

Dual Immersion 4th 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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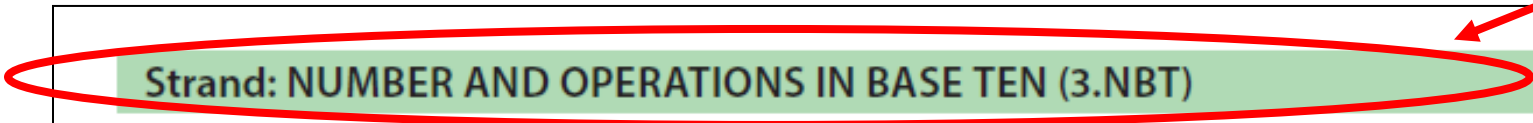


How to Read the Grade Level Content Standards

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.

Strand



Strand: NUMBER AND OPERATIONS IN BASE TEN (3.NBT)

Use place value understanding and properties of operations to perform multi-digit arithmetic. A range of algorithms may be used (Standards 3.NBT.1–3).

- **Standard 3.NBT.1** Use place value understanding to round whole numbers to the nearest 10 or 100.
 - **Standard 3.NBT.2** Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
 - **Standard 3.NBT.3** Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (*for example, 9×80 and 5×60*) using strategies based on place value and properties of operations.
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Standard

Standards for Mathematical Practice

The Standards for Mathematical Practice in Fourth 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 4.MP.1–8).

Standard 4.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 4.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 4.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 4.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 4.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 4.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 4.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 4.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.

4th 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, Addition, and Subtraction to One Million	Strand: Number and Operations in Base Ten Standards: 1, 2, 3, 4
2	Chapter 2	Multiply by 1-Digit Numbers	Strand: Operations and Algebraic Thinking Standards: 1, 2, 3 Strand: Number and Operations in Base Ten Standard: 5
3	Chapter 3	Multiply 2-Digit Numbers	Strand: Operations and Algebraic Thinking Standard: 3 Strand: Number and Operations in Base Ten Standard: 5
4	Chapter 4	Divide by 1-Digit Numbers	Strand: Operations and Algebraic Thinking Standard: 3 Strand: Number and Operations in Base Ten Standard: 6
5	Chapter 5	Factors, Multiples, and Patterns	Strand: Operations and Algebraic Thinking Standards: 4, 5
6	Chapter 6	Fraction Equivalence and Comparison	Strand: Number and Operations - Fractions Standards: 1, 2
7	Chapter 7	Add and Subtract Fractions	Strand: Number and Operations - Fractions Standards: 3a, 3b, 3c, 3d
8	Chapter 8	Multiply Fractions by Whole Numbers	Strand: Number and Operations - Fractions Standards: 4a, 4b, 4c
9	Chapter 9	Relate Fractions and Decimals	Strand: Number and Operations – Fractions Standards: 5, 6, 7 Strand: Measurement and Data Standard: 2
10	Chapter 10	Two-Dimensional Figures	Strand: Geometry Standards: 1, 2, 3 Strand: Operations and Algebraic Thinking Standard: 5
11	Chapter 11	Angles	Strand: Measurement and Data Standards: 5a, 5b, 6, 7
12	Chapter 12	Relative Sizes of Measurement Units	Strand: Measurement and Data Standards: 1, 2, 4
13	Chapter 13	Algebra: Perimeter and Area	Strand: Measurement and Data Standard: 3

4th Grade

Instruction and Assessment Semester Schedule 2017-2018

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 8/21 – 2/9 (required)	14	18	13	19	10	15	Semester 1 Posttest 12/11 – 2/9 (required)	Semester 2 Pretest 12/11 – 3/5 (required)	20	14	16	8	6	12	6	Semester 2 Posttest 3/5 – 5/25 (supplemental)	SAGE 3/19 – 5/18	End of Year
		8	12	7	12	6	8			10	5	7	7	5	11	5			
Number of Lessons	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	Unit of Study 12	Unit of Study 13	Getting Ready for Gr. 5 Unit				
Math Standards	4.OA.1 4.NBT.3 4.OA.2 4.NBT.4 *4.OA.3 *4.NBT.5 *4.OA.4 *4.NBT.6 4.OA.5 4.NF.1 *4.NBT.1 *4.NF.2 *4.NBT.2							*4.OA.5 *4.MD.3 *4.NF.3 4.MD.4 *4.NF.4 4.MD.5 4.NF.5 4.MD.6 4.NF.6 *4.MD.7 4.NF.7 4.G.1 4.MD.1 *4.G.2 *4.MD.2 4.G.3											

*Indicates emphasized standards.

Beginning and Ending of Semesters

1st Semester Aug 21, 2017 – Jan 11, 2018
 2nd Semester Jan 16, 2018 – May 25, 2018

4th Grade

Instruction and Assessment Quarterly Schedule 2017-2018

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		14	18	13		19	10	15		20	14	16		8	6	12	6		End of Year	
Number of Lesson		8	12	7		12	6	8		10	5	7		7	5	11	5		Getting Ready for Gr. 5 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	Unit of Study 12	Unit of Study 13			
Math Standards	GQB 1 8/21 (supplemental)	4.OA.1 4.OA.2 *4.OA.3 *4.NBT.1 *4.NBT.2 4.NBT.3 4.NBT.4 *4.NBT.5			GQB 2 10/30 (supplemental)	4.OA.3 *4.OA.4 4.OA.5 *4.NBT.6 4.NF.1 *4.NF.2			GQB 3 1/16 (supplemental)	*4.NF.3 *4.NF.4 4.NF.5 4.NF.6 4.NF.7 4.MD.2			GQB 4 3/5 (supplemental)	*4.OA.5 4.MD.1 *4.MD.2 *4.MD.3 4.MD.4 4.MD.5			4.MD.6 *4.MD.7 4.G.1 *4.G.2 4.G.3		SAGE 3/19 – 5/18 (required)	

*Indicates emphasized standards.

Beginning and Ending of Quarters

1st Quarter Aug 21, 2017 – Oct 26, 2017
 2nd Quarter Oct 30, 2017 – Jan 11, 2018
 3rd Quarter Jan 16, 2018 – Mar 28, 2018
 4th Quarter Apr 4, 2018 – May 25, 2018

4th Grade Mathematics Curriculum Map - Overview

Lesson Plan Format:

Lesson Plan Format with Go Math! References:

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 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/
Additional Resources	Each elementary school has a copy of <u>Elementary and Middle School Mathematics</u> , 7 th Edition, by John A. Van de Walle. This book is intended to be a resource for mathematical content and instructional strategy suggestions. The websites are a resource for lesson plans, teacher tutorials, content videos, student applets, and games. The 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: <ul style="list-style-type: none"> • 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 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. • 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

- Refer to details and examples in a math text when explaining what the text says.
- Explain procedures, ideas, or concepts in a math text.
- Determine the meaning of specific math words or phrases in a text.
- Describe the overall structure of ideas or concepts in a math text.
- Interpret math information presented visually, orally or quantitatively. (e.g., in charts, graphs, diagrams)
- 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.
- Use technology to produce math writing and collaborate with others.
- Draw evidence from informational 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.
- Paraphrase math information presented in visual, quantitative, and oral formats.
- Identify the reasons and evidence a speaker provides to support particular math points.
- Report on a math topic in an organized manner using appropriate facts and details.
- Add visual displays to math presentations.
- Use formal English to present math ideas.

Unit of Study 1	4 th Grade	Quarter 1	Approx. 10 – 14 days	GSD Revised 6/1/17
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Strand: Number and Operations in Base Ten	4.NBT
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Generalize place value understanding for multi-digit whole numbers by analyzing patterns, writing whole numbers in a variety of ways, making comparisons, and rounding. Expectations in this strand are limited to whole numbers less than or equal to 1,000,000.

1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. *For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.*
2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.
3. Use place value understanding to round multi-digit whole numbers to any place.

Use place value understanding and properties of operations to perform multi-digit addition, subtraction, multiplication, and division using a one-digit divisor.

4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.

Math Content Objectives	Vocabulary	Vocabulary (cont.)
<p>I can:</p> <p><u>4.NBT.1</u> ☞ Recognize that a digit in one place represents 10 times as much as the place to its right.</p> <p><u>4.NBT.2</u> ☞ Read and write whole numbers to 1,000,000 using base-ten numerals. • Read and write whole numbers to 1,000,000 using number names. ☞ Read and write whole numbers to 1,000,000 using expanded form. ☞ Correctly use $<$, $>$, and $=$ to record the comparison of two whole numbers.</p> <p><u>4.NBT.3</u> • Round whole numbers to any place.</p> <p><u>4.NBT.4</u> • Fluently add whole numbers. • Fluently subtract whole numbers. • Fluently add whole numbers using the standard algorithm. • Fluently subtract whole numbers using the standard algorithm.</p> <p>☞ Key Concepts for Differentiation - See p. 7</p>	<ul style="list-style-type: none"> • add • addend • algorithm • base-ten numerals • compare • difference • digit • equal • estimate • expanded form • greater than • hundreds • number line • number name • ones • order • period • place value 	<ul style="list-style-type: none"> • regroup • round a whole number • standard form • subtract • sum • tens • thousands • whole numbers • word form

Go Math! Utah Core Alignment	Envisions to Go Math! Alignment	Unit of Study 1 – Additional Resources
<u>Lesson 1.1</u> 4.NBT.1	Lesson 3-2	<p>Place Value VDW 7th Edition - pages 208-210 Education Place - Place Value - Student Tutorial - http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.shtml&grade=5&chapter=1&lesson=1&title=Place+Value+Through+Hundred+Thousands&tm=tmff0101e HMH School Publishers eLab - Place Value - Interactive Applet - http://www.hbschool.com/activity/elab2004/gr4/1.html Illustrations - “Making Your First Million” Lesson 2 - http://illuminations.nctm.org/LessonDetail.aspx?ID=L367</p>
<u>Lesson 1.2</u> 4.NBT.2	Lesson 3-1	
<u>Lesson 1.3</u> 4.NBT.2	Lessons 3-3, 3-4	<p>Compare Numbers Education Place - Compare Numbers - Student Tutorial - http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.shtml&grade=4&chapter=2&lesson=1&title=Compare+Numbers&tm=tmfe0201e Free Training Tutorial - Place Value Speedboats - Game - http://www.free-training-tutorial.com/place-value/greaterthan.html</p>
<u>Lesson 1.4</u> 4.NBT.3	Lesson 3-5	
<u>Lesson 1.5</u> 4.NBT.1	Lesson 3-6	<p>Rounding VDW 7th Edition - pages 246-247 Mr. Nussbaum - Half-court rounding - Game - http://www.mrnussbaum.com/rounding/index.html Mr. Nussbaum - Rounding Master - Game - http://www.mrnussbaum.com/mathmillions/index.html Education Place - Round Two-Digit and Three-Digit Numbers - Student Tutorial - http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.shtml&grade=3&chapter=2&lesson=3&title=Round+Two-Digit+and+Three-Digit+Numbers&tm=tmfd0203e</p>
<u>Lesson 1.6</u> 4.NBT.4	Lessons 4-1, 4-3	
<u>Lesson 1.7</u> 4.NBT.4	Lessons 4-4, 4-5	
<u>Lesson 1.8</u> 4.NBT.4	Lessons 4-6	<p>Add Whole Numbers VDW 7th Edition - pages 218-225 IXL - Add Numbers Up to Millions - Assessment - http://www.ixl.com/math/grade-4/add-numbers-up-to-millions BBC KS2 Bitesize - Addition and Subtraction - Game - http://www.bbc.co.uk/schools/ks2bitesize/maths/number/addition_subtraction/play.shtml</p> <p>Subtract Whole Numbers VDW 7th Edition - pages 218-225 IXL - Subtract Numbers Up to Millions - Assessment - http://www.ixl.com/math/grade-4/subtract-numbers-up-to-millions BBC KS2 Bitesize - Addition and Subtraction - Game - http://www.bbc.co.uk/schools/ks2bitesize/maths/number/addition_subtraction/play.shtml</p>

Unit of Study 1 - Additional Resources - Continued

Literature

Betcha by Stuart J. Murphy

Coyotes All Around by Stuart J. Murphy

Earth Day – Hooray! by Stuart J. Murphy

How Big is a Million? by Anna Milbourne

How Much is a Million? by David M. Schwartz

If You Made a Million by David M. Schwartz

A Million Fish...More or Less by Patricia McKissack

More or Less by Stuart J. Murphy

Sir Cumference and All the King's Tens: A Math Adventure 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	4th Grade	Quarter 1	Approx. 14 – 18 days	GSD Revised 6/1/17
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Strand: Operations and Algebraic Thinking **4.OA**

Use the four operations with whole numbers (addition, subtraction, multiplication and division) to solve problems.

1. Interpret a multiplication equation as a comparison, (for example, interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5.)
Represent verbal statements of multiplicative comparisons as multiplication equations.
2. Multiply or divide to solve word problems involving multiplicative comparison, for example, by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which whole remainders must be interpreted.
 - a. Represent these problems using equations with a letter standing for the unknown quantity.
 - b. Assess the reasonableness of answers using mental computation and estimation strategies, including rounding.

Strand: Number and Operations in Base Ten **4.NBT**

Use place value understanding and properties of operations to perform multi-digit addition, subtraction, multiplication, and division using a one-digit divisor. Expectations in this strand are limited to whole numbers less than or equal to 1,000,000.

5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Math Content Objectives	Vocabulary	
<p>I can:</p> <p><u>4.OA.1</u></p> <ul style="list-style-type: none"> • Explain the multiplicative comparison of a multiplication equation. • Write an equation to match a verbal statement about a multiplicative comparison. <p><u>4.OA.2</u></p> <ul style="list-style-type: none"> • Solve multiplicative comparison problems by drawing a picture. • Solve multiplicative comparison problems by writing an equation. • Tell the difference between a multiplicative comparison and an additive comparison. 	<ul style="list-style-type: none"> • add • addend • additive comparison • area model • array • Associative Property of Multiplication • bar model • Commutative Property of Multiplication • difference • digit • Distributive Property • divide • dividend • divisor • equal 	

Unit of Study 2 (continued)

Math Content Objectives	Vocabulary (cont.)	
<p><u>4.OA.3</u></p> <ul style="list-style-type: none">◦→ Solve word problems using the four operations.• Interpret the remainder in a division problem.◦→ Write an equation to solve a word problem.• Decide if an answer is reasonable using estimation strategies. <p><u>4.NBT.5</u></p> <ul style="list-style-type: none">◦→ Use strategies to multiply whole numbers.• Explain the calculation of a multiplication problem. <p>◦→ Key Concepts for Differentiation - See p. 7.</p>	<ul style="list-style-type: none">• equation• estimate• expanded form• expression• factor• multiplicative comparison• multiply• number line• Order of Operations• parentheses• partial product• place value• product• quotient• reasonableness• regroup• remainder• round a whole number• subtract• sum• variable• whole numbers• Zero Property of Multiplication	

Go Math! Utah Core Alignment	Envisions to Go Math! Alignment	Unit of Study 2 – Additional Resources
<u>Lesson 2.1</u> 4.OA.1	Lesson 1-1	<u>Multiplicative Comparisons</u> VDW 7 th Edition - page 154 Investigations - Multiplicative Comparison - Lesson - http://investigations.terc.edu/library/common_core/4U1_Session.pdf Multiplicative Comparison - Examples - http://www.uwosh.edu/coehs/mindsongmath/many_word/documents/Mult=Div_Rate=Price.pdf Helping With Math - Multiplication and Division Word Problems - Teacher Tutorial - http://www.helpingwithmath.com/by_subject/word_problems/wor_multiplication_division01_4oa2.htm YouTube - Singapore Math: Multiplication Comparison - Classroom Demonstration - http://www.youtube.com/watch?v=jwMmCYRNpTs Math Playground - Thinking Blocks (Bar Model - Multiplication and Division) - Interactive Applet - http://www.mathplayground.com/NewThinkingBlocks/thinking_blocks_multiplication_division.html Math Playground - Multiplication Models - Interactive Applet - http://www.mathplayground.com/TB_MD/tb_md1_iFrame.html Math Playground - 2-Step Multiplication Models - Interactive Applet - http://www.mathplayground.com/TB_MD/tb_md2_iFrame.html Math Playground - Multi-Step Multiplication Models - Interactive Applet - http://www.mathplayground.com/TB_MD/tb_md3_iFrame.html
<u>Lesson 2.2</u> 4.OA.2	Lessons 1-6, 1-10	
<u>Lesson 2.3</u> 4.NBT.5	Lessons 5-1, 5-2	
<u>Lesson 2.4</u> 4.NBT.5	Lessons 5-5, 5-6	
<u>Lesson 2.5</u> 4.NBT.5	Lessons 1-4, 6-1	
<u>Lesson 2.6</u> 4.NBT.5	Lessons 5-1, 5-2, 5-3	<u>Additive Comparisons</u> VDW 7 th Edition - pages 152-153 Thinking Blocks - Comparison Model - 1Step and Comparison Model - 2 Steps - Bar Models - http://www.thinkingblocks.com/tb_addition/addition.html
<u>Lesson 2.7</u> 4.NBT.5	Lessons 6-1	
<u>Lesson 2.8</u> 4.NBT.5	Lessons 5-4, 5-5, 5-6	<u>Rounding</u> VDW 7 th Edition - pages 246-247 IXL - Number Sense: Rounding - Assessment - http://www.ixl.com/math/grade-4/rounding Scholastic Study Jams - Estimate Whole Numbers - Student Tutorial - http://studyjams.scholastic.com/studyjams/jams/math/numbers/estimate-whole-numbers.htm
<u>Lesson 2.9</u> 4.OA.3	-----	
<u>Lesson 2.10</u> 4.NBT.5	Lessons 6-2, 6-3	<u>Distributive Property</u> VDW 7 th Edition - page 161 Scholastic Study Jams - Distributive Property - Student Tutorial - http://studyjams.scholastic.com/studyjams/jams/math/multiplication-division/distrib-property.htm
<u>Lesson 2.11</u> 4.NBT.5	Lessons 6-4, 6-5	
<u>Lesson 2.12</u> 4.OA.3	-----	

Unit of Study 2 - Additional Resources - Continued

Word Problems

[VDW 7th Edition - pages 157; 161-164](#)

Math Playground - Thinking Blocks (Bar Model - Addition and Subtraction) - Interactive Applet -

http://www.mathplayground.com/NewThinkingBlocks/thinking_blocks_addition_subtraction.html

Math Playground - Thinking Blocks (Bar Model - Multiplication and Division) - Interactive Applet -

http://www.mathplayground.com/NewThinkingBlocks/thinking_blocks_multiplication_division.html

Multiplication of Whole Numbers

[VDW 7th Edition - pages 226-232](#)

Education Place - Multiply Two-Digit by One-Digit Numbers - Student Tutorial - [http://eduplace.com/cgi-](http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.shtml&grade=4&chapter=6&lesson=4&title=Multiply+Two-Digit+Numbers+by+One-Digit+Numbers&tm=tmfe0604e)

[bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.shtml&grade=4&chapter=6&lesson=4&title=Multiply+Two-Digit+Numbers+by+One-Digit+Numbers&tm=tmfe0604e](http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.shtml&grade=4&chapter=6&lesson=4&title=Multiply+Two-Digit+Numbers+by+One-Digit+Numbers&tm=tmfe0604e)

Illustrations - Product Game - Interactive Applet - <http://illuminations.nctm.org/ActivityDetail.aspx?ID=29>

Illustrations - “Multiply and Conquer” Lesson - <http://illuminations.nctm.org/LessonDetail.aspx?id=L858>

PBS CyberKids - Multiplying Bigger Numbers - Video - <http://www.teachersdomain.org/resource/vtl07.math.number.ope.multbignum/>

NLVM - Number Line Arithmetic - Interactive Applet - http://nlvm.usu.edu/en/nav/frames_asid_197_g_2_t_1.html?open=activities

NLVM - Rectangle Multiplication - Interactive Applet - http://nlvm.usu.edu/en/nav/frames_asid_192_g_2_t_1.html

Literature

Betcha by Stuart J. Murphy

Coyotes All Around by Stuart J. Murphy

Grapes of Math by Greg Tang

Multiplication Made Easy by Rebecca Wingard-Nelson

One Hundred Hungry Ants by Elinor J. Pinczes

One Riddle, One Answer by Lauren Thompson

A Place for Zero: A Math Adventure by Angeline Sparagna LoPresti

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	4th Grade	Quarter 1	Approx. 9 – 13 days	GSD Revised 6/1/17
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Strand: Operations and Algebraic Thinking 4.OA

Use the four operations with whole numbers (addition, subtraction, multiplication, and division) to solve problems.
3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which whole remainders must be interpreted.
 a. Represent these problems using equations with a letter standing for the unknown quantity.
 b. Assess the reasonableness of answers using mental computation and estimation strategies, including rounding.

Strand: Number and Operations in Base Ten 4.NBT

Use place value understanding and properties of operations to perform multi-digit addition, subtraction, multiplication, and division using a one-digit divisor. Expectations in this strand are limited to whole numbers less than or equal to 1,000,000.
5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Math Content Objectives	Vocabulary	Vocabulary (cont.)
<p>I can:</p> <p>4.OA.3</p> <ul style="list-style-type: none"> ☛ Solve word problems using the four operations. <ul style="list-style-type: none"> • Interpret the remainder in a division problem. ☛ Write an equation to solve a word problem. <ul style="list-style-type: none"> • Decide if an answer is reasonable using estimation strategies. <p>4.NBT.5</p> <ul style="list-style-type: none"> ☛ Use strategies to multiply whole numbers. <ul style="list-style-type: none"> • Explain the calculation of a multiplication problem. <p>☛ Key Concepts for Differentiation - See p. 7.</p>	<ul style="list-style-type: none"> • addend • area model • array • Associative Property of Multiplication • Commutative Property of Multiplication • compatible numbers • digit • Distributive Property • equation • estimate • expanded form • expression • factor • multiply • number line • partial product • place value 	<ul style="list-style-type: none"> • product • reasonableness • regroup • round a whole number • sum • variable • Zero Property of Multiplication

Go Math! Utah Core Alignment	Envisions to Go Math! Alignment	Unit of Study 3 - Additional Resources
<u>Lesson 3.1</u> 4.NBT.5	Lessons 7-1, 8-3	<u>Multiply by Tens</u> YouTube - 10 Time Tables "Rock" - Song - http://www.youtube.com/watch?v=zCJug1WIYJs BBC - Camel Times Tables - Game - http://www.bbc.co.uk/bitesize/ks1/maths/multiplication/play/popup.shtml Quia - Times 10 Matching - Game - http://www.quia.com/mc/644904.html?AP_rand=1404880125 Quia - Times 10 Concentration - Game - http://www.quia.com/cc/644904.html?AP_rand=1233343864
<u>Lesson 3.2</u> 4.NBT.5	Lessons 7-2, 7-3, 7-4	
<u>Lesson 3.3</u> 4.NBT.5	Lesson 8-1	<u>Multiplication of Whole Numbers</u> VDW 7th Edition - pages 226-232 UEN - "Multi-Digit Multiplication" Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=6095 Illustrations - "Multiply and Conquer" Lesson - http://illuminations.nctm.org/LessonDetail.aspx?id=L858 UEN - "Multiplication Strategy Review" Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=6151 Math Playground - Thinking Blocks - Problems and Models - http://www.mathplayground.com/TB_MD/tb_md4_iFrame.html NLVM - Rectangle Multiplication - Interactive Applet - http://nlvm.usu.edu/en/nav/frames_asid_192_g_2_t_1.html
<u>Lesson 3.4</u> 4.NBT.5	Lesson 8-2	
<u>Lesson 3.5</u> 4.NBT.5	Lesson 8-4	
<u>Lesson 3.6</u> 4.NBT.5	-----	<u>Literature</u> <u>Betcha</u> by Stuart J. Murphy <u>Coyotes All Around</u> by Stuart J. Murphy <u>Multiplication Made Easy</u> by Rebecca Wingard-Nelson <u>One Hundred Hungry Ants</u> by Elinor J. Pinczes
<u>Lesson 3.7</u> 4.OA.3	Lesson 8-5	
Assessment Options	<ul style="list-style-type: none"> • 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	4 th Grade	Quarter 2	Approx. 14 – 19 days	GSD Revised 6/1/17
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Strand: Operations and Algebraic Thinking	4.OA
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Use the four operations with whole numbers (addition, subtraction, multiplication, and division) to solve problems.

3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which whole remainders must be interpreted.

- Represent these problems using equations with a letter standing for the unknown quantity.
- Assess the reasonableness of answers using mental computation and estimation strategies, including rounding.

Strand : Number and Operations in Base Ten	4.NBT
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Use place value understanding and properties of operations to perform multi-digit addition, subtraction, multiplication, and division using a one-digit divisor. Expectations in this strand are limited to whole numbers less than or equal to 1,000,000.

6. Find whole-number quotients and remainders with up to four-digit dividends and one-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.

Math Content Objectives	Vocabulary	Vocabulary (cont.)
<p>I can:</p> <p>4.OA.3</p> <ul style="list-style-type: none"> Solve word problems using the four operations. Interpret the remainder in a division problem. Write an equation to solve a word problem. Decide if an answer is reasonable using estimation strategies. <p>4.NBT.6</p> <ul style="list-style-type: none"> Use strategies to divide whole numbers. Show the relationship between multiplication and division. Solve a division problem using an equation. Show and explain division using a rectangular array. Show and explain division using an area model. Show and explain division using place value. <p>Key Concepts for Differentiation - See p. 7.</p>	<ul style="list-style-type: none"> add addend area model array compatible numbers counting number difference Distributive Property divide dividend divisor equation estimate expression fact family factor hundreds inverse operations multiple multiply ones 	<ul style="list-style-type: none"> partial quotient partitive division place value product quotative division quotient reasonableness related facts remainder repeated subtraction round a whole number subtract sum tens thousands variable

Go Math! Utah Core Alignment	Envisions to Go Math! Alignment	Unit of Study 4 - Additional Resources
<p><u>Lesson 4.1</u> 4.NBT.6</p> <p><u>Lesson 4.2</u> 4.NBT.6</p> <p><u>Lesson 4.3</u> 4.OA.3</p> <p><u>Lesson 4.4</u> 4.NBT.6</p> <p><u>Lesson 4.5</u> 4.NBT.6</p> <p><u>Lesson 4.6</u> 4.NBT.6</p> <p><u>Lesson 4.7</u> 4.NBT.6</p> <p><u>Lesson 4.8</u> 4.NBT.6</p> <p><u>Lesson 4.9</u> 4.NBT.6</p> <p><u>Lesson 4.10</u> 4.NBT.6</p> <p><u>Lesson 4.11</u> 4.NBT.6</p> <p><u>Lesson 4.12</u> 4.OA.3</p>	<p>Lessons 9-1, 9-2, 9-3</p> <p>Lessons 9-4, 9-6</p> <p>Lesson 9-5</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>Lessons 10-1, 10-2</p> <p>-----</p> <p>Lesson 10-3</p> <p>Lessons 10-4, 10-5, 10-6</p> <p>Lesson 10-7</p> <p>Lesson 10-8</p>	<p>Division of Whole Numbers VDW 7th Edition - pages 232-237</p> <p>Education Place - Place the First Digit of the Quotient - Student Tutorial - http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.thtml&grade=4&chapter=9&lesson=2&title=Place+the+First+Digit+of+the+Quotient&tm=tmfe0902e</p> <p>Education Place - Divide With Remainders - Student Tutorial - http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.thtml&grade=4&chapter=8&lesson=2&title=Divide+with+Remainders&tm=tmfe0802e</p> <p>Education Place - Model Division with Remainders - Student Tutorial - http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.thtml&grade=3&chapter=22&lesson=2&title=Model+Division+with+Remainders&tm=tmfd2202e</p> <p>UEN - “Long Division” Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=6096</p> <p>Learn Alberta - Division of Whole Numbers - Video Tutorial - http://www.learnalberta.ca/content/me5l/html/math5.html?goLesson=9</p> <p>NLVM - Division - Interactive Applet - http://nlvm.usu.edu/en/nav/frames_asid_193_g_2_t_1.html</p> <p>UEN - Remainder of One - Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=6152</p> <p>UEN - Remainder Riddles - Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=6153</p> <p>UEN - Partial Quotient - Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=6154</p> <p>UEN - “Mystery Dinner” Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=21553</p> <p>NLVM - Number Line Arithmetic - Interactive Applet - http://nlvm.usu.edu/en/nav/frames_asid_197_g_2_t_1.html?open=activities</p> <p>Mr. Nussbaum - Voldemath - Game - http://mrnussbaum.com/voldemath/</p> <p>Interpreting Remainders VDW 7th Edition - pages 157-158</p> <p>Math Playground - Time for Division - Models and Problems - http://www.mathplayground.com/TB_MD/tb_md5_iFrame.html</p> <p>UEN - “Playing with Remainders” Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=18900</p> <p>Literature <u>Bean Thirteen</u> by Matthew McElligott <u>Betcha</u> by Stuart J. Murphy <u>Coyotes All Around</u> by Stuart J. Murphy <u>Divide and Ride</u> by Stuart J. Murphy <u>Division Made Easy</u> by Rebecca Wingard-Nelson <u>Everybody Wins!</u> by Sheila Bruce <u>A Remainder of One</u> by Elinor J. Pinczes</p>
<p>Assessment Options</p>		<ul style="list-style-type: none"> • 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	4 th Grade	Quarter 2	Approx. 8 – 10 days	GSD Revised 6/1/17
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Strand: Operations and Algebraic Thinking 4.OA

Gain familiarity with factors and multiples.
 4. Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.

Generate and analyze numeric and shape patterns.
 5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. *For example, given the rule “add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.*

Math Content Objectives	Vocabulary	
<p>I can:</p> <p><u>4.OA.4</u></p> <ul style="list-style-type: none"> • Find factor pairs for the numbers 1-100. • Recognize that a whole number is a multiple of each of its factors. ☛ Decide if a whole number (1-100) is a multiple of a one-digit number. ☛ Decide if a one-digit number is a factor of another number (1-100). • Determine whether a number is prime or composite. <p><u>4.OA.5</u></p> <ul style="list-style-type: none"> • Make a number pattern that follows a rule. • Make a shape pattern that follows a rule. • Identify features of a pattern. • Explain how a pattern works. <p>☛ Key Concepts for Differentiation - See p. 7.</p>	<ul style="list-style-type: none"> • array • common factor • common multiple • composite number • divisible • factor • factor pairs • multiple • pattern • prime number • product • sequence • term 	

Go Math! Utah Core Alignment	Envisions to Go Math! Alignment	Unit of Study 5 – Additional Resources
<u>Lesson 5.1</u> 4.OA.4	Lesson 11-1	<p>Prime and Composite Numbers Math Playground - Prime and Composite Numbers - Video Tutorial - http://www.mathplayground.com/howto_primenumbers.html Math Playground - What is a Prime Number? - Video Tutorial - http://www.mathplayground.com/howto_primenumbers.html UEN - “Prime and Composite” Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=15423 Learn Alberta - Multiples, Factors, Primes and Composites - Student Tutorial - http://www.learnalberta.ca/content/me5/html/Math5.html?launch=true Ohio Department of Education - “Prime Time” Lesson - http://dnet01.ode.state.oh.us/IMS.ItemDetails/LessonDetail.aspx?id=0907f84c80531e28</p>
<u>Lesson 5.2</u> 4.OA.4	-----	
<u>Lesson 5.3</u> 4.OA.4	-----	
<u>Lesson 5.4</u> 4.OA.4	Lesson 11-3	<p>Factors and Multiples VDW 7th Edition - page 154 Smart Tutor - Space Rocks - Game - http://smarttutor.com/home/games/Space_rocks.swf Scholastic Study Jams - Multiples - Student Tutorial - http://studyjams.scholastic.com/studyjams/jams/math/multiplication-division/multiples.htm Education Place - Factors and Multiples - Student Tutorial - http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.shtml&grade=4&chapter=10&lesson=1&title=Factors+and+Multiples&tm=tmfe1001e Illuminations - Factor Game - Interactive Applet - http://illuminations.nctm.org/ActivityDetail.aspx?ID=12 Illuminations - “The Product Game” Unit - http://illuminations.nctm.org/LessonDetail.aspx?ID=U100 MathsFrame - Finding Multiples - Interactive Applet - http://www.mathsframe.co.uk/resources/Finding_Multiples.aspx Education Place - Factors and Multiples - Student Tutorial - http://www.eduplace.com/cgi-bin/schtemplate.cgi?template=/kids/hmm/help/eh_popup.shtml&grade=4&chapter=10&lesson=1&title=Factors+and+Multiples&tm=tmfe1001e Learn Alberta - Multiples, Factors, Primes and Composites - Student Tutorial - http://www.learnalberta.ca/content/me5/html/Math5.html?launch=true</p>
<u>Lesson 5.5</u> 4.OA.4	Lesson 11-2	
<u>Lesson 5.6</u> 4.OA.5	Lessons 1-2, 1-5, 2-2	
		<p>Divisibility Math League - Teacher Tutorial - http://www.mathleague.com/help/wholenumbers/wholenumbers.htm IXL - Divisibility Rules - Assessment - http://www.ixl.com/math/grade-4/divisibility-rules UEN - “Divisibility Rules” Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=18907 Education Place - Divisibility - Student Tutorial - http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.shtml&grade=5&chapter=4&lesson=4&title=Divisibility&tm=tmff0404e Study Jams - Divisibility Rules - Student Tutorial - http://studyjams.scholastic.com/studyjams/jams/math/multiplication-division/divisibility-rules.htm</p>

Unit of Study 5 - Additional Resources - Continued

Number Patterns (Sequences of Terms)

[VDW 7th Edition - page 269](#)

[Ambleside Primary - Numberlines - Interactive Applet](http://www.amblesideprimary.com/ambleweb/mentalmaths/numberlines.html) - <http://www.amblesideprimary.com/ambleweb/mentalmaths/numberlines.html>

[Toy Theater - Number Patterns - Interactive Applet](http://toytheater.com/number-pattern.php) - <http://toytheater.com/number-pattern.php>

[Study Jams - Number Patterns - Student Tutorial](http://studyjams.scholastic.com/studyjams/jams/math/algebra/number-patterns.htm) - <http://studyjams.scholastic.com/studyjams/jams/math/algebra/number-patterns.htm>

[NLVM - Number Patterns - Interactive Applet](http://nlvm.usu.edu/en/nav/frames_asid_185_g_2_t_1.html) - http://nlvm.usu.edu/en/nav/frames_asid_185_g_2_t_1.html

[Compass Learning Odyssey - Rhino Raider - Interactive Applet](http://www.compasslearningodyssey.com/sample_act/12math_rhinoraider.html) - http://www.compasslearningodyssey.com/sample_act/12math_rhinoraider.html

Literature

[The Doorbell Rang](#) by Pat Hutchins

[The Librarian Who Measured the Earth](#) by Kathryn Lasky

[One Hundred Hungry Ants](#) by Elinor J. Pinczes

[Rabbits Everywhere: A Fibonacci Tale](#) by Ann McCallum

[Two Ways to Count to Ten](#) by Ruby Dee

[Wild Fibonacci: Nature's Secret Code Revealed](#) by Joy N. Hulme

[You Can Count on Monsters](#) by Richard Evan Schwartz

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	4 th Grade	Quarter 2	Approx. 10 – 15 days	GSD Revised 6/1/17
Strand: Number and Operations - Fractions				4.NF
Extend understanding of equivalence and ordering of fractions. Denominators for fourth grade are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.				
<p>1. Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.</p> <p>2. Compare two fractions with different numerators and different denominators, for example, by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, for example, by using a visual fraction model.</p>				
Math Content Objectives	Vocabulary	Vocabulary (cont.)		
<p>I can:</p> <p>4.NF.1</p> <ul style="list-style-type: none"> Use models to show equivalent fractions. Explain the meaning of equivalent fractions. Use multiplication to find equivalent fractions. Use division to find equivalent fractions. <p>4.NF.2</p> <ul style="list-style-type: none"> Compare two fractions by creating common numerators. Compare two fractions by creating common denominators. Use benchmark fractions to compare fractions. Correctly use $<$, $>$, and $=$ to record the comparison of two fractions. Use models to explain comparison of fractions. <p>Key Concepts for Differentiation - See p. 7.</p>	<ul style="list-style-type: none"> benchmark benchmark fractions common denominator common factor common multiple common numerator compare denominator equal equivalent fractions factor fraction fraction bar greater than interval less than like denominators like numerators lowest terms numerator order 	<ul style="list-style-type: none"> simplest form simplify unlike denominators unlike numerators 		

Go Math! Utah Core Alignment	Envisions to Go Math! Alignment	Unit of Study 6 - Additional Resources
<p><u>Lesson 6.1</u> 4.NF.1</p> <p><u>Lesson 6.2</u> 4.NF.1</p> <p><u>Lesson 6.3</u> 4.NF.1</p> <p><u>Lesson 6.4</u> 4.NF.1</p> <p><u>Lesson 6.5</u> 4.NF.1</p> <p><u>Lesson 6.6</u> 4.NF.2</p> <p><u>Lesson 6.7</u> 4.NF.2</p> <p><u>Lesson 6.8</u> 4.NF.2</p>	<p>Lessons 11-4, 11-5</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>-----</p> <p>Lesson 11-6</p> <p>-----</p> <p>Lesson 11-7</p>	<p><u>Equivalent Fractions</u> VDW 7th Edition - pages 293-294; 301-306 Annenberg Learner - Fraction Tracks - Video Tutorial of Game - http://www.learner.org/vod/vod_window.html?pid=916 NCTM - Playing Fraction Tracks - Game - http://www.nctm.org/standards/content.aspx?id=26975 UEN - “Fantastic Fractions” Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=6097 UEN - “Parts of a Dozen” Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=21551 Learn Alberta - Equivalent Fractions - Student Tutorial - http://www.learnalberta.ca/content/me5l/html/Math5.html?launch=true Education Place - Equivalent Fractions and Simplest Form - Student Tutorial - http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.shtml&grade=5&chapter=9&lesson=6&title=Equivalent+Fractions+and+Simplest+Form&tm=tmff0906e Illustrations - Equivalent Fractions - Interactive Applet - http://illuminations.nctm.org/ActivityDetail.aspx?ID=80 NLVM - Equivalent Fractions - Interactive Applet - http://nlvm.usu.edu/en/nav/frames_asid_105_g_3_t_1.html?from=category_g_3_t_1.html Study Jams - Equivalent Fractions - Student Tutorial - http://studyjams.scholastic.com/studyjams/jams/math/fractions/equiv-fractions.htm</p> <p><u>Comparing Fractions</u> VDW 7th Edition - pages 300-301 Education Place - Comparing Fractions - Student Tutorial - http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.shtml&grade=2&chapter=9&lesson=4&title=Comparing+Fractions&tm=tmfc0904e UEN - “Comparing Fractions War Card Game” Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=6157 Study Jams - Compare Fractions & Mixed Numbers - Student Tutorial - http://studyjams.scholastic.com/studyjams/jams/math/fractions/fractions-mixed-numbers.htm</p> <p><u>Literature</u> <u>Fractions and Decimals Made Easy</u> by Rebecca Wingard-Nelson <u>Fun Food Word Problems Starring Fractions</u> by Rebecca Wingard-Nelson <u>The Hershey’s Milk Chocolate Fractions Book</u> by Jerry Pallotta <u>Jump, Kangaroo, Jump!</u> by Stuart J. Murphy <u>Polar Bear Math: Learning About Fractions from Klondike and Snow</u> by Ann Whitehead Nagda <u>The Wishing Club: A Story About Fractions</u> by Donna Jo Napoli <u>Working With Fractions</u> by David A. Adler</p>
<p>Assessment Options</p>		<ul style="list-style-type: none"> • 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	4 th Grade	Quarter 3	Approx. 12 – 20 days	GSD Revised 6/1/17
Strand: Number and Operations - Fractions				4.NF
Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.				
Denominators for fourth grade are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.				
3. Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$. In other words, any fraction is a sum of unit fractions.				
a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.				
b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, for example, by using a visual fraction model. <i>Examples: $3/8 = 1/8 + 1/8 + 1/8$; $3/8 = 1/8 + 2/8$; $2\ 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8$.</i>				
c. Add and subtract mixed numbers with like denominators, for example, by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. <i>For example, $3\ 1/4 + 2\ 1/4 = 13/4 + 9/4 = 22/4$; $3\ 1/4 + 2\ 1/4 = (3 + 2) + (1/4 + 1/4) = 5 + 2/4 = 5\ 2/4$, which is equivalent to $22/4$.</i>				
d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, for example, by using visual fraction models and equations to represent the problem.				
Math Content Objectives	Vocabulary		Vocabulary (cont.)	
<p>I can:</p> <p>4.NF.3a</p> <ul style="list-style-type: none"> • Explain why it is important to use the same-size wholes when adding or subtracting fractions. ☞ Add fractions by joining fractional parts that refer to the same whole. ☞ Subtract fractions by separating fractional parts that refer to the same whole. <p>4.NF.3b</p> <ul style="list-style-type: none"> • Decompose a fraction by writing it as a sum of fractions with the same denominators. • Prove a sum of fractions is equivalent to a given fraction. <p>4.NF.3c</p> <ul style="list-style-type: none"> ☞ Add mixed numbers. ☞ Subtract mixed numbers. <p>4.NF.3d</p> <ul style="list-style-type: none"> • Solve word problems by adding and subtracting fractions. <p>☞ Key Concepts for Differentiation - See p. 7.</p>	<ul style="list-style-type: none"> • add • addend • Associative Property of Addition • common denominator • Commutative Property of Addition • compose • decompose • denominator • difference • equation • expression • fraction • fraction bar • fraction greater than 1 • fraction less than 1 • interval • like denominators • like numerators • lowest terms • mixed number 		<ul style="list-style-type: none"> • numerator • simplest form • simplify • subtract • sum • unlike denominators 	

Go Math! Utah Core Alignment	Envisions to Go Math! Alignment	Unit of Study 7 - Additional Resources
<p><u>Lesson 7.1</u> 4.NF.3a</p> <p><u>Lesson 7.2</u> 4.NF.3b</p> <p><u>Lesson 7.3</u> 4.NF.3d</p> <p><u>Lesson 7.4</u> 4.NF.3d</p> <p><u>Lesson 7.5</u> 4.NF.3d</p> <p><u>Lesson 7.6</u> 4.NF.3b</p> <p><u>Lesson 7.7</u> 4.NF.3c</p> <p><u>Lesson 7.8</u> 4.NF.3c</p> <p><u>Lesson 7.9</u> 4.NF.3c</p> <p><u>Lesson 7.10</u> 4.NF.3d</p>	<p>Lesson 12-1</p> <p>Lesson 12-10</p> <p>Lessons 12-1, 12-2</p> <p>Lessons 12-3, 12-4</p> <p>Lesson 12-5</p> <p>Lesson 12-6</p> <p>Lessons 12-7, 12-8</p> <p>Lesson 12-9</p> <p>-----</p> <p>Lesson 12-11</p>	<p><u>Addition and Subtraction of Fractions (Like Denominators)</u> VDW 7th Edition - pages 312-316 Scholastic Study Jams - Add and Subtract with Common Denominators - Student Tutorial - http://studyjams.scholastic.com/studyjams/jams/math/fractions/add-sub-common-denom.htm UEN - “A Picture’s Worth” Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=15228 Softschools - Subtraction of Fractions - Assessment - http://www.softschools.com/math/games/fractions_subtraction.jsp Softschools - Addition of Fractions - Assessment - http://www.softschools.com/math/games/fractions_practice.jsp Math Playground - Thinking Blocks - Addition of Fractions with Like Denominators Model - http://www.mathplayground.com/NewThinkingBlocks/thinking_blocks_fractions.html Ambleside Primary - Adding and Subtracting Fractions - Interactive Applet - http://www.amblesideprimary.com/ambleweb/fraction/fraction.htm Ohio Department of Education - “Action with Fractions” Lesson - http://dnet01.ode.state.oh.us/IMS.ItemDetails/LessonDetail.aspx?id=0907f84c80531023</p> <p><u>Addition and Subtraction of Mixed Numbers (Like Denominators)</u> VDW 7th Edition - page 317 Scholastic Study Jams - Add and Subtract Mixed Numbers - Student Tutorial - http://studyjams.scholastic.com/studyjams/jams/math/fractions/add-sub-mixed-numbers.htm Education Place - Add and Subtract Mixed Numbers - Student Tutorial - http://www.eduplace.com/cgi-bin/schtemplate.cgi?template=/kids/hmm/help/eh_popup.shtml&grade=4&chapter=20&lesson=2&title=Add+and+Subtract+Mixed+Numbers&tm=tmfe2002e</p> <p><u>Renaming Mixed Numbers</u> VDW 7th Edition - pages 297-298 UEN - “There’s Nothing Improper About Them” Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=18890 UEN - “Mixed Number/Improper Fraction Bingo” Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=6155</p> <p><u>Literature</u> <u>Fractions and Decimals Made Easy</u> by Rebecca Wingard-Nelson <u>The Hershey’s Milk Chocolate Fractions Book</u> by Jerry Pallotta <u>Polar Bear Math</u> by Ann Whitehead Nagda</p>
<p>Assessment Options</p>		<ul style="list-style-type: none"> • 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	4 th Grade	Quarter 3	Approx. 7 days	GSD Revised 6/1/17
Strand: Number and Operations - Fractions				4.NF
Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.				
Denominators for fourth grade are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.				
4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.				
a. Understand a fraction a/b as a multiple of $1/b$. For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.				
b. Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as $6/5$. (In general, $n \times (a/b) = (n \times a)/b$.)				
c. Solve word problems involving multiplication of a fraction by a whole number (for example, by using visual fraction models and equations to represent the problem). For example, if each person at a party will eat $3/8$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?				
Math Content Objectives	Vocabulary			
<p>I can:</p> <p>4.NF.4a</p> <ul style="list-style-type: none"> Model a fraction as a product of a whole number and a unit fraction. Write an equation to show a fraction as a product of a whole number and a unit fraction. <p>4.NF.4b</p> <ul style="list-style-type: none"> Write a product of a whole number and a fraction as a product of a whole number and a unit fraction. Use a model to show a product of a whole number and a fraction. <p>4.NF.4c</p> <ul style="list-style-type: none"> Solve word problems using multiplication of a fraction by a whole number. <p>Key Concepts for Differentiation - See p. 7.</p>	<ul style="list-style-type: none"> denominator equation factor fraction fraction bar interval multiple Multiplicative Identity Property of 1 multiply numerator product unit fraction whole numbers 			

Go Math! Utah Core Alignment	Envisions to Go Math! Alignment	Unit of Study 8 - Additional Resources
<u>Lesson 8.1</u> 4.NF.4a	Lesson 13-1	<u>Multiply a Fraction by a Whole Number</u> VDW 7 th Edition - pages 317-318 The Math Page - Unit Fractions - Teacher Tutorial - http://www.themathpage.com/arith/unit-fractions.htm
<u>Lesson 8.2</u> 4.NF.4b	Lesson 13-1	YouTube - Multiply Fractions With Whole Numbers - Video - http://www.youtube.com/watch?v=gc0PXzwBtEI&feature=related YouTube - Multiply Fractions and Whole Numbers - Video - http://www.youtube.com/watch?v=LKmWPKADI-E&feature=related
<u>Lesson 8.3</u> 4.NF.4b	Lessons 13-2, 13-3	IXL - Multiply Fractions: Multiply Fractions By Whole Numbers: Word Problems - Assessment - http://www.ixl.com/math/grade-5/multiply-fractions-by-whole-numbers-word-problems
<u>Lesson 8.4</u> 4.NF.4c	-----	<u>Literature</u> <u>Multiplying Menace: The Revenge of Rumpelstiltskin</u> by Pam Calvert
<u>Lesson 8.5</u> 4.NF.4c	-----	
Assessment Options		<ul style="list-style-type: none"> • 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; Personal Math Trainer. • Daily/Weekly Formative Assessment Options: Exit Slips, Observation, Daily Work, Homework.

Unit of Study 9	4 th Grade	Quarter 3	Approx. 9 days	GSD Revised 6/1/17
Strand: Number and Operations - Fractions				4.NF
Understand decimal notation to the hundredths and compare decimal fractions with denominators of 10 and 100. Denominators for fourth grade are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.				
5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express $\frac{3}{10}$ as $\frac{30}{100}$, and add $\frac{3}{10} + \frac{4}{100} = \frac{34}{100}$.				
6. Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $\frac{62}{100}$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.				
7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, for example, by using a visual model.				
Strand: Measurement and Data				4.MD
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.				
2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money.				
a. Include problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.				
b. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.				
Math Content Objectives	Vocabulary	Vocabulary (cont.)		
<p>I can:</p> <p>4.NF.5</p> <ul style="list-style-type: none"> Find an equivalent fraction for denominators of 10 and 100. Add two fractions with denominators of 10 and 100. <p>4.NF.6</p> <ul style="list-style-type: none"> Convert fractions with denominators of 10 or 100 to decimals. 	<ul style="list-style-type: none"> compare decimal decimal fraction decimal point denominator equal equivalent decimals equivalent fractions fraction fraction bar greater than hundredth hundredths 	<ul style="list-style-type: none"> interval less than numerator order place value tenth tenths whole 		

Unit of Study 9 (continued)

Math Content Objectives

4.NF.7

- Compare decimals to hundredths by reasoning about their size.
- Compare decimals that refer to the same whole.
- Correctly use $<$, $>$, and $=$ to record the comparison of two decimals.
- Use models to explain comparison of decimals.

4.MD.2

- Solve word problems using distances.
- Solve word problems using elapsed time.
- Solve word problems using liquid volume.
- Solve word problems using masses of objects.
- Solve word problems using money.
- Represent measurement quantities with models and diagrams.
- Use fractions to compare equivalent units within one system.

↪ Key Concepts for Differentiation - See p. 7.

Go Math! Utah Core Alignment	Envisions to Go Math! Alignment	Unit of Study 9 – Additional Resources
<u>Lesson 9.1</u> 4.NF.6	Lessons 13-4, 13-5	<u>Decimal Fractions (Limited to Denominators of 10 and 100)</u> VDW 7th Edition - pages 328-333
<u>Lesson 9.2</u> 4.NF.6	Lessons 13-4, 13-5	LearnAlberta - Place Value - Video Tutorial - http://www.learnalberta.ca/content/me5l/html/Math5.html?launch=true Education Place - Fractions and Decimals - eManipulatives - http://www.eduplace.com/cgi-bin/schtemplate.cgi?template=/kids/hmm/manip/mn_popup.shtml&filename=decimals&title=Fractions%20and%20Decimals&grade=1
<u>Lesson 9.3</u> 4.NF.5	Lesson 13-6	PBS Kids - Railroad Repair - Game - http://pbskids.org/cyberchase/math-games/railroad-repair/ Sheppard Software - Matching Math Tenths - Game - http://www.sheppardsoftware.com/mathgames/decimals/DecimalModels10.htm Sheppard Software - Matching Math Hundredths - Game - http://www.sheppardsoftware.com/mathgames/decimals/DecimalModels.htm
<u>Lesson 9.4</u> 4.NF.6	Lesson 13-9	Ontario eWorkshop - Relating Fractions and Decimal Numbers - Game - http://eworkshop.on.ca/edu/pdf/Mod27_relating_fractions_and_decimal.pdf School Wax TV - Notepad Tutor - Relating Decimals to Fractions (Hundredths) - Video Tutorial - http://schoolwaxtv.com/notepad-tutor-relating-decimals-fractions-hundredths
<u>Lesson 9.5</u> 4.MD.2	Lesson 15-3	SchoolTube - Decimals: Relate Fractions, Decimals, and Money - Video Tutorial - http://www.schooltube.com/video/c5e28cc7a09749d8b1b3/ YouTube - Decimals - Tenths and Hundredths - Video - http://www.youtube.com/watch?v=riLu8NNab4&safety_mode=true&persist_safety_mode=1&safe=active
<u>Lesson 9.6</u> 4.NF.5	-----	YouTube - Writing Tenths and Hundredths with Decimals.mp4 - Video - http://www.youtube.com/watch?v=yWcNQkmpYVk&feature=related&safety_mode=true&persist_safety_mode=1&safe=active
<u>Lesson 9.7</u> 4.NF.7	Lessons 13-7, 13-8	HMH School Publishers - Matching Fractions and Decimals - Interactive Applet - http://dnet01.ode.state.oh.us/IMS.ItemDetails/LessonDetail.aspx?id=0907f84c80531023
		<u>Addition of Decimal Fractions with Tenths and Hundredths</u> VDW 7th Edition - page 334 YouTube - Add Fractions with Tenths and Hundredths Denominators - 4.NF.5 - Video - http://www.youtube.com/watch?v=AXd0qrZEPk4

Unit of Study 9 - Additional Resources - Continued

Equivalent Fractions with Tenths and Hundredths

Education Place - Fractions and Decimals - eManipulatives - http://www.eduplace.com/cgi-bin/schtemplate.cgi?template=/kids/hmm/manip/mn_popup.shtml&filename=decimals&title=Fractions%20and%20Decimals&grade=1

Comparing Decimals Within Hundredths

VDW 7th Edition - pages 336-337

UEN - "Patterns with Decimals" Lesson - <http://www.uen.org/Lessonplan/preview.cgi?LPid=6165>

Decimal Squares - Rope Tug - Game - <http://www.decimalsquares.com/dsGames/games/tugowar.html>

Literature

Fractions and Decimals Made Easy by Rebecca Wingard-Nelson

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; Performance Assessment Chapters 6-9; Personal Math Trainer.
- **Daily/Weekly Formative Assessment Options:** Exit Slips, Observation, Daily Work, Homework.

Unit of Study 10	4 th Grade	Quarter 4	Approx. 8 days	GSD Revised 6/1/17
Strand: Geometry				4.G
Draw and identify lines and angles, and classify shapes by properties of their lines and angles.				
<ol style="list-style-type: none"> 1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. 2. Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles. 3. Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry. 				
Strand: Operations and Algebraic Thinking				4.OA
Generate and analyze numeric and shape patterns.				
<ol style="list-style-type: none"> 5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule “add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way. 				
Math Content Objectives	Vocabulary	Vocabulary (cont.)		
<p>I can:</p> <p>4.G.1</p> <ul style="list-style-type: none"> • Draw points, lines, line segments, rays, angles, perpendicular lines, and parallel lines. • Identify points, lines, line segments, rays, angles, perpendicular lines, and parallel lines in 2-D figures. <p>4.G.2</p> <ul style="list-style-type: none"> ☞ Classify 2-D figures based on the types of lines and angles. • Identify right, obtuse, and acute triangles. <p>4.G.3</p> <ul style="list-style-type: none"> • Recognize a line of symmetry on a 2-D figure. • Identify line-symmetric figures. • Draw lines of symmetry on 2-D figures. <p>4.OA.5</p> <ul style="list-style-type: none"> • Make a number pattern that follows a rule. • Make a shape pattern that follows a rule. • Identify features of a pattern. ☞ Explain how a pattern works. <p>☞ Key Concepts for Differentiation - See p. 7.</p>	<ul style="list-style-type: none"> • acute angle • acute triangle • angle • attribute • classify • congruent • diagonal • hexagon • horizontal • intersecting lines • line • line of symmetry • line segment • line symmetry • line-symmetric figure • obtuse angle • obtuse triangle • octagon • parallel lines • parallelogram • pattern 	<ul style="list-style-type: none"> • pentagon • perpendicular lines • point • polygon • quadrilateral • ray • rectangle • regular polygon • rhombus • right angle • right triangle • square • straight angle • trapezoid • triangle • two-dimensional figure • Venn diagram • vertex (plural - vertices) • vertical 		

Go Math! Utah Core Alignment	Envisions to Go Math! Alignment	Unit of Study 10 – Additional Resources
<u>Lesson 10.1</u> 4.G.1	Lesson 16-2	<p><u>Lines, Rays, Parallel Lines, and Perpendicular Lines</u> Scholastic Study Jams - Types of Lines - Student Tutorial and Song - http://studyjams.scholastic.com/studyjams/jams/math/geometry/types-of-lines.htm</p>
<u>Lesson 10.2</u> 4.G.2	Lesson 16-8	<p>Illuminations - IGD: Line, Ray, Segment - Teacher Tutorial - http://illuminations.nctm.org/ActivityDetail.aspx?id=53</p>
<u>Lesson 10.3</u> 4.G.1	Lesson 16-1	<p><u>Angle Identification</u> Scholastic Study Jams - Classify Angles - Student Tutorial - http://studyjams.scholastic.com/studyjams/jams/math/geometry/classify-angles.htm</p>
<u>Lesson 10.4</u> 4.G.2	Lessons 16-7, 16-9, 16-11	<p>IXL - Measure Angles With a Protractor - Assessment - http://www.ixl.com/math/grade-4/measure-angles-with-a-protractor BBC - Angles - Game (2nd Game) - http://www.bbc.co.uk/schools/ks2bitesize/maths/shape_space/angles/play.shtml Toon University - 6th Grade Math: Angles - Game - http://www.toonuniversity.com/6m_angle_d.html Online Math Learning - Types of Angles - Video - http://www.onlinemathlearning.com/angle-types.html</p>
<u>Lesson 10.5</u> 4.G.3	Lesson 16-10	<p><u>Triangles</u> VDW 7th Edition - pages 410- 411</p>
<u>Lesson 10.6</u> 4.G.3	Lesson 16-10	<p>Crickweb - Triangle Sort - Interactive Applet - http://www.crickweb.co.uk/ks2numeracy-shape-and-weight.html#triangles Math-Play - Classifying Triangles - Game - http://www.math-play.com/classifying-triangles/classifying-triangles.html Scholastic Study Jams - Classify Triangles - Student Tutorial and Song - http://studyjams.scholastic.com/studyjams/jams/math/geometry/classify-triangles.htm</p>
<u>Lesson 10.7</u> 4.OA.5	Lessons 2-1, 2-5	<p><u>Quadrilaterals</u> VDW 7th Edition - pages 410-411 UEN - “Quadrilaterals” Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=11235 Scholastic Study Jams - Classify Quadrilaterals - Student Tutorial and Song - http://studyjams.scholastic.com/studyjams/jams/math/geometry/classify-quadrilaterals.htm Ohio Department of Education - “Investigating Quadrilaterals” Lesson - http://dnet01.ode.state.oh.us/IMS.ItemDetails/LessonDetail.aspx?id=0907f84c8053226b</p>

Unit of Study 10 - Additional Resources - Continued

Line Symmetry

[VDW 7th Edition - pages 420-421](#)

[Harcourt School E-Lab - Symmetry - Interactive Applet](http://www.harcourtschool.com/activity/elab2004/gr3/21.html) - http://www.harcourtschool.com/activity/elab2004/gr3/21.html

[Scholastic Study Jams - Lines of Symmetry - Student Tutorial](http://studyjams.scholastic.com/studyjams/jams/math/geometry/lines-of-symmetry.htm) - http://studyjams.scholastic.com/studyjams/jams/math/geometry/lines-of-symmetry.htm

[Learning Today - Geometry - Symmetry - Level 1 - Student Tutorial](http://www.learningtoday.com/player/swf/Geometry_Symmetry_L1_V1_t3a.swf) - http://www.learningtoday.com/player/swf/Geometry_Symmetry_L1_V1_t3a.swf

[Ohio Department of Education - "Exploring Symmetry" Lesson](http://ims.ode.state.oh.us/ODE/IMS/Lessons/Web_Content/CMA_LP_S03_BG_L02_I05_01.pdf) - http://ims.ode.state.oh.us/ODE/IMS/Lessons/Web_Content/CMA_LP_S03_BG_L02_I05_01.pdf

[Online Math Learning - Line Symmetry - Video](http://www.onlinemathlearning.com/symmetry-grade1.html) - http://www.onlinemathlearning.com/symmetry-grade1.html

Shape Patterns

[Scholastic Study Jams - Geometric Patterns - Student Tutorial](http://studyjams.scholastic.com/studyjams/jams/math/algebra/geometric-patterns.htm) - http://studyjams.scholastic.com/studyjams/jams/math/algebra/geometric-patterns.htm

[UEN - "Building Patterns" Lesson](http://www.uen.org/Lessonplan/preview.cgi?LPid=6158) - http://www.uen.org/Lessonplan/preview.cgi?LPid=6158

Literature

[The Important Book](#) by Margaret Wise Brown

[Let's Fly a Kite](#) by Stuart J. Murphy

[Seeing Symmetry](#) by Loreen Leedy

[Snowflake Bentley](#) by Jacqueline Briggs Martin

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	4 th Grade	Quarter 4	Approx. 6 days	GSD Revised 6/1/17
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Strand: Measurement and Data 4.MD

Understand various concepts of angles and angle measurement.

5. Recognize angles as geometric figures that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:
- Understand that an angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure other angles.
 - Understand that an angle turns through n one-degree angles is said to have an angle measure of n degrees.
6. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
7. Recognize angle measure as additive.
- Understand that when an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts.
 - Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, for example, by using an equation with a symbol for the unknown angle measure.

Math Content Objectives	Vocabulary	
<p>I can:</p> <p>4.MD.5a</p> <ul style="list-style-type: none"> Show how angles are fractional parts of a circle. Relate fractional parts of a circle to degrees. <p>4.MD.5b</p> <ul style="list-style-type: none"> Show how an angle measurement is composed of one-degree angles. <p>4.MD.6</p> <ul style="list-style-type: none"> Measure angles using a protractor. Draw angles of a given measure. <p>4.MD.7</p> <ul style="list-style-type: none"> Decompose an angle into smaller angles. Solve addition and subtraction problems to find unknown angles. <p>Key Concepts for Differentiation - See p. 7.</p>	<ul style="list-style-type: none"> acute angle angle angle measure arc circle clockwise counterclockwise decompose degree (angle measure) endpoint intersecting lines obtuse angle protractor ray right angle straight angle vertex (plural - vertices) 	

Go Math! Utah Core Alignment	Envisions to Go Math! Alignment	Unit of Study 11 – Additional Resources
<u>Lesson 11.1</u> 4.MD.5a	Lesson 16-3	Angle Measurement VDW 7th Edition - pages 386-387
<u>Lesson 11.2</u> 4.MD.5a; 4.MD.5b	Lesson 16-3	Learning Today - Measurement Tools - Angles - Interactive Applet - http://www.learningtoday.com/player/swf/Math_measurement_tools_Angles_Lev5_vol_01_ss_t3_edact_n_y_5_1.swf Math Playground - Measuring Angles - Interactive Applet - http://www.mathplayground.com/measuringangles.html Oswego - Banana Hunt - Game - http://www.oswego.org/ocsd-web/games/bananahunt/bhunt.html
<u>Lesson 11.3</u> 4.MD.6	Lessons 16-4, 16-5	Amble Side Primary - What's My Angle - Interactive Applet - http://www.amblesideprimary.com/ambleweb/mentalmaths/protractor.html Kidport - Measuring Angles - Student Tutorial - http://www.kidport.com/Grade5/Math/MeasureGeo/MeasuringAngles.htm Maths Packs - Angle Drag - Interactive Applet - http://www.maths-packs.co.uk/indexmp1.html IXL - Angles of 90, 180, 270, 360 - Assessment - http://www.ixl.com/math/grade-4/angles-of-90-180-270-and-360-degrees
<u>Lesson 11.4</u> 4.MD.7	Lesson 16-6	Math Is Fun - Degrees (Angles) - Student Tutorial - http://www.mathsisfun.com/geometry/degrees.html BBC - Angles - Game - http://www.bbc.co.uk/schools/ks2bitesize/maths/shape_space/angles/play.shtml PBS Kids Cyberchase - Star Gazing - Game - http://pbskids.org/cyberchase/math-games/star-gazing/
<u>Lesson 11.5</u> 4.MD.7	Lesson 16-6	UEN - "Measuring Pattern Block Angles" Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=6409 UEN - "Angle Land and Angle Aerobics" Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=6398 UEN - "Angles, Degrees, Protractors... Oh My!" Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=21520 UEN - "Artistic Angles" Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=15234 Innovations Learning - Angles - Game - http://www.innovationslearning.co.uk/subjects/maths/activities/year6/angles/game.asp Ohio Department of Education - "Angle Explorations" Lesson - http://ims.ode.state.oh.us/ODE/IMS/Lessons/Web_Content/CMA_LP_S03_BD_L03_I02_01.pdf PBS Kids Cyberchase - What is 360°? - Real World Video - http://www.teachersdomain.org/asset/vtl07_vid_what360/ Scholastic Study Jams - Measure Angles - Student Tutorial and Song - http://studyjams.scholastic.com/studyjams/jams/math/geometry/measure-angles.htm Scholastic Study Jams - Construct Angles - Student Tutorial - http://studyjams.scholastic.com/studyjams/jams/math/geometry/construct-angles.htm Mister Teacher - Alphabet Geometry - Student Tutorial - http://www.misterteacher.com/alphabetgeometry/angles.html Online Math Learning - Measuring Angles Using a Protractor - Video - http://www.onlinemathlearning.com/measure-angles.html Hitting the Target - Measuring Angles - Game - http://www.hittingthetarget.com/hittingthetarget.php

Unit of Study 11 - Additional Resources - Continued

Unknown Angle Measures

Math Is Fun - Angles on One Side of a Straight Line - Student Tutorial - <http://www.mathsisfun.com/angle180.html>

IXL - Adjacent Angles - Assessment - <http://www.ixl.com/math/grade-4/adjacent-angles>

Literature

Hamster Champs by Stuart J. Murphy

The Quilt-block History of Pioneer Days by Mary Cobb

Sir Cumference and the Great Knight of Angleland by Cindy Neuschwander

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; Personal Math Trainer.
- **Daily/Weekly Formative Assessment Options:** Exit Slips, Observation, Daily Work, Homework.

Unit of Study 12	4 th Grade	Quarter 4	Approx. 12 days	GSD Revised 6/1/17
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Strand: Measurement and Data 4.MD

Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

1. Know relative sizes of measurement units within one system of units including kilometers, meters, and centimeters; liters and milliliters; kilograms and grams; pounds and ounces; hours, minutes, and seconds. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a four-foot snake as 48 inches. Know that one meter is 100 times as long as one centimeter. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...
2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money.
 - a. Include problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.
 - b. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

Represent and interpret data through the use of a line plot. .

4. Make a line plot to display a data set of measurements in fractions of a unit (halves, quarters, and eighths). Solve problems involving addition and subtraction with like denominators of fractions by using information presented in line plots. For example, use a line plot find and interpret the difference in length between the longest and shortest pencils in a classroom.

Math Content Objectives	Vocabulary	
<p>I can:</p> <p><u>4.MD.1</u></p> <ul style="list-style-type: none"> • Use benchmarks to show the relative size of units of measurement. • Convert units of measurement within one system. • Record equivalent measurements in a table. <p><u>4.MD.2</u></p> <ul style="list-style-type: none"> • Solve word problems using distances. • Solve word problems using elapsed time. • Solve word problems using liquid volume. • Solve word problems using masses of objects. • Solve word problems using money. • Represent measurement quantities with models and diagrams. • Use fractions to compare equivalent units within one system. 	<ul style="list-style-type: none"> • add • addend • a.m. • benchmark • capacity • centimeter • cup • customary system • data • day • decimeter • difference • elapsed time • fluid ounce • foot • gallon • gram 	

Unit of Study 12 (continued)

Math Content Objectives	Vocabulary (cont.)	
<p>4.MD.4</p> <ul style="list-style-type: none">• Make a line plot for a data set of fraction measurements.• Solve problems using information in a line plot with fraction measurements. <p>→ Key Concepts for Differentiation - See p. 7.</p>	<ul style="list-style-type: none">• half gallon• hour• inch• interval• kilogram• kilometer• length• line plot• liter• mass• meter• metric system• mile• milliliter• millimeter• minute• month• ounce• pint• p.m.• pound• quart• second• subtract• sum• time interval• ton• unit fraction• volume (liquid)• week• weight• yard• year	

Go Math! Utah Core Alignment	Envisions to Go Math! Alignment	Unit of Study 12 - Additional Resources
<u>Lesson 12.1</u> 4.MD.1	Lessons 14-1, 14-2, 14-3, 14-6, 14-7, 14-8	<p>Customary Measurement VDW 7th Edition - pages 380-381; 389 Education Place - Cups, Pints, and Quarts - Student Tutorial - http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.html&grade=1&chapter=18&lesson=2&title=Cups,+Pints,+and+Quarts&tm=tmfb1802e UEN - “Twice the Rice, or More?” Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=6175 UEN - “Fill it to Capacity” Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=16316 PBS Kids Cyberchase - Pour to Score - Game - http://pbskids.org/cyberchase/math-games/pour-score/</p>
<u>Lesson 12.2</u> 4.MD.1	Lessons 14-1, 14-4, 14-5	
<u>Lesson 12.3</u> 4.MD.1	Lessons 14-3, 14-4, 14-5	<p>Metric Measurement VDW 7th Edition - pages 380-381; 389 Education Place - Meter and Kilometer - Student Tutorial - http://eduplace.com/cgi-bin/schtemplate.cgi?template=/math/hmm/models/tm_popup.html&grade=3&chapter=14&lesson=2&title=Meter+and+Kilometer&tm=tmfd1402e UEN - “Worth the Weight” Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=16318 Crickweb - Alien Weigh In - Game - http://www.crickweb.co.uk/ks2numeracy-shape-and-weight.html#triangles</p>
<u>Lesson 12.4</u> 4.MD.1	Lessons 14-2, 14-4	
<u>Lesson 12.5</u> 4.MD.4	Lessons 15-4	
<u>Lesson 12.6</u> 4.MD.1	Lesson 14-6	<p>Time VDW 7th Edition - pages 383-385 Learn Alberta - Time (Passage of Time) - Interactive Applet - http://www.learnalberta.ca/content/me3us/flash/index.html</p>
<u>Lesson 12.7</u> 4.MD.1; 4.MD.2	Lessons 14-7, 14-8, 14-9	
<u>Lesson 12.8</u> 4.MD.1	Lesson 14-10	<p>Literature <u>Biggest, Strongest, Fastest</u> by Steve Jenkins <u>Capacity</u> by Henry Pluckrose <u>Hershey’s Weights and Measures</u> by Jerry Pallotta</p>
<u>Lesson 12.9</u> 4.MD.2	Lesson 14-11	<p><u>How Big Is a Foot?</u> by Rolf Myller <u>Length</u> by Henry Arthur Pluckrose <u>LuLu’s Lemonade</u> by Barbara deRubertis</p>
<u>Lesson 12.10</u> 4.MD.2	Lesson 15-2	<p><u>Measuring Penny</u> by Loreen Leedy <u>Room for Ripley</u> by Stuart J. Murphy</p>
<u>Lesson 12.11</u> 4.MD.1	-----	
Assessment Options	<ul style="list-style-type: none"> • 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; Personal Math Trainer. • Daily/Weekly Formative Assessment Options: Exit Slips, Observation, Daily Work, Homework. 	

Unit of Study 13	4 th Grade	Quarter 4	Approx. 7 days	GSD Revised 6/1/17
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Strand: Measurement and Data 4.MD

Apply knowledge of area and perimeter to solve real world and mathematical problems.
3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems. *For example, find the width of a rectangular room given the area of the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.*

Math Content Objectives	Vocabulary	
<p>I can:</p> <p>4.MD.3</p> <ul style="list-style-type: none"> ☛ Use a formula to find the perimeter of a rectangle. ☛ Use a formula to find the area of a rectangle. <p>☛ Key Concepts for Differentiation - See p. 7.</p>	<ul style="list-style-type: none"> • area • base • centimeter • foot • formula • height • inch • kilometer • length • meter • mile • perimeter • square unit • width • yard 	

Go Math! Utah Core Alignment	Envisions to Go Math! Alignment	Unit of Study 13 - Additional Resources
<u>Lesson 13.1</u> 4.MD.3	Lesson 15-1	<p>Area and Perimeter VDW 7th Edition - pages 376-378; 380; 392 UEN - "A Thin Inch" Lesson - http://www.uen.org/Lessonplan/preview.cgi?LPid=6173 The Futures Channel - Kay Toliver: The Apartment - Video - http://www.thefutureschannel.com/dockets/kay_toliver/the_apartment/ Scholastic Study Jams - Perimeter - Student Tutorial - http://studyjams.scholastic.com/studyjams/jams/math/measurement/perimeter.htm Illustrations - "Chairs" Lesson - http://illuminations.nctm.org/ActivityDetail.aspx?ID=144 Math Playground - Party Designer - Game - http://www.mathplayground.com/PartyDesigner/PartyDesigner.html</p> <p>Literature <u>Bigger, Better, Best!</u> by Stuart J. Murphy <u>Racing Around</u> by Stuart J. Murphy <u>Spaghetti and Meatballs for All!</u> By Marilyn Burns</p>
<u>Lesson 13.2</u> 4.MD.3	Lesson 15-1	
<u>Lesson 13.3</u> 4.MD.3	-----	
<u>Lesson 13.4</u> 4.MD.3	Lesson 15-1	
<u>Lesson 13.5</u> 4.MD.3	Lesson 15-1	
Assessment Options		<ul style="list-style-type: none"> • 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; Performance Assessment Chapters 10-13; Personal Math Trainer. • Daily/Weekly Formative Assessment Options: Exit Slips, Observation, Daily Work, Homework.

Appendix

General Website Resources

Common Core Standards - Official Website - www.corestandards.org

USOE - Utah 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>

Utah Standards Academy - <http://www.schools.utah.gov/CURR/main/Core-Academy.aspx>

National Library of Virtual Manipulatives (NLVM) - <http://nlvm.usu.edu/>

Illustrations - <http://illustrations.nctm.org/>

UEN - <http://www.uen.org/>

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/>

Mathwire - <http://mathwire.com/>

Scholastic Study Jams - <http://studyjams.scholastic.com/studyjams/jams/math/index.htm>

Education Place - <http://eduplace.com/kids/hmm/>

K-5 Math Teaching Resources - <http://www.k-5mathteachingresources.com/%202nd-grade-number-activities.html>

Learn Zillion - <http://learnzillion.com/>

Online Math Learning - <http://www.onlinemathlearning.com/grade-4.html>

CCSSMath - <http://ccssmath.org/>

Book

VDW - Van de Walle, John A., Elementary and Middle School Mathematics, 7th Edition, Allyn & Bacon, Boston, 2010. ISBN-13: 978-0-205-57352-3