

INNOVATION IN EDUCATION

Common Core State Standards

August 2010



DESTINATION
MATH



HOUGHTON MIFFLIN
LEARNING TECHNOLOGY

Destination Math
Aligned to
Common Core State Standards

Common Core State Standards	Destination Math
Grade Five	
5.OA: Operations and Algebraic Thinking	
Write and interpret numerical expressions.	Course IV: <ul style="list-style-type: none"> Module: Integers and Order of Operations Unit: Order of Operations Session: Using Grouping Symbols
Analyze patterns and relationships.	
1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	Course IV: <ul style="list-style-type: none"> Module: Integers and Order of Operations Unit: Order of Operations Session: Using Grouping Symbols
3. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.	Course III: <ul style="list-style-type: none"> Module: Geometry Unit: Coordinate Geometry and Algebra Session: The Coordinate Plane Module: Data Analysis and Probability Unit: Modeling and Displaying Events Session: Displaying and Analyzing Data
5.NBT: Number and Operations in Base Ten	
Understand the place value system.	
1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $1/10$ of what it represents in the place to its left.	Course III: <ul style="list-style-type: none"> Module: Numbers and Number Sense Unit: Large and Small Numbers Session: Whole Numbers to One Million Module: Decimals Unit: Introduction Session: Tenths, Hundredths, and Thousandths
2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	Course III: <ul style="list-style-type: none"> Module: Numbers and Number Sense Unit: Large and Small Numbers Session: Whole Numbers to One Million Module: Decimals Unit: Introduction Session: Tenths, Hundredths, and Thousandths Course IV: <ul style="list-style-type: none"> Module: Decimals Unit: Multiplying Decimals Session: Multiplying Decimals by Powers of 10 Course V: <ul style="list-style-type: none"> Module: Radicals & Exponents Unit: Introduction to Scientific Notation Session: Writing Numbers Using Scientific Notation
3. Read, write, and compare decimals to thousandths.	
a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.	Course III: <ul style="list-style-type: none"> Module: Decimals Unit: Introduction Session: Tenths, Hundredths, and Thousandths
b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.	Course III: <ul style="list-style-type: none"> Module: Decimals Unit: Introduction Session: Ordering and Rounding
4. Use place value understanding to round decimals to any place.	Course III:

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	<ul style="list-style-type: none"> Module: Decimals Unit: Introduction Session: Ordering and Rounding
Perform operations with multi-digit whole numbers and with decimals to hundredths.	
5. Fluently multiply multi-digit whole numbers using the standard algorithm.	Course III: <ul style="list-style-type: none"> Module: Operations with Numbers Unit: Multiplication and Division of Whole Numbers Session: Two-Digit Multipliers
6. Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	Course III: <ul style="list-style-type: none"> Module: Operations with Numbers Unit: Multiplication and Division of Whole Numbers Session: Introduction to Long Division Module: Operations with Numbers Unit: Multiplication and Division of Whole Numbers Session: Two-Digit Divisors
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.	Course III: <ul style="list-style-type: none"> Module: Decimals Unit: Addition and Subtraction Session: Adding Decimals Module: Decimals Unit: Addition and Subtraction Session: Subtracting Decimals Module: Decimals Unit: Multiplication and Division Session: Multiplying Decimals Module: Decimals Unit: Multiplication and Division Session: Dividing Decimals by Whole Numbers
5.NF: Number and Operations-Fractions	
Use equivalent fractions as a strategy to add and subtract fractions.	
1. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$. (In general, $\frac{a}{b} + \frac{c}{d} = \frac{(ad + bc)}{bd}$.)	Course III: <ul style="list-style-type: none"> Module: Fractions Unit: Proper and Improper Fractions Session: Improper Fractions Module: Fractions Unit: Addition and Subtraction Session: Working with Unlike Denominators Course IV: <ul style="list-style-type: none"> Module: Fractions Unit: Adding Fractions Session: Adding with Unlike Denominators Module: Fractions Unit: Adding Fractions Session: Solving Missing Value Problems when Adding Fractions Module: Fractions Unit: Subtracting Fractions Session: Subtracting with Unlike Denominators Module: Fractions Unit: Subtracting Fractions Session: Solving Missing Value Problems when Subtracting Fractions
2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $\frac{2}{5} + \frac{1}{2} = \frac{3}{7}$, by observing that $\frac{3}{7} < \frac{1}{2}$.	Course III: <ul style="list-style-type: none"> Module: Fractions Unit: Addition and Subtraction Session: Sums involving Like Denominators Module: Fractions Unit: Addition and Subtraction Session: Differences involving Like Denominators Module: Fractions Unit: Addition and Subtraction Session: Working with Unlike Denominators Course IV: <ul style="list-style-type: none"> Module: Fractions Unit: Adding Fractions Session: Adding with Like Denominators Module: Fractions Unit: Adding Fractions Session: Adding with Unlike Denominators Module: Fractions Unit: Adding Fractions Session: Solving

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	<ul style="list-style-type: none"> Missing Value Problems when Adding Fractions Module: Fractions Unit: Subtracting Fractions Session: Subtracting with Like Denominators Module: Fractions Unit: Subtracting Fractions Session: Subtracting with Unlike Denominators Module: Fractions Unit: Subtracting Fractions Session: Solving Missing Value Problems when Subtracting Fractions
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	
3. Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret $3/4$ as the result of dividing 3 by 4, noting that $3/4$ multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size $3/4$. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?	<p>Course II:</p> <ul style="list-style-type: none"> • <p>Course III:</p> <ul style="list-style-type: none"> Module: Fractions Unit: Proper and Improper Fractions Session: Improper Fractions <p>Course IV:</p> <ul style="list-style-type: none"> Module: Fractions Unit: Essentials of Fractions Session: Exploring Proper and Improper Fractions Module: Fractions Unit: Dividing Fractions Session: Estimating Quotients of Fractions
b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (nxa)/(nxb)$ to the effect of multiplying a/b by 1.	<p>Course IV:</p> <ul style="list-style-type: none"> Module: Fractions Unit: Multiplying Fractions Session: Finding Products of Fractions, Whole Numbers, and Mixed Numbers
6. Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	<p>Course III:</p> <ul style="list-style-type: none"> Module: Fractions Unit: Multiplication and Division Session: Finding Products <p>Course IV:</p> <ul style="list-style-type: none"> Module: Fractions Unit: Multiplying Fractions Session: Finding Products of Fractions, Whole Numbers, and Mixed Numbers
7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.	
a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for $(1/3) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$	<p>Course III:</p> <ul style="list-style-type: none"> Module: Fractions Unit: Multiplication and Division Session: Quotients and Remainders

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because $(1/12) \times 4 = 1/3$.	
b. Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$.	<p>Course III:</p> <ul style="list-style-type: none"> Module: Fractions Unit: Multiplication and Division Session: Quotients and Remainders
c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $1/3$ -cup servings are in 2 cups of raisins?	<p>Course III:</p> <ul style="list-style-type: none"> Module: Fractions Unit: Multiplication and Division Session: Quotients and Remainders
5.MD: Measurement and Data	
Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	
3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement.	
a. A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.	<p>Course II:</p> <ul style="list-style-type: none"> Module: Geometry and Measurement Unit: Geometry Session: Volume
4. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	<p>Course II:</p> <ul style="list-style-type: none"> Module: Geometry and Measurement Unit: Geometry Session: Volume
5. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.	
a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.	<p>Course IV:</p> <ul style="list-style-type: none"> Module: Decimals Unit: Multiplying Decimals Session: Finding the Volume of a Prism
5.G: Geometry	
Graph points on the coordinate plane to solve real-world and mathematical problems.	

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<p>1. Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).</p>	<p>Course III:</p> <ul style="list-style-type: none">Module: Geometry Unit: Coordinate Geometry and Algebra Session: The Coordinate Plane
<p>2. Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.</p>	<p>Course III:</p> <ul style="list-style-type: none">Module: Geometry Unit: Coordinate Geometry and Algebra Session: The Coordinate Plane
<p>Classify two-dimensional figures into categories based on their properties.</p>	
<p>3. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.</p>	<p>Course III:</p> <ul style="list-style-type: none">Module: Geometry Unit: Measurement Session: Rectangles and SquaresModule: Geometry Unit: Measurement Session: TrianglesModule: Geometry Unit: Measurement Session: Parallelograms and Trapezoids

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