5th Grade

Utah Core State Standards

Mathematics Curriculum Map

Granite School District

Striving toward greater focus and coherence through Content Standards and Practice Standards

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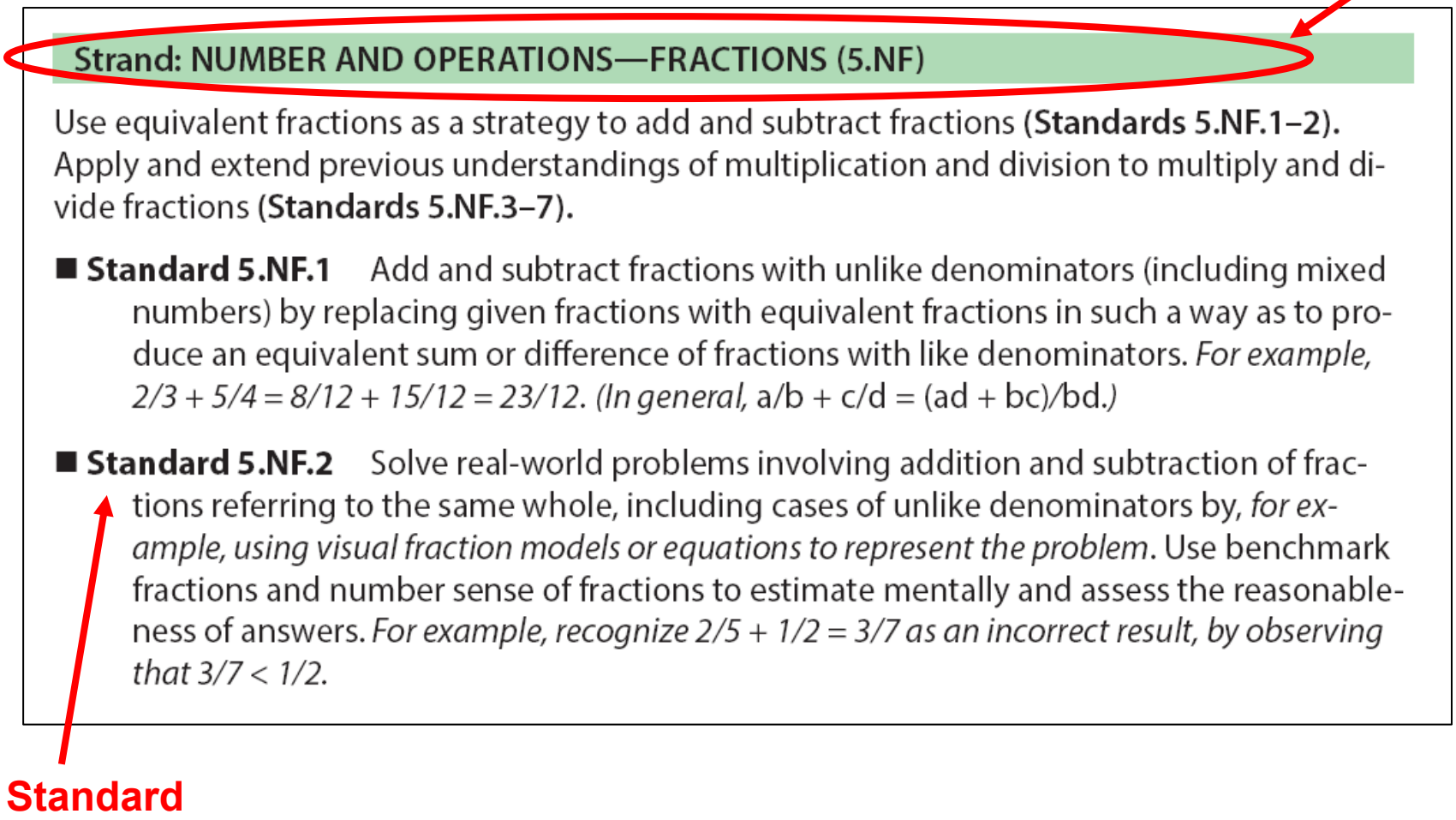
Granite SCHOOL DISTRICT

How to Read the Grade Level Content Standards

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

Strands are larger groups of related standards. Standards from different strands may sometimes be closely related.



Standards for Mathematical Practice

The Standards for Mathematical Practice in Fifth Grade describe mathematical habits of mind that teachers should seek to develop in their students. Students become mathematically proficient in engaging with mathematical content and concepts as they learn, experience, and apply these skills and attitudes (Standards 5.MP.1–8).

Standard 5.MP.1 Make sense of problems and persevere in solving them.

Explain the meaning of a problem, look for entry points to begin work on the problem, and plan and choose a solution pathway. When a solution pathway does not make sense, look for another pathway that does. Explain connections between various solution strategies and representations. Upon finding a solution, look back at the problem to determine whether the solution is reasonable and accurate, often checking answers to problems using a different method or approach.

Standard 5.MP.2 Reason abstractly and quantitatively.

Make sense of quantities and their relationships in problem situations. Contextualize quantities and operations by using images or stories. Decontextualize a given situation and represent it symbolically. Interpret symbols as having meaning, not just as directions to carry out a procedure. Know and flexibly use different properties of operations, numbers, and geometric objects.

Standard 5.MP.3 Construct viable arguments and critique the reasoning of others.

Use stated assumptions, definitions, and previously established results to construct arguments. Explain and justify the mathematical reasoning underlying a strategy, solution, or conjecture by using concrete referents such as objects, drawings, diagrams, and actions. Listen to or read the arguments of others, decide whether they make sense, ask useful questions to clarify or improve the arguments, and build on those arguments.

Standard 5.MP.4 Model with mathematics.

Identify the mathematical elements of a situation and create a mathematical model that shows the relationships among them. Identify important quantities in a contextual situation, use mathematical models to show the relationships of those quantities, analyze the relationships, and draw conclusions. Models may be verbal, contextual, visual, symbolic, or physical.

Standard 5.MP.5 Use appropriate tools strategically.

Consider the tools that are available when solving a mathematical problem, whether in a real-world or mathematical context. Choose tools that are relevant and useful to the problem at hand, such as drawings, diagrams, technologies, and physical objects and tools, as well as mathematical tools such as estimation or a particular strategy or algorithm.

Standard 5.MP.6 Attend to precision.

Communicate precisely to others by crafting careful explanations that communicate mathematical reasoning by referring specifically to each important mathematical element, describing the relationships among them, and connecting their words clearly to representations. Calculate accurately and efficiently, and use clear and concise notation to record work.

Standard 5.MP.7 Look for and make use of structure.

Recognize and apply the structures of mathematics such as patterns, place value, the properties of operations, or the flexibility of numbers. See complicated things as single objects or as being composed of several objects.

Standard 5.MP.8 Look for and express regularity in repeated reasoning.

Notice repetitions in mathematics when solving multiple related problems. Use observations and reasoning to find shortcuts or generalizations. Evaluate the reasonableness of intermediate results.

GSD Instructional Resources

- Helping Students Master the Basic Facts
- How Can I Use the Problem of the Day as a Self-Start?
- How Can I Build Ongoing Math Review and Practice?
- How Can I Implement Tasks Using a Go Math Lesson?
- Mathematical Practice Standards 1-8
- Math Routines
- Problem Types
- Bar Model Drawing
- Writing in Math
- Depth of Knowledge (DOK)
- Math Homework
- Levels of Geometric Thinking
- Rubrics

GSD Additional Instructional Resources Website

- Navigating Go Math User Guide
- Proficiency Scales
- Math Investigation Centers
- Newsletters

Additional Resources

Utah Core State Standards for Mathematics K-5

Learning Progressions for CCSSM

Elementary Mathematics Core Guides

Math Vocabulary Cards

General Website Resources

Curriculum Maps Appendix

5th Grade Mathematics Curriculum Map
Granite School District Scope and Sequence Overview

Unit of Study	Go Math! Alignment	Go Math! Chapter Title	Strands and Standards
1	Chapter 1	Place Value, Multiplication, and Expressions	Strand: Number and Operations in Base Ten Standards: 1, 2, 5, 6 Strand: Operations and Algebraic Thinking Standards: 1,2
2	Chapter 2	Divide Whole Numbers	Strand: Number and Operations in Base Ten Standard: 6 Strand: Number and Operations – Fractions Standard: 3
3	Chapter 3	Add and Subtract Decimals	Strand: Number and Operations in Base Ten Standards: 1, 3a, 3b, 4, 7
4	Chapter 4	Multiply Decimals	Strand: Number and Operations in Base Ten Standards: 2, 7
5	Chapter 5	Divide Decimals	Strand: Number and Operations in Base 10 Standards: 2, 7
6	Chapter 6	Add and Subtract Fractions with Unlike Denominators	Strand: Number and Operations – Fractions Standards: 1, 2
7	Chapter 7	Multiply Fractions	Strand: Number and Operations – Fractions Standards: 4a, 4b, 5a, 5b, 6
8	Chapter 8	Divide Fractions	Strand: Number and Operations - Fractions Standards: 3, 7a, 7b, 7c
9	Chapter 9	Algebra: Patterns and Graphing	Strand: Measurement and Data Standard: 2 Strand: Geometry Standards: 1, 2 Strand: Operations and Algebraic Thinking Standard: 3
10	Chapter 10	Convert Units of Measure	Strand: Measurement and Data Standard: 1
11	Chapter 11	Geometry and Volume	Strand: Measurement and Data Standards: 3, 3a, 3b, 4, 5a, 5b, 5c Strand: Geometry Standards: 3, 4

5th Grade
Instruction and Assessment Semester Schedule
2018-2019

It is expected that the units will be taught consecutively. The table below reflects which units and standards are assessed on each semester test. Semester Benchmark Tests are required by GSD except for the Semester 2 Posttest which is supplemental. Additional assessment options are on each Unit of Study in the GSD maps.

Approx. Number of Days of Instruction	**Semester 1 Pretest 8/20 – 2/8 (required)**	**16**	**13**	**16**	**14**	**14**	**16**	**Semester 1Posttest 12/3 – 2/8 (required)**	**Semester 2 Pretest 12/3 – 3/1 (required)**	**19**	**15**	**12**	**14**	**19**	**Semester 2 Posttest 3/4 – 5/23 (supplemental)**	**RISE (Summative) 3/27 – 5/17 (required)**	**End of Year**
Number of Lessons		**12**	**9**	**12**	**8**	**8**	**10**			**10**	**5**	**7**	**7**	**12**			Getting Ready for Gr. 6 Unit
Instructional Content		Unit of Study 1	Unit of Study 2	Unit of Study 3	Unit of Study 4	Unit of Study 5	Unit of Study 6			Unit of Study 7	Unit of Study 8	Unit of Study 9	Unit of Study 10	Unit of Study 11			
Math Standards		5.OA.1 *5.OA.2 *5.NBT.1 *5.NBT.2 5.NBT.3 5.NBT.4	5.NBT.5 *5.NBT.6 *5.NBT.7 5.NF.1 *5.NF.2 5.NF.3							*5.OA.3 5.NF.3 *5.NF.4 *5.NF.5 5.NF.6 *5.NF.7 *5.MD.1 5.MD.2	5.MD.3 5.MD.4 *5.MD.5 5.G.1 5.G.2 5.G.3 *5.G.4						

*Indicates emphasized standards.

Beginning and Ending of Semesters

1st Semester Aug 20, 2018 – Jan 10, 2019
2nd Semester Jan 14, 2019 – May 23, 2019

5th Grade
Instruction and Assessment Quarterly Schedule
2018-2019

It is expected that the units will be taught consecutively. The table below reflects which units and standards are assessed on each Granite Quarterly Benchmark (GQB). Quarterly Benchmark Tests are supplemental. Additional assessment options are on each Unit of Study in the GSD maps.

Approx. Number of Days of Instruction	**GQB 1 8/20 (supplemental)**	**16**	**13**	**16**	**GQB 2 10/29 (supplemental)**	**14**	**14**	**16**	**GQB 3 1/14 (supplemental)**	**19**	**15**	**12**	**GQB 4 3/1 (supplemental)**	**14**	**19**	**RISE (Summative) 3/27 – 5/17 (required)**	**End of Year**
Number of Lessons		**12**	**9**	**12**		**8**	**8**	**10**		**10**	**5**	**7**		**7**	**12**		
Instructional Content		Unit of Study 1	Unit of Study 2	Unit of Study 3		Unit of Study 4	Unit of Study 5	Unit of Study 6		Unit of Study 7	Unit of Study 8	Unit of Study 9		Unit of Study 10	Unit of Study 11		Getting Ready for Gr. 6 Unit
Math Standards		5.OA.1 *5.OA.2 *5.NBT.1 *5.NBT.2 5.NBT.3 5.NBT.4 5.NBT.5 *5.NBT.6 *5.NBT.7 5.NF.3				5.NBT.2 *5.NBT.7 5.NF.1 *5.NF.2				*5.OA.3 5.NF.3 *5.NF.4 *5.NF.5 5.NF.6 *5.NF.7 5.MD.2 5.G.1 5.G.2				*5.MD.1 5.MD.3 5.MD.4 *5.MD.5 5.G.3 *5.G.4			

*Indicates emphasized standards.

Beginning and Ending of Quarters

1st Quarter Aug 20, 2018 – Oct 25, 2018
2nd Quarter Oct 29, 2018 – Jan 10, 2019
3rd Quarter Jan 14, 2019 – Mar 21, 2019
4th Quarter Mar 27, 2019 – May 23, 2019

5th Grade Mathematics Curriculum Map - Overview

Lesson Plan Format:
Lesson Plan Format with Go Math! References
Lesson Plan Format for Tasks

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. It is expected that the units will be taught consecutively.
Go Math! Alignment	The primary textbook adopted in Granite School District for Grades K-6 is Houghton Mifflin Harcourt's Go Math!, 2015 Edition.
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. Suggested Math Language Objectives can be located on the next page.
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/mathvocabulary/
Progressions Documents	The Learning Progressions Documents are anchor documents to the Math Core Standards. These research-based documents describe the progression of each math core strand across various grade levels. They were written by the authors of the CCSSM to offer more in-depth explanation and details regarding the Math Core Standards. Click here to access these documents.
Additional Resources	The websites are a resource for lesson plans, teacher tutorials, content videos, student applets, and games. *GSD Additional Teacher Resources* are available to Granite School District teachers only. These resources are **NOT** intended to be all-inclusive. It is the teacher's responsibility to teach the **Utah Core State Standards for Mathematics** content, not the resources.
Assessment	There are many formative and summative assessment options: • 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; and, Personal Math Trainer. The assessments 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. • Semester Benchmark Assessments – These are cumulative tests for multiple Units of Study. These are to be given as a pretest and a posttest. Students not mastering content will need Tier 2 and/or Tier 3 interventions. • 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.

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

- Explain the relationships between concepts in a math text.
- Determine the meaning of specific math words or phrases in a text.
- Compare and contrast the structure of ideas or concepts in math texts.
- Analyze multiple accounts of the same math topic, noting similarities and differences.
- Read and comprehend math texts.

Writing Standards

- Write opinion pieces on math topics, supporting a point of view with reasons and information.
- Write explanatory math text to convey ideas and information clearly.
- Use precise math language to explain the topic.
- Produce clear, coherent math writing appropriate to the task.
- Use technology to produce math writing and collaborate with others.
- Draw evidence from informational math texts to support analysis and reflection.
- Write routinely for a range of math tasks.

Speaking and Listening Standards

- Engage in collaborative discussions about math topics.
- Summarize math information presented in visual, quantitative, and oral formats.
- Summarize the math points a speaker makes and explain how each claim is supported by reasons and evidence.
- Report on a math topic or present an opinion, sequencing ideas logically and using appropriate facts and details.
- Add visual displays to math presentations.
- Use formal English to present math ideas.

Unit of Study 1	5th Grade	Quarter 1	Approx. 14 – 16 days	GSD Revised 6/1/18

Strand: Number and Operations in Base Ten 5.NBT

Understand the place value system.

1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.

2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

Perform operations with multi-digit whole numbers and with decimals to hundredths.

5. Fluently multiply multi-digit whole numbers using the standard algorithm.

6. Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Strand: Operations and Algebraic Thinking 5.OA

Write and interpret numerical expressions.

1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

2. Write and interpret simple expressions.

a. Write simple expressions that record calculations with numbers. *For example, use 2 × (8 + 7) to express the calculation "add 8 and 7, then multiply by 2."*

b. Interpret numerical expressions without evaluating them. *For example, use conceptual understanding of multiplication to interpret 3 × (18932 + 921) as being three times as large as 18932 + 921 without calculating the indicated sum or product.*

Math Content Objectives	Vocabulary	
I can: **5.NBT.1** - Recognize that a digit in one place represents 10 times as much as the place to its right. - Recognize that a digit in one place represents 1/10 as much as the place to its left. **5.NBT.2** - Explain patterns in the number of zeros in a product when multiplying a number by a power of ten. - Explain patterns in the placement of the decimal point when a decimal is multiplied by a power of ten.	• Additive Identity Property of 0 • algorithm • area model • array • Associative Property of Addition • Associative Property of Multiplication • base of an exponent • braces • brackets • Commutative Property of Addition • Commutative Property of Multiplication • Distributive Property	

Unit of Study 1 (continued)

Math Content Objectives	Vocabulary (cont.)	
5.NBT.2 (continued) • Explain patterns in the placement of the decimal point when a decimal is divided by a power of ten. 🔑 Use exponents to show powers of ten. **5.NBT.5** • Fluently multiply multi-digit whole numbers. • Multiply multi-digit whole numbers using the standard algorithm. **5.NBT.6** 🔑 Use strategies to divide whole numbers. 🔑 Show and explain the relationship between multiplication and division. • Show and explain division using place value. • Solve a division problem using an equation. • Show and explain division using a rectangular array. • Show and explain division using an area model. **5.OA.1** • Use parentheses in numerical expressions. • Use brackets in numerical expressions. • Use braces in numerical expressions. • Evaluate expressions with parentheses. • Evaluate expressions with brackets. • Evaluate expressions with braces. **5.OA.2** 🔑 Write simple expressions that record calculations with numbers. 🔑 Interpret the meaning of numerical expressions. 🔑 Key Concepts for Differentiation - See p. 7.	• dividend • divisor • equation • estimate • evaluate • exponent • expression • factor • inverse operations • long division • Multiplicative Identity Property of 1 • multiply • numerical expression • Order of Operations • parentheses • pattern • period • place value • powers of ten • product • quotient • remainder • sum • whole numbers	

Go Math! Utah Core Alignment	Unit of Study 1 – Additional Resources
Lesson 1.1 5.NBT.1 **Lesson 1.2** 5.NBT.1 **Lesson 1.3** 5.NBT.6 **Lesson 1.4** 5.NBT.2 **Lesson 1.5** 5.NBT.2 **Lesson 1.6** 5.NBT.5 **Lesson 1.7** 5.NBT.5 **Lesson 1.8** 5.NBT.6 **Lesson 1.9** 5.NBT.6 **Lesson 1.10** 5.OA.2 **Lesson 1.11** 5.OA.1 **Lesson 1.12** 5.OA.1	**Place Value (include Powers of Ten)** Cosmic Voyage Clip - narrated by Morgan Freeman LearnAlberta - Place Value - Video Tutorial Education Place - Place Value - Student Tutorial Mr. Nussbaum - Decimals of the Caribbean - Game Mr. Nussbaum - Place Value Pirates - Game K-5 Math Teaching Resources – Place Value Concentration - Game **Division of Whole Numbers** LearnAlberta - Division of Whole Numbers - Video Tutorial Double Division - Division by a 2-Digit Number - Algorithm Applet NLVM - Rectangle Division- Interactive Applet UEN - "Remainder of One" Lesson UEN - "Remainder Riddles" Lesson UEN - "Partial Quotient" Lesson Learn Alberta - Division of Whole Numbers - Video Tutorial Education Place - Divide with Remainders - Student Tutorial UEN - "Mystery Dinner" Lesson NLVM - Number Line Arithmetic - Interactive Applet Math Solutions - "A Remainder of One" Lesson Thinking Blocks – Bar Model – Interactive Applet **Multiplication of Whole Numbers** NLVM - Rectangle Multiplication- Interactive Applet NLVM - Number Line Arithmetic - Interactive Applet Illuminations - "Multiply and Conquer" Lesson PBS Kids Cyberchase - Multiplying Bigger Numbers - Video Tutorial Math Playground - Grand Slam Math - Practice Exercises Thinking Blocks – Bar Model – Interactive Applet

	Unit of Study 1 – Additional Resources (continued)
	Order of Operations LearnAlberta - Exploring Order of Operations - Student Interactive Illuminations - "Order of Operations Bingo" Lesson Math Goodies - Order of Operations - Tutorial and Practice Exercises Illuminations - Everything Balances Out in the End - Lesson Illuminations - "Exploring Krypto" Lesson Purple Math - Order of Operations- Teacher Tutorial Math Playground - Order of Operations - Game Kahn Academy - Order of Operations - Teacher Tutorial Shodor - Order of Operations - Assessment Shodor - Order of Operations Four - Game Jefferson Lab - Speed Math - Game IXL - Simplify Expressions Using Order of Operations - Assessment Mr. Nussbaum - The Order of Operations Royal Rescue - Game YouTube - Order of Operations - Cartoon **Properties of Operations** Purplemath - Properties - Teacher Tutorial **GSD Additional Teacher Resources** Math Investigation Center – Unit 1 Division Top-It – Game Division Dice War - Game Partial Quotients Eats Shoots and Leaves (Order of Operations)

	Unit of Study 1 - Additional Resources (continued)
	Literature Arithme-tickle by J. Patrick Lewis Count to a Million by Jerry Pallotta Divide and Ride by Stuart J. Murphy Division Made Easy by Rebecca Wingard-Nelson The Doorbell Rang by Pat Hutchins How Much is a Million by David M. Schwartz A Million Dots by Andrew Clements Multiplication Made Easy by Rebecca Wingard-Nelson Powers of Ten by Charles and Ray Eames Remainder of One by Elinor J. Pinczes Riddle-iculous Math by Joan Hoab Sir Cumterence and all the King's Tens by Cindy Neuschwander
Assessment Options	• **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; Personal Math Trainer. • **Daily/Weekly Formative Assessment Options**: Exit Slips, Observation, Daily Work, Homework.

Unit of Study 2	5th Grade	Quarter 1	Approx. 11 – 13 days	GSD Revised 6/1/18

Strand: Number and Operations in Base Ten 5.NBT

Perform operations with multi-digit whole numbers and with decimals to hundredths.

6. Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Strand: Number and Operations – Fractions 5.NF

Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

3. Interpret a fraction as division of the numerator by the denominator (*a*/*b* = *a* ÷ *b*). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, through the use of visual fraction models or equations to represent the problem. *For example, interpret 3/4 as the result of dividing three by four, noting that 3/4 multiplied by four equals three, and that when three wholes are shared equally among four people each person has a share of size 3/4. If nine people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?*

Math Content Objectives	Vocabulary	
I can: **5.NBT.6** 🔑 Use strategies to divide whole numbers. 🔑 Show and explain the relationship between multiplication and division. 🔑 Show and explain division using place value. • Solve a division problem using an equation. • Show and explain division using a rectangular array. • Show and explain division using an area model. **5.NF.3** • Understand that a fraction bar can mean to divide. • Find an equivalent whole number, mixed number, or decimal for a fraction by dividing the numerator by the denominator. • Solve division word problems where the quotient is a fraction or a mixed number. 🔑 Key Concepts for Differentiation - See p. 7.	• area model • array • bar model • compatible numbers • decimal • denominator • Distributive Property • dividend • divisor • equation • estimate • fraction bar • inverse operations • long division • mixed number • numerator • partial quotients • place value • quotient • remainder • whole numbers	

Go Math! Utah Core Alignment	Unit of Study 2 - Additional Resources
Lesson 2.1 5.NBT.6 **Lesson 2.2** 5.NBT.6 **Lesson 2.3** 5.NBT.6 **Lesson 2.4** 5.NBT.6 **Lesson 2.5** 5.NBT.6 **Lesson 2.6** 5.NBT.6 **Lesson 2.7** 5.NF.3 **Lesson 2.8** 5.NBT.6 **Lesson 2.9** 5.NBT.6	**Division of Whole Numbers** LearnAlberta - Division of Whole Numbers - Video Tutorial Double Division - Division by a 2-Digit Number - Algorithm Applet NLVM - Rectangle Division- Interactive Applet UEN - "Remainder of One" Lesson UEN - "Remainder Riddles" Lesson UEN - "Partial Quotient" Lesson Learn Alberta - Division of Whole Numbers - Video Tutorial Education Place - Divide with Remainders - Student Tutorial UEN - "Mystery Dinner" Lesson NLVM - Number Line Arithmetic - Interactive Applet Math Solutions - "A Remainder of One" Lesson Learn Zillion – Use an Area Model for Division **Properties of Operations** Purplemath - Properties - Teacher Tutorial **Division with Fractional Remainders** Illuminations - "Order of Operations Bingo" Lesson **GSD Additional Teacher Resources** Math Investigation Center – Unit 2 Division Top-It – Game Division Dice War - Game Partial Quotients **Literature** Divide and Ride by Stuart J. Murphy Division Made Easy by Rebecca Wingard-Nelson The Doorbell Rang by Pat Hutchins Remainder of One by Elinor J. Pinczes
Assessment Options	• **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; Personal Math Trainer. • **Daily/Weekly Formative Assessment Options**: Exit Slips, Observation, Daily Work, Homework.

Unit of Study 3	5th Grade	Quarter 1	Approx. 14 – 16 days	GSD Revised 6/1/18

Strand: Number and Operations in Base Ten 5.NBT

Understand the place value system.

1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.

3. Read, write, and compare decimals to thousandths.

a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form. *For example, 347.392 = 3 × 100 + 4 ×10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).*

b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.

4. Use place value understanding to round decimals to any place.

Perform operations with multi-digit whole numbers and with decimals to hundredths.

7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. In this standard, dividing decimals is limited to a whole number dividend with a decimal divisor or a decimal dividend with a whole number divisor. Compare the value of the quotient on the basis of the values of the dividend and the divisor.

Math Content Objectives	Vocabulary	Vocabulary (cont.)
I can: **5.NBT.1** 🗝 Recognize that a digit in one place represents 10 times as much as the place to its right. 🗝 Recognize that a digit in one place represents 1/10 as much as the place to its left. **5.NBT.3a** 🗝 Read and write decimals to thousandths using base-ten numerals. • Read and write decimals to thousandths using number names. • Read and write decimals to thousandths using expanded form. **5.NBT.3b** • Compare two decimals to thousandths. • Correctly use <, >, and = to record the comparison of two decimals. **5.NBT.4** • Round decimals to any place.	• addend • Associative Property of Addition • base-ten numeral form • base-ten numerals • benchmark • Commutative Property of Addition • compose • decimal • decimal fraction • decimal point • decompose • difference • estimate • expanded form • greater than • hundredth • hundredths • inequality • less than	• minuend • place value • rounding • sequence • standard form • subtrahend • sum • tenth • tenths • term • thousandth • thousandths

Unit of Study 3 (continued)		
Math Content Objectives		
5.NBT.7 🗝 Add decimals to hundredths and write an explanation of the reasoning used. 🗝 Subtract decimals to hundredths and write an explanation of the reasoning used. • Multiply decimals to hundredths and write an explanation of the reasoning used. • Divide decimals to hundredths and write an explanation of the reasoning used. 🗝 Key Concepts for Differentiation - See p. 7.		

Go Math! Utah Core Alignment	Unit of Study 3 - Additional Resources
Lesson 3.1 5.NBT.1 **Lesson 3.2** 5.NBT.3a **Lesson 3.3** 5.NBT.3b **Lesson 3.4** 5.NBT.4 **Lesson 3.5** 5.NBT.7 **Lesson 3.6** 5.NBT.7 **Lesson 3.7** 5.NBT.7 **Lesson 3.8** 5.NBT.7 **Lesson 3.9** 5.NBT.7 **Lesson 3.10** 5.NBT.7 **Lesson 3.11** 5.NBT.7 **Lesson 3.12** 5.NBT.7	**Adding and Subtracting Decimals** Learn Alberta - Addition and Subtraction with Decimals- Video Tutorial NLVM - Base Blocks Decimals - Interactive Applet NLVM - Diffy (Decimals) - Interactive Applet NLVM - Circle 3 - Interactive Applet PBS Kids Cyberchase - Railroad Repair - Game PBS Kids Cyberchase - Adding Decimals Common Misconceptions - Video Tutorial PBS Kids Cyberchase - Adding Decimals - Video Tutorial Scholastic Study Jams - Addition and Subtraction of Decimals - Student Tutorial K-5 Math Teaching Resources – Magic Triangle Illustrative Mathematics – Kipton's Scale Illustrative Mathematics – Which Number Is It? EngageNY – Name Decimal Fractions – Lesson Teaching Channel – Patterns with Decimals Teaching Channel – Decimal Quick Images Teaching Channel – Decimal Place Value **Comparing Decimals** UEN - "Patterns with Decimals" Lesson Learn Alberta - Comparing and Ordering Decimals - Video Tutorial BBC - Builder Ted - Game Decimal Squares - Rope Tug - Game Illustrative Mathematics – Drawing Pictures to Compare Decimals

Go Math! Utah Core Alignment	Unit of Study 3 - Additional Resources
	Rounding Decimals BBC - Rounding Off - Game Decimal Squares - Laser Beams - Game Scholastic Study Jams - Rounding Decimals - Student Tutorial Mr. Nussbaum - Half-court rounding - Game Mr. Nussbaum - Rounding Master - Game **GSD Additional Teacher Resources** Math Investigation Center – Unit 3 Learn Zillion Videos – 5.NBT.1, 3, 4, and 7 **Literature** Do You Know Dewey? Exploring the Dewey Decimal System by Brian P. Cleary The Monster Who Did My Math by Danny Schnitzlein The $1.00 Word Riddle Book by Marilyn Burns The Phantom Tollbooth by Norton Juster
Assessment Options	• **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; Personal Math Trainer. • **Daily/Weekly Formative Assessment Options**: Exit Slips, Observation, Daily Work, Homework.

Unit of Study 4	5th Grade	Quarter 2	Approx. 10 – 14 days	GSD Revised 6/1/18

Strand: Number and Operations in Base Ten 5.NBT

Understand the place value system.

2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

Perform operations with multi-digit whole numbers and with decimals to hundredths.

7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. In this standard, dividing decimals is limited to a whole number dividend with a decimal divisor or a decimal dividend with a whole number divisor. Compare the value of the quotient on the basis of the values of the dividend and the divisor.

Math Content Objectives	Vocabulary	
I can: **5.NBT.2** • Explain patterns in the number of zeros in a product when multiplying a number by a power of ten. • Explain patterns in the placement of the decimal point when a decimal is multiplied by a power of ten. • Explain patterns in the placement of the decimal point when a decimal is divided by a power of ten. • Use exponents to show powers of ten. **5.NBT.7** • Add decimals to hundredths and write an explanation of the reasoning used. • Subtract decimals to hundredths and write an explanation of the reasoning used. 🗝 Multiply decimals to hundredths and write an explanation of the reasoning used. • Divide decimals to hundredths and write an explanation of the reasoning used. 🗝 Key Concepts for Differentiation - See p. 7.	• Associative Property of Multiplication • Commutative Property of Multiplication • decimal • decimal point • Distributive Property • expanded form • exponent • factor • hundredth • hundredths • partial product • pattern • place value • powers of ten • product • tenth • tenths • thousandth • thousandths	

Go Math! Utah Core Alignment	Unit of Study 4 - Additional Resources
Lesson 4.1 5.NBT.2 **Lesson 4.2** 5.NBT.7 **Lesson 4.3** 5.NBT.2; 5.NBT.7 **Lesson 4.4** 5.NBT.2; 5.NBT.7 **Lesson 4.5** 5.NBT.7 **Lesson 4.6** 5.NBT.7 **Lesson 4.7** 5.NBT.2; 5.NBT.7 **Lesson 4.8** 5.NBT.2; 5.NBT.7	**Multiplication of Decimals** Learn Alberta - Multiplication and Division of Decimals - Video Tutorial Education Place - Multiply Decimals - Student Tutorial HMH E-Lab - Exploring Division of Decimals - Assessment Illustrative Mathematics – The Value of Education Illustrative Mathematics – Marta's Multiplication Error Georgia Standards Frameworks – Unit 3 GFletchy – Straighten Up – 3 Act Task GFletchy – Gassed – 3 Act Task Learn Zillion – Use An Area Model to Multiply Decimals **GSD Additional Teacher Resources** Math Investigation Center – Unit 4 **Literature** Once Upon a Dime (A Math Adventure) by Nancy Kelly Allen
Assessment Options	• **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; Personal Math Trainer. • **Daily/Weekly Formative Assessment Options**: Exit Slips, Observation, Daily Work, Homework.

Unit of Study 5	5th Grade	Quarter 2	Approx. 10 – 14 days	GSD Revised 6/1/18

Strand: Number and Operations in Base Ten 5.NBT

Understand the place value system.

2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

Perform operations with multi-digit whole numbers and with decimals to hundredths.

7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. In this standard, dividing decimals is limited to a whole number dividend with a decimal divisor or a decimal dividend with a whole number divisor. Compare the value of the quotient on the basis of the values of the dividend and the divisor.

Math Content Objectives	Vocabulary	
I can: **5.NBT.2** • Explain patterns in the number of zeros in a product when multiplying a number by a power of ten. • Explain patterns in the placement of the decimal point when a decimal is multiplied by a power of ten. • Explain patterns in the placement of the decimal point when a decimal is divided by a power of ten. • Use exponents to show powers of ten. **5.NBT.7** • Add decimals to hundredths and write an explanation of the reasoning used. • Subtract decimals to hundredths and write an explanation of the reasoning used. • Multiply decimals to hundredths and write an explanation of the reasoning used. 🗝 Divide decimals to hundredths and write an explanation of the reasoning used. 🗝 Key Concepts for Differentiation - See p. 7.	• compatible numbers • decimal • decimal point • dividend • divisor • equivalent fractions • estimate • exponent • hundredth • hundredths • place value • powers of ten • quotient • remainder • tenth • tenths • thousandth • thousandths	

Go Math! Utah Core Alignment	Unit of Study 5 - Additional Resources
Lesson 5.1 5.NBT.2 **Lesson 5.2** 5.NBT.7 **Lesson 5.3** 5.NBT.7 **Lesson 5.4** 5.NBT.2; 5.NBT.7 **Lesson 5.5** 5.NBT.7 **Lesson 5.6** 5.NBT.2; 5.NBT.7 **Lesson 5.7** 5.NBT.7 **Lesson 5.8** 5.NBT.7	**Division with Decimals** Learn Alberta - Multiplication and Division of Decimals- Video Tutorial Education Place - Divide a Decimal by a Decimal - Student Tutorial Math Playground - How to Divide Decimals - Student Tutorial Scholastic Study Jams - Division of Decimals - Student Tutorial Illustrative Mathematics – The Value of Education Georgia Standards Frameworks – Unit 3 Learn Zillion – Divide Decimals **GSD Additional Teacher Resources** Math Investigation Center – Unit 5 **Literature**
Assessment Options	• **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; Performance Assessment Chapters 1-5; Personal Math Trainer. • **Daily/Weekly Formative Assessment Options**: Exit Slips, Observation, Daily Work, Homework.

Unit of Study 6	5th Grade	Quarter 2	Approx. 12 – 16 days	GSD Revised 6/1/18

Strand: Number and Operations – Fractions 5.NF

Use equivalent fractions as a strategy to add and subtract fractions.

1. **Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.** *For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)*
2. **Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators by, for example, using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.** *For example, recognize an incorrect result 2/5 + 1/2 = 3/7 as an incorrect result, by observing that 3/7 < 1/2.*

Math Content Objectives

I can:

5.NF.1

- Add fractions with unlike denominators.
- Subtract fractions with unlike denominators.
- Add mixed numbers with unlike denominators.
- Subtract mixed numbers with unlike denominators.

5.NF.2

- 🗝 Solve word problems with fractions.
- Use benchmark fractions and number sense to check the answers to fraction problems.

🗝 Key Concepts for Differentiation - See p. 7.

Vocabulary

- addend
- Associative Property of Addition
- benchmark fractions
- common denominators
- common factor
- common multiple
- Commutative Property of Addition
- denominator
- difference
- equivalent fractions
- estimate
- fraction
- fraction greater than 1
- fraction less than 1
- like denominators
- lowest terms
- minuend
- mixed number
- multiple
- number line
- numerator
- prime number
- reasonableness

Vocabulary (cont.)

- simplest form
- simplify
- subtrahend
- sum
- unlike denominators

Go Math! Utah Core Alignment	Unit of Study 6 - Additional Resources
Lesson 6.1 5.NF.2 **Lesson 6.2** 5.NF.2 **Lesson 6.3** 5.NF.2 **Lesson 6.4** 5.NF.1 **Lesson 6.5** 5.NF.1 **Lesson 6.6** 5.NF.1 **Lesson 6.7** 5.NF.1 **Lesson 6.8** 5.NF.1 **Lesson 6.9** 5.NF.2 **Lesson 6.10** 5.NF.1	**Equivalent Fractions** Learn Alberta - Equivalent Fractions- Video Tutorial Education Place - Equivalent Fractions and Simplest Form - Student Tutorial Illuminations - Equivalent Fractions - Interactive Applet NLVM - Equivalent Fractions - Interactive Applet **Addition and Subtraction of Fractions** Education Place - Locate Points on a Grid - Animated Math Center Education Place - Add Fractions with Like Denominators - Student Tutorial NLVM - Adding Fractions - Interactive Applet YouTube - Adding Unlike Denominators - Video Tutorial Thinking Blocks – Bar Model - Interactive Applet K-5 Math Teaching Resources – Closest to 25 K-5 Math Teaching Resources – Add Unlike Denominators K-5 Math Teaching Resources – Subtract Unlike Denominators K-5 Math Teaching Resources – Adding Mixed Numbers Georgia Standards Frameworks – Unit 4 - Lessons **Mixed Numbers** Scholastic Study Jams - Add & Subtract Mixed Numbers - Student Tutorial **GSD Additional Teacher Resources** Math Investigation Centers – Unit 6 Cuberator Game Fraction Bingo Pattern Block Fractions – Grade 5 Adding and Subtracting Unlike Denominators Learn Zillion Videos – 5.NF.1 and 5.NF.2

GSD Additional Teacher Resources
Math Investigation Centers – Unit 6
Cuberator Game
Fraction Bingo
Pattern Block Fractions – Grade 5
Adding and Subtracting Unlike Denominators
Learn Zillion Videos – 5.NF.1 and 5.NF.2

	Literature Fractions and Decimals Made Easy by Rebecca Wingard-Nelson Fun Food Word Problems Starring Fractions by Rebecca Wingard-Nelson The Man Who Made Parks: The Story of Parkbuilder Frederick Law Olmsted by Frieda Wishinsky The Wishing Club by Donna Jo Napoli
Assessment Options	• **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; Personal Math Trainer. • **Daily/Weekly Formative Assessment Options**: Exit Slips, Observation, Daily Work, Homework.

Unit of Study 7	5th Grade	Quarter 3	Approx. 12 – 19 days	GSD Revised 6/1/18

Strand: Number and Operations – Fractions 5.NF

Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

a. Interpret the product (*a*/*b*) × *q* as *a* parts of a partition of *q* into *b* equal parts; equivalently, as the result of a sequence of operations *a* × *q* ÷ *b* using a fraction model. *For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = ac/bd.)*

b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.

5. Interpret multiplication as scaling.

a. Compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. *For example, the products of expressions such as 5 × 3 or ½ × 3 can be interpreted in terms of a quantity, three, and a scaling factor, five or ½. Thus in addition to knowing that 5 × 3 = 15, they can also say that 5 × 3 is five times as big as three, without evaluating the product. Likewise they see ½ × 3 as half the size of three.*

b. Explain why multiplying a given number by a fraction greater than one results in a product greater than the given number (recognizing multiplication by whole numbers greater than one as a familiar case); explain why multiplying a given number by a fraction less than one results in a product smaller than the given number; and relating the principle of fraction equivalence. *For example, 6/10 = (2 × 3)/(2 × 5). In general, a/b = (n × a)/(n × b) has the effect of multiplying a/b by one.*

6. Solve real world problems involving multiplication of fractions and mixed numbers, for example, by using visual fraction models or equations to represent the problem.

Math Content Objectives	Vocabulary	Vocabulary (cont.)
I can: **<u>5.NF.4a</u>** • Understand the meaning of multiplying a fraction by a whole number using a model and a story. 🗝 Find the product of a fraction and a whole number. • Understand the meaning of multiplying a fraction by a fraction using a model and a story. 🗝 Find the product of a fraction and a fraction. **<u>5.NF.4b</u>** • Find the area of a rectangle by tiling it with unit squares. • Find the area of a rectangle by multiplying the side lengths. 🗝 Find the area of a rectangle using tiling and multiplying to show that the product is the same. • Correctly label rectangular areas as square units.	• area • array • common factor • denominator • equation • equivalent fractions • factor • fraction greater than 1 • fraction less than 1 • mixed number • Multiplicative Identity Property of 1 • number line • numerator • prime number • product • rectangle • scaling	• simplest form • simplify • square unit • tiling • whole numbers

Unit of Study 7 (continued)		
Math Content Objectives		
5.NF.5a 🔑 Predict the size of a product by looking at the relationships between the factors. **5.NF.5b** • Explain what happens when multiplying a given number by a fraction greater than 1. • Explain what happens when multiplying a given number by a fraction less than 1. 🔑 Create an equivalent fraction by multiplying the numerator and denominator by the same number. • Understand that a fraction with the same numerator and denominator is equal to 1. • Understand that multiplying the numerator and denominator by the same number is the same as multiplying by 1. **5.NF.6** 🔑 Solve real world problems using multiplication of fractions and mixed numbers. • Use fraction models and equations to represent multiplication of fractions and mixed numbers. 🔑 Key Concepts for Differentiation - See p. 7.		

Go Math! Utah Core Alignment	Unit of Study 7 - Additional Resources
Lesson 7.1 5.NF.4a **Lesson 7.2** 5.NF.4a **Lesson 7.3** 5.NF.4a **Lesson 7.4** 5.NF.4b **Lesson 7.5** 5.NF.5a; 5.NF.5b **Lesson 7.6** 5.NF.4a **Lesson 7.7** 5.NF.4b **Lesson 7.8** 5.NF.5a; 5.NF.5b **Lesson 7.9** 5.NF.6 **Lesson 7.10** 5.NF.5b	**Multiplying Fractions** NLVM - Rectangle Multiplication of Fractions - Interactive Applet Math Is Fun - Multiplying Fractions - Student Tutorial Math Playground - Multiplying Fractions - Interactive Applet Math Is Fun - Multiplying Mixed Numbers - Student Tutorial Math Play - Multiplying Fractions Millionaire Game Math Solutions - "Introducing Multiplication of Fractions" Lesson Learn Zillion – Multiplying Fractions by Fractions Teaching Channel – A Passion For Fractions – Multiplying a fraction by a fraction EngageNY – Multiply a Whole Number by a Fraction - Lesson Georgia Standards Frameworks – Unit 4 Lessons Thinking Blocks – Bar Model - Applet Teaching Channel – Preparation for Multiplying Fractions **GSD Additional Teacher Resources** Math Investigation Centers – Units 7 and 8 Pattern Block Fractions – Grade 5 Learn Zillion Videos – Chapter 7 – 5.NF.4-6 **Literature** Alice's Adventures in Wonderland by Lewis Carroll The Lion's Share by Matthew McElligott The Man Who Made Parks: The Story of Parkbuilder Frederick Law Olmsted by Frieda Wishinsky Multiplying Menace: The Revenge of Rumpelstiltskin by Pam Calvert
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; Personal Math Trainer. • **Daily/Weekly Formative Assessment Options**: Exit Slips, Observation, Daily Work, Homework.

Unit of Study 8	5th Grade	Quarter 3	Approx. 7 – 15 days	GSD Revised 6/1/18

Strand: Number and Operations – Fractions 5.NF

Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

3. Interpret a fraction as division of the numerator by the denominator (*a*/*b* = *a* ÷ *b*). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, through the use of visual fraction models or equations to represent the problem. *For example, interpret 3/4 as the result of dividing three by four, noting that 3/4 multiplied by four equals three, and that when three wholes are shared equally among four people each person has a share of size 3/4. If nine people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?*

7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. Use strategies to divide fractions by reasoning about the relationship between multiplication and division. Division of a fraction by a fraction is not a requirement at this grade.

- **a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.** *For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3.*
- **b. Interpret division of a whole number by a unit fraction, and compute such quotients.** *For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4.*
- **c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, for example, by using visual fraction models and equations to represent the problem.** *For example, how much chocolate will each person get if three people share 1/2 lb of chocolate equally? How many 1/3-cup servings are in 2 cups of raisins?*

Math Content Objectives	Vocabulary	Vocabulary (cont.)
I can: **5.NF.3** • Understand that a fraction bar can mean to divide. • Find an equivalent whole number, mixed number, or decimal for a fraction by dividing the numerator by the denominator. • Solve division word problems where the quotient is a fraction or a mixed number. **5.NF.7a** • Create a story to model division of a fraction by a whole number. • Use a fraction model to show how to divide a unit fraction by a whole number. • Use multiplication to prove a division answer is correct.	• common factor • decimal • denominator • dividend • divisor • equation • equivalent fractions • fraction • fraction bar • fraction greater than 1 • fraction less than 1 • mixed number • number line • numerator • prime number • quotient	• simplest form • simplify • unit fraction • whole numbers

Unit of Study 8 (continued)		
Math Content Objectives		
5.NF.7b • Create a story to model division of a whole number by a fraction. • Use a fraction model to show how to divide a whole number by a unit fraction. • Use multiplication to prove a division answer is correct. **5.NF.7c** • Use a fraction model to divide a unit fraction by a whole number in a real world problem. • Use a fraction model to divide a whole number by a unit fraction in a real world problem. 🔑 Use an equation to divide a unit fraction by a whole number in a real world problem. 🔑 Use an equation to divide a whole number by a unit fraction in a real world problem. 🔑 Key Concepts for Differentiation - See p. 7.		

Go Math! Utah Core Alignment	Unit of Study 8 - Additional Resources
Lesson 8.1 5.NF.7a; 5.NF.7b **Lesson 8.2** 5.NF.7b **Lesson 8.3** 5.NF.3 **Lesson 8.4** 5.NF.7c **Lesson 8.5** 5.NF.7c	**Division of Fractions with a Whole Number** IXL - Divide Fractions by Whole Numbers - Assessment IXL- Divide Whole Numbers by Fractions - Assessment UEN - "Fruity O Fractions" Lesson K-5 Math Teaching Resources – Divide a Whole Number by a Unit Fraction K-5 Math Teaching Resources – Divide a Unit Fraction by a Whole Number **GSD Additional Teacher Resources** Math Investigation Centers – Units 7 and 8 Learn Zillion Videos – Chapter 8 – 5.NF3, 7 Dividing Fractions Using Pattern Blocks **Literature** Full House: An Invitation to Fractions by Dayle Ann Dodds Jump, Kangaroo, Jump! by Stuart J. Murphy The Man Who Counted: A Collection of Mathematical Adventures by Malba Tahan The Multiplying Menace Divides by Pam Calvert
Assessment Options	• **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; Performance Assessment Chapters 6-8; Personal Math Trainer. • **Daily/Weekly Formative Assessment Options**: Exit Slips, Observation, Daily Work, Homework.

Unit of Study 9	5th Grade	Quarter 3	Approx. 9 – 12 days	GSD Revised 6/1/18

Strand: Measurement and Data 5.MD

Represent and interpret data.

2. Make a line plot to display a data set of measurements in fractions of a unit (halves, quarters, eighths). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given graduated cylinders with different measures of liquid in each, find the amount of liquid each cylinder would contain if the total amount in all the cylinders were redistributed equally.*

Strand: Geometry 5.G

Graph points on the coordinate plane to solve real-world and mathematical problems in quadrant one.

1. Compose and understand the coordinate plane.

a. Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the zero on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates.

b. Using quadrant one on the coordinate plane, understand that the first number in a coordinate pair indicates how far to travel from the origin in the direction of the horizontal axis, and the second number indicates how far to travel in the direction of the vertical axis, with the convention that the names of the two axes and the coordinates correspond (*x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).

2. Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

Strand: Operations and Algebraic Thinking 5.OA

Analyze patterns and relationships.

3. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. *For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.*

Math Content Objectives	Vocabulary	Vocabulary (cont.)
I can: **<u>5.MD.2</u>** • Make a line plot for a data set of fraction measurements. • Solve problems using information in a line plot with fraction measurements. **<u>5.G.1</u>** • Find and name the parts of a coordinate system. • Understand how to locate points in a coordinate system using an ordered pair.	• axis (plural - axes) • bar graph • coordinate grid • coordinate plane • coordinate system • coordinates • corresponding terms • data • fraction • intersect • interval • line graph • line plot	• number line • ordered pair • origin • perpendicular • plane • quadrant • scale • sequence • unit fraction • *x*-axis • *x*-coordinate • *y*-axis • *y*-coordinate

Unit of Study 9 (continued)		
Math Content Objectives		
5.G.2 • Graph points in the first quadrant of the coordinate plane to represent real world and mathematical problems. • Use coordinate values of points to answer questions. **5.OA.3** 🗝 Generate numerical patterns using a rule. 🗝 Analyze two numerical patterns and identify relationships between corresponding terms. • Form ordered pairs made up of corresponding terms from two numerical patterns. • Graph ordered pairs on the coordinate plane. 🗝 Key Concepts for Differentiation - See p. 7.		

Go Math! Utah Core Alignment	Unit of Study 9 – Additional Resources
Lesson 9.1 5.MD.2 **Lesson 9.2** 5.G.1 **Lesson 9.3** 5.G.2 **Lesson 9.4** 5.G.2 **Lesson 9.5** 5.OA.3 **Lesson 9.6** 5.OA.3 **Lesson 9.7** 5.OA.3	**General Line Plot Information** IXL - Create Line Plots - Assessment LearnAlberta - Displaying Data - Video Tutorial IXL - Interpret Line Plots - Assessment EngageNY – Measure and Compare Pencil Lengths Line Plots **Coordinate Plane – Graphing Points in Quadrant I** NLVM - Counting All Pairs - Student Interactive- IXL - Location and Relative Coordinates on Maps - Assessment IXL - Graph Points on a Coordinate Plane - Assessment IXL - Coordinate Graphs Review - Assessment UEN - "Mountain Rescue Mission" Lesson LearnAlberta - Ordered Pairs - Video Tutorial Education Place - Locate Points on a Grid - Student Tutorial Education Place - Graphing on a Coordinate Grid - Student Tutorial UEN - "Fly on the Ceiling" Lesson K-5 Math Teaching Resources – Shapes on the Coordinate Plane K-5 Math Teaching Resources – Fly on the Ceiling K-5 Math Teaching Resources – How Many Pages K-5 Math Teaching Resources – Patterns on the Coordinate Plane EngageNY – Name and Plot Coordinate Points Mathwire – High Five Game **Numerical Patterns** Teacher's Domain - "Linking Number Patterns" Lesson Teacher's Domain - "Finding the Common Beat" Lesson UEN - "Math Stations for Pattern Review" Lesson UEN - "Table Settings" Lesson UEN - "Eye Spy a Rule" Lesson

	Unit of Study 9 - Additional Resources - Continued
	Line Graphs IXL - Create Line Graphs - Assessment IXL - Interpret Line Graphs - Assessment Education Place - Bar Graphs and Line Graphs - Student Tutorial Mr. Nussbaum - Cool Graphing - Interactive Applet **GSD Additional Teacher Resources** Math Investigation Center – Unit 9 Graph and Analyze Relationships Learn Zillion Links – Chapter 9 **Literature** The Fly on the Ceiling by Julie Glass Two of Everything by Lily Toy Hong X Marks the Spot! by Lucille Recht Penner
Assessment Options	• **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; Personal Math Trainer. • **Daily/Weekly Formative Assessment Options**: Exit Slips, Observation, Daily Work, Homework.

Unit of Study 10	5th Grade	Quarter 4	Approx. 9 – 14 days	GSD Revised 6/1/18

Strand: Measurement and Data 5.MD

Convert like measurement units within a given measurement system.

1. Convert among different-sized standard measurement units within a given measurement system (for example., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real-world problems.

Math Content Objectives	Vocabulary	Vocabulary (cont.)
I can: **5.MD.1** 🔑 Convert measurements within the customary system. 🔑 Convert measurements within the metric system. • Solve multi-step real world problems that convert measurements within the customary system. • Solve multi-step real world problems that convert measurements within the metric system. 🔑 Key Concepts for Differentiation - See p. 7.	• capacity • centimeter • cup • customary system • decimeter • dekameter • elapsed time • fluid ounce • foot • gallon • gram • inch • kilogram • kilometer • liter • mass • meter • metric system • mile • milligram • milliliter • millimeter	• ounce • pint • pound • quart • ton • weight • yard

Go Math! Utah Core Alignment	Unit of Study 10 - Additional Resources
Lesson 10.1 5.MD.1 **Lesson 10.2** 5.MD.1 **Lesson 10.3** 5.MD.1 **Lesson 10.4** 5.MD.1 **Lesson 10.5** 5.MD.1 **Lesson 10.6** 5.MD.1 **Lesson 10.7** 5.MD.1	**Customary/Standard System** Easy Surf - Converter Applet BBC - Animal Weigh In - Game HMH School Publishers - Game UEN – Measurement Benchmarks and Conversions Georgia Standards Frameworks – Unit 6 **Metric System** Atlantis Ed. - Teacher Tutorial UEN - "Make It Metric" Lesson Purple Math - Teacher Tutorial Figure This - Problem Solving with Measurement Math Playground - Student Tutorial Video UEN – Measurement Benchmarks and Conversions K-5 Math Teaching Resources – Comparing Metric Units Georgia Standards Frameworks – Unit 6 **GSD Additional Teacher Resources** Math Investigation Centers – Unit 10 Learn Zillion Links – Chapter 10 Elapsed Time and Other Conversions **Literature** How Tall, How Short, How Far Away by David A. Adler Millions to Measure by David Schwartz
Assessment Options	• **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; Personal Math Trainer. • **Daily/Weekly Formative Assessment Options**: Exit Slips, Observation, Daily Work, Homework.

Unit of Study 11	5th Grade	Quarter 4	Approx. 14 – 19 days	GSD Revised 6/1/18

Strand: Measurement and Data 5.MD

Understand concepts of geometric measurement and volume, as well as how multiplication and addition relate to volume.

3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
- **a. A cube with side length one unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.**
- **b. A solid figure which can be packed without gaps or overlaps using *n* unit cubes is said to have a volume of *n* cubic units.**

4. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.

5. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
- **a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, for example, to represent the associative property of multiplication.**
- **b. Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real-world and mathematical problems.**
- **c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.**

Strand: Geometry 5.G

Classify two-dimensional figures into categories based on their properties.

3. Understand that attributes belonging to a category of two dimensional figures also belong to all subcategories of that category. *For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.*

4. Classify two-dimensional figures in a hierarchy based on properties.

Math Content Objectives	Vocabulary	
I can: **<u>5.MD.3a</u>** • Understand how a unit cube can be used to measure volume. **<u>5.MD.3b</u>** • Make solid figures with unit cubes that have no gaps or overlaps to find volume. • Correctly label volume as cubic units. **<u>5.MD.4</u>** • Count unit cubes that fill a solid figure to find volume. • Correctly label volume as cubic units.	• acute triangle • Associative Property of Multiplication • attribute • base of a solid figure • congruent • cube • cubic unit • decagon • decagonal prism • diagonal • equiangular triangle • equilateral triangle • formula • height • heptagon • hexagon • hexagonal prism	

Unit of Study 11 (continued)

Math Content Objectives	Vocabulary (cont.)	
5.MD.5a • Find the volume of a right rectangular prism by packing it with unit cubes. • Find the volume of a right rectangular prism by multiplying the edge lengths. • Find the volume of a right rectangular prism by multiplying the area of the base by the height. 🔑 Find the volume of a right rectangular prism in more than one way and show that the volume is the same with each method. • Apply the Associative Property of Multiplication to find the volume of a right rectangular prism. **5.MD.5b** • Use the formula $V = l \times w \times h$ to find the volume of a right rectangular prism in real world and mathematical problems. • Use the formula $V = B \times h$ to find the volume of a right rectangular prism in real world and mathematical problems. **5.MD.5c** • Find the volume of a solid figure that is made of two right rectangular prisms in a real world problem. **5.G.3** • Describe attributes of 2-dimensional figures. • Explain how attributes of a category of 2-dimensional figures are shared by its subcategories. **5.G.4** 🔑 Classify 2-dimensional figures in a hierarchy based on properties. 🔑 Key Concepts for Differentiation - See p. 7.	• hierarchy • isosceles triangle • lateral face • line of symmetry • line symmetry • nonagon • obtuse triangle • octagon • octagonal prism • parallel lines • parallelogram • pentagon • pentagonal prism • pentagonal pyramid • perpendicular • perpendicular lines • polygon • polyhedron • prism • pyramid • quadrilateral • rectangle • regular polygon • rhombus • right rectangular prism • right triangle • scalene triangle • solid figure • square • three-dimensional figure • trapezoid • two-dimensional figure • unit cube • variable • volume	

Go Math! Utah Core Alignment	Unit of Study 11 - Additional Resources
Lesson 11.1 5.G.3 **Lesson 11.2** 5.G.3; 5.G.4 **Lesson 11.3** 5.G.4 **Lesson 11.4** 5.G.3 **Lesson 11.5** 5.MD.3 **Lesson 11.6** 5.MD.3a **Lesson 11.7** 5.MD.3b; 5.MD.4 **Lesson 11.8** 5.MD.4 **Lesson 11.9** 5.MD.5a **Lesson 11.10** 5.MD.5b **Lesson 11.11** 5.MD.5b **Lesson 11.12** 5.MD.5c	**2-Dimensional Figures** Learn Alberta - Triangles - Video Tutorial Learn Alberta - Polygons- Video Tutorial IXL - Types of Triangles- Assessment IXL - Regular and Irregular Polygons- Assessment Scholastic Study Jams - Classify Triangles - Student Tutorial Scholastic Study Jams - Classify Quadrilaterals - Student Tutorial UEN – Classify Quadrilaterals K-5 Math Teaching Resources – Quadrilateral Hierarchy K-5 Math Teaching Resources – Classifying Triangles K-5 Math Teaching Resources – Triangle Hierarchy Georgia Standards Frameworks – Unit 5 **Volume of Right Rectangular Prisms** IXL - Volume of Figures Made of Unit Cubes - Assessment IXL - Volume of Cubes and Rectangular Prisms - Assessment Learn Alberta - Volume - Video Tutorial Scholastic Study Jams - Volume - Student Tutorial Illuminations - "Fill 'er Up" Lesson Illuminations - "Fishing for the Best Prism" Lesson Illuminations - "Popcorn, Anyone?" Lesson LearnAlberta - "Volume and Displacement" Lesson - MathOpen Reference - Interactive Model UEN - "Box It Up" Lesson Georgia Standards Frameworks – Unit 6 **GSD Additional Teacher Resources** Math Investigation Centers – Unit 11 Learn Zillion Links – Chapter 11 What is a Trapezoid? Note: USBE defines a trapezoid as a quadrilateral with **at least** one pair of parallel sides. For more information, click here.

Go Math! Utah Core Alignment	Unit of Study 11 - Additional Resources
	Literature Counting on Frank by Rod Clement The Greedy Triangle by Marilyn Burns The Important Book by Margaret Wise Brown Perimeter, Area and Volume: A Monster Book of Dimensions by David A. Adler Shape Up: Fun with Triangles and Other Polygons by David A. Adler
Assessment Options	• **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; Performance Assessment Chapters 9-11; Personal Math Trainer. • **Daily/Weekly Formative Assessment Options**: Exit Slips, Observation, Daily Work, Homework.

Appendix

General Website Resources

Instructional Support

Learning Progressions for CCSM
Utah Core State Standards for Mathematics K-5
Utah Core State Standards for Mathematics 6-12
Georgia Standards of Excellence (Activities and Lessons)
Create a Graph
ThemeSpark (Rubric Generator)
K-2 Assessments Hawaii
UEN
Illuminations
Van de Walle - Blackline Masters
Youcubed
Math Their Way Assessment
Engage New York (website)
Ask Dr. Math
Education Place
Math.com
Math is Fun
Core Academy Teacher-Created Tasks
Online Math Learning (Grade Specific)
Illustrating the Standards for Mathematical Practice
Common Core Standards - Official Website
North Carolina Department of Public Instruction - Common Core Instructional Support Tools

Games and Activities

PBS Kids - Curious George
K-5 Math Teaching Resources
Math Playground – Thinking Blocks
Mathwire
FunBrain
Fuel the Brain
National Library of Virtual Manipulatives (NLVM)
Dr. Mike's Math Games
Scholastic Study Jams

Videos

Learn Zillion
Teaching Channel
Three-Act Math Tasks