Length of Time: 3 weeks |
| Date Created: 01/18/12 | | BOE Approval Date: |
| Pacing | Week #1-Lessons 6.1 & 6.2 Week #2-Lessons 6.3, & 6.4, Supplemental Lesson 17.4A, NJ ASK Review 2013-2014 Dates: May 1 through May 9 NJ ASK Testing: May 12 through May 16 Daily Warm-up: Windows/Test Prep | |
| Essential Questions | <ul style="list-style-type: none"> • How can you use expressions with variables? • How can you find a rule and write an addition and subtraction expression? • How can you find a rule and write a multiplication and division expression? • How can you use objects and reasoning to solve a problem? • How can you use line plots to solve problems? | |
| Content | <ul style="list-style-type: none"> • Variables and Expressions (Lesson 6.1) • Addition and Subtraction Expressions (Lesson 6.2) • Multiplication and Division Expressions (Lesson 6.3) • Problem Solving: Use Objects and Reasoning (Lesson 6.4) • Solving Problems Involving Line Plots (Supplemental Lesson 17.4A) | |
| Skills | <ul style="list-style-type: none"> • Understand how to work with variables in a table • Study completed tables to determine a rule and write an expression • Solve problems by using objects to show the action • Construct line plots using given data and use the line plot to answer questions about a given data set | |
| Assessments | <ul style="list-style-type: none"> • Formative : Daily Quick Check; Topic Test; Anecdotal Records; Teacher Observation; Independent Practice; Problem Solving • Summative : Daily Spiral Review; Placement Test; Mid-Year Benchmark; End of Year Benchmark | |
| Interventions / differentiated instruction | <ul style="list-style-type: none"> • Error Intervention • Differentiated Instruction – Intervention, On-Level, and Advanced • Leveled Homework – Reteach, Practice, and Enrichment • Center Activities • Special Needs • Below Level • ELL Strategies | |
| Inter-disciplinary Connections | <ul style="list-style-type: none"> ▪ Altering word problems to reflect current classroom themes ▪ Theme based center activities ▪ Connecting reading strategies to problems solving | |
| Lesson resources / activities | <ul style="list-style-type: none"> • Pearsonsuccessnet.com • E-tools • Smartboard • Student Text • Workbook • Teacher Text • Manipulatives | |

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Common Core State Standards

Grade or Conceptual Category (HS only): Fourth grade

Domain (name and #): 4.OA Operations and Algebraic Thinking

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| Cluster: Use the four operations with whole numbers to solve problems | 4.OA.3 Solve multi-step word problems posed with whole numbers and having whole numbers 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. |
| Generate and analyze patterns | 4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself, <i>For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</i> |

- Math Practices:**
- Make sense of problems and persevere in solving them
 - Reason abstractly and quantitatively
 - Construct viable arguments and critique the reasoning of others
 - Model with mathematics
 - Use appropriate tools strategically
 - Attend to precision
 - Look for and make use of structure
 - Look for and express regularity in repeated reasoning

21st Century Themes

| | | | | | | | |
|--|------------------|---|---|--|----------------|--|-----------------|
| | Global Awareness | X | Financial, Economic, Business, and Entrepreneurial Literacy | | Civic Literacy | | Health Literacy |
|--|------------------|---|---|--|----------------|--|-----------------|

21st Century Skills

| | | | | | | | |
|--|---------------------------|---|---------------------------------------|---|---------------------------------|--|----------------------|
| | Creativity and Innovation | X | Critical Thinking and Problem Solving | X | Communication and Collaboration | | Information Literacy |
| | Media Literacy | | ICT Literacy | X | Life and Career Skills | | |

**Pine Hill Public Schools
Mathematics Curriculum**

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|---|---|---------------------------------------|
| Unit Title: Equations (Topic 18) | | Unit #: 16 |
| Course or Grade Level: 4 th grade | | Length of Time: 1 week, 2 days |
| Date Created: 01/18/12 | | BOE Approval Date: |
| Pacing | Week #1-Lessons 18.1, 18.2, 18.3, 18.4, & 18.5 Week #2-Review & Test 2013-2014 Dates: May 19 through May 28 Daily Warm-up: Windows/Test Prep | |
| Essential Questions | <ul style="list-style-type: none"> • How can you change both sides of an equation so that it stays true? • How can you use addition and subtraction to solve equations? • How can you use multiplication and division to solve equations? • How can you solve an inequality? • How can you solve a problem working backward? | |
| Content | <ul style="list-style-type: none"> • Equal or Not Equal (Lesson 18.1) • Solving Addition & Subtraction Equations (Lesson 18.2) • Solving Multiplication & Division Equations (Lesson 18.3) • Understanding Inequalities (Lesson 18.4) • Problem Solving : Work Backward (Lesson 18.5) | |
| Skills | <ul style="list-style-type: none"> • Learn and understand the properties of equality • Learn and understand how to use addition and subtraction to solve equations • Learn and understand how to use multiplication and division to solve equations • Solve an inequality by finding all the values that make it true • Solve problems that require finding the original times, measurements, or quantities that led to a result that is given | |
| Assessments | <ul style="list-style-type: none"> • Formative : Daily Quick Check; Topic Test; Anecdotal Records; Teacher Observation; Independent Practice; Problem Solving • Summative : Daily Spiral Review; Placement Test; Mid-Year Benchmark; End of Year Benchmark | |
| Interventions / differentiated instruction | <ul style="list-style-type: none"> • Error Intervention • Differentiated Instruction – Intervention, On-Level, and Advanced • Leveled Homework – Reteach, Practice, and Enrichment • Center Activities • Special Needs • Below Level • ELL Strategies | |
| Inter-disciplinary Connections | <ul style="list-style-type: none"> ▪ Altering word problems to reflect current classroom themes ▪ Theme based center activities ▪ Connecting reading strategies to problems solving | |
| Lesson resources / activities | <ul style="list-style-type: none"> • Pearsonsuccessnet.com • E-tools • Smartboard • Student Text • Workbook • Teacher Text • Manipulatives | |

Common Core State Standards

Grade or Conceptual Category (HS only): Fourth grade

Domain (name and #): 4.OA Operations and Algebraic Thinking

Cluster: Use the four operations with whole numbers to solve problems

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.

Math Practices:

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

21st Century Themes

| | | | | | | | |
|--|------------------|---|---|--|----------------|--|-----------------|
| | Global Awareness | X | Financial, Economic, Business, and Entrepreneurial Literacy | | Civic Literacy | | Health Literacy |
|--|------------------|---|---|--|----------------|--|-----------------|

21st Century Skills

| | | | | | | | |
|--|---------------------------|---|---------------------------------------|---|---------------------------------|--|----------------------|
| | Creativity and Innovation | X | Critical Thinking and Problem Solving | X | Communication and Collaboration | | Information Literacy |
| | Media Literacy | | ICT Literacy | X | Life and Career Skills | | |

**Pine Hill Public Schools
Mathematics Curriculum**

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|--|---|--|
| Unit Title: Operations with Decimals- Topic 13 (Prepares students for Fifth Grade: no longer in the fourth grade standards) | | Unit #: 17 |
| Course or Grade Level: 4 th grade | | Length of Time: 2 weeks, 2 days |
| Date Created: 01/18/12 | | BOE Approval Date: |
| Pacing | Week #1-Lessons 13.1 & 13.2 Week #2-Lessons 13.3, 13.4, 13.5, 13.6 & 13.7 Week #3- Review & Test, End-of-year Test 2013-2014 Dates: May. 29 through June 13 Daily Warm-up: Windows/Test Prep | |
| Essential Questions | <ul style="list-style-type: none"> • How do you round a decimal? • How can you estimate sums and differences of decimals? • How do you use a grid model to add and subtract decimals? • How can you subtract decimal numbers? • How do you multiply a decimal by a whole number? • How do you divide a decimal by a whole number? • How can you solve a problem by trying, checking, and revising your work? | |
| Content | <ul style="list-style-type: none"> • Rounding Decimals (Lesson 13.1) • Estimating Sums & Differences of Decimals (Lesson 13.2) • Modeling Addition & Subtraction of Decimals (Lesson 13.3) • Adding & Subtracting Decimals (Lesson 13.4) • Multiplying a Whole Number by a Decimal (Lesson 13.5) • Dividing a Decimal by a Whole Number (Lesson 13.6) • Problem Solving : Try, Check, & Revise (Lesson 13.7) | |
| Skills | <ul style="list-style-type: none"> • Round two-place decimal numbers to one place or the nearest whole number • Round decimal numbers to estimate sums and differences • Add and subtract decimals in tenths and hundredths using models • Estimate and compute the sum or difference of whole numbers and positive decimals to two places • Multiply a decimal number by a whole number • Divide a decimal number by a whole number • Try a solution, check the solution, and, if not correct, revise the solution, following the same method until the correct solution is determined via checking | |
| Assessments | <ul style="list-style-type: none"> • Formative : Daily Quick Check; Topic Test; Anecdotal Records; Teacher Observation; Independent Practice; Problem Solving • Summative : Daily Spiral Review; Placement Test; Mid-Year Benchmark; End of Year Benchmark | |
| Interventions / differentiated instruction | <ul style="list-style-type: none"> • Error Intervention • Differentiated Instruction – Intervention, On-Level, and Advanced • Leveled Homework – Reteach, Practice, and Enrichment • Center Activities • Special Needs • Below Level • ELL Strategies | |

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|--|---|---|---|---|---------------------------------|--|----------------------|
| Inter-disciplinary Connections | <ul style="list-style-type: none"> ▪ Altering word problems to reflect current classroom themes ▪ Theme based center activities ▪ Connecting reading strategies to problems solving | | | | | | |
| Lesson resources / activities | <ul style="list-style-type: none"> • Pearsonsuccesnet.com • E-tools • Smartboard • Student Text • Workbook • Teacher Text • Manipulatives | | | | | | |
| Common Core State Standards | | | | | | | |
| Grade or Conceptual Category (HS only): Fifth grade | | | | | | | |
| Domain (name and #): 5.NBT Numbers and Operations in Base Ten | | | | | | | |
| Cluster: Perform operations with multi-digit whole numbers and with decimals to hundredths | 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 | | | | | | |
| Math Practices: | | | | | | | |
| <ul style="list-style-type: none"> • Make sense of problems and persevere in solving them • Reason abstractly and quantitatively • Construct viable arguments and critique the reasoning of others • Model with mathematics • Use appropriate tools strategically • Attend to precision • Look for and make use of structure • Look for and express regularity in repeated reasoning | | | | | | | |
| <u>21st Century Themes</u> | | | | | | | |
| | Global Awareness | X | Financial, Economic, Business, and Entrepreneurial Literacy | | Civic Literacy | | Health Literacy |
| <u>21st Century Skills</u> | | | | | | | |
| | Creativity and Innovation | X | Critical Thinking and Problem Solving | X | Communication and Collaboration | | Information Literacy |
| | Media Literacy | | ICT Literacy | X | Life and Career Skills | | |

Revised: Revised: September 24, 2014