6th Grade

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Utah Core State Standards

Mathematics Curriculum Map

Garfield County School District

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(This document was adapted from the Granite School District Curriculum Map)

To whom it may concern: May 29, 2014

In our review of the Granite School District 2010 edition of the 6th Grade Math Curriculum Map, we have found that their outline and alignment with common core standards match very closely with what we feel works most effectively in our own district.   We, therefore, have changed very little information. Two areas where we have added or otherwise changed content in this document are as follows:

- Separation of areas to be tested with benchmarks and the dates during which we plan to administer those benchmark tests (found on page 7 of this document)

- A few minor additions to the Daily/Weekly Formative assessment options found at the end of each Unit of Study throughout the document.

We are also leaving the Additional Resources pages as they are. We have been reviewing those resources one by one, mainly to identify if we must have paid access to the resource. If the resource is a paid subscription unique to the Granite School District, then we will remove it from our list.
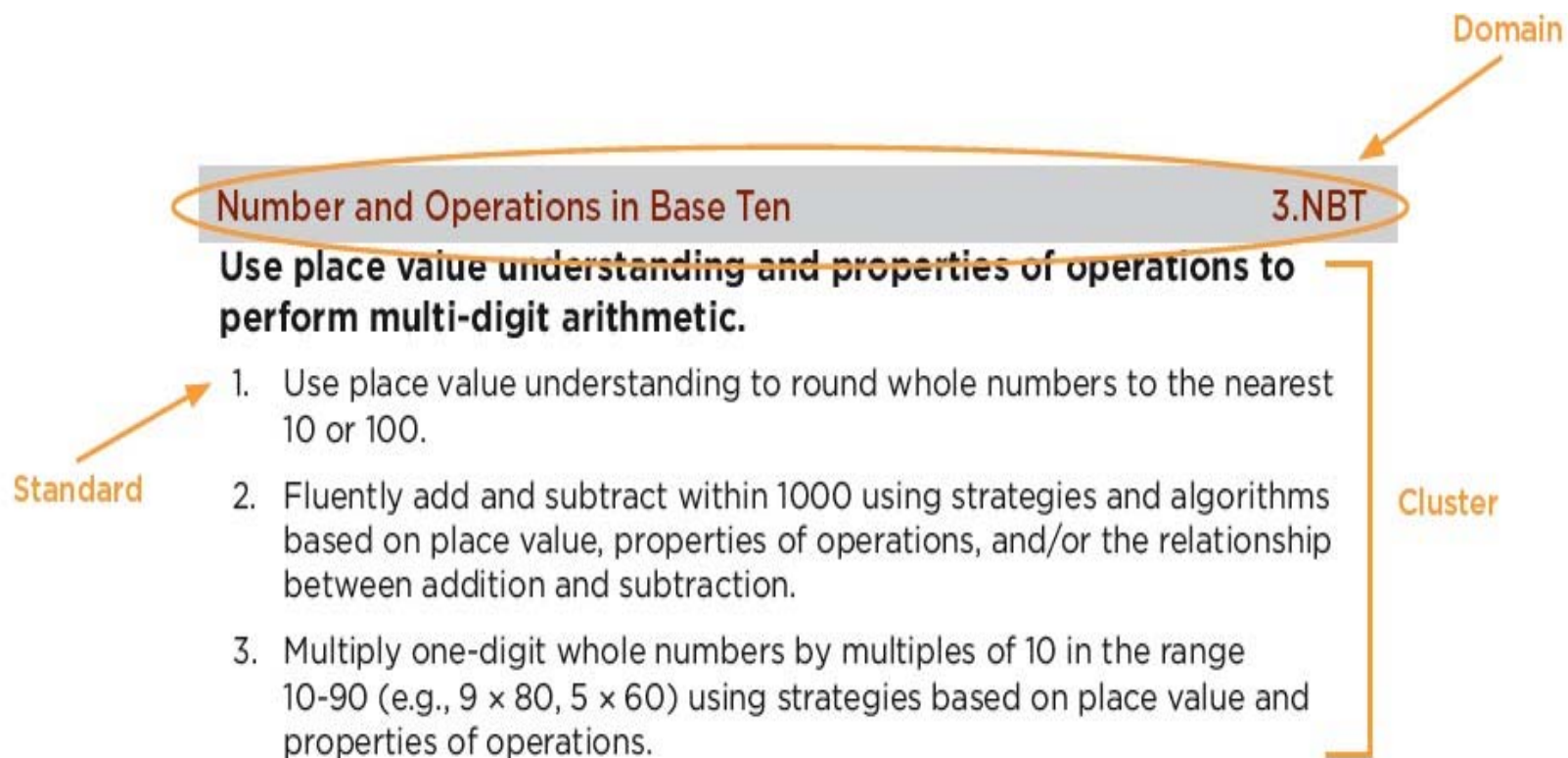
Thank you,

Eva Durfey
Trista Rich
Russell Torgersen

How to Read the Grade Level Content Standards

Standards define what students should understand and be able to do.

Clusters are groups of related standards. Note that standards from different clusters may sometimes be closely related, because mathematics is a connected subject.

Domains are larger groups of related standards. Standards from different domains may sometimes be closely related.

Domain

Number and Operations in Base Ten   **3.NBT**

Use place value understanding and properties of operations to perform multi-digit arithmetic.

Standard

1. Use place value understanding to round whole numbers to the nearest 10 or 100.

2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

3. Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.

Cluster

Standards for Mathematical Practice

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important "processes and proficiencies" with longstanding importance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council's report *Adding It Up*: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one's own efficacy).

1. **Make sense of problems and persevere in solving them.**

   Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

2. **Reason abstractly and quantitatively.**

   Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to *decontextualize*—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to *contextualize*, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

3. **Construct viable arguments and critique the reasoning of others.**

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

4. **Model with mathematics.**

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

5. Use appropriate tools strategically.

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

6. Attend to precision.

Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

7. **Look for and make use of structure.**

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7 × 8 equals the well remembered 7 × 5 + 7 × 3, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2 × 7 and the 9 as 2 + 7. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.

8. **Look for and express regularity in repeated reasoning.**

Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

6th Grade Mathematics Curriculum Map
Garfield County School District Scope and Sequence
Overview

Unit of Study	Go Math! Alignment	Go Math! Chapter Title	Domain and Standards
1	Chapter 1	Whole Numbers and Decimals	Domain: The Number System Standards: 2, 3, 4
2	Chapter 2	Fractions	Domain: The Number System Standards: 1, 4, 6c
3	Chapter 3	Rational Numbers	Domain: The Number System Standards: 5, 6a, 6b, 6c, 7a, 7b, 7c, 7d, 8
4	Chapter 4	Ratios and Rates	Domain: Ratios and Proportional Relationships Standards: 1, 2, 3a, 3b
5	Chapter 5	Percents	Domain: Ratios and Proportional Relationships Standard: 3c
6	Chapter 6	Units of Measure	Domain: Ratios and Proportional Relationships Standard: 3d
7	Chapter 7	Algebra: Expressions	Domain: Expressions and Equations Standards: 1, 2a, 2b, 2c, 3, 4, 6
8	Chapter 8	Algebra: Equations and Inequalities	Domain: Expressions and Equations Standards: 5, 7, 8
9	Chapter 9	Algebra: Relationships Between Variables	Domain: Expressions and Equations Standard: 9
10	Chapter 10	Area	Domain: Geometry Standards: 1, 3
11	Chapter 11	Surface Area and Volume	Domain: Geometry Standards: 2, 4
12	Chapter 12	Data Displays and Measures of Center	Domain: Statistics and Probability Standards: 1, 4, 5a, 5b, 5c, 5d
13	Chapter 13	Variability and Data Distributions	Domain: Statistics and Probability Standards: 2, 3, 4, 5c, 5d

6th Grade
Instruction and Assessment* Schedule
2013-2014

It is expected that the units will be taught consecutively. The table below reflects which units are assessed on each benchmark. It is possible to begin a new unit prior to the quarter in which it is being assessed.

Approx. # of Days of Instruction	Benchmark A Pretest 8/19 – 9/5	11	12	12	Benchmark A Posttest 10/7 – 10/31	Benchmark B Pretest 10/7 – 10/31	10	8	7	Benchmark B Posttest 11/13 – 12/22	Benchmark C Pretest 11/13– 12/22	11	12	7	Benchmark C Posttest 1/12 – 1/30	Benchmark D Pretest 1/12-1/30	11	9	Benchmark D Posttest 2/10-2/27	Benchmark E Pretest 2/10-2/27	10	10	Benchmark E Posttest 3/1-4-10	Prior to SAGE	SAGE Mid April –Mid May????	After SAGE
Instructional Content	Benchmark A Pretest 8/19 – 9/5	Unit of Study 1	Unit of Study 2	Unit of Study 3	Benchmark A Posttest 10/7 – 10/31	Benchmark B Pretest 10/7 – 10/31	Unit of Study 4	Unit of Study 5	Unit of Study 6	Benchmark B Posttest 11/13 – 12/22	Benchmark C Pretest 11/13– 12/22	Unit of Study 7	Unit of Study 8	Unit of Study 9	Benchmark C Posttest 1/12 – 1/30	Benchmark D Pretest 1/12-1/30	Unit of Study 10	Unit of Study 11	Benchmark D Posttest 2/10-2/27	Benchmark E Pretest 2/10-2/27	Unit of Study 12	Unit of Study 13	Benchmark E Posttest 3/1-4-10	SAGE Review	SAGE Mid April –Mid May????	Getting Ready for Gr. 7 Unit
Assessment		Ch. 1 Test	Ch. 2 Test	Ch. 3 Test			Ch. 4 Test	Ch. 5 Test	Ch. 6 Test			Ch. 7 Test	Ch. 8 Test	Ch. 9 Test			Ch. 10 Test	Ch. 11 Test			Ch. 12 Test	Ch. 13 Test				

*Benchmark Tests are(????) required by GCSD. Additional assessment options are on each Unit of Study in the GCSD maps.

6th Grade Mathematics Curriculum Map - Overview

Unit of Study	The mathematical content is sequenced in Units of Study that will take approximately 2-3 weeks each to teach. The sequence of Units of Study provides a coherent flow to mathematics instruction throughout the year.
Go Math! Alignment	The primary textbook adopted in Garfield County School District for Grades K-6 is Houghton Mifflin Harcourt's Go Math!, 2012
Math Content and Language Objectives	The Math Content and Language Objectives are to be posted for each lesson, restated to students during the lesson, and revisited at the end of each lesson. These are written as "I Can" statements.
Key Concepts for Differentiation ⌒	In an effort to assist teachers in the process of differentiation in Tier I teaching, key concepts have been identified in the curriculum maps as those specific objectives a teacher would focus on during small group instruction with struggling students. Key concepts cover minimum, basic skills and knowledge every student must master. Key concepts are **NOT** an alternative to teaching the entire Utah State Core Standards, rather they emphasize which concepts to prioritize for differentiation.
Vocabulary	Vocabulary cards for instruction and word walls can be found at: http://www.graniteschools.org/depart/teachinglearning/curriculuminstruction/math/Pages/MathematicsVocabulary.aspx
Teacher's Resources and Notes	Teachers are encouraged to make notes of their own lesson ideas and resources that align with each Unit of Study.
Assessment	There are many formative and summative assessment options: ⅜ Go Math! Options: Prerequisite Skills Inventory; Beginning-of-Year, Middle-of-Year, and End-of-Year Benchmark Tests; Show What You Know Diagnostic Assessments; Diagnostic Interview Assessments; Portfolio Assessment; Mid-Chapter Checkpoints; Chapter Review/Tests; Chapter Tests; Performance Assessments; Quick Checks; Soar to Success; and, Standards Practice Pages. The assessments are intended to be used to provide immediate feedback that can be used for Tier 2 and/or Tier 3 interventions for individual students. The results may also be used to identify concepts for reteaching the whole class if needed. ⅜ Benchmark Assessments on Acuity – These are cumulative tests for multiple Units of Study. These are to be given as a pretest and a posttest. Scores from the Benchmark Assessments are to be reported to the district. Students not mastering content will need Tier 2 and/or Tier 3 interventions. ⅜ Exit slips, teacher observations, daily class work, homework, and basal assessments are to be used at the teacher's discretion to help guide and direct instruction.

Unit of Study 1	6th Grade	Quarter 1	Approx. 11 days	GSD Revised 4/24/13

Domain: The Number System   6.NS

Cluster: Compute fluently with multi-digit numbers and find common factors and multiples.

Standard(s):

2. Fluently divide multi-digit numbers using the standard algorithm.

3. Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

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).*

Math Content Objectives	Vocabulary	Teacher's Resources and Notes

I can:
 	
6.NS.2
  Fluently divide multi-digit numbers using the standard algorithm.
 	
6.NS.3
  Fluently add multi-digit decimals using the standard algorithm.
  Fluently subtract multi-digit decimals using the standard algorithm.
  Fluently multiply multi-digit decimals using the standard algorithm.
  Fluently divide multi-digit decimals using the standard algorithm.
	addend
	algorithm
	array
	common factor
	common multiple
	compatible numbers
	decimal
	difference
	Distributive Property
	dividend
	divisible
	divisor
	equation
	expression
	factor
	greatest common factor (GCF)
	least common multiple (LCM)
	minuend
	multiple	

Math Content Objectives	Vocabulary	Teacher's Resources and Notes
6.NS.4 35/17 Find the greatest common factor (GCF) of two whole numbers less than or equal to 100. 35/17 Find the least common multiple of two whole numbers less than or equal to 12. ☞ Use the distributive property to express a sum of two numbers with a common factor as a multiple of a sum of two whole numbers with no common factor. ☞ Key Concepts for Differentiation - See p. 8.	35/17 prime factorization 35/17 prime number 35/17 product 35/17 quotient 35/17 subtrahend 35/17 sum 35/17 whole numbers	

Math Language Objectives

[Note: The following language objectives must be written in student-friendly terms, adapted to specific lessons, and aligned with the language needs of students.]

Reading Standards for Informational Text

35/17 Cite textual evidence to support analysis of a math text.

35/17 Determine the meaning of specific math words or phrases in a text.

35/17 Integrate information presented in visual, quantitative, and text formats to understand a math topic.

35/17 Read and comprehend math texts.

Math Language Objectives	Vocabulary	Teacher's Resources and Notes
Writing Standards $\frac{35}{17}$ Write arguments to support math claims with clear reasons and evidence. $\frac{35}{17}$ Write explanatory math text to convey ideas, concepts, and information, including graphics and multimedia when useful to aiding comprehension. $\frac{35}{17}$ Produce clear, coherent math writing appropriate to the task. $\frac{35}{17}$ Use technology to produce math writing and collaborate with others. $\frac{35}{17}$ Draw evidence from informational math texts to support analysis and reflection. $\frac{35}{17}$ Write routinely for a range of math tasks. **Speaking and Listening Standards** $\frac{35}{17}$ Engage in collaborative math discussions. $\frac{35}{17}$ Interpret math information presented in visual, quantitative, and oral formats. $\frac{35}{17}$ Delineate a speaker's argument, distinguishing math claims that are supported by reasons and evidence from claims that are not. $\frac{35}{17}$ Present math claims and findings, sequencing ideas logically and using pertinent facts and details. $\frac{35}{17}$ Add visual displays in math presentations.		

Go Math! Common Core Alignment	Unit of Study 1 – Additional Resources
Lesson 1.1 6.NS.2 **Lesson 1.2** 6.NS.4 **Lesson 1.3** 6.NS.4 **Lesson 1.4** 6.NS.4 **Lesson 1.5** 6.NS.4 **Lesson 1.6** 6.NS.3 **Lesson 1.7** 6.NS.3 **Lesson 1.8** 6.NS.3 **Lesson 1.9** 6.NS.3	**Division of Whole Numbers** **VDW 7th Edition - pages 232-237** **BBC - Division Strategy Practice** - http://www.bbc.co.uk/skillswise/numbers/wholenumbers/division/written/game.shtml **LearnAlberta - "Division of Whole Numbers" - Video Tutorial** - http://www.learnalberta.ca/content/me5l/html/math5.html?goLesson=9 **Division by a 2-Digit Number - Algorithm Applet** - http://www.doubledivision.org/ **Addition/Subtraction of Decimals** **VDW 7th Edition - pages 342-343** **NLVM - Base Block Decimals - Interactive Applet** - http://nlvm.usu.edu/en/nav/frames_asid_264_g_3_t_1.html?from=category_g_3_t_1.html **NLVM - Circle 3 - Adding Decimals - Interactive Applet** - http://nlvm.usu.edu/en/nav/frames_asid_187_g_3_t_1.html?open=instructions&from=category_g_3_t_1.html **LearnAlberta - "Solving Problems with Decimals" Video Lesson** - http://www.learnalberta.ca/content/mesg/html/math6web/index.html?page=lessons&lesson=m6lessonshell05.swf **LearnAlberta - "Addition and Subtraction of Decimals" Video Lesson** - http://www.learnalberta.ca/content/me5l/html/math5.html?goLesson=7 **Math Play - Jeopardy - Computation Game** - http://www.math-play.com/Decimals-Jeopardy/decimals-jeopardy.html **Multiplication/Division of Decimals** **VDW 7th Edition - pages 343-345** **LearnAlberta - Multiplication and Division of Decimals - Video Tutorial** - http://www.learnalberta.ca/content/me5l/html/math5.html?goLesson=10

	Unit of Study 1 - Additional Resources - Continued
	Greatest Common Factor and Least Common Multiple **VDW 7th Edition - pages 316-317** **Illuminations - "The Venn Factor" Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?id=L859 **Illuminations - "Factor Findings" Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?id=L872 **Illuminations - "Factor Trail Game" Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?id=L719 **NLVM - Factor Tree - Interactive Applet** - http://nlvm.usu.edu/en/nav/frames_asid_202_g_2_t_1.html?from **LearnAlberta Spy Guys - "Factors, Multiples, and Prime Factorization" Video Lesson** - http://www.learnalberta.ca/content/mesg/html/math6web/index.html?page=lessons&lesson=m6lessonshell07.swf **Amby - Teacher Tutorial** - http://amby.com/educate/math/ **IXL - GCF and LCM Word Problems - Assessment** - http://www.ixl.com/math/grade-6/greatest-common-factor-word-problems **Fun 4 The Brain - Snowball Fight - Game** - http://www.fun4thebrain.com/beyondfacts/lcmsnowball.html **Distributive Property** **Illuminations - "Distributing and Factoring Using Area" Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?id=L744 **Literature** The Monster Who Did My Math by Danny Schnitzlein Multiplying Menace Divides by Pam Calvert The Phantom Tollbooth by Norton Juster (**See VDW 7th Edition - page 345**)
Assessment Options	$\frac{35}{17}$ **Go Math! Assessment Options**: Show What You Know Diagnostic Assessment; Mid-Chapter Checkpoint; Quick Checks; Portfolio Assessment; Chapter 1 Review/Test; Chapter 1 Test; Diagnostic Interview Assessment; Soar to Success; Standards Practice Pages. $\frac{35}{17}$ **Daily/Weekly Formative Assessment Options**: Journaling, Problem of the Day, Teacher Developed Tasks, Observation, Daily Work, Homework.

Domain: The Number System   6.NS

Cluster: Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

Standard(s):

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?*

Cluster: Compute fluently with multi-digit numbers and find common factors and multiples.

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).*

Cluster: Apply and extend previous understandings of numbers to the system of rational numbers.

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.
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.

Math Content Objectives	Vocabulary	Teacher's Resources and Notes
I can: **6.NS.1** ▪ Use a model to show division of fractions. ▪ Use my understanding of multiplication of fractions to explain division of fractions. ☞ Divide fractions to find the quotient. ▪ Interpret the meaning of the quotient. ▪ Solve word problems using division of fractions. ▪ Write an equation to solve a problem using division of fractions. ▪ Write a story problem that will use division of fractions.	▪ addend ▪ bar model ▪ benchmark ▪ common denominator ▪ common factor ▪ compatible numbers ▪ denominator ▪ difference ▪ dividend ▪ divisor ▪ equation ▪ equivalent fractions ▪ expression	

Math Content Objectives	Vocabulary	Teacher's Resources and Notes
6.NS.4 ☞ Find the greatest common factor (GCF) of two whole numbers less than or equal to 100. ☞ Find the least common multiple of two whole numbers less than or equal to 12. ☞ Use the distributive property to express a sum of two numbers with a common factor as a multiple of a sum of two whole numbers with no common factor. **6.NS.6c** ☞ Place integers and other rational numbers in the correct locations on a number line. ☞ Plot ordered pairs on a coordinate plane in all four quadrants. ☞ Key Concepts for Differentiation - See p. 8.	☞ factor ☞ fraction ☞ fraction bar ☞ fraction greater than 1 ☞ fraction less than 1 ☞ greater than ☞ greatest common factor (GCF) ☞ less than ☞ minuend ☞ mixed number ☞ multiplicative inverse ☞ number line ☞ numerator ☞ Order of Operations ☞ product ☞ quotient ☞ rational number ☞ reciprocal ☞ repeating decimal ☞ simplest form ☞ simplify ☞ subtrahend ☞ sum ☞ terminating decimal ☞ unit fraction	

Math Language Objectives

[Note: The following language objectives must be written in student-friendly terms, adapted to specific lessons, and aligned with the language needs of students.]

Reading Standards for Informational Text
☞ Cite textual evidence to support analysis of a math text.
☞ Determine the meaning of specific math words or phrases in a text.
☞ Integrate information presented in visual, quantitative, and text formats to understand a math topic.
☞ Read and comprehend math texts.

Math Language Objectives	Vocabulary	Teacher's Resources and Notes

Writing Standards

- $\frac{35}{17}$ Write arguments to support math claims with clear reasons and evidence.
- $\frac{35}{17}$ Write explanatory math text to convey ideas, concepts, and information, including graphics and multimedia when useful to aiding comprehension.
- $\frac{35}{17}$ Produce clear, coherent math writing appropriate to the task.
- $\frac{35}{17}$ Use technology to produce math writing and collaborate with others.
- $\frac{35}{17}$ Draw evidence from informational math texts to support analysis and reflection.
- $\frac{35}{17}$ Write routinely for a range of math tasks.

Speaking and Listening Standards

- $\frac{35}{17}$ Engage in collaborative math discussions.
- $\frac{35}{17}$ Interpret math information presented in visual, quantitative, and oral formats.
- $\frac{35}{17}$ Delineate a speaker's argument, distinguishing math claims that are supported by reasons and evidence from claims that are not.
- $\frac{35}{17}$ Present math claims and findings, sequencing ideas logically and using pertinent facts and details.
- $\frac{35}{17}$ Add visual displays in math presentations.

Go Math! Common Core Alignment	Unit of Study 2 – Additional Resources
Lesson 2.1 6.NS.6c	**Meaning of Fractions in Division** **VDW 7th Edition - page 287**
Lesson 2.2 6.NS.6c	**Relationship of Multiplication and Division of Fractions** **VDW 7th Edition - pages 311-312; 317-326**
Lesson 2.3 6.NS.4	**Models and Algorithms** **VDW 7th Edition - pages 321-326**
Lesson 2.4 6.NS.4	**NLVM - Fraction Number Line Bars- Interactive Applet** - http://nlvm.usu.edu/en/nav/frames_asid_265_g_3_t_1.html?open=activities&from=category_g_3_t_1.html **Math Forum - Teacher Tutorial** - http://mathforum.org/dr.math/faq/faq.divide.fractions.html **Dividing Fractions - Teacher Tutorial** - http://www.tpub.com/math1/5g.htm
Lesson 2.5 6.NS.1	**Visual Fractions - "Divide Fractions" - Interactive Applets and Game** - http://www.visualfractions.com/divide.htm **UEN - "Modeling Multiplication and Division of Fractions" Lesson** - http://www.uen.org/Lessonplan/preview.cgi?LPid=23394
Lesson 2.6 6.NS.1	**Mixed Numbers and Fractions Greater Than 1** **VDW 7th Edition - page 297** **LearnAlberta - "Improper Fractions and Mixed Numbers" Video Lesson** -
Lesson 2.7 6.NS.1	http://www.learnalberta.ca/content/mesg/html/math6web/index.html?page=lessons&lesson=m6lessonshell02.swf
Lesson 2.8 6.NS.1	**Lessons** **Illuminations "Feeding Frenzy" Lesson - Unit Rates; Multiply/Divide Fractions** - http://illuminations.nctm.org/LessonDetail.aspx?id=L781 **UEN - "Sticky Note Math" Lesson** - http://www.uen.org/Lessonplan/preview?LPid=15443 **UEN - "Dividing Fractions" Lesson** - http://www.uen.org/Lessonplan/preview?LPid=5301
Lesson 2.9 6.NS.1	**Ohio Dept. of Ed. - "Models for Dividing Fractions" Lesson** - http://ims.ode.state.oh.us/ODE/IMS/Lessons/Content/CMA_LP_S01_BH_L06_I08_01.pdf
Lesson 2.10 6.NS.1	

	Unit of Study 2 - Additional Resources - Continued
	Greatest Common Factor and Least Common Multiple **VDW 7th Edition - pages 316-317** **Illuminations - "The Venn Factor" Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?id=L859 **Illuminations - "Factor Findings" Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?id=L872 **Illuminations - "Factor Trail Game" Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?id=L719 **NLVM - Factor Tree - Interactive Applet** - http://nlvm.usu.edu/en/nav/frames_asid_202_g_2_t_1.html?from **LearnAlberta Spy Guys - "Factors, Multiples, and Prime Factorization" Video Lesson** - http://www.learnalberta.ca/content/mesg/html/math6web/index.html?page=lessons&lesson=m6lessonshell07.swf **Amby - Teacher Tutorial** - http://amby.com/educate/math/ **IXL - GCF and LCM Word Problems - Assessment** - http://www.ixl.com/math/grade-6/greatest-common-factor-word-problems **Literature** The Doorbell Rang by Pat Hutchins Full House: An Invitation to Fractions by Dayle Ann Dodds Multiplying Menace Divides by Pam Calvert
Assessment Options	$\frac{35}{17}$ **Go Math! Assessment Options**: Show What You Know Diagnostic Assessment; Mid-Chapter Checkpoint; Quick Checks; Portfolio Assessment; Chapter 2 Review/Test; Chapter 2 Test; Diagnostic Interview Assessment; Soar to Success; Standards Practice Pages. $\frac{35}{17}$ **Daily/Weekly Formative Assessment Options**: Journaling, Problem of the Day, Teacher Developed Tasks, Observation, Daily Work, Homework.

Domain: The Number System   6.NS

Cluster: Apply and extend previous understandings of numbers to the system of rational numbers.

Standard(s):

5. 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, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.

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.

a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite.

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.

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.

7. Understand ordering and absolute value of rational numbers.

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.*

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.*

c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. *For example, for an account balance of –30 dollars, write |–30| = 30 to describe the size of the debt in dollars.*

d. Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than –30 dollars represents a debt greater than 30 dollars.*

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.

Math Content Objectives	Vocabulary	Teacher's Resources and Notes
I can: **6.NS.5** $\frac{35}{17}$ Name real world places for using positive and negative numbers. ☞ Understand that positive and negative numbers are used together to describe quantities having opposite directions or values on a number line.	$\frac{35}{17}$ absolute value $\frac{35}{17}$ axis (pural - axes) $\frac{35}{17}$ coordinate grid $\frac{35}{17}$ coordinate pair $\frac{35}{17}$ coordinate plane $\frac{35}{17}$ coordinate system $\frac{35}{17}$ coordinates	

Math Content Objectives	Vocabulary	Teacher's Resources and Notes
6.NS.6a ☞ Recognize zero as the origin on the number line. ☞ Understand the sign of a number indicates its place on the number line from zero. ☞ Recognize that the opposite of an opposite of a number is the number itself. -(-3) = 3 ☞ Understand that 0 is its own opposite. **6.NS.6b** ☞ Know that the signs of numbers in ordered pairs tell the location of the point in a quadrant on the coordinate plane. ☞ Recognize that if two ordered pairs only differ by the signs, the points are reflections across one or both axes. **6.NS.6c** ☞ Place integers and other rational numbers in the correct locations on a number line. ☞ Plot ordered pairs on a coordinate plane in all four quadrants. **6.NS.7a** ☞ Interpret statements of inequality and recognize the placement of the integers on the number line. **6.NS.7b** ☞ Write statements of inequality about integers on a number line. ☞ Explain statements of order for rational numbers in a real world situation.	☞ greater than (how to read >) ☞ inequality ☞ integers ☞ less than (how to read <) ☞ line of symmetry ☞ line symmetry ☞ magnitude ☞ negative numbers ☞ number line ☞ opposites ☞ ordered pair ☞ origin ☞ positive numbers ☞ quadrants ☞ rational number ☞ signed number ☞ value ☞ x-axis ☞ x-coordinate ☞ y-axis ☞ y-coordinate	

Math Content Objectives	Vocabulary	Teacher's Resources and Notes
6.NS.7c ☞ Understand absolute value of a rational number as the distance from 0 on the number line. ☞ Interpret absolute value as the magnitude of the number from 0 in a real world situation. **6.NS.7d** ☞ Order and compare the absolute values of rational numbers. **6.NS.8** ☞ Use coordinates and absolute values to find distances between points. ☞ Key Concepts for Differentiation - See p. 8.		
Math Language Objectives		
[Note: The following language objectives must be written in student-friendly terms, adapted to specific lessons, and aligned with the language needs of students.] **Reading Standards for Informational Text** ☞ Cite textual evidence to support analysis of a math text. ☞ Determine the meaning of specific math words or phrases in a text. ☞ Integrate information presented in visual, quantitative, and text formats to understand a math topic. ☞ Read and comprehend math texts.		

Math Language Objectives	Vocabulary	Teacher's Resources and Notes
Writing Standards $\frac{35}{17}$ Write arguments to support math claims with clear reasons and evidence. $\frac{35}{17}$ Write explanatory math text to convey ideas, concepts, and information, including graphics and multimedia when useful to aiding comprehension. $\frac{35}{17}$ Produce clear, coherent math writing appropriate to the task. $\frac{35}{17}$ Use technology to produce math writing and collaborate with others. $\frac{35}{17}$ Draw evidence from informational math texts to support analysis and reflection. $\frac{35}{17}$ Write routinely for a range of math tasks. **Speaking and Listening Standards** $\frac{35}{17}$ Engage in collaborative math discussions. $\frac{35}{17}$ Interpret math information presented in visual, quantitative, and oral formats. $\frac{35}{17}$ Delineate a speaker's argument, distinguishing math claims that are supported by reasons and evidence from claims that are not. $\frac{35}{17}$ Present math claims and findings, sequencing ideas logically and using pertinent facts and details. $\frac{35}{17}$ Add visual displays in math presentations.		

Go Math! Common Core Alignment	Unit of Study 3 – Additional Resources
Lesson 3.1 6.NS.5; 6.NS.6a **Lesson 3.2** 6.NS.7a; 6.NS.7b **Lesson 3.3** 6.NS.6a; 6.NS.6c **Lesson 3.4** 6.NS.7a; 6.NS.7b **Lesson 3.5** 6.NS.7c **Lesson 3.6** 6.NS.7d **Lesson 3.7** 6.NS.6c **Lesson 3.8** 6.NS.6b **Lesson 3.9** 6.NS.8 **Lesson 3.10** 6.NS.8	**Integers in Real World Contexts** **VDW 7th Edition - pages 479-481** **LearnAlberta - Exploring Integers and Temperatures - Interactive Video** - http://www.learnalberta.ca/content/mejhm/index.html?l=0&ID1=AB.MATH.JR.NUMB&ID2=AB.MATH.JR.NUMB.INTE&lesson=html/video_interactives/integers/integersSmall.html **IXL Math - Understanding Integers - Assessment** - http://www.ixl.com/math/grade-6/understanding-integers **Math Star - Integer Lessons** - http://mathstar.lacoe.edu/lessonlinks/integers/integers_main.html **Math Goodies - Integers Introduction - Tutorial and Practice** - http://www.mathgoodies.com/lessons/vol5/intro_integers.html **UEN - "Representing, Identifying and Comparing Integers" Lesson** - http://www.uen.org/Lessonplan/preview.cgi?LPid=23402 **Math Central - "Applications of Integers" - Information** - http://mathcentral.uregina.ca/beyond/articles/Integers/integer1.html **Helping with Math - Practice Page** - http://www.helpingwithmath.com/printables/worksheets/numbers/int0601negative_01.htm **Absolute Value** **VDW 7th Edition - page 481** **Purplemath - Teacher Tutorial** - http://www.purplemath.com/modules/absolute.htm **Math Goodies - Absolute Value - Tutorial and Practice** - http://www.mathgoodies.com/lessons/vol5/absolute_value.html **IXL Math - Absolute Value - Assessment** - http://www.ixl.com/math/grade-6/absolute-value-and-opposite-integers **Shepherd's Software - Number Balls - Game** - http://www.sheppardsoftware.com/mathgames/Numberballs_absolute_value/numberballsAS2_abs.htm **Education Place - Integers and Absolute Value - Student Tutorial** - http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.thtml&grade=5&chapter=22&lesson=1&title=Integers+and+Absolute+Value&tm=tmff2201e

	Unit of Study 3 - Additional Resources - Continued
	Integers on a Number Line **LearnAlberta - Spy Guys Understanding Integers** - http://www.learnalberta.ca/content/mesg/html/math6web/index.html?page=lessons&lesson=m6lessonshell06.swf **MathStar - Integer Game** - http://mathstar.lacoe.edu/newmedia/integers/intro/activities/intro_numberline.html **WebMATH - Teacher Tutorial** - http://www.webmath.com/k8numlineuse.html **Houghton-Mifflin - Teacher Tutorial** - http://www.eduplace.com/math/mw/background/5/05/te_5_05_negnums_ideas1.html **Math Goodies - Compare and Order Integers - Tutorial and Practice** – http://www.mathgoodies.com/lessons/vol5/compare_order.html **Online Math Learning - Introduction - Tutorial and Videos** - http://www.onlinemathlearning.com/integer-number-line.html **IXL - Number Lines with Integers - Assessment** - http://www.ixl.com/math/grade-6/number-lines-with-integers **Comparing Integers on a Number Line - Practice Page** - http://go.hrw.com/resources/go_sc/hst/HSTMW091.PDF **Math123 - Student Tutorial** - http://math123xyz.com/Nav/Pre-Algebra/Integer_Number_Line.php **Cyberchase - Vertical Number Line Game** - http://pbskids.org/cyberchase/games/negativenumbers/negativenumbers.html **UEN - "Getting to the Point" Lesson** - http://www.uen.org/Lessonplan/preview.cgi?LPid=18994 **Integers on a Coordinate Plane** **NLVM - Counting All Pairs - Interactive Applet** - http://nlvm.usu.edu/en/nav/frames_asid_307_g_4_t_1.html?from=category_g_4_t_1.html **BBC - Planet Hop- Game** - http://www.bbc.co.uk/education/mathsfile/index.shtml **Math Steps - Teacher Tutorial** - http://www.eduplace.com/math/mathsteps/5/c/index.html **Shodor - Plotting Coordinate Pairs - Interactive Applet** - http://www.shodor.org/interactivate/activities/GeneralCoordinates/ **Shodor - Maze - Game** - http://www.shodor.org/interactivate/activities/MazeGame/ **Fun Brain - What's The Point?- Game** - http://www.funbrain.com/cgi-bin/getskill.cgi?A1=choices&A2=co&A3=8&A4=0&A7=0&A8=math **Hot Math - Catch the Fly - Game** - http://hotmath.com/hotmath_help/games/ctf/ctf_hotmath.swf **UEN - "Integers on a Coordinate Plane" Lesson** - http://www.uen.org/Lessonplan/preview.cgi?LPid=23530 **Math Playground - "Locate the Aliens" - Game** - http://www.mathplayground.com/locate_aliens.html **Mr. Nussbaum - "Stock the Shelves" - Game** - http://www.mrnussbaum.com/stockshelves.htm#inst **IXL - Coordinate Grids - Assessment** - http://www.ixl.com/math/grade-6/coordinate-graphs-review **UEN - "Coordinate Connections" Lesson** - http://www.uen.org/Lessonplan/preview.cgi?LPid=15431 **UEN - "Getting to the Point" Lesson** - http://www.uen.org/Lessonplan/preview.cgi?LPid=18994 **Thatquiz - Assessment** - http://www.thatquiz.org/tq-7/?-j8-l5-m2kc0-na-p0 **Math Open Reference - Coordinate Grid - Print Blank Grids** - http://www.mathopenref.com/coordblank.html **UEN - "Fly on the Ceiling" Lesson** - http://www.uen.org/Lessonplan/preview.cgi?LPid=11237

	Unit of Study 3 - Additional Resources - Continued
	Inequalities; Ordering and Comparing Rational Numbers including Number Lines **VDW 7th Edition - pages 298-301; 333-337** **IXL Math - Decimal Number Lines - Assessment** - http://www.ixl.com/math/grade-6/decimal-number-lines **IXL Math - Compare and Order Integers - Assessment** - http://www.ixl.com/math/grade-6/compare-and-order-integers **Math is Fun - Teacher Tutorial** - http://www.mathsisfun.com/equal-less-greater.html **SpeedMath- Inequalities - Game** - http://education.jlab.org/sminequality/index.html **XP Math - Inequality - Game** - http://xpmath.com/forums/arcade.php?s=47418d9f43c25c3823d447df51517c57&do=play&gameid=61 **The Math Games - Number Balls - Game** - http://themathgames.com/our-games/arithmetic-games/order-positive-negative-integers/ **Helping with Math - Practice Page** - http://www.helpingwithmath.com/printables/worksheets/numbers/int0601integers_01.htm **Literature** The Fly on the Ceiling by Julie Glass Hottest, Coldest, Highest, Deepest by Steve Jenkins Less Than Zero by Stuart Murphy Sir Cumference and the Viking's Map by Cindy Neuschwander
Assessment Options	$\frac{35}{17}$ **Go Math! Assessment Options**: Show What You Know Diagnostic Assessment; Mid-Chapter Checkpoint; Quick Checks; Portfolio Assessment; Chapter 3 Review/Test; Chapter 3 Test; Diagnostic Interview Assessment; Soar to Success; Performance Assessment Chapters 1-3; Standards Practice Pages. $\frac{35}{17}$ **Daily/Weekly Formative Assessment Options**: Journaling, Problem of the Day, Teacher Developed Tasks, Observation, Daily Work, Homework.

Unit of Study 4	6th Grade	Quarters 1 & 2	Approx. 10 days	GSD Revised 11/14/13

Domain: Ratios and Proportional Relationships | 6.RP

Cluster: Understand ratio concepts and use ratio reasoning to solve problems.

Standard(s):

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."*

2. Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, 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 15 hamburgers, which is a rate of $5 per hamburger."[1]*

[1]Expectations for unit rates in this grade are limited to non-complex fractions.

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.

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?*

Math Content Objectives	Vocabulary	Teacher's Resources and Notes
I can: **6.RP.1** $\frac{35}{17}$ Use ratio language to describe the relationship between two quantities. ☞ Write a ratio to describe the relationship between two quantities. $\frac{35}{17}$ Write a ratio using three different formats. **6.RP.2** $\frac{35}{17}$ Describe a unit rate in words. ☞ Write a unit rate in a/b and $a:b$ form.	$\frac{35}{17}$ bar model $\frac{35}{17}$ constant speed $\frac{35}{17}$ coordinate grid $\frac{35}{17}$ coordinate pair $\frac{35}{17}$ coordinate plane $\frac{35}{17}$ coordinate system $\frac{35}{17}$ coordinates $\frac{35}{17}$ denominator $\frac{35}{17}$ double number line diagram $\frac{35}{17}$ equation $\frac{35}{17}$ equivalent fractions $\frac{35}{17}$ equivalent ratios $\frac{35}{17}$ numerator	

Math Content Objectives	Vocabulary	Teacher's Resources and Notes
6.RP.3a $\frac{35}{17}$ Use a table to find equivalent ratios. ☞ Find missing values in equivalent ratio tables. $\frac{35}{17}$ Plot the pairs of values in a table on a coordinate plane. ☞ Use a table to reason about equivalent ratios. $\frac{35}{17}$ Use a tape diagram to reason about equivalent ratios. $\frac{35}{17}$ Use a double number line diagram to reason about equivalent ratios. $\frac{35}{17}$ Use an equation to reason about equivalent ratios. **6.RP.3b** ☞ Solve unit rate problems with unit pricing. ☞ Solve unit rate problems with constant speed. ☞ Key Concepts for Differentiation - See p. 8.	$\frac{35}{17}$ ordered pair $\frac{35}{17}$ origin $\frac{35}{17}$ pattern $\frac{35}{17}$ plot $\frac{35}{17}$ proportion $\frac{35}{17}$ quadrants $\frac{35}{17}$ quantity $\frac{35}{17}$ rate $\frac{35}{17}$ ratio $\frac{35}{17}$ table $\frac{35}{17}$ tape diagram $\frac{35}{17}$ unit rate $\frac{35}{17}$ value $\frac{35}{17}$ *x*-axis $\frac{35}{17}$ *x*-coordinate $\frac{35}{17}$ *y*-axis $\frac{35}{17}$ *y*-coordinate	

Math Language Objectives

[Note: The following language objectives must be written in student-friendly terms, adapted to specific lessons, and aligned with the language needs of students.]

Reading Standards for Informational Text
$\frac{35}{17}$ Cite textual evidence to support analysis of a math text.
$\frac{35}{17}$ Determine the meaning of specific math words or phrases in a text.
$\frac{35}{17}$ Integrate information presented in visual, quantitative, and text formats to understand a math topic.
$\frac{35}{17}$ Read and comprehend math texts.

Math Language Objectives	Vocabulary	Teacher's Resources and Notes
Writing Standards $\frac{35}{17}$ Write arguments to support math claims with clear reasons and evidence. $\frac{35}{17}$ Write explanatory math text to convey ideas, concepts, and information, including graphics and multimedia when useful to aiding comprehension. $\frac{35}{17}$ Produce clear, coherent math writing appropriate to the task. $\frac{35}{17}$ Use technology to produce math writing and collaborate with others. $\frac{35}{17}$ Draw evidence from informational math texts to support analysis and reflection. $\frac{35}{17}$ Write routinely for a range of math tasks. **Speaking and Listening Standards** $\frac{35}{17}$ Engage in collaborative math discussions. $\frac{35}{17}$ Interpret math information presented in visual, quantitative, and oral formats. $\frac{35}{17}$ Delineate a speaker's argument, distinguishing math claims that are supported by reasons and evidence from claims that are not. $\frac{35}{17}$ Present math claims and findings, sequencing ideas logically and using pertinent facts and details. $\frac{35}{17}$ Add visual displays in math presentations.		

Go Math! Common Core Alignment	Unit of Study 4 – Additional Resources
Lesson 4.1 6.RP.1 **Lesson 4.2** 6.RP.1 **Lesson 4.3** 6.RP.3a **Lesson 4.4** 6.RP.3a **Lesson 4.5** 6.RP.3a **Lesson 4.6** 6.RP.2 **Lesson 4.7** 6.RP.3b **Lesson 4.8** 6.RP.3a	**Types of Ratios and Interpreting Ratios –** **VDW 7th Edition - pages 25; 287; 348-350** **Ratio - Teacher Tutorial** - https://www.etap.org/demo/math4_6/math3/instruction3tutor.html **Math Forum - Fish Game - Student Applet** - http://mathforum.org/escotpow/puzzles/fish/applet.html **BBC - Ratio and Proportion - Game** - http://www.bbc.co.uk/skillswise/numbers/wholenumbers/ratioandproportion/ratio/game.shtml **Arcademic Skill Builder - Martian Ratio - Game** - http://www.arcademicskillbuilders.com/games/ratio-martian/ratio-martian.html **Ratio - Practice Exercises** - http://math.rice.edu/~lanius/proportions/ **LearnAlberta - "Ratio" Lesson** - http://www.learnalberta.ca/content/mesg/html/math6web/index.html?page=lessons **IXL - Write a Ratio to Describe Objects in a Picture - Assessment** - http://www.ixl.com/math/grade-6/write-a-ratio-to-describe-objects-in-a-picture **eHow - Video Tutorial** - http://www.ehow.com/video_4754324_understanding-math-ratios.html **Purplemath - Teacher Tutorial** - http://www.purplemath.com/modules/ratio.htm **Math Snacks - Video Lesson** - http://www.mathsnacks.com/ **Math Playground - Student Tutorial** - http://www.mathplayground.com/ThinkingBlocks/thinking_blocks_ratios_1.html **Macmillan - "Ratio and Proportional Reasoning"- Gulliver's Travels Lesson** - http://macmillanmh.com/FL/mathconnects_econsultant/assets/clsrmactivities/grade6.pdf **Ann McCallum Books - "Beanstalk: The Measure of a Giant" Lesson** - http://annmccallumbooks.com/wp-content/uploads/2010/11/Beanstalk-teachers.pdf **Defining Ratios and Rates –** **Houghton-Mifflin - Teacher Tutorial** - http://www.eduplace.com/math/mhm/6/07a/index.html **Houghton-Mifflin - Teacher Tutorial** - http://www.eduplace.com/math/mathsteps/6/e/index.html **Teacher Vision - "Biggest, Strongest, Fastest" Lesson** - http://www.teachervision.fen.com/tv/printables/allynbacon/Ward_020552916x_21-26_key.pdf **Comparing Ratios and Equivalent Ratios** **VDW 7th Edition - pages 353-356** **Arcademic Skill Builder - Ratio Stadium - Game** - http://www.arcademicskillbuilders.com/games/ratio-stadium/ratio-stadium.html **Arcademic Skill Builder - Ratio Blaster - Game** - http://www.arcademicskillbuilders.com/games/ratio-blaster/ratio-blaster.html **IXL- Equivalent Ratios - Assessment** - http://www.ixl.com/math/grade-6/equivalent-ratios **LearnAlberta - Rate,** **Ratio and Proportion - Interactive Applet and Video** - http://www.learnalberta.ca/content/mejhm/index.html?l=0&ID1=AB.MATH.JR.NUMB&ID2=AB.MATH.JR.NUMB.RATE **Education Place - Equivalent Ratios - Student Tutorial** - http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.thtml&grade=5&chapter=18&lesson=2&title=Equivalent+Ratios&tm=tmff1802e **Mary McClung - "Cut Down to Size at High Noon" Lesson** - https://docs.google.com/viewer?a=v&q=cache:5fohOJ-AU4EJ:wvde.state.wv.us/professional-development/model-classrooms/documents/MaryMcClung.doc+cut+down+to+size+at+high+noon+lesson+plans&hl=en&gl=us&pid=bl&srcid=ADGEESirMbZ0mgB2czShyQWG3mJ8rY9qx0WrWKQDvdBBd-iS_PVhmEts_R78NdVRGwZ6MzL2uikCGkedX8mC_0I1pJT7XHxYPlI_5NUUvFXJaBgy46Tg-7Eh1T_6rX-h1P6oCtpxWtip&sig=AHIEtbQcN8zEBjTR9sEN6GQ03v-27FFCDg

	Unit of Study 4 - Additional Resources - Continued
	Ratio Tables **VDW 7th Edition - pages 356-358** **Unit Rates** **Figure This - Problem Solving with Rates** - http://www.figurethis.org/challenges/c24/challenge.htm **Tutor Vista - "How Can I Solve a Unit Rate" - Teacher Tutorial** - http://www.tutorvista.com/math/how-can-i-solve-a-unit-rate **Proportional Relationships and Unit Rates - Lesson and Practice Pages** – http://www.cehd.umn.edu/rationalnumberproject/89_4.html **Tape Diagrams and Double Number Line Diagrams** **Tape Diagrams - Teacher Tutorial** - http://mathgpselaboration.blogspot.com/2010/04/mp5-tape-diagrams.html **Math Playground - Thinking Blocks (Bar Model - Ratios - Interactive Applet** - http://www.mathplayground.com/NewThinkingBlocks/thinking_blocks_ratios.html **Literature** Beanstalk: The Measure of a Giant by Ann McCallum Biggest, Strongest, Fastest by Steve Jenkins Cut Down to Size at High Noon by Scott Sundby Gulliver's Travels by Jonathan Swift How Many Snails? by Paul Giganti If Dogs Were Dinosaurs by David Schwarz If You Hopped Like a Frog by David Schwartz Kate and the Beanstalk by Mary Pope Osborne "One Inch Tall" in Where the Sidewalk Ends by Shel Silverstein Only One by Marc Harshman A Pizza the Size of the Sun by Jack Prelutsky Pythagoras and the Ratios by Julie Ellis The Shrinking of Treehorn by Florence Parry Heide Space Word Problems Starring Ratios and Proportions by Rebecca Wingard-Nelson Swamp Angel by Anne Isaacs The Warlord's Puppeteers by Virginia Walton Pilegard What's Faster Than a Speeding Cheetah? by Robert E. Wells
Assessment Options	$\frac{35}{17}$ **Go Math! Assessment Options**: Show What You Know Diagnostic Assessment; Mid-Chapter Checkpoint; Quick Checks; Portfolio Assessment; Chapter 4 Review/Test; Chapter 4 Test; Diagnostic Interview Assessment; Soar to Success; Standards Practice Pages. $\frac{35}{17}$ **Daily/Weekly Formative Assessment Options**: Journaling, Problem of the Day, Teacher Developed Tasks, Observation, Daily Work, Homework.

Unit of Study 5	6th Grade	Quarter 2	Approx. 8 days	GSD Revised 9/18/13

Domain: Ratios and Proportional Relationships   6.RP

Cluster: Understand ratio concepts and use ratio reasoning to solve problems.

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.

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.

Math Content Objectives	Vocabulary	Teacher's Resources and Notes

I can:
 	
6.RP.3c
  Understand percent means hundredths.
  Find a percent of a quantity.
  Find the whole, given a part and a percent.
 	
Key Concepts for Differentiation - See p. 8.
 	
Math Language Objectives
 	
[Note: The following language objectives must be written in student-friendly terms, adapted to specific lessons, and aligned with the language needs of students.]
 	
Reading Standards for Informational Text
  Cite textual evidence to support analysis of a math text.
  Determine the meaning of specific math words or phrases in a text.
  Integrate information presented in visual, quantitative, and text formats to understand a math topic.
  Read and comprehend math texts.
	bar model
	decimal
	decimal fraction
	double number line diagram
	equivalent fractions
	equivalent ratios
	fraction
	number line
	percent
	quantity
	ratio
	simplify
	tape diagram	

Math Language Objectives	Vocabulary	Teacher's Resources and Notes
Writing Standards ³⁵⁄₁₇ Write arguments to support math claims with clear reasons and evidence. ³⁵⁄₁₇ Write explanatory math text to convey ideas, concepts, and information, including graphics and multimedia when useful to aiding comprehension. ³⁵⁄₁₇ Produce clear, coherent math writing appropriate to the task. ³⁵⁄₁₇ Use technology to produce math writing and collaborate with others. ³⁵⁄₁₇ Draw evidence from informational math texts to support analysis and reflection. ³⁵⁄₁₇ Write routinely for a range of math tasks. **Speaking and Listening Standards** ³⁵⁄₁₇ Engage in collaborative math discussions. ³⁵⁄₁₇ Interpret math information presented in visual, quantitative, and oral formats. ³⁵⁄₁₇ Delineate a speaker's argument, distinguishing math claims that are supported by reasons and evidence from claims that are not. ³⁵⁄₁₇ Present math claims and findings, sequencing ideas logically and using pertinent facts and details. ³⁵⁄₁₇ Add visual displays in math presentations.		

Go Math! Common Core Alignment	Unit of Study 5 – Additional Resources
Lesson 5.1 6.RP.3c **Lesson 5.2** 6.RP.3c **Lesson 5.3** 6.RP.3c **Lesson 5.4** 6.RP.3c **Lesson 5.5** 6.RP.3c **Lesson 5.6** 6.RP.3c	**Fractions, Decimals, and Percents** **LearnAlberta - "Percent" Lesson** - http://www.learnalberta.ca/content/mesg/html/math6web/index.html?page=lessons **Math.com - Fraction, Decimal, Percent - Teacher Tutorial** - http://www.math.com/school/subject1/lessons/S1U1L7GL.html **Illuminations - "Now and Then" Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?id=L837 **CyberChase - Fraction, Decimal Percent - Game** - http://pbskids.org/cyberchase/games/percent/ **Education Place - Fractions and Decimal Equivalents - Student Tutorial** - http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.thtml&grade=4&chapter=21&lesson=4&title=Fractions+and+Decimal+Equivalents&tm=tmfe2104e **Illuminations - "Fraction Models" Lesson** - http://illuminations.nctm.org/ActivityDetail.aspx?ID=11 **UEN - "Predicting Percents" If You Hopped Like a Frog Lesson** - http://www.uen.org/Lessonplan/preview.cgi?LPid=21561

	Unit of Study 5 - Additional Resources - Continued
	Literature <u>Fractions, Decimals, and Percents</u> by David Adler <u>If the World Were a Village</u> by David J. Smith <u>Piece=Part=Portion</u> by Scott Gifford
Assessment Options	�35⁄17 **Go Math! Assessment Options**: Show What You Know Diagnostic Assessment; Mid-Chapter Checkpoint; Quick Checks; Portfolio Assessment; Chapter 5 Review/Test; Chapter 5 Test; Diagnostic Interview Assessment; Soar to Success; Standards Practice Pages. �35⁄17 **Daily/Weekly Formative Assessment Options**: Journaling, Problem of the Day, Teacher Developed Tasks, Observation, Daily Work, Homework.

Unit of Study 6	6th Grade	Quarter 2	Approx. 7 days	GSD Revised 3/12/13

Domain: Ratios and Proportional Relationships | 6.RP

Cluster: Understand ratio concepts and use ratio reasoning to solve problems.

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.

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

Math Content Objectives	Vocabulary	Teacher's Resources and Notes

I can:
 	
6.RP.3d
  ☞ Convert measurement units using ratio reasoning.
  ☞ Transform units to solve problems.
 	
☞ Key Concepts for Differentiation - See p. 8.
 	
Math Language Objectives
 	
[Note: The following language objectives must be written in student-friendly terms, adapted to specific lessons, and aligned with the language needs of students.]
 	
Reading Standards for Informational Text
  ☞ Cite textual evidence to support analysis of a math text.
  ☞ Determine the meaning of specific math words or phrases in a text.
  ☞ Integrate information presented in visual, quantitative, and text formats to understand a math topic.
  ☞ Read and comprehend math texts.
	☞ capacity
	☞ conversion factor
	☞ customary system
	☞ formula
	☞ gallon
	☞ gram
	☞ length
	☞ liter
	☞ mass
	☞ meter
	☞ metric system
	☞ ounce
	☞ pint
	☞ pound
	☞ quart
	☞ substitution
	☞ ton
	☞ value
	☞ variable
	☞ weight	

Math Language Objectives	Vocabulary	Teacher's Resources and Notes
Writing Standards $\frac{35}{17}$ Write arguments to support math claims with clear reasons and evidence. $\frac{35}{17}$ Write explanatory math text to convey ideas, concepts, and information, including graphics and multimedia when useful to aiding comprehension. $\frac{35}{17}$ Produce clear, coherent math writing appropriate to the task. $\frac{35}{17}$ Use technology to produce math writing and collaborate with others. $\frac{35}{17}$ Draw evidence from informational math texts to support analysis and reflection. $\frac{35}{17}$ Write routinely for a range of math tasks. **Speaking and Listening Standards** $\frac{35}{17}$ Engage in collaborative math discussions. $\frac{35}{17}$ Interpret math information presented in visual, quantitative, and oral formats. $\frac{35}{17}$ Delineate a speaker's argument, distinguishing math claims that are supported by reasons and evidence from claims that are not. $\frac{35}{17}$ Present math claims and findings, sequencing ideas logically and using pertinent facts and details. $\frac{35}{17}$ Add visual displays in math presentations.		

Go Math! Common Core Alignment	Unit of Study 6 – Additional Resources
Lesson 6.1 6.RP.3d **Lesson 6.2** 6.RP.3d **Lesson 6.3** 6.RP.3d **Lesson 6.4** 6.RP.3d **Lesson 6.5** 6.RP.3d	**Customary/Standard System** **IXL - Convert and Compare Customary Systems - Assessment** - http://www.ixl.com/math/grade-6/convert-and-compare-customary-units **IXL - Convert, compare, add, and subtract mixed customary units - Assessment** - http://www.ixl.com/math/grade-6/convert-compare-add-and-subtract-mixed-customary-units **NLVM - Converting Units - Interactive Applet** - http://nlvm.usu.edu/en/nav/frames_asid_272_g_2_t_4.html?open=instructions&from=category_g_2_t_4.html **Easy Surf - Converter Applet** - http://www.easysurf.cc/cnver13.htm#ctog1 **BBC - Animal Weigh In - Game** - http://www.bbc.co.uk/education/mathsfile/shockwave/games/animal.html **The Teacher Website – "Gallon Man" Lesson** - http://www.theteacherwebsite.com/mrgallonmanproject-tools.pdf **HMH School Publishers - Game** - http://www.harcourtschool.com/activity/con_math/g04c24.html **Metric System** **IXL - Convert and Compare Metric Systems - Assessment** - http://www.ixl.com/math/grade-6/convert-and-compare-metric-units **Atlantis Ed. - Teacher Tutorial** - http://atlantis.coe.uh.edu/archive/science/science_lessons/scienceles3/metric/metric.html **UEN – "Make It Metric" Lesson** - http://www.uen.org/Lessonplan/preview.cgi?LPid=21571 **Purple Math - Metric Units and Converting Between Them - Teacher Tutorial** - http://www.purplemath.com/modules/metric.htm **Figure This - Problem Solving with Measurement** - http://www.figurethis.org/challenges/c67/challenge.htm **Math Playground - Student Tutorial Video** - http://www.mathplayground.com/howto_Metric.html **Distance, Rate, and Time** **Math.com - Distance, Rate and Time - Teacher Tutorial** - http://www.math.com/school/subject1/lessons/S1U2L3GL.html **Math.com - Distance, Rate and Time - Teacher Tutorial** - http://www.k12math.com/math-concepts/algebra/drt.htm **Illuminations - Understanding Distance, Speed and Time Relationships - Unit of Lessons and Interactive Applet** - http://illuminations.nctm.org/LessonDetail.aspx?ID=U101

	Unit of Study 6 - Additional Resources - Continued
	Literature Millions to Measure by David M. Schwartz Wilma Unlimited by Kathleen Krull
Assessment Options	�35⁄17 **Go Math! Assessment Options**: Show What You Know Diagnostic Assessment; Mid-Chapter Checkpoint; Quick Checks; Portfolio Assessment; Chapter 6 Review/Test; Chapter 6 Test; Diagnostic Interview Assessment; Soar to Success; Performance Assessment Chapters 4-6; Standards Practice Pages. �35⁄17 **Daily/Weekly Formative Assessment Options**: Journaling, Problem of the Day, Teacher Developed Tasks, Observation, Daily Work, Homework.

Unit of Study 7	6th Grade	Quarter 2	Approx. 11 days	GSD Revised 3/12/13

Domain: Expressions and Equations

6.EE

Cluster: Apply and extend previous understandings of arithmetic to algebraic expressions.

Standard(s):

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

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

a. 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.*

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.*

c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used 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.*

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.*

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.*

Cluster: Reason about and solve one-variable equations and inequalities.

Standard(s):

6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

Math Content Objectives	Vocabulary	Teacher's Resources and Notes
I can: **6.EE.1** ☞ Write an expression using whole-number exponents. ☞ Evaluate expressions using whole-number exponents. **6.EE.2a** ☞ Write expressions with variables. ☞ Read expressions with variables.	☞ Additive Identity Property of 0 ☞ algebraic expression ☞ Associative Property of Addition ☞ Associative Property of Multiplication ☞ bar model ☞ base of an exponent ☞ Commutative Property of Addition ☞ Commutative Property of Multiplication ☞ coefficient ☞ constant	

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Math Content Objectives	Vocabulary	Teacher's Resources and Notes
6.EE.2b 35/17 Identify the parts of an expression using sum, term, product, factor, quotient, and coefficient. 35/17 Understand parts of an expression can have more than one name. **6.EE.2c** ☞ Evaluate expressions using specific values for variables. 35/17 Use formulas to solve real-world problems. 35/17 Evaluate expressions using the Order of Operations. **6.EE.3** ☞ Apply the properties of operations to find equivalent expressions. **6.EE.4** 35/17 Combine like terms to find equivalent expressions. ☞ Identify if and when two expressions are equivalent. **6.EE.6** 35/17 Use variables to represent numbers. ☞ Write expressions for real-world and mathematical problems. 35/17 Understand that a variable can represent one number or a set of numbers. ☞ Key Concepts for Differentiation - See p. 8.	35/17 difference 35/17 Distributive Property 35/17 equivalent expressions 35/17 evaluate 35/17 exponent 35/17 expression 35/17 factor 35/17 formula 35/17 greatest common factor (GCF) 35/17 like terms 35/17 Multiplicative Identity Property of 1 35/17 numerical expression 35/17 Order of Operations 35/17 product 35/17 quotient 35/17 substitution 35/17 sum 35/17 tape diagram 35/17 term 35/17 variable	

Unit of Study 7 (continued)

Math Language Objectives	Vocabulary	Teacher's Resources and Notes
[Note: The following language objectives must be written in student-friendly terms, adapted to specific lessons, and aligned with the language needs of students.] **Reading Standards for Informational Text** $\frac{35}{17}$ Cite textual evidence to support analysis of a math text. $\frac{35}{17}$ Determine the meaning of specific math words or phrases in a text. $\frac{35}{17}$ Integrate information presented in visual, quantitative, and text formats to understand a math topic. $\frac{35}{17}$ Read and comprehend math texts. **Writing Standards** $\frac{35}{17}$ Write arguments to support math claims with clear reasons and evidence. $\frac{35}{17}$ Write explanatory math text to convey ideas, concepts, and information, including graphics and multimedia when useful to aiding comprehension. $\frac{35}{17}$ Produce clear, coherent math writing appropriate to the task. $\frac{35}{17}$ Use technology to produce math writing and collaborate with others. $\frac{35}{17}$ Draw evidence from informational math texts to support analysis and reflection. $\frac{35}{17}$ Write routinely for a range of math tasks.		

Math Language Objectives	Vocabulary	Teacher's Resources and Notes
Speaking and Listening Standards $\frac{35}{17}$ Engage in collaborative math discussions. $\frac{35}{17}$ Interpret math information presented in visual, quantitative, and oral formats. $\frac{35}{17}$ Delineate a speaker's argument, distinguishing math claims that are supported by reasons and evidence from claims that are not. $\frac{35}{17}$ Present math claims and findings, sequencing ideas logically and using pertinent facts and details. $\frac{35}{17}$ Add visual displays in math presentations.		

Go Math! Common Core Alignment	Unit of Study 7 – Additional Resources
Lesson 7.1 6.EE.1 **Lesson 7.2** 6.EE.1 **Lesson 7.3** 6.EE.2a **Lesson 7.4** 6.EE.2b **Lesson 7.5** 6.EE.2c **Lesson 7.6** 6.EE.6 **Lesson 7.7** 6.EE.3 **Lesson 7.8** 6.EE.3 **Lesson 7.9** 6.EE.4	**Exponents** **VDW 7th Edition - pages 473-476** **Math Goodies - Exponents - Tutorial and Practice Exercises** - http://www.mathgoodies.com/lessons/vol3/exponents.html **Math Goodies - Patterns and Exponents - Tutorial and Practice Exercises** – http://www.mathgoodies.com/lessons/vol3/patterns_and_exponents.html **EZSchool - Alien Exponents - Game** - http://www.ezschool.com/Games/Exponents.html **Parts of an Expression and Definitions** **Math.com - Teacher Tutorial** - http://www.math.com/school/subject2/lessons/S2U1L1GL.html **Math Is Fun - Teacher Tutorial** - http://www.mathsisfun.com/algebra/definitions.html **Variables** **VDW 7th Edition - pages 262-264** **MathStar - Interactive Lesson** - http://mathstar.lacoe.edu/lessonlinks/menu_math/var_food.html **Write, Read and Evaluate Expressions** **Math Goodies - Writing Algebraic Expressions - Tutorial and Practice Exercises** - http://www.mathgoodies.com/lessons/vol7/expressions.html **Study Guides and Tutorials - Teacher Tutorial** - http://www.studygs.net/mathproblems.htm **Mathwire - I Have, Who Has - Game** - http://mathwire.com/whohas/whalgA.pdf **Math Play - Who Wants to Be a Millionaire - Game** – http://www.math-play.com/Algebraic-Expressions-Millionaire/algebraic-expressions-millionaire.html **UEN - Algebra Applies to the Real World! No Way! - Lesson** - http://www.uen.org/Lessonplan/preview.cgi?LPid=18876 **Education Place - Words into Expressions - Student Tutorial** - http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.thtml&grade=4&chapter=5&lesson=2&title=Words+into+Expressions&tm=tmfe0502e **UEN - "Understanding Variables" Lesson** - http://www.uen.org/Lessonplan/preview.cgi?LPid=6161

	Unit of Study 7 - Additional Resources - Continued
	Order of Operations **VDW 7th Edition - pages 474-475** **LearnAlberta - Exploring Order of Operations - Student Interactive** http://www.learnalberta.ca/content/mejhm/index.html?l=0&ID1=AB.MATH.JR.NUMB&ID2=AB.MATH.JR.NUMB.INTE&lesson=html/object_interactives/order_of_operations/use_it.html **Illuminations- Order of Operations Bingo - Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?id=L730 **Math Goodies - Order of Operations - Tutorial and Practice Exercises** - http://www.mathgoodies.com/lessons/vol7/order_operations.html **Math Goodies - Order of Operations with Exponents - Tutorial and Practice Exercises** - http://www.mathgoodies.com/lessons/vol7/operations_exponents.html **Illuminations - Everything Balances Out in the End - Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?ID=L643 **Properties of Operations** **VDW 7th Edition - pages 265-266** **Math League - Teacher Tutorial** - http://www.mathleague.com/help/wholenumbers/wholenumbers.htm **Purplemath - Teacher Tutorial** - http://www.purplemath.com/modules/numbprop.htm **Write Expressions and Equations** **MathsNet - Word Problems - Class Interactive** - http://mathsnet.net/algebra/c11.html **LearnAlberta - Exploring Algebra Noodle - Game** - http://www.learnalberta.ca/content/mejhm/index.html?l=0&ID1=AB.MATH.JR.PATT&ID2=AB.MATH.JR.PATT.ALG&lesson=html/object_interactives/algebra/use_it.html **Literature** Dinosaur Deals by Stuart Murphy The King's Chessboard by David Birch Minnie's Diner by Dayle Ann Dodds Mystery Math: A First Book of Algebra by David Adler One Grain of Rice by Demi Ordinary Mary's Extraordinary Deed by Emily Pearson Pay It Forward - Student Book Excerpt - www.payitforwardfoundation.org Powers of Ten by Charles and Ray Eames Safari Park by Stuart Murphy
Assessment Options	**Go Math! Assessment Options**: Show What You Know Diagnostic Assessment; Mid-Chapter Checkpoint; Quick Checks; Portfolio Assessment; Chapter 7 Review/Test; Chapter 7 Test; Diagnostic Interview Assessment; Soar to Success; Standards Practice Pages. **Daily/Weekly Formative Assessment Options**: Journaling, Problem of the Day, Teacher Developed Tasks, Observation, Daily Work, Homework.

Unit of Study 8	6th Grade	Quarter 2	Approx. 12 days	GSD Revised 12/17/13

Cluster: Reason about and solve one-variable equations and inequalities.

Standard(s):

5. Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

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.

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.

Math Content Objectives	Vocabulary	Teacher's Resources and Notes
I can: **6.EE.5** ▫ Determine which values make an equation true. ▫ Determine which values make an inequality true. ▫ Use substitution to decide if a number makes an equation true. ▫ Use substitution to decide if a number makes an inequality true. **6.EE.7** ☞ Solve real-world and mathematical problems by writing and solving equations.	▫ Addition Property of Equality ▫ Additive Identity Property of 0 ▫ additive inverse ▫ algebraic expression ▫ Commutative Property of Addition ▫ Commutative Property of Multiplication ▫ difference ▫ Division Property of Equality ▫ equation ▫ equivalent ▫ evaluate ▫ expression ▫ greater than (how to read >) ▫ greater than or equal to (how to read ≥) ▫ inequality ▫ infinite ▫ inverse operations ▫ is not equal to (how to read ≠) ▫ less than (how to read <)	

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Math Content Objectives	Vocabulary	Teacher's Resources and Notes
6.EE.8 ☞ Write an inequality to represent a set of solutions for real-world and mathematical problems. ☞ Recognize that inequalities of the form $x > c$ and $x < c$ have an infinite number of solutions. ☞ Graph solutions to inequalities on a number line. ☞ Key Concepts for Differentiation - See p. 8. **Math Language Objectives** *[Note: The following language objectives must be written in student-friendly terms, adapted to specific lessons, and aligned with the language needs of students.]* **Reading Standards for Informational Text** ☞ Cite textual evidence to support analysis of a math text. ☞ Determine the meaning of specific math words or phrases in a text. ☞ Integrate information presented in visual, quantitative, and text formats to understand a math topic. ☞ Read and comprehend math texts.	☞ less than or equal to (how to read ≤) ☞ Multiplication Property of Equality ☞ Multiplicative Identity Property of 1 ☞ number line ☞ numerical expression ☞ product ☞ quotient ☞ solution of an equation ☞ solution of an inequality ☞ substitution ☞ Subtraction Property of Equality ☞ sum ☞ value ☞ variable	

Math Language Objectives	Vocabulary	Teacher's Resources and Notes

Writing Standards

$^{35}_{17}$ Write arguments to support math claims with clear reasons and evidence.

$^{35}_{17}$ Write explanatory math text to convey ideas, concepts, and information, including graphics and multimedia when useful to aiding comprehension.

$^{35}_{17}$ Produce clear, coherent math writing appropriate to the task.

$^{35}_{17}$ Use technology to produce math writing and collaborate with others.

$^{35}_{17}$ Draw evidence from informational math texts to support analysis and reflection.

$^{35}_{17}$ Write routinely for a range of math tasks.

Speaking and Listening Standards

$^{35}_{17}$ Engage in collaborative math discussions.

$^{35}_{17}$ Interpret math information presented in visual, quantitative, and oral formats.

$^{35}_{17}$ Delineate a speaker's argument, distinguishing math claims that are supported by reasons and evidence from claims that are not.

$^{35}_{17}$ Present math claims and findings, sequencing ideas logically and using pertinent facts and details.

$^{35}_{17}$ Add visual displays in math presentations.

Go Math! Common Core Alignment	Unit of Study 8 – Additional Resources
Lesson 8.1 6.EE.5 **Lesson 8.2** 6.EE.7 **Lesson 8.3** 6.EE.7 **Lesson 8.4** 6.EE.7 **Lesson 8.5** 6.EE.7 **Lesson 8.6** 6.EE.7 **Lesson 8.7** 6.EE.7 **Lesson 8.8** 6.EE.5 **Lesson 8.9** 6.EE.8 **Lesson 8.10** 6.EE.8	**Solve One-Variable Equations** **Shodor - Algebra Four - Game** - (All activities except quadratics.) http://www.shodor.org/interactivate/activities/AlgebraFour/ **MathsNet - Unknowns on Both Sides - Class Interactive**- http://mathsnet.net/algebra/cu1.html **MathsNet - Equation Buster - Class Interactive**- http://www.mathsnet.net/algebra/equation.html **Education Place - Write and Solve Equations - Student Tutorial** - http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.thtml&grade=5&chapter=21&lesson=2&title=Write+and+Solve+Equations&tm=tmff2102e **Substitution of Variables** **VDW 7th Edition - pages 262-264** **MathsNet - Substituting Values - Tutorial** - http://mathsnet.net/algebra/a11.html **BBC - Late Delivery - Game** - http://www.bbc.co.uk/education/mathsfile/shockwave/games/postie.html **Write Expressions and Equations** **MathsNet - Word Problems - Class Interactive** - http://mathsnet.net/algebra/c11.html **LearnAlberta - Exploring Algebra Noodle - Game** - http://www.learnalberta.ca/content/mejhm/index.html?l=0&ID1=AB.MATH.JR.PATT&ID2=AB.MATH.JR.PATT.ALG&lesson=html/object_interactives/algebra/use_it.html **Balancing Equations** **VDW 7th Edition - pages 258-262** **NLVM - Algebra Balance Scales – Interactive Applet** - http://nlvm.usu.edu/en/nav/frames_asid_201_g_3_t_2.html?open=instructions&from=category_g_3_t_2.html **Illuminations - Pan Balance - Numbers - Class Interactive** - http://illuminations.nctm.org/ActivityDetail.aspx?ID=26 **Illuminations - Pan Balance - Expressions - Class Interactive** - http://illuminations.nctm.org/ActivityDetail.aspx?id=10 **LearnAlberta - Balancing Equations - Video Lesson** - http://www.learnalberta.ca/content/mesg/html/math6web/index.html?page=lessons&lesson=m6lessonshell11.swf **CORE Academy - 6th Grade, 2005 Participant Handbook - Balance or Tilt? Lesson** - http://coreacademy.usu.edu/Materials/2005/Handbooks/SixthGrade.pdf **BBC - Equation Match Game** - http://www.bbc.co.uk/education/mathsfile/shockwave/games/equationmatch.html

	Unit of Study 8 - Additional Resources - Continued
	Inequalities **Math is Fun - Teacher Tutorial** - http://www.mathsisfun.com/equal-less-greater.html **SpeedMath - Inequalities - Game** - http://education.jlab.org/sminequality/index.html **IXL Math - Comparing Integers - Assessment** - http://www.ixl.com/math/practice/grade-5-compare-integers **MathsNet - Inequalities - Tutorial** - http://mathsnet.net/algebra/c31.html **Literature** Equal Shmequal by Virginia Kroll Mystery Math: A First Book of Algebra by David Adler
Assessment Options	$\frac{35}{17}$ **Go Math! Assessment Options**: Show What You Know Diagnostic Assessment; Mid-Chapter Checkpoint; Quick Checks; Portfolio Assessment; Chapter 8 Review/Test; Chapter 8 Test; Diagnostic Interview Assessment; Soar to Success; Standards Practice Pages. $\frac{35}{17}$ **Daily/Weekly Formative Assessment Options**: Journaling, Problem of the Day, Teacher Developed Tasks, Observation, Daily Work, Homework.

Unit of Study 9	6th Grade	Quarters 2 & 3	Approx. 7 days	GSD Revised 12/17/13

Domain: Expressions and Equations | 6.EE

Cluster: Represent and analyze quantitative relationships between dependent and independent variables.

Standard(s):

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.*

Math Content Objectives	Vocabulary	Teacher's Resources and Notes
I can: **6.EE.9** - Use variables to represent two quantities that change in relationship to one another. - Write an equation to describe one quantity in terms of the other quantity. - ☞ Write an equation to describe how the dependent variable changes in terms of the independent variable. - Analyze how dependent variables change in a table. - Analyze how dependent variables change in a graph. - ☞ Understand that a graph, table and an equation can all represent the same real-world problem. ☞ Key Concepts for Differentiation - See p. 8.	- coordinate grid - coordinate pair - coordinate plane - coordinate system - coordinates - dependent variable - equation - expression - independent variable - linear equation - Order of Operations - ordered pair - origin - pattern - table - value - *x*-axis - *x*-coordinate - *y*-axis - *y*-coordinate	
Math Language Objectives		
[Note: The following language objectives must be written in student-friendly terms, adapted to specific lessons, and aligned with the language needs of students.] **Reading Standards for Informational Text** - Cite textual evidence to support analysis of a math text.		

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Math Language Objectives	Vocabulary	Teacher's Resources and Notes
Reading Standards for Informational Text (cont.) [35/17] Determine the meaning of specific math words or phrases in a text. [35/17] Integrate information presented in visual, quantitative, and text formats to understand a math topic. [35/17] Read and comprehend math texts. **Writing Standards** [35/17] Write arguments to support math claims with clear reasons and evidence. [35/17] Write explanatory math text to convey ideas, concepts, and information, including graphics and multimedia when useful to aiding comprehension. [35/17] Produce clear, coherent math writing appropriate to the task. [35/17] Use technology to produce math writing and collaborate with others. [35/17] Draw evidence from informational math texts to support analysis and reflection. [35/17] Write routinely for a range of math tasks. **Speaking and Listening Standards** [35/17] Engage in collaborative math discussions. [35/17] Interpret math information presented in visual, quantitative, and oral formats. [35/17] Delineate a speaker's argument, distinguishing math claims that are supported by reasons and evidence from claims that are not. [35/17] Present math claims and findings, sequencing ideas logically and using pertinent facts and details. [35/17] Add visual displays in math presentations.		

Go Math! Common Core Alignment	Unit of Study 9 – Additional Resources
Lesson 9.1 6.EE.9 **Lesson 9.2** 6.EE.9 **Lesson 9.3** 6.EE.9 **Lesson 9.4** 6.EE.9 **Lesson 9.5** 6.EE.9	**Dependent and Independent Variables** **VDW 7th Edition - pages 277-278** **Cyberchase - Stop That Creature - Game** - http://pbskids.org/cyberchase/games/functions/functions.html **Math Playground - What's the Function? - Game** - http://www.mathplayground.com/functionmachine.html **Mathwire - Guess My Rule: The Function Machine - Game** - http://mathwire.com/games/guessmyrulegame.pdf **Teams - Find the Function- Game** - http://teams.lacoe.edu/documentation/classrooms/amy/algebra/5-6/activities/functionmachine/functionmachine5_6.html **Mathwire - Investigating Growing Patterns - Teacher Lesson** - http://mathwire.com/algebra/growingpatterns.html **Project Idea** - http://www.teachforever.com/2007/10/project-idea-independent-vs-dependent.html **Math Solutions - Two of Everything - Lesson Plan** - http://www.mathsolutions.com/documents/0941355489_CH1.pdf **UEN - "Function-al Machines and Spaghetti Graphs" Lesson** - http://www.uen.org/Lessonplan/preview.cgi?LPid=18863 **UEN - "Patterns" Lesson** - http://www.uen.org/Lessonplan/preview.cgi?LPid=6394 **Representations of Dependent and Independent Variables (including graphs and tables)** **VDW 7th Edition - pages 278-283** **UEN - " Best Salary" The King's Chessboard Lesson** - http://www.uen.org/Lessonplan/preview.cgi?LPid=15426 **Beacon Lesson Plan Library - "Chessboard Challenge" The King's Chessboard Lesson** - http://www.beaconlearningcenter.com/Lessons/5107.htm **NSA - "The King's Rule" The King's Chessboard Lesson** - http://www.nsa.gov/academia/_files/collected_learning/elementary/patterns/The_Kings_Rule.pdf **US Mint - "Double Your Money" The King's Chessboard Lesson** - http://www.usmint.gov/kids/teachers/lessonPlans/50sq/2001/0406-1.pdf **Illuminations - "One Grain of Rice" Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?ID=L713 **Two-Quantities in a Real-World Problem** **LearnAlberta - Exploring Algebra - Video and Interactive Lesson** - http://www.learnalberta.ca/content/mejhm/index.html?l=0&ID1=AB.MATH.JR.PATT&ID2=AB.MATH.JR.PATT.ALG&lesson=html/video_interactives/algebra/algebraSmall.html **Distance, Rate, and Time** **Math.com - Distance, Rate and Time - Teacher Tutorial** - http://www.math.com/school/subject1/lessons/S1U2L3GL.html **Math.com - Distance, Rate and Time - Teacher Tutorial** - http://www.k12math.com/math-concepts/algebra/drt.htm **Illuminations - Understanding Distance, Speed and Time Relationships - Unit of Lessons and Interactive Applet** - http://illuminations.nctm.org/LessonDetail.aspx?ID=U101

	Unit of Study 9 - Additional Resources - Continued
	Literature Aesop's The Crow and the Pitcher by Stephanie Gwyn Brown Fortunately by Remy Charlip The King's Chessboard by David Birch Minnie's Diner by Dayle Ann Dodds One Grain of Rice by Demi Two of Everything by Lily Toy Hong Wilma Unlimited by Kathleen Krull
Assessment Options	35/17 **Go Math! Assessment Options**: Show What You Know Diagnostic Assessment; Mid-Chapter Checkpoint; Quick Checks; Portfolio Assessment; Chapter 9 Review/Test; Chapter 9 Test; Diagnostic Interview Assessment; Soar to Success; Performance Assessment Chapters 7-9; Standards Practice Pages. 35/17 **Daily/Weekly Formative Assessment Options**: Journaling, Problem of the Day, Teacher Developed Tasks, Observation, Daily Work, Homework.

Unit of Study 10	6th Grade	Quarter 3	Approx. 11 days	GSD Revised 11/14/13

Domain: Geometry   6.G

Cluster: Solve real-world and mathematical problems involving area, surface area, and volume.

Standard(s):

1. Find the 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.

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.

Math Content Objectives	Vocabulary	Teacher's Resources and Notes

I can:
 	
6.G.1
  Find the area of right triangles and other triangles.
  Find the area of quadrilaterals and polygons by composing into rectangles or decomposing into triangles and other shapes.
  Find the area of polygons in real-world and mathematical problems.
	acute triangle
	altitude
	area
	array
	base of a polygon
	compose
	composite figure
	congruent
	coordinate grid
	coordinate pair
	coordinate plane
	coordinate system
	coordinates
	decompose
	diagonal
	equiangular triangle
	equilateral triangle
	formula
	height
	isosceles triangle
	negative numbers
	obtuse triangle	

Math Content Objectives	Vocabulary	Teacher's Resources and Notes

6.G.3
- Draw polygons in the coordinate plane with given vertices.
- Find the length of a side of a polygon when the endpoints of the side have either the same first coordinate **or** the same second coordinate.
- Apply the techniques of finding polygon side lengths in real-world and mathematical problems.

☞ Key Concepts for Differentiation - See p. 8.

Math Language Objectives

[Note: The following language objectives must be written in student-friendly terms, adapted to specific lessons, and aligned with the language needs of students.]

Reading Standards for Informational Text
- Cite textual evidence to support analysis of a math text.
- Determine the meaning of specific math words or phrases in a text.
- Integrate information presented in visual, quantitative, and text formats to understand a math topic.
- Read and comprehend math texts.

Vocabulary:
- ordered pair
- origin
- parallelogram
- plot
- polygon
- positive numbers
- quadrants
- quadrilateral
- rectangle
- regular polygon
- right triangle
- scalene triangle
- square
- square unit
- trapezoid
- unit square
- vertex (plural - vertices)
- x-axis
- *x*-coordinate
- *y*-axis
- *y*-coordinate

Math Language Objectives	Vocabulary	Teacher's Resources and Notes

Writing Standards

$\frac{35}{17}$ Write arguments to support math claims with clear reasons and evidence.

$\frac{35}{17}$ Write explanatory math text to convey ideas, concepts, and information, including graphics and multimedia when useful to aiding comprehension.

$\frac{35}{17}$ Produce clear, coherent math writing appropriate to the task.

$\frac{35}{17}$ Use technology to produce math writing and collaborate with others.

$\frac{35}{17}$ Draw evidence from informational math texts to support analysis and reflection.

$\frac{35}{17}$ Write routinely for a range of math tasks.

Speaking and Listening Standards

$\frac{35}{17}$ Engage in collaborative math discussions.

$\frac{35}{17}$ Interpret math information presented in visual, quantitative, and oral formats.

$\frac{35}{17}$ Delineate a speaker's argument, distinguishing math claims that are supported by reasons and evidence from claims that are not.

$\frac{35}{17}$ Present math claims and findings, sequencing ideas logically and using pertinent facts and details.

$\frac{35}{17}$ Add visual displays in math presentations.

Go Math! Common Core Alignment	Unit of Study 10 – Additional Resources
Lesson 10.1 6.G.1 **Lesson 10.2** 6.G.1 **Lesson 10.3** 6.G.1 **Lesson 10.4** 6.G.1 **Lesson 10.5** 6.G.1 **Lesson 10.6** 6.G.1 **Lesson 10.7** 6.G.1 **Lesson 10.8** 6.G.1 **Lesson 10.9** 6.G.3	<u>**Area of Triangles and Quadrilaterals**</u> **VDW 7th Edition- pages 391-394** **NLVM eModule - Student Interactive Lesson** - http://enlvm.usu.edu/ma/nav/toc.jsp?sid=__shared&cid=emready@area_pt&bb=course **Shodor - Triangle Explorer - Interactive Applet** - http://www.shodor.org/interactivate/activities/TriangleExplorer/ **Illuminations - Area Formulas - Unit of Lessons** - http://illuminations.nctm.org/LessonDetail.aspx?ID=U160 **Scholastic Study Jams - Area of Parallelogram - Student Interactive Tutorial** - http://studyjams.scholastic.com/studyjams/jams/math/measurement/area-parallelogram.htm **Scholastic Study Jams - Area of Triangle - Student Interactive Tutorial** - http://studyjams.scholastic.com/studyjams/jams/math/measurement/area-triangle.htm **Education Place - Area of a Parallelogram - Student Tutorial** - http://eduplace.com/cgi- bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.thtml&grade=5&chapter=16&lesson=3&title=Area+of+a+Parallelogram&tm=tmff1603e <u>**Composing and Decomposing Polygons**</u> **Illuminations - Area Formulas - Lesson 4** - http://illuminations.nctm.org/LessonDetail.aspx?ID=L583 **Scholastic Study Jams - Area of Irregular Figures - Student Interactive Tutorial** - http://studyjams.scholastic.com/studyjams/jams/math/measurement/area-irregular-figures.htm **LearnAlberta - "Exploring Composite Figures" ' Interactive Applet** - http://www.learnalberta.ca/content/mejhm/index.html?l=0&ID1=AB.MATH.JR.SHAP&ID2=AB.MATH.JR.SHAP.AREA&lesson=html/object_interactives/composite_figures/explore_it.html **Cyberchase - Tangram Game - Game** - http://pbskids.org/cyberchase/games/area/tangram.html **Apples4theTeacher - Geometry Games** - http://www.apples4theteacher.com/math.html#geometrygames <u>**Length of Sides of Polygons in Coordinate Plane**</u> **VDW 7th Edition - page 428** <u>**Real World Applications**</u> **Learn NC - Gridding a Site - Archaeology Lesson** - http://www.learnnc.org/lp/pages/1005

	Unit of Study 10 - Additional Resources - Continued
	Literature The Fly on the Ceiling by Julie Glass Grandfather Tang's Story by Ann Tompert The Greedy Triangle by Marilyn Burns Shape Up by David Adler "Shapes" in A Light in the Attic by Shel Silverstein Shapes, Shapes, Shapes by Tana Hoban The Warlord's Puzzle by Virginia Walton Pilegard
Assessment Options	$\frac{35}{17}$ **Go Math! Assessment Options**: Show What You Know Diagnostic Assessment; Mid-Chapter Checkpoint; Quick Checks; Portfolio Assessment; Chapter 10 Review/Test; Chapter 10 Test; Diagnostic Interview Assessment; Soar to Success; Standards Practice Pages. $\frac{35}{17}$ **Daily/Weekly Formative Assessment Options**: Journaling, Problem of the Day, Teacher Developed Tasks, Observation, Daily Work, Homework.

Unit of Study 11	6th Grade	Quarter 3	Approx. 9 days	GSD Revised 1/13/14

Domain: Geometry   6.G

Cluster: Solve real-world and mathematical problems involving area, surface area, and volume.

Standard(s):

2. Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l\,w\,h$ and $V = b\,h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

4. Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world mathematical problems.

Math Content Objectives	Vocabulary	Teacher's Resources and Notes
I can: **6.G.2** $\frac{35}{17}$ Find the volume of right rectangular prisms in mathematical problems. ↪ Use the formulas $V = lwh$ and $V = Bh$ to find the volume of right rectangular prisms. $\frac{35}{17}$ Find the volume of right rectangular prisms in real-world problems.	$\frac{35}{17}$ acute triangle $\frac{35}{17}$ array $\frac{35}{17}$ base of a solid figure $\frac{35}{17}$ cube $\frac{35}{17}$ cubic unit $\frac{35}{17}$ edge $\frac{35}{17}$ equiangular triangle $\frac{35}{17}$ equilateral triangle $\frac{35}{17}$ face $\frac{35}{17}$ formula $\frac{35}{17}$ height $\frac{35}{17}$ isosceles triangle $\frac{35}{17}$ lateral area $\frac{35}{17}$ lateral face $\frac{35}{17}$ net $\frac{35}{17}$ obtuse triangle $\frac{35}{17}$ polygon $\frac{35}{17}$ polyhedron $\frac{35}{17}$ prism (rectangular and triangular) $\frac{35}{17}$ pyramid (square-based and triangular) $\frac{35}{17}$ rectangle	

Math Content Objectives	Vocabulary	Teacher's Resources and Notes
6.G.4	right rectangular prism	
Represent three-dimensional figures using nets made up of rectangles and triangles.	right triangle	
Use nets to find the surface area of three-dimensional figures composed of rectangles and triangles.	scalene triangle	
Apply the surface area techniques of three-dimensional figures composed of rectangles and triangles in real-world and mathematical problems.	solid figure	
	surface area	
	three-dimensional figure	
	two-dimensional figure	
Key Concepts for Differentiation - See p. 8.	unit cube	
	vertex (plural - vertices)	
	volume	

Math Language Objectives

[Note: The following language objectives must be written in student-friendly terms, adapted to specific lessons, and aligned with the language needs of students.]

Reading Standards for Informational Text
- Cite textual evidence to support analysis of a math text.
- Determine the meaning of specific math words or phrases in a text.
- Integrate information presented in visual, quantitative, and text formats to understand a math topic.
- Read and comprehend math texts.

Math Language Objectives	Vocabulary	Teacher's Resources and Notes

Writing Standards

35/17 Write arguments to support math claims with clear reasons and evidence.

35/17 Write explanatory math text to convey ideas, concepts, and information, including graphics and multimedia when useful to aiding comprehension.

35/17 Produce clear, coherent math writing appropriate to the task.

35/17 Use technology to produce math writing and collaborate with others.

35/17 Draw evidence from informational math texts to support analysis and reflection.

35/17 Write routinely for a range of math tasks.

Speaking and Listening Standards

35/17 Engage in collaborative math discussions.

35/17 Interpret math information presented in visual, quantitative, and oral formats.

35/17 Delineate a speaker's argument, distinguishing math claims that are supported by reasons and evidence from claims that are not.

35/17 Present math claims and findings, sequencing ideas logically and using pertinent facts and details.

35/17 Add visual displays in math presentations.

Go Math! Common Core Alignment	Unit of Study 11 – Additional Resources
Lesson 11.1 6.G.4 **Lesson 11.2** 6.G.4 **Lesson 11.3** 6.G.4 **Lesson 11.4** 6.G.4 **Lesson 11.5** 6.G.2 **Lesson 11.6** 6.G.2 **Lesson 11.7** 6.G.4	**Volume of Right Rectangular Prism** **VDW 7th Edition - page 395** **Scholastic Study Jams - Volume - Video Tutorial** - http://studyjams.scholastic.com/studyjams/jams/math/measurement/volume.htm **Illuminations - "Fill 'er Up" Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?id=L831 **Illuminations - "Fishing for the Best Prism" Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?id=L793 **Illuminations - "Popcorn, Anyone?" Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?id=L797 **Scholastic - Volume of 3-D Shapes - Lesson** - http://www2.scholastic.com/browse/lessonplan.jsp?id=1317 **LearnAlberta - Volume and Displacement - Lesson** - http://www.learnalberta.ca/content/mesg/html/math6web/index.html?page=lessons&lesson=m6lessonshell15.swf **UEN - "Cube Models" (Volume and Surface Area) - Lesson** - http://www.uen.org/Lessonplan/preview.cgi?LPid=6399 **Three-Dimensional Box - Working with Volume - Applet** - http://mste.illinois.edu/users/carvell/3dbox/default.html **MathOpen Reference - Interactive Model** - http://www.mathopenref.com/cubevolume.html **Nets Using Rectangles and Triangles** **Illuminations - Dynamic Paper - Make Own Nets** - http://illuminations.nctm.org/ActivityDetail.aspx?id=205 **Interactives - Solids and Nets - Tutorial/Demonstration** - http://www.learner.org/interactives/geometry/3d_prisms.html **Nets for Geometric Solids** - http://www.lifeisastoryproblem.org/explore/index_net.html **Nets of Pyramids** - http://www.korthalsaltes.com/pdf/pyramid.pdf **Nets of Rectangular Prisms** - http://www.korthalsaltes.com/pdf/rectangular_prism.pdf **Nets of Cubes and Tetrahedron** - http://www.korthalsaltes.com/pdf/cube_tetrahedron.pdf **Nets of Pyramids** - http://www.korthalsaltes.com/pdf/pyramids_equal_hight.pdf

	Unit of Study 11 - Additional Resources - Continued
	Surface Area **Scholastic Study Jams - Student Interactive Tutorial** - http://studyjams.scholastic.com/studyjams/jams/math/measurement/surface-area.htm **CIMT - Surface Area and Nets - Lesson 6.4 pdf p. 13-20** - http://www.cimt.plymouth.ac.uk/projects/mepres/book8/bk8_6.pdf **SCETV - Surface Area and Volume Lesson Using Nets** - http://www.scetv.org/education/ntti/pdf/2000pdf/SurfaceAreaVolume.pdf **Shawnee Edu - Nets and Surface Area of Solids - Lesson** - http://www.shawnee.edu/acad/ms/ENABLdocs/MarchFollowuppdfs/Suit%20for%20a%20Solid.pdf **Unfolding Nets - Interactive Tutorial Applet** - http://mrskrummel.com/apps/Geometry/ch11_SurfaceArea.html **Shodor - Surface Area of a Rectangular Prism - Lesson and Applet** - http://www.shodor.org/interactivate/lessons/SurfaceAreaRectangular/ **Interactives - Surface Area of a Rectangular Prism - Tutorial and Applet** - http://www.learner.org/interactives/geometry/area_surface.html **Surface Area of Rectangular Prisms - Textbook Tutorial and Practice** - http://www.gaston.k12.nc.us/schools/cramerton/faculty/kllasky/Course%20Outline%20and%20Syllabus/Textbook/Ch%2012/Text%2012.3%20Surface%20Area%20Rectangular%20Prism.pdf **LearnAlberta - Surface Area and Volume with Nets - Interactive Applet and Video** - http://www.learnalberta.ca/content/mejhm/index.html?l=0&ID1=AB.MATH.JR.SHAP&ID2=AB.MATH.JR.SHAP.SURF&lesson=html/video_interactives/areavolume/areaVolumeSmall.html **eHow - Playing the Surface Area Game - Video Tutorial** - http://www.ehow.com/video_4429485_playing-surface-area-game.html **Literature** Counting on Frank by Rod Clement Wrappers Wanted by Candice Yarbray Brucke
Assessment Options	$\frac{35}{17}$ **Go Math! Assessment Options**: Show What You Know Diagnostic Assessment; Mid-Chapter Checkpoint; Quick Checks; Portfolio Assessment; Chapter 11 Review/Test; Chapter 11 Test; Diagnostic Interview Assessment; Soar to Success; Standards Practice Pages. $\frac{35}{17}$ **Daily/Weekly Formative Assessment Options**: Journaling, Problem of the Day, Teacher Developed Tasks, Observation, Daily Work, Homework.

Unit of Study 12	6th Grade	Quarter 3	Approx. 10 days	GSD Revised 3/12/13

Domain: Statistics and Probability **6.SP**

Cluster: Develop understanding of statistical variability.

Standard(s):

1. Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. *For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.*

Cluster: Summarize and describe distributions.

Standard(s):

4. Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

5. Summarize numerical data sets in relation to their context, such as by:

a. Reporting the number of observations.

b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.

c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.

d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

Math Content Objectives	Vocabulary	Teacher's Resources and Notes
I can: **6.SP.1** ☞ Recognize the difference between a statistical and a non-statistical question. ☞ Recognize that a statistical question will have variability in answers. **6.SP.4** ☞ Display numerical data on a dot plot. ☞ Display numerical data on a histogram. ☞ Display numerical data on a box plot. **6.SP.5a** ☞ Report the number of observations in a data set.	attribute bar graph cluster data distribution dot plot frequency table gap histogram interval line plot mean	

Math Content Objectives	Vocabulary	Teacher's Resources and Notes
6.SP.5b 35/17 Analyze a data set and describe what attribute is being measured, how it was measured, and its units of measure. **6.SP.5c** 35/17 Find the median of a set of data on a graph. ☞ Find the mean of a set of data. 35/17 Find the inter-quartile range of a set of data on a graph. 35/17 Find the mean absolute deviation of a set of data. ☞ Describe overall patterns and striking deviations in a set of data on a graph. **6.SP.5d** 35/17 Understand that data can be affected by the context in which it was gathered. ☞ Key Concepts for Differentiation - See p. 8.	35/17 measure of center 35/17 median 35/17 mode 35/17 number line 35/17 outlier 35/17 range 35/17 relative frequency table 35/17 statistical question 35/17 statistics 35/17 table 35/17 value	

Math Language Objectives
[Note: The following language objectives must be written in student-friendly terms, adapted to specific lessons, and aligned with the language needs of students.] **Reading Standards for Informational Text** 35/17 Cite textual evidence to support analysis of a math text. 35/17 Determine the meaning of specific math words or phrases in a text. 35/17 Integrate information presented in visual, quantitative, and text formats to understand a math topic. 35/17 Read and comprehend math texts.

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Math Language Objectives	Vocabulary	Teacher's Resources and Notes

Writing Standards

$\frac{35}{17}$ Write arguments to support math claims with clear reasons and evidence.

$\frac{35}{17}$ Write explanatory math text to convey ideas, concepts, and information, including graphics and multimedia when useful to aiding comprehension.

$\frac{35}{17}$ Produce clear, coherent math writing appropriate to the task.

$\frac{35}{17}$ Use technology to produce math writing and collaborate with others.

$\frac{35}{17}$ Draw evidence from informational math texts to support analysis and reflection.

$\frac{35}{17}$ Write routinely for a range of math tasks.

Speaking and Listening Standards

$\frac{35}{17}$ Engage in collaborative math discussions.

$\frac{35}{17}$ Interpret math information presented in visual, quantitative, and oral formats.

$\frac{35}{17}$ Delineate a speaker's argument, distinguishing math claims that are supported by reasons and evidence from claims that are not.

$\frac{35}{17}$ Present math claims and findings, sequencing ideas logically and using pertinent facts and details.

$\frac{35}{17}$ Add visual displays in math presentations.

Go Math! Common Core Alignment	Unit of Study 12 – Additional Resources
Lesson 12.1 6.SP.1 **Lesson 12.2** 6.SP.5a; 6.SP.5b **Lesson 12.3** 6.SP.4 **Lesson 12.4** 6.SP.4 **Lesson 12.5** 6.SP.5c **Lesson 12.6** 6.SP.5c **Lesson 12.7** 6.SP.5d **Lesson 12.8** 6.SP.4	**Statistical Questions and Collecting Data** **VDW 7th Edition - pages 439-441** **Illuminations - Numerical and Categorical Data - Unit of Lessons** - http://illuminations.nctm.org/LessonDetail.aspx?ID=U116 **How to Create Misleading Statistics in 6 Easy Steps - Teacher Background Information** - http://blog.makingitclear.com/2010/03/25/statistics/ **Dot Plots (Line Plots)** **VDW 7th Edition - page 446** **IXL - Create Line Plots - Assessment** - http://www.ixl.com/math/grade-6/create-line-plots **UEN - "The Human Line Plot" Lesson** - http://www.uen.org/Lessonplan/preview?LPid=15238 **LearnAlberta - Displaying Data - Video Tutorial** - http://www.learnalberta.ca/content/me5l/html/math5.html?goLesson=21 **Histograms** **VDW 7th Edition - page 447** **Illuminations - Histogram Tool - Interactive Applet** - http://illuminations.nctm.org/ActivityDetail.aspx?ID=78 **Illuminations - "There is a Difference: Histograms vs. Bar Graphs" Lesson** – http://illuminations.nctm.org/LessonDetail.aspx?id=L812 **NLVM - Box Plot/Histogram - Interactive Applet** - http://nlvm.usu.edu/en/nav/frames_asid_145_g_3_t_5.html?open=instructions&from=category_g_3_t_5.html **Shodor - Histogram Lesson and Interactive Applet** - http://www.shodor.org/interactivate/activities/Histogram/ **IXL - Create Histograms - Assessment** - http://www.ixl.com/math/grade-6/create-histograms **LearnAlberta - "Interpreting Graphs" Lesson** - http://www.learnalberta.ca/content/mesg/html/math6web/index.html?page=lessons&lesson=m6lessonshell10.swf

	Unit of Study 12 - Additional Resources - Continued
	Measures of Center, Measures of Variability and Shape of Data **VDW 7th Edition - pages 437-439; 449-452** **Illuminations - Mean and Median Interactive Applet** - http://illuminations.nctm.org/ActivityDetail.aspx?ID=160 **Online Math Learning - Series of Video Tutorials** - http://www.onlinemathlearning.com/mode-mean-median.html **Measures of Center and Spread - Student Handout** - http://westernreservepublicmedia.org/quizbus/images/vid1_measures.pdf **PH - Finding Mean, Median and Mode - Video** - http://www.phschool.com/atschool/academy123/english/academy123_content/wl-book-demo/ph-022s.html **PH - Finding and Using the Range - Video** - http://www.phschool.com/atschool/academy123/english/academy123_content/wl-book-demo/ph-148s.html **Education World - "Candy Colors" Lesson** - http://www.educationworld.com/a_lesson/03/lp293-02.shtml **Measure of Central Tendency - Teacher Tutorial** - http://www.regentsprep.org/regents/math/algebra/AD2/measure.htm **LearnAlberta - Central Tendency - Student Interactive and Video** - http://www.learnalberta.ca/content/mejhm/index.html?l=0&ID1=AB.MATH.JR.STAT&ID2=AB.MATH.JR.STAT.CENT&lesson=html/video_interactives/centralTendency/centralTendencyInteractive.html **HMH Animated Math Centers - Mean, Median and Mode** - http://eduplace.com/kids/hmcam/animath/mean_median_and_mode.html **PBS Kids Cyberchase - Send in the Trolls - Game** - http://pbskids.org/cyberchase/math-games/send-trolls/ **Interpreting Results** **VDW 7th Edition - page 453** **Literature** The Inch Boy by Junko Morimoto (**See VDW 7th Edition - page 455**) Swamp Angel by Anne Isaacs (**See VDW 7th Edition - page 455**)
Assessment Options	⅗⅟₁₇ **Go Math! Assessment Options**: Show What You Know Diagnostic Assessment; Mid-Chapter Checkpoint; Quick Checks; Portfolio Assessment; Chapter 12 Review/Test; Chapter 12 Test; Diagnostic Interview Assessment; Soar to Success; Standards Practice Pages. ⅗⅟₁₇ **Daily/Weekly Formative Assessment Options**: Journaling, Problem of the Day, Teacher Developed Tasks, Observation, Daily Work, Homework.

Unit of Study 13	6th Grade	Quarter 3	Approx. 10 days	GSD Revised 3/12/13

Domain: Statistics and Probability   6.SP

Cluster: Develop understanding of statistical variability.

Standard(s):

2. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.

3. Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.

Cluster: Summarize and describe distributions.

Standard(s):

4. Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

5. Summarize numerical data sets in relation to their context, such as by:

c. Giving quantitative measures of center (median and/or mean) and variability (inter-quartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.

d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

Math Content Objectives	Vocabulary	Teacher's Resources and Notes
I can: **6.SP.2** $\frac{35}{17}$ Find the center of a set of data. $\frac{35}{17}$ Describe a set of data by its spread and overall shape. **6.SP.3** $\frac{35}{17}$ Know that mean is a single number that is a measure of center and it summarizes all values in a set of data. $\frac{35}{17}$ Know that median is a single number that is a measure of center and it summarizes all values in a set of data. $\frac{35}{17}$ Know that range is a single number that is a measure of variation and it describes how values vary in the set of data.	$\frac{35}{17}$ attribute $\frac{35}{17}$ box plot $\frac{35}{17}$ cluster $\frac{35}{17}$ data $\frac{35}{17}$ distribution $\frac{35}{17}$ dot plot $\frac{35}{17}$ first quartile (Q1) $\frac{35}{17}$ gap $\frac{35}{17}$ histogram $\frac{35}{17}$ interquartile range $\frac{35}{17}$ line plot $\frac{35}{17}$ lower extreme $\frac{35}{17}$ lower quartile $\frac{35}{17}$ maximum $\frac{35}{17}$ mean $\frac{35}{17}$ mean absolute deviation $\frac{35}{17}$ measure of center	

Math Content Objectives	**Vocabulary**	**Teacher's Resources and Notes**
6.SP.4 ⅗₁₇ Display numerical data on a dot plot. ⅗₁₇ Display numerical data on a histogram. ☞ Display numerical data on a box plot. **6.SP.5c** ⅗₁₇ Find the median of a set of data on a graph. ⅗₁₇ Find the mean of a set of data. ☞ Find the inter-quartile range of a set of data on a graph. ⅗₁₇ Find the mean absolute deviation of a set of data. ☞ Describe overall patterns and striking deviations in a set of data on a graph. **6.SP.5d** ⅗₁₇ Select appropriate measures of center and variability to describe a data set. ⅗₁₇ Understand that data can be affected by the context in which it was gathered. ☞ Key Concepts for Differentiation - See p. 8.	measure of variability median minimum mode number line outlier range spread statistical question statistical variability statistics third quartile (Q3) upper extreme upper quartile value	
Math Language Objectives		
[Note: The following language objectives must be written in student-friendly terms, adapted to specific lessons, and aligned with the language needs of students.] **Reading Standards for Informational Text** ⅗₁₇ Cite textual evidence to support analysis of a math text. ⅗₁₇ Determine the meaning of specific math words or phrases in a text.		

Math Language Objectives	**Vocabulary**	**Teacher's Resources and Notes**
Reading Standards for Informational Text (cont.) 35/17 Integrate information presented in visual, quantitative, and text formats to understand a math topic. 35/17 Read and comprehend math texts. **Writing Standards** 35/17 Write arguments to support math claims with clear reasons and evidence. 35/17 Write explanatory math text to convey ideas, concepts, and information, including graphics and multimedia when useful to aiding comprehension. 35/17 Produce clear, coherent math writing appropriate to the task. 35/17 Use technology to produce math writing and collaborate with others. 35/17 Draw evidence from informational math texts to support analysis and reflection. 35/17 Write routinely for a range of math tasks. **Speaking and Listening Standards** 35/17 Engage in collaborative math discussions. 35/17 Interpret math information presented in visual, quantitative, and oral formats. 35/17 Delineate a speaker's argument, distinguishing math claims that are supported by reasons and evidence from claims that are not. 35/17 Present math claims and findings, sequencing ideas logically and using pertinent facts and details. 35/17 Add visual displays in math presentations.		

Go Math! Common Core Alignment	Unit of Study 13 – Additional Resources
Lesson 13.1 6.SP.5c **Lesson 13.2** 6.SP.4 **Lesson 13.3** 6.SP.5c **Lesson 13.4** 6.SP.5c **Lesson 13.5** 6.SP.5d **Lesson 13.6** 6.SP.3 **Lesson 13.7** 6.SP.2 **Lesson 13.8** 6.SP.2	**Statistical Questions and Collecting Data** **VDW 7th Edition - pages 439-441** **Illuminations - Numerical and Categorical Data - Unit of Lessons** - http://illuminations.nctm.org/LessonDetail.aspx?ID=U116 **How to Create Misleading Statistics in 6 Easy Steps - Teacher Background Information** - http://blog.makingitclear.com/2010/03/25/statistics/ **Box Plots (Box-and-Whisker Plots)** **VDW 7th Edition - pages 452-453** **Illuminations - Food Court "The Clucking Chicken" Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?ID=L522 **Illuminations - Food Court "The Pizza Palace" Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?ID=L523 **Illuminations - "Using NBA Statistics for Box and Whisker Plots" Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?id=L737 **Illuminations - "Bears in a Boat" Lesson** - http://illuminations.nctm.org/LessonDetail.aspx?id=L856 **NLVM - Box Plot/Histogram - Interactive Applet** - http://nlvm.usu.edu/en/nav/frames_asid_145_g_3_t_5.html?open=instructions&from=category_g_3_t_5.html **Shodor -" Box Plot" Lesson and Interactive Applet** - http://www.shodor.org/interactivate/activities/BoxPlot/ **"Creating Box Plots" Lesson** - http://math.springbranchisd.com/middle/Middle/7P/Resources/7P-4-CIGDD-Box_Whisker328-333.pdf **Box and Whisker Plot - Teacher Tutorial** - http://staff.argyll.epsb.ca/jreed/math9/strand4/boxNwhisker.htm **HMH Animated Math Centers - Box and Whisker Plot** - http://eduplace.com/kids/hmcam/animath/box_and_whisker_plot.html **Lenny-Prob-Stats Wikispace - "The Inch Boy" Lesson** - http://lenny-prob-stats.wikispaces.com/file/view/Inch%20Boy%20activity.doc/162644127/Inch%20Boy%20activity.doc

	Unit of Study 13 - Additional Resources - Continued
	Measures of Center, Measures of Variability and Shape of Data **VDW 7th Edition - pages 437-439; 449-452** **Illuminations - Mean and Median Interactive Applet** - http://illuminations.nctm.org/ActivityDetail.aspx?ID=160 **Online Math Learning - Series of Video Tutorials** - http://www.onlinemathlearning.com/mode-mean-median.html **Measures of Center and Spread - Student Handout** - http://westernreservepublicmedia.org/quizbus/images/vid1_measures.pdf **PH - Finding Mean, Median and Mode - Video** - http://www.phschool.com/atschool/academy123/english/academy123_content/wl-book-demo/ph-022s.html **PH - Finding and Using the Range - Video** - http://www.phschool.com/atschool/academy123/english/academy123_content/wl-book-demo/ph-148s.html **Education World - "Candy Colors" Lesson** - http://www.educationworld.com/a_lesson/03/lp293-02.shtml **Measure of Central Tendency - Teacher Tutorial** - http://www.regentsprep.org/regents/math/algebra/AD2/measure.htm **LearnAlberta -** **Central Tendency - Student Interactive and Video** - http://www.learnalberta.ca/content/mejhm/index.html?l=0&ID1=AB.MATH.JR.STAT&ID2=AB.MATH.JR.STAT.CENT&lesson=html/video_interactives/centralTendency/centralTendencyInteractive.html **HMH Animated Math Centers - Mean, Median and Mode** - http://eduplace.com/kids/hmcam/animath/mean_median_and_mode.html **Mean Absolute Deviation** **Wiki Answers - Teacher Tutorial** - http://wiki.answers.com/Q/How_do_you_calculate_mean_absolute_deviation **eHow - Teacher Tutorial** - http://www.ehow.com/how_4918826_absolute-deviation-average-absolute-deviation.html **YouTube Video - Teacher Tutorial** - http://www.youtube.com/watch?v=z9AJk7TvdpQ **Interpreting Results** **VDW 7th Edition - page 453** **Literature** The Inch Boy by Junko Morimoto (**See VDW 7th Edition - page 455**) Swamp Angel by Anne Isaacs (**See VDW 7th Edition - page 455**) Tikki, Tikki, Tembo by Arlene Mosel
Assessment Options	$\frac{35}{17}$ **Go Math! Assessment Options**: Show What You Know Diagnostic Assessment; Mid-Chapter Checkpoint; Quick Checks; Portfolio Assessment; Chapter 13 Review/Test; Chapter 13 Test; Diagnostic Interview Assessment; Soar to Success; Performance Assessment Chapters 10-13; Standards Practice Pages. $\frac{35}{17}$ **Daily/Weekly Formative Assessment Options**: Journaling, Problem of the Day, Teacher Developed Tasks, Observation, Daily Work, Homework.

Appendix

General Website Resources

Common Core Standards - Official Website - www.corestandards.org
USOE - Common Core Links - http://www.schools.utah.gov/core/
Arizona Academic Standards - Common Core Explanations and Examples -
http://www.azed.gov/standards-practices/mathematics-standards/
North Carolina Department of Public Instruction - Common Core Instructional Support Tools -
http://www.ncpublicschools.org/docs/acre/standards/common-core-tools/unpacking/math/6th.pdf
CORE Academy - http://www.schools.utah.gov/curr/main/Core_Academy.htm
National Library of Virtual Manipulatives (NLVM) - http://nlvm.usu.edu/
Illuminations - http://illuminations.nctm.org/
UEN - http://www.uen.org/
LearnAlberta - Math Live - 5th Grade - http://www.learnalberta.ca/content/me5l/html/math5.html
LearnAlberta - Spy Guys - 6th Grade - http://www.learnalberta.ca/content/mesg/html/math6web/index.html
LearnAlberta - Jr. High – http://www.learnalberta.ca/content/mejhm/index.html?launch=true
IXL - http://www.ixl.com/math/grade-6
Houghton-Mifflin - http://www.eduplace.com/math/mw/g_6.html
Purplemath - http://www.purplemath.com/index.htm
Figure This! - http://figurethis.org/index.html
Van de Walle – Blackline Masters - http://wps.ablongman.com/ab_vandewalle_math_6/54/13858/3547876.cw/index.html
Math Playground - http://www.mathplayground.com/
FunBrain - http://www.funbrain.com/
Ask Dr. Math - http://mathforum.org/dr.math/
Math.com - http://www.math.com/
Mathgoodies - http://www.mathgoodies.com/
Scholastic Study Jams - http://studyjams.scholastic.com/studyjams/jams/math/index.htm
Education Place - http://eduplace.com/kids/hmm/
Learn Zillion - http://learnzillion.com/
CCSSMath - http://ccssmath.org/