Second Nine Weeks   Instructional Map

DRAFT

Subject Mathematics
Grade 6

GLE 0606.1.2 (RP.6.3.d, EE.6.1) Apply and adapt a variety of appropriate strategies to problem solving, including estimation, and reasonableness of the solution. GLE 0606.2.1 (NS.6.1) Understand and explain the procedures for multiplication and division of fractions, mixed numbers, and decimals. GLE 0606.2.3 (RP.6.1) Understand and use ratios, rates and percents. GLE 0606.2.4 (RP.6.3) Understand and convert between fraction, decimal, and percent forms of rational numbers.

Knowledge and Skills	Checks for Understanding & Guiding Question(s)	Resources & Instructional Practices	Assessments	Differentiated Instruction	Technology & Additional Web-based Resources
Weeks 1 – 5 **SPI 0606.2.5** Transform numbers from one form to another (fractions, decimals, percents, and mixed numbers). Glencoe Word Problem Practice Book Go to pages 34-35 Fraction Models Interactive Model-Frac/Dec/Percents TI-73 Relationship between fractions, decimals & percents Frac/Dec/Percents Equivalences Video Common Percents/Decimals/Fractions Table TI-73 Fractions, decimals, percents relationship **SPI 0606.2.7 –** Locate positive rational numbers on the number line. (NS.6.5, NS.6.6, NS.6.6.c, NS.6.7, NS.6.7.a, NS.6.7b) Interactive Fraction Number Line **TI-73 Rational Numbers on a number line** **Vocabulary** Percent, least common denominator	**0606.2.1 Efficiently compare and order fractions, decimals and percents; determine their appropriate locations on a number line.** **0606.2.8** Recognize that a terminating decimal equals a fraction with a denominator that is a power of ten. Converting decimals to fractions **0606.2.9** Recognize that the decimal form of a rational number either terminates or repeats. TI-73 Rational Numbers: Terminating & repeating decimals **Guiding Question(s):** How do you convert decimals to fractions and percent, fractions to decimals and percent, and percent to decimals and fractions? How are fractions and decimals related? How are percents related to decimals and fractions? How does knowing how to operate with fractions help us to operate with decimals?	_Math Connects Course 1_: **Chapter 4,** Multi-Part Lessons 2B (pp 210-213); 2C (pp 214-217); 2D (pp 218-221); 2E (pp 222-225); Explore **3A (pp. 227-228)**; 3B (pp 231-233); **Explore 3C (pp. 234-235);** 3D (pp 236-241); Test Practice, pp. 213, 217, 221, 225, 233, 241, 246, 251 Spiral Review, pp. 213, 217, 221, 225, 233, 241, 246, 251 H.O.T. Problems, pp. 213, 217, 221, 225, 233, 241, 246, 251 Problem-Solving Investigation pp. 252-253 Chapter Study Guide and Review, pp. 256-261 Hands-On Activity Tools and Resources Quick Review Math Handbook Foldables used in each lesson 5 minute checks	Are You Ready? p. 198 Mid-Chapter Check, p. 226 Practice Chapter Test pp. 262 Preparing for Standardized Tests p. 263. Test Practice, pp. 264-265 Mastering the TCAP practice book – practice by SPI Lesson Quizzes (CRB) Stop and Reflect, p. 225 Self Check Quiz Ch Test (TR kit) **TCAP Practice:** Mr. Kincaid has a piece of pipe that is 3.08 meters long. Which length is equivalent to 3.08 meters? A.3 2/25 B. 3 4/25 C. 3 1/5 D. 3 4/5	**Intervention:** Stanford math: 90 min./wk Differentiated Instruction (pp 208C-D, 227C-D, 242C-D) Re-teach Masters (Chapter Resource Masters) Response to Intervention Destination Math Quick Checks Are You Ready? p. 198 Stanford Math Browser **Enrichment:** Differentiated Instruction (pp 208C-D, 227C-D, 242C-D) Stanford Math: 90 min/wk Destination Math Enrichment Masters (Chapter Resource Masters) Quick Checks Are you Ready? p. 198 Chapter Projects Stanford Math Browser	• Teacher's Edition CD • Graphing Calculators • Destination Math • Publisher's Website: http://connectED.mcgraw-hill.com • Examview Pro • NCTM Website: http://illuminations.nctm.org • www.internet4classrooms.com • www.tnelc.org • Dynamic Curriculum Gr. 6 • Informational Math Site (Power Points/Games) • www.education.ti.com • Interactive Manipulatives: http://nlvm.usu.edu/ • STEM Resources: http://www.stemsources.com • http://softschools.com • www.brightstorm.com • http://exchange.smarttech.com • www.discoveryeducation.com • Stanford Math Browser • www.insidemathematics.org.

Common Core Standards p.9-11

_2012_2013 Memphis City Schools_

GLE 0606.3.2 (EE.6.2, EE.6.3, EE.6.9) Interpret and represent algebraic relationships with variables in expressions, simple equations and inequalities. GLE 0606.3.3 (EE.6.2.c, EE.6.1) Extend order of operations to include grouping symbols and exponents.
GLE 0606.3.4 (EE.6.2.c, EE.6.7, EE.6.8) Use expressions, equations, and formulas to solve problems.

Knowledge and Skill	Checks for Understanding & Guiding Question(s)	Resources & Instructional Practices	Assessments	Differentiated Instruction	Technology & Additional Web-based Resources
Weeks 1 – 5 **SPI 0606.3.4** – Rewrite expressions to represent quantities in different ways. (RP.6.3.c, RP.6.3.d, EE.6., EE.6.2, EE.6.3) **SPI 0606.3.5** – Translate between verbal expressions/ sentences and algebraic expressions/ equations.(EE.6.2, EE.6.3) Translating Expressions and Equations Worksheet How to Identify and Write an Algebraic Expression (with videos, worksheets, games & activities) **Vocabulary** Numerical expression, order of operations, algebra, variable, algebraic expression, evaluate, term. Like terms, constant, defining the variable	**0606.3.5** Use the commutative, associative, and distributive properties to show that two expressions are equivalent. (NS.6.4, EE.6.2, EE.6.3) **0606.3.7** Move fluently between different representations (such as verbal, tabular, numerical, algebraic, and graphical) of equations and expressions. (RP.6.3.a, EE.6.1, EE.6.2, EE.6.3) **0606.3.8** Represent patterns using words, graphs, and simple symbolic notation. (EE.6.1) TI-73 From Functions and Table Values to equations **Guiding Question(s):** How would you describe the order of operations? How do we translate verbal ideas to the language of mathematics?	_Math Connects Course 1_: **Chapter 5**, Multi-Part Lesson 1A (pp 270-273); Lesson 1B (pp 274-277); **Explore 1C** (279-281) Lesson 1D (pp 282-285); 1E (286-287) **IMPACT Math Unit F, Inv. 6 pp. 127-129** **CCSS Additional Lesson 17 p. 843 SE** 5 minute checks Spiral Review, pp. 273, 277, and 285. H.O.T. Problems, pp. 273, 277, and 285. Problem-Solving Investigation pp. 286 Foldables used in each lesson Hands On Activity Tools and Resources Quick Review Math Handbook Problem Solving Investigation	Are You Ready? p. 268 Mid-Chapter Check, p. 288 Practice Chapter Test pp. 306 Preparing for Standardized Tests p.307 Test Practice, pp. 308-309 Test Practice, pp. 273, 277, 285, 308-309. Mastering the TCAP practice Lesson Quizzes (CRB) Stop and Reflect, p. 285 Self Check Quiz Chapter Study Guide and Review, pp. 302-305 **TCAP Practice:** What is the simplest form of the expression $(4^2 + 3) + (5^2 \times 2^2)$? A. 17 B. 51 C. 119 D. 149 Which expression is equivalent to $8(n - 4) + 6$? a.8n-26 b.8n-38 c.4n+6 d.4n-2 Which expression represents the phrase _the sum of twice a number and 7_? a.2+n+7 b.n+2(7) c.2n+7 d.2(n)7	**Intervention:** Stanford math: 90 min./wk Differentiated Instruction (p 269C) Destination Math Response to Intervention Reteach Masters Quick Checks Are You Ready (p. 268) Stanford Math Standards Browser Funbrain.com's Operation Order Algebra Game Amby's Math Resources: Order of Operations **Enrichment:** Differentiated Instruction (p 269C) Stanford Math: 90 min/wk Enrichment Masters Destination Math Quick Checks Are you Ready? p. 268 Chapter Projects Stanford Math Standards Browser Algebraic Equations Game	• Teacher's Edition CD • Graphing Calculators • Destination Math • Publisher's Website: http://connectED.mcgraw-hill.com • Examview Pro • NCTM Website: http://illuminations.nctm.org • www.internet4classrooms.com • www.tnelc.org • www.education.ti.com • Interactive Manipulatives: http://nlvm.usu.edu/ • STEM Resources: http://www.stemsources.com • Informational Math Site (Power Points/Games) Dynamic Curriculum Gr. 6 • http://softschools.com • www.brightstorm.com • http://exchange.smarttech.com • www.discoveryeducation.com • Stanford Math Browser • www.insidemathematics.org.

Common Core Standards p.9-11   _2012_2013 Memphis City Schools_

Common Core Focus Standards Lessons/Activities

Weeks 1-5 con't

6.RP.1   Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."*

Chapter 3, Lesson 1, Multi-Parts A & B, pages 148-155	**Understanding Ratios with the Spy Guys**	**Concept of Ratio** Open and click on the hyperlinks within the document
Games at Recess - Ratios and Rates Candies Students will work with fractions and ratios	**IXL Individual on-line Practice**	**The Golden Ratio**

6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.

a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.

Chapter 3, Lesson 2, Multi-Parts A & B, Pages 163-169; Lesson 3A, pages 173-177	Impact Math Unit D, Investigations 2 & 3, pp. 76-81	**tape diagrams, double number line diagrams, or equations.**
Proportional Reasoning Click on .Doc file and open	**Jim and Jesse's Money**	**Equivalent Ratios**
Equivalent Ratios and Tables	**Ratio Table Practice**	**Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios,**

Chandra's friend Shellie jogs at a speed of 2 feet per second. Use the table to calculate how many feet Shellie will jog in 15 seconds.

Feet	2					
Seconds	1	2	3	5	10	15

6.RP.3c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.

A small fish tank holds 32 gallons of water. Complete the table to show how many gallons are in the tank if the tank is 50% full and 25% full.

Percent Full	100%	50%	25%
Gallons of Water	32		

Answers	
50%	25%
16	8

Source: Mobiusmath.com

The gas tank in a car holds 6 gallons of gas when it is 40% full. Use this information to complete the first column in the table.

Percent Full	40	60	80	100
Gallons of Gas	6	9	12	15

Complete the table to show how many gallons of gas are in the car's tank when it is 100% full. Answers are in red.

Source: Mobiusmath.com

6.RP.3c Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.
Task 1: Shirt Sale

Task 2:

Benchmark Percents on Bars

INTRODUCTION

1. Label 50% below the bar.

    0 g   22g

    0%   100%
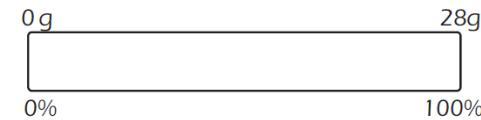
2. Label 50% of 22 grams above the bar.

3. Shade in 50% of the bar.

4. How much is 50% of 22 grams?

Source: Mobiusmath.com

Common Core Standards 6.RP.3a,c

5. Split the bar into 2 equal pieces.

    0 g   28g

    0%   100%

6. Label 50% below the bar. Then, label 50% of 28 grams above the bar.

7. Shade in 50% of the bar.

8. How much is 50% of 28 grams?

Source:Mobiusmath.com

6.RP.3d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

Using distance Scales on maps

Common Core Standards p.9-11   *2012_2013 Memphis City Schools*

GLE 0606.1.4 (NS.6.1, NS.6.5) Move flexibly between concrete and abstract representations of mathematical ideas in order to solve problems, model mathematical ideas, and communicate solution strategies. GLE 0606.3.2 (EE.6.3, EE.6.9, EE.6.2) Interpret and represent algebraic relationships with variables in expressions, simple equations, and inequalities. GLE 0606.3.3 (EE.6.1, EE.6.2.c) Extend order of operations to include grouping symbols and exponents. GLE 0606.3.4 (EE.6.7, EE.6.8, EE.6.2.c) Use expressions, equations, and formulas to solve problems.

Knowledge and Skills	Checks for Understanding & Guiding Question(s)	Resources & Instructional Practices	Assessments	Differentiated Instruction	Technology & Additional Web-based Resources
Weeks 6 - 9 **SPI 0606.1.4 –** Select the representation that models one of the arithmetic properties (commutative, associative, or distributive) (NS.6.4) Number Properties Properties Using TI-73 **SPI 0606.1.5 –** Model algebraic expressions using algebra tiles. (EE.6.4) Exploring Algebra Tiles Algebra Tiles PPT **SPI 0606.3.4 –** Rewrite expressions to represent quantities in different ways. (RP.6.3.a, RP.6.3.c, RP.6.3.d, EE.6.1, EE.6.2, EE.6.3) The Distributive Property Beginning Algebra Tutorial on Intro to Variable Expressions and Equations **Vocabulary** Properties, equivalent expressions	**0606.1.1 –** Recognize different conventions used in calculator and computer spreadsheets (e.g., * for multiplication, ^ for exponent), but use mathematical notation in written work. **0606.1.10 –** Use various methods (such as dynamic geometry software) to explore properties of triangles and quadrilaterals. (G.6.1) **0606.1.11 –** Model algebraic expressions with manipulatives, technology, and pencil and paper. (EE.6.4) Algebraic Expressions with Algebra Tiles PPT **Guiding Question(s):** How can commutative and associative properties be used to simplify numerical expressions? How can I use algebraic expressions to represent geometric and numerical patterns?	**_Math Connects Course 1_**: Chapter 5 Multi-Part Lesson 2A (pp289 293); **Explore pp. 294-295;** Lesson 2C (pp 296-299); Spiral Review, pp. 293 and 299 H.O.T. Problems, pp. 293 and 299. Chapter Study Guide and Review, pp. 302-305 Hands-On Activity Tools and Resources Quick Review Math Handbook Foldables used in each lesson Funbrain.com's Operation Order Algebra Game Amby's Math Resources: Order of Operations Algebraic Equations Game	Are You Ready? p. 268 Mid-Chapter Check, p. 288 Practice Chapter Test pp. 306 Preparing for Standardized Tests p. 307 Test Practice, pp. 293, 299, 308-309 Mastering the TCAP practice book Lesson Quizzes (CRB) Stop and Reflect, pg. 299 Self Check Quiz Which equation represents the distributive property? A. 6 x (4 + 8) = (6 x 4) + (6 x 8) B. 6 + (4 + 8) = (6 + 4) + 8 C. 6 + (4 + 8) =(4 + 8) + 6 D. 6 x (4 x 8) = (6 x 4) x 8 Using the table of values above which expression can be used to find the value of _c_ in terms of _n_? a.7n b. 6n + 1 c.10n – 3 d. 5n + 2	**Intervention:** Stanford math: 90 min./wk Stanford Math Standards Browser Differentiated Instruction (p 269C) Destination Math Response to Intervention Reteach Masters Quick Checks Reteach Masters Are You Ready (p. 268) **Enrichment:** Differentiated Instruction (p 269C) Stanford Math: 90 min/wk Stanford Math Standards Browser Enrichment Masters Destination Math Quick Checks Are you Ready? p. 268 Chapter Projects	• Teacher's Edition CD • Graphing Calculators • Destination Math • Publisher's Website: http://connectED.mcgraw-hill.com • NCTM Website: http://illuminations.nctm.org • www.internet4classrooms.com • www.tnelc.org • www.education.ti.com • Interactive Manipulatives: http://nlvm.usu.edu/ • STEM Resources: http://www.stemsources.com • Informational Math Site (Power Points/Games) http://jc-schools.net/index.html • http://softschools.com • Examview Pro • www.brightstorm.com • http://exchange.smarttech.com • www.discoveryeducation.com • Stanford Math Browser • www.insidemathematics.org.

N	1	2	3	4
C	7	12	17	22

Common Core Standards p.9-11   _2012_2013 Memphis City Schools_

Common Core Focus Standards Lessons/Activities

Weeks 6-9 con't

6.EE.1. Write and evaluate numerical expressions involving whole-number exponents.

| Chapter 5, Lesson 1, Multi-Part Lesson A Pages 270-273 | **Everything Balances Out in the End** | **6.EE   Djinni's Offer** |
| | Explore relationships between a*n and a^n: visual models (JAVA required) | |

6.EE. 2. Write, read, and evaluate expressions in which letters stand for numbers. Rectangle Perimeter 1

6.EE.2a. Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as 5 – y.*

| Chapter 5, Lesson 1, Multi-Part Lesson B & C, Pages 274-281 | Distance to School | **Solving Real-Life Problems: Baseball Jerseys** |

6.EE.2b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.*

| Chapter 5, Lesson 1, Multi-Part Lesson D, pages 282-285 | **Worksheets and Other Resources On Algebraic Expressions** | **Evaluating Expressions Using Tiles** |

6.EE.3. Apply the properties of operations to generate equivalent expressions. *For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y.*

| Chapter 5, Lesson 2, Multi-Part Lessons A-C, Pages 289 – 299 | Commutative Rectangle | **Pyramid Inequality** |

6.EE.4. Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.*

| Chapter 5, Lesson 1, Multi-Part Lessons C & D, Pages 279-285 | Equivalent Expressions | Rectangle Perimeter 2 | **Balancing Expressions** |

Bead Patterns and the Distrubutive Property (Mobiusmath.com)

1. A pattern of blue (b) and green (g) beads is used to make a necklace. The string of letters below can be used to represent the pattern of beads on the necklace. Identify and extend the pattern to represent a necklace with 32 beads.
   g b b b g b b b

2. Blue beads are 10 mm long and green beads are 8 mm long. How long in the necklace below?
   g b b b

3. How long in the necklace below?
   g b b b g b b b

4. Explain how both algebraic expressions below can be used to calculate the length of the necklace in Problem 3.
   $L = 2g + 6b$ $L = 2(g + 3b)$

Common Core Standards p.9-11

2012_2013 Memphis City Schools

GLE 0606.1.2 (RP.6.3.d, NS.6.8) Apply and adapt a variety of appropriate strategies to problem solving, including estimation, and reasonableness of the solution. GLE 0606.3.1 (EE.6.2) Write and solve two-step equations and inequalities. GLE 0606.3.2 (EE.6.2, EE.6.3, EE.6.9) Interpret and represent algebraic relationships with variables in expressions, simple equations, and inequalities. GLE 0606.3.4 (EE.6.7, EE.6.8, EE.6.2.c) Use expressions, equations, and formulas to solve problems.

Knowledge and Skills	Checks for Understanding & Guiding Question(s)	Resources & Instructional Practices	Assessments	Differentiated Instruction	Technology & Additional Web-based Resources
Weeks 6 - 9 **SPI 0606.1.4 –** Select the representation that models one of the arithmetic properties (commutative, associative, or distributive). (NS.6.4) **SPI 0606.1.5 –** Model algebraic expressions using algebra tiles. (EE.6.4) **SPI 0606.3.2 –** Use order of operations and parentheses to simplify expressions and solve problems. (EE.6.1, EE.6.3) Order of Operations Video TI-73 Activity Evaluating Simple Expressions MathFROG - Order of Operations **SPI 0606.3.3 –** Write equations that correspond to given situations or represent a given mathematical relationship. (EE.6.7) Traffic Jam Activity **SPI 0606.3.5 –** Translate between verbal expressions/sentences and algebraic expressions/equations. (EE.6.2, EE.6.3) **SPI 0606.3.6** Solve two-step linear equations using number sense, properties, and inverse operations. **Vocabulary** Equation, equal sign, solve, solution, inverse operations, Subtraction Property of Equality, Addition Property of Equality, coefficient, Division Property of Equality	**0606.1.1 –** Recognize different conventions used in calculator and computer spreadsheets (e.g., * for multiplication, ^ for exponent), but use mathematical notation in written work. **0606.1.11 –** Model algebraic expressions with manipulatives, technology, and pencil and paper. (EE.6.1) Algebraic Expressions with Algebra Tiles PPT Translating Expressions and Equations Worksheet How to Identify and Write an Algebraic Expression (with videos, worksheets, games & activities) **0606.3.1 –** Write and solve two- step linear equations corresponding to given situations (non-negative numbers only). (EE.6.7, EE.6.8) **Guiding Question(s):** How do mathematical properties make calculations easier? How can inverse operations be used to transform an equation to isolate the variable?	***Math Connects Course 1***: **Chapter 6** **IMPACT Math Unit G, Inv. 2 pp.140-142;** Multi-Part Lessons 1A (pp 314-317); **Explore 1C (pp 320-321),**1D (pp 322-326); Explore **1E (p 327),** 1F (pp 328-331); **Explore 2A (p 333),** 2B (pp. 335-338); **Explore 2C (p 339),** 2D (340-343); Explore 3A (p 344-345) and 3B (346-351) . Spiral Review, pp. 326, 331, 338, 343, and 351. H.O.T. Problems, pp. , 326, 331, 338, and 343 Problem-Solving Investigation (pp 318 319) Hands-On Activity Tools and Resources Quick Review Math Handbook Foldables used in each lesson 5 minute checks Translate two-step verbal sentences into algebraic equations	Are You Ready? p. 312 Mid-Chapter Check, p. 332 Practice Chapter Test pp. 358 Preparing for Standardized Tests p. 359 Test Practice, pp. 317, 326, 331, 338, 343, 351, 360-361 Mastering the TCAP practice book Lesson Quizzes (CRB) Stop and Reflect, pp. 331 and 343 Self Check Quiz Chapter Study Guide and Review, pp. 354-357 **TCAP Practice:** The cost of renting a mountain bike is a basic fee of \$6 plus an additional \$2 for each hour that the bike is rented. Which equation can be used to find c, the cost of renting a bike for h hours? a. $C = 2(h + 6)$ b. $C = 6(h + 2)$ c. $C = 2h + 6$ d. $C = 6h + 2$ $x/4 + 19 = 27$; $x = ?$ a. 8 b. 12 c. 16 d. 32	**Intervention:** Stanford math: 90 min./wk Stanford Math Standards Browser Differentiated Instruction (p 269C) Destination Math Response to Intervention Reteach Masters Quick Checks Reteach Masters Are You Ready (p. 268) **Enrichment:** Differentiated Instruction (p 269C) Stanford Math: 90 min/wk Stanford Math Standards Browser Enrichment Masters Destination Math Quick Checks Are you Ready? p. 268 Chapter Projects	• Teacher's Edition CD • Graphing Calculators • Destination Math • Publisher's Website: http://connectED.mcgraw-hill.com • NCTM Website: http://illuminations.nctm.org • www.internet4classrooms.com • www.tnelc.org • www.education.ti.com • Interactive Manipulatives: http://nlvm.usu.edu/ • STEM Resources: http://www.stemsources.com • Informational Math Site (Power Points/Games) http://jc-schools.net/index.html • http://softschools.com • Examview Pro • www.brightstorm.com • http://exchange.smarttech.com • www.discoveryeducation.com • Stanford Math Browser • www.insidemathematics.org.

Common Core Standards p.9-11   *2012_2013 Memphis City Schools*

<u>Common Core State Standards Crosswalk Correlations</u>

NS.6.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc.) How much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?

 NS.6.4 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example, express 36 + 8 as 4 (9 + 2).*

NS.6.5 Apply and extend previous understandings of numbers to the system of rational numbers. Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, debits/credits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.

NS.6.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.

NS.6.6.b Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.

NS.6.6.c Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate

plane. NS.6.7 Understand ordering and absolute value of rational numbers.

NS.6.7.a Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret –3 > –7 as a statement that –3 is located to the right of –7 on a number line oriented from left to right.

NS.6.7.b Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write –3°C > –7°C to express the fact that –3°C is warmer than –7°C.

NS.6.8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

EE.6.1   Write and evaluate numerical expressions involving whole-number exponents.

EE.6.2   Write, read, and evaluate expressions in which letters stand for numbers.

Common Core Standards p.9-11   *2012_2013 Memphis City Schools*

EE.6.2.b Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression 2(8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms.

EE.6.2.c Evaluate expressions at specific values for their variables. Include expressions that arise from formulas in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas $V = s^3$ and $A = 6 s^2$ to find the volume and surface area of a cube with sides of length s = 1/2.

EE.6.3 Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression 3(2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y.

EE.6.4 Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.

EE.6.7 Solve real-world and mathematical problems by writing and solving equations of the form x + p = q and px = q for cases in which p, q and x are all nonnegative rational numbers.

EE.6.8 Write an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form x > c or x < c have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

EE.6.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.

G.6.1 Solve real-world and mathematical problems involving area, surface area, and volume. Find area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

G.6.3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.

RP.6.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."

RP.6.2 Understand ratio concepts and use ratio reasoning to solve problems. Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0 (b not equal to zero), and use rate language in the context of a ratio relationship. For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for

Common Core Standards p.9-11   *2012_2013 Memphis City Schools*

15 hamburgers, which is a rate of $5 per hamburger." (Expectations for unit rates in this grade are limited to non-complex fractions.)

RP.6.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.

RP.6.3.a Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.

RP.6.3.b Solve unit rate problems including those involving unit pricing and constant speed. For example, If it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?

RP.6.3.c Find a percent of a quantity as a rate per 100 (e.g.,30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole given a part and the percent.

RP.6.3.d Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

Common Core Standards p.9-11   *2012_2013 Memphis City Schools*