

Dual Immersion 3rd 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.

Standard

Standards for Mathematical Practice

The Standards for Mathematical Practice in Third 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 3.MP.1–8).

Standard 3.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 3.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 3.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 3.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 3.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 3.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 3.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 3.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](#)

3rd Grade Mathematics Curriculum Map

Granite School District Scope and Sequence Overview

| Unit of Study | Go Math! Alignment | Go Math! Chapter Title | Strand and Standards |
|---------------|--------------------|---------------------------------------|--|
| 1 | Chapter 1 | Addition and Subtraction Within 1,000 | Strand: Operations and Algebraic Thinking Standards: 8, 9 Strand: Number and Operations in Base Ten Standards: 1, 2 |
| 2 | Chapter 2 | Represent and Interpret Data | Strand: Measurement and Data Standards: 3,4 |
| 3 | Chapter 3 | Understand Multiplication | Strand: Operations and Algebraic Thinking Standards: 1, 3, 5, 8 |
| 4 | Chapter 4 | Multiplication Facts and Strategies | Strand: Operations and Algebraic Thinking Standards: 3, 5, 7, 8, 9 |
| 5 | Chapter 5 | Use Multiplication Facts | Strand: Operations and Algebraic Thinking Standards: 4, 9 Strand: Number and Operations in Base 10 Standard: 3 |
| 6 | Chapter 6 | Understand Division | Strand: Operations and Algebraic Thinking Standards: 2, 3, 5, 6, 7 |
| 7 | Chapter 7 | Division Facts and Strategies | Strand: Operations and Algebraic Thinking Standards: 3, 4, 7, 8 |
| 8 | Chapter 8 | Understand Fractions | Strand: Number and Operations - Fractions Standards: 1, 2a, 2b, 3c |
| 9 | Chapter 9 | Compare Fractions | Strand: Number and Operations – Fractions Standards: 3a, 3b, 3d |
| 10 | Chapter 10 | Time, Length, Liquid Volume, and Mass | Strand: Measurement and Data Standards: 1, 2, 4 |
| 11 | Chapter 11 | Perimeter and Area | Strand: Measurement and Data Standards: 5, 5a, 5b, 6, 7, 7a, 7b, 7c, 7d, 8 |
| 12 | Chapter 12 | Two-Dimensional Shapes | Strand: Geometry Standards: 1, 2 |

3rd 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 Benchmarks 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) | | | | | | Semester 2 Pretest 12/3 – 3/1 (required) | | | | | | End of Year | | | |
|---------------------------------------|--|-----------------|-----------------|-----------------|-----------------|-----------------|--|-----------------|-----------------|------------------|------------------|------------------|---|--|---|--|
| | 17 | 14 | 14 | 19 | 9 | 16 | 16 | 14 | 11 | 11 | 11 | | | | | |
| Number of Lessons | 12 | 7 | 7 | 10 | 5 | 9 | 11 | 9 | 7 | 9 | 10 | 9 | Getting Ready for Gr. 4 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 | | | | |
| Math Standards | 3.OA.1 *3.OA.8 *3.OA.2 *3.OA.9 *3.OA.3 3.NBT.1 *3.OA.4 *3.NBT.2 *3.OA.5 3.NBT.3 3.OA.6 *3.MD.3 *3.OA.7 3.MD.4 | | | | | | 3.OA.3 *3.MD.2 3.OA.4 3.MD.4 *3.OA.7 3.MD.5 *3.OA.8 3.MD.6 3.NF.1 *3.MD.7 3.NF.2 *3.MD.8 *3.NF.3 *3.G.1 *3.MD.1 3.G.2 | | | | | | Semester 2 Posttest 3/4 – 5/23 (supplemental) | | RISE (Summative) 3/27 – 5/17 (required) | |

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*Indicates emphasized standards.

Beginning and Ending of Semesters

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

3rd 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 | | 17 | 14 | 14 | | 19 | 9 | 16 | | 16 | 16 | 14 | | 11 | 11 | 11 | End of Year | |
| Number of Lesson | | 12 | 7 | 7 | | 10 | 5 | 9 | | 11 | 9 | 7 | | 9 | 10 | 9 | | |
| 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 | Getting Ready for Gr. 4 Unit | |
| Math Standards | GQB 1 8/20 (supplemental) | 3.OA.1 *3.OA.3 3.OA.5 *3.OA.8 3.OA.9 3.NBT.1 *3.NBT.2 *3.MD.3 3.MD.4 | | | GQB 2 10/29 (supplemental) | *3.OA.2 3.OA.3 *3.OA.4 *3.OA.5 3.OA.6 *3.OA.7 3.OA.8 *3.OA.9 3.NBT.3 | | | GQB 3 1/14 (supplemental) | 3.OA.3 3.OA.4 *3.OA.7 3.NF.1 3.NF.2 *3.NF.3 | | | GQB 4 3/1 (supplemental) | *3.MD.1 *3.MD.2 3.MD.4 3.MD.5 3.MD.6 *3.MD.7 *3.MD.8 *3.G.1 3.G.2 | | | RISE (Summative) 3/27 – 5/17 (required) | |

*Indicates emphasized standards.

| |
|---|
| Beginning and Ending of Quarters |
| 1 st Quarter Aug 20, 2018 – Oct 25, 2018 |
| 2 nd Quarter Oct 29, 2018 – Jan 10, 2019 |
| 3 rd Quarter Jan 14, 2019 – Mar 21, 2019 |
| 4 th Quarter Mar 27, 2019 – May 23, 2019 |

3rd 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 Objectives 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 | 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. <i>GSD Additional Teacher Resources</i> 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: <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 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

- Ask and answer questions to demonstrate understanding of a math text.
- Describe the relationship between concepts or steps in math procedures.
- Determine the meaning of specific math words or phrases in a text.
- Use text features to locate information relevant to a given math topic.
- Use information gained from illustrations and words to demonstrate math understanding.
- Compare and contrast important points and key details in a math text.
- Read and comprehend math texts.

Writing Standards

- Write opinion pieces on math topics, supporting a point of view with reasons.
- Write explanatory math text to convey ideas and information clearly.
- Use technology to produce math writing and collaborate with others.
- Write routinely for a range of math tasks.

Speaking and Listening Standards

- Engage in collaborative discussions about math topics.
- Determine the main math ideas and supporting details presented in visual, quantitative, and oral formats.
- Ask and answer questions about information from a speaker.
- Report on a math topic with appropriate facts and details.
- Add visual displays to emphasize facts or details.
- Speak in complete sentences to provide detail or clarification on math topics.

| | | | | |
|-----------------|-----------------------|-----------|----------------------|--------------------|
| Unit of Study 1 | 3 rd Grade | Quarter 1 | Approx. 14 – 17 days | GSD Revised 6/1/18 |
|-----------------|-----------------------|-----------|----------------------|--------------------|

Strand: Operations and Algebraic Thinking 3.OA

Use the four operations to identify and explain patterns in arithmetic.

8. Solve two-step word problems.
- Solve two-step word problems using the four operations. Know how to perform operations in the conventional order when there are no parentheses to specify a particular order (Order of Operations). (Limit to problems posed with whole numbers and having whole number answers.)
 - Represent two-step problems using equations with a letter standing for the unknown quantity. Create accurate equations to match word problems.
 - Assess the reasonableness of answers using mental computation and estimation strategies, including rounding.
9. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that four times a number is always even, and explain why four times a number can be decomposed into two equal addends.*

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.

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

| Math Content Objectives: | Vocabulary | Vocabulary (cont.) |
|--|--|--|
| <p>I can:</p> <p>3.OA.8</p> <ul style="list-style-type: none"> ☞ Solve two-step word problems. <ul style="list-style-type: none"> Write an equation for a two-step word problem. Use a letter to stand for the missing number in an equation. Decide if my answer is reasonable. <p>3.OA.9</p> <ul style="list-style-type: none"> Identify arithmetic patterns. <p>3.NBT.1</p> <ul style="list-style-type: none"> Round whole numbers to the nearest 10. Round whole numbers to the nearest 100. <p>3.NBT.2</p> <ul style="list-style-type: none"> ☞ Add within 1000. ☞ Subtract within 1000. <p>☞ Key Concepts for Differentiation - See p. 7.</p> | <ul style="list-style-type: none"> add addend algorithm arithmetic patterns Additive Identity Property of 0 Associative Property of Addition bar model base-ten numeral form base-ten numerals column Commutative Property of Addition compatible numbers difference digit equation estimate even number expanded form hundreds | <ul style="list-style-type: none"> inverse operations number line odd number ones Order of Operations parentheses place value reasonableness regroup round a whole number row standard form subtract sum tens variable |

| Go Math! Utah Core Alignment | Envisions to Go Math! Alignment | Unit of Study 1 – Additional Resources |
|------------------------------------|--|--|
| <u>Lesson 1.1</u> 3.OA.9 | Lesson 8-2 | <p>Number Patterns Learn Alberta - Patterns (Increasing and Decreasing) - Interactive Applet PBS Kids Cyberchase - Crack Hacker's Safe - Game</p> |
| <u>Lesson 1.2</u> 3.NBT.1 | Lesson 8-3 | <p>Place Value Sheppard Software - Place Value Made Easy - Game</p> |
| <u>Lesson 1.3</u> 3.NBT.1 | Lesson 8-6 | <p>Round a Whole Number Education Place - Round Two-Digit and Three-Digit Numbers - Student Tutorial Mr. Nussbaum - Half-court rounding - Game</p> |
| <u>Lesson 1.4</u> 3.NBT.2 | Lesson 8-4 | <p>Estimating Sums PBS Kids Cyberchase - Glow's Estimation Contraption - Game</p> |
| <u>Lesson 1.5</u> 3.NBT.2 | Lesson 8-1 | <p>Properties Education Place - Addition Properties - Student Tutorial</p> |
| <u>Lesson 1.6</u> 3.NBT.2 | Lesson 9-1 | <p>Addition IXL - Addition: Add two numbers up to three digits - Assessment Learn Alberta - Addition - Interactive Applet UEN - "Mental Math: Addition and Subtraction" Lesson Thinking Blocks – Addition Bar Models - Applet Learn Zillion – Use Decomposition and Regrouping to Add – Student Tutorial</p> |
| <u>Lesson 1.7</u> 3.NBT.2 | Lessons 9-2, 9-3, 9-4 | <p>Subtraction Learn Alberta - Subtraction - Interactive Applet UEN - "Subtraction – There's Got to be an Easier Way!" Lesson UEN - "Mental Math: Addition and Subtraction" Lesson Thinking Blocks – Subtraction Bar Models - Applet</p> |
| <u>Lesson 1.8</u> 3.NBT.1 | Lesson 8-7 | |
| <u>Lesson 1.9</u> 3.NBT.2 | Lesson 8-5, 9-5 | |
| <u>Lesson 1.10</u> 3.NBT.2 | Lessons 8-8, 9-6 | |
| <u>Lesson 1.11</u> 3.NBT.2 | Lesson 9-7 | |
| <u>Lesson 1.12</u> 3.OA.8 | Lessons 11-1 | |

Unit of Study 1 - Additional Resources - Continued

Word Problems

- [Math Playground - Word Problems with Katie - Game](#)
- [Math Playground - Thinking Blocks \(Bar Model\) - Interactive Applet](#)
- [Math Playground - Word Problem Bank](#)

GSD Additional Teacher Resources

- [Math Investigation Centers – Unit 1](#)
- [What's The Difference? - Game](#)
- [Even and Odd Grand Prix - Game](#)
- [Round-N-Squares - Game](#)
- [Subtraction Strategies – Teacher Tutorial](#)

Literature

- [Betcha!](#) by Stuart J. Murphy
- [Coyotes All Around](#) by Stuart J. Murphy
- [Even Steven and Odd Todd](#) by Kathryn Cristaldi
- [The Long Wait](#) by Annie Cobb
- [A Place for Zero](#) by Angeline Sparagna LoPresti

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 | 3 rd Grade | Quarter 1 | Approx. 9 – 14 days | GSD Revised 6/1/18 |
|--|--|-----------|---------------------|--------------------|
| Strand: Measurement and Data | | | | 3.MD |
| Represent and interpret data. | | | | |
| 3. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. <i>For example, draw a bar graph in which each square in the bar graph might represent five pets.</i> | | | | |
| 4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters. | | | | |
| Math Content Objectives | Vocabulary | | | |
| <p>I can:</p> <p>3.MD.3</p> <ul style="list-style-type: none"> ☞ Draw a picture graph to show data. ☞ Draw a bar graph to show data. ☞ Answer questions using information on a picture graph. ☞ Answer questions using information on a bar graph. <p>3.MD.4</p> <ul style="list-style-type: none"> • Measure lengths with halves and fourths of an inch. • Show measurement data on a line plot. <p>☞ Key Concepts for Differentiation - See p. 7.</p> | <ul style="list-style-type: none"> • bar graph • data • experiment • frequency table • horizontal bar graph • key • line plot • number line • picture graph • scale • skip count • survey • tally table • vertical bar graph | | | |

| Go Math! Utah Core Alignment | Envisions to Go Math! Alignment | Unit of Study 2 - Additional Resources |
|------------------------------------|--|---|
| <u>Lesson 2.1</u> 3.MD.3 | ----- | <p>Picture Graphs IXL - Create Pictographs - Assessment Beacon Learning Center - Play Ball - Assessment Toy Theater - Fishing - Game</p> |
| <u>Lesson 2.2</u> 3.MD.3 | Lesson 7-1 | <p>Bar Graphs Learn Alberta - Using Bar Graphs - Interactive Applet Beacon Learning Center - "Kids Have Pets" Lesson IXL - Create Bar Graphs - Assessment K-5 Math Teaching Resources – Represent and Interpret Data</p> |
| <u>Lesson 2.3</u> 3.MD.3 | Lesson 7-2 | <p>Line Plots Learn Alberta - Organizing Data - Interactive Applet IXL - Create Pictographs - Assessment Learn Zillion – Construct and Interpret a Line Plot – Student Tutorial</p> |
| <u>Lesson 2.4</u> 3.MD.3 | Lesson 7-1 | <p>GSD Additional Teacher Resources Math Investigation Centers – Unit 2</p> |
| <u>Lesson 2.5</u> 3.MD.3 | Lesson 7-3 | <p>Literature <u>Graphs</u> by Bonnie Bader <u>Lemonade for Sale</u> by Stuart J. Murphy <u>Tally O'Malley</u> by Stuart J. Murphy <u>Tiger Math</u> by Ann Whitehead Nagda</p> |
| <u>Lesson 2.6</u> 3.MD.3 | Lesson 7-4 | |
| <u>Lesson 2.7</u> 3.MD.4 | ----- | |
| 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 2 Review/Test; Chapter 2 Test; Diagnostic Interview Assessment; Personal Math Trainer. • Daily/Weekly Formative Assessment Options: Exit Slips, Observation, Daily Work, Homework. | |

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|-----------------|-----------------------|-----------|---------------------|--------------------|
| Unit of Study 3 | 3 rd Grade | Quarter 1 | Approx. 9 – 14 days | GSD Revised 6/1/18 |
|-----------------|-----------------------|-----------|---------------------|--------------------|

Domain: Operations and Algebraic Thinking 3.OA

Represent and solve problems involving multiplication and division within 100.

1. Interpret products of whole numbers, such as interpreting 5×7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5×7 .*
3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. *For example, use drawings and equations with a symbol for the unknown number to represent the problem*

Demonstrate understanding of the properties of multiplication and the relationship between multiplication and division.

5. Apply properties of operations as strategies to multiply and divide. *For example: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known (commutative property of multiplication). $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$ (associative property of multiplication). Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$ (distributive property). (Third grade students may, but need not, use formal terms for these properties.)*

Use the four operations to identify and explain patterns in arithmetic.

8. Solve two-step word problems.
 - a. Solve two-step word problems using the four operations. Know how to perform operations in the conventional order when there are no parentheses to specify a particular order (Order of Operations). (Limit to problems posed with whole numbers and having whole number answers.)
 - b. Represent two-step problems using equations with a letter standing for the unknown quantity. Create accurate equations to match word problems.
 - c. Assess the reasonableness of answers using mental computation and estimation strategies, including rounding.

| Math Content Objectives | Vocabulary | Vocabulary (cont.) |
|---|---|--|
| <p>I can:</p> <p>3.OA.1</p> <ul style="list-style-type: none"> • Explain the meaning of factors and products. • Model multiplication as repeated addition. <p>3.OA.3</p> <ul style="list-style-type: none"> • Use multiplication to solve word problems. • Use division to solve word problems. • Use a drawing to solve a multiplication and division word problem. • Use an equation to solve a multiplication and division word problem. • Use a symbol for an unknown number in an equation. | <ul style="list-style-type: none"> • add • array • Associative Property of Multiplication • bar model • column • Commutative Property of Multiplication • Distributive Property • equal groups • equation • expression • fact family • factor | <ul style="list-style-type: none"> • Multiplicative Identity Property of 1 • multiply • number line • product • related facts • repeated addition • row • skip count • whole numbers • Zero Property of Multiplication |

Unit of Study 3 (continued)

Math Content Objectives

3.OA.5

- Use the Commutative Property of Multiplication.
- Use the Associative Property of Multiplication.
- Use the Distributive Property.
- Use the Multiplicative Identity Property of 1.
- Use the Zero Property of Multiplication.

3.OA.8

- ☛ Solve two-step word problems.
- Write an equation for a two-step word problem.
- Use a letter to stand for the missing number in an equation.
- Decide if my answer is reasonable.

☛ Key Concepts for Differentiation - See p. 7.

| Go Math! Utah Core Alignment | Envisions to Go Math! Alignment | Unit of Study 3 – Additional Resources |
|---|--|--|
| <u>Lesson 3.1</u> 3.OA.1 | Lesson 1-1 | <p><u>Multiplication Models - 1-digit x 1-digit</u> Learn Alberta - Multiplication (Various Models) - Interactive Applet Education Place - Model Multiplication as Repeated Addition - Student Tutorial</p> |
| <u>Lesson 3.2</u> 3.OA.1 | Lesson 1-1 | <p>Education Place - Multiply with 2 and 5 - Student Tutorial Education Place - Multiply with 3 - Student Tutorial NLVM - Number Line Arithmetic - Interactive Applet</p> |
| <u>Lesson 3.3</u> 3.OA.3 | Lesson 1-2 | <p>Illuminations - All About Multiplication - Lessons 1 and 2 K-5 Math Teaching Resources – Relate Addition and Multiplication EngageNY – Multiplication and the Array Model – Lesson</p> |
| <u>Lesson 3.4</u> 3.OA.8 | ----- | <p>Youtube – Number Circles – 4s and 6s – Student Tutorial Learn Zillion – Represent Multiplication Using Arrays – Student Tutorial</p> |
| <u>Lesson 3.5</u> 3.OA.3 | Lesson 1-3 | <p><u>Word Problems</u> Math Playground - Word Problem Bank</p> |
| <u>Lesson 3.6</u> 3.OA.5 | Lesson 1-4 | <p>Math Playground - Thinking Blocks - Bar Models and Tutorial Learn Zillion – Solve Word Problems Using the Idea of Equal Groups</p> |
| <u>Lesson 3.7</u> 3.OA.5 | Lesson 2-3 | <p><u>Properties</u> Scholastic Study Jams - Multiplication- Student Interactive Tutorial K-5 Math Teaching Resources – Turn Your Array EngageNY – The Distributive Property – Lesson</p> |
| | | <p><u>GSD Additional Teacher Resources</u> Math Investigation Center – Units 3-5 Multiplication Tic Tac Toe - Game Multiplication Chart How Many? - Game Circle Patterns Array a Day Narrowing the Multiplication Facts to 15 – Teacher Tutorial Narrowing the Multiplication Facts to 15 – Teacher Tutorial - Charts Facts That Used to “Bug” Me – Teacher Tutorial</p> |

Unit of Study 3 - Additional Resources - Continued

Literature

- 2 x 2 = Boo: A Set of Multiplication Stories by Loreen Leedy
- Amanda Bean's Amazing Dream by Cindy Neuschwander
- Best of Times by Greg Tang
- Breakfast at Danny's Diner by Judith Bauer Stamper
- Each Orange Had 8 Slices by Paul Giganti, Jr.
- The Hershey's Milk Chocolate Multiplication Book by Jerry Pallotta
- How Many Legs: Learning to Multiply by Repeated Addition by Kristine Lalley
- Stacks of Trouble by Martha F. Brenner
- Too Many Kangaroo Things to Do! By Stuart J. Murphy
- Two Ways to Count to Ten by Ruby Dee
- What Comes in 2's, 3's, and 4's? by Suzanne Aker

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.

| | |
|---|------|
| Strand: Operations and Algebraic Thinking | 3.OA |
|---|------|

Represent and solve problems involving multiplication and division within 100.

3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. *For example, use drawings and equations with a symbol for the unknown number to represent the problem.*

7. Fluently multiply and divide.

- a. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division or properties of operations. *(For example, knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$.)*
- b. By the end of Grade 3, know from memory all products of two one-digit numbers.

Demonstrate understanding of the properties of multiplication and the relationship between multiplication and division.

5. Apply properties of operations as strategies to multiply and divide. *For example: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known (commutative property of multiplication). $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$ (associative property of multiplication). Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$ (distributive property). (Third grade students may, but need not, use formal terms for these properties.)*

Use the four operations to identify and explain patterns in arithmetic.

8. Solve two-step word problems.

- a. Solve two-step word problems using the four operations. Know how to perform operations in the conventional order when there are no parentheses to specify a particular order (Order of Operations). (Limit the problems posed with whole numbers and having whole number answers.)
- b. Represent two-step problems using equations with a letter standing for the unknown quantity.
- c. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

9. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that four times a number is always even, and explain why four times a number can be decomposed into two equal addends.*

| Math Content Objectives | Vocabulary | |
|---|---|--|
| <p>I can:</p> <p>3.OA.3</p> <ul style="list-style-type: none"> • Use multiplication to solve word problems. • Use division to solve word problems. • Use a drawing to solve a multiplication and division word problem. • Use an equation to solve a multiplication and division word problem. • Use a symbol for an unknown number in an equation. | <ul style="list-style-type: none"> • add • addend • area model • arithmetic patterns • array • Associative Property of Multiplication • bar model • column • Commutative Property of Multiplication • counting number | |

Unit of Study 4 (continued)

| Math Content Objectives | Vocabulary (cont.) | |
|--|---|--|
| <p><u>3.OA.5</u></p> <ul style="list-style-type: none">• Use the Commutative Property of Multiplication.☞ Use the Associative Property of Multiplication.☞ Use the Distributive Property.• Use the Multiplicative Identity Property of 1.• Use the Zero Property of Multiplication. <p><u>3.OA.7</u></p> <ul style="list-style-type: none">☞ Fluently multiply two one-digit numbers.• Fluently divide within 100.• Memorize all products of two one-digit numbers. <p><u>3.OA.8</u></p> <ul style="list-style-type: none">• Solve two-step word problems.• Write an equation for a two-step word problem.• Use a letter to stand for the missing number in an equation.• Decide if my answer is reasonable. <p><u>3.OA.9</u></p> <ul style="list-style-type: none">☞ Identify arithmetic patterns. <p>☞ Key Concepts for Differentiation - See p. 7.</p> | <ul style="list-style-type: none">• difference• Distributive Property• equal groups• equation• even number• fact family• factor• multiple• Multiplicative Identity Property of 1• multiply• number line• odd number• product• related facts• row• subtract• sum• Zero Property of Multiplication | |

| Go Math! Utah Core Alignment | Envisions to Go Math! Alignment | Unit of Study 4 – Additional Resources |
|------------------------------------|--|--|
| <u>Lesson 4.1</u> 3.OA.3 | Lessons 2-1, 3-3 | Multiplication Models - 1-digit x 1-digit Learn Alberta - Multiplication (Various Models) - Interactive Applet Education Place - Model Multiplication as Repeated Addition - Student Tutorial |
| <u>Lesson 4.2</u> 3.OA.3 | Lessons 2-1, 2-4 | Education Place - Multiply with 2 and 5 - Student Tutorial Education Place - Multiply with 3 - Student Tutorial NLVM - Number Line Arithmetic - Interactive Applet |
| <u>Lesson 4.3</u> 3.OA.3 | Lessons 3-2, 3-4 | Illuminations - All About Multiplication - Lessons 1 and 2 Ambleside - Numberlines - Interactive Applet |
| <u>Lesson 4.4</u> 3.OA.5 | Lesson 3-1, 5-5 | Multiplication Fact Practice Maths Games - Basic Fact Practice - Games Illuminations - The Product Game - Lessons 1 and 2 |
| <u>Lesson 4.5</u> 3.OA.7 | Lesson 3-4 | Arcademics Skill Builders - Meteor Multiplication - Game HMH School Publishers - Multiplication Mystery - Game APlus Math - Multiplication Picture - Game |
| <u>Lesson 4.6</u> 3.OA.5 | Lesson 3-7 | Math Is Fun - Multiplication Practice - Assessment Mr. Nussbaum - Around the World - Game Multiplication - Games |
| <u>Lesson 4.7</u> 3.OA.9 | Lessons 3-1, 3-2, 5-3 | River Tables - Multiplication Practice - Game Education Place - eManipulatives - Multiplication Table Learn Zillion – Identify Patterns on a Multiplication Chart – Student Tutorial |
| <u>Lesson 4.8</u> 3.OA.7 | Lesson 3-5 | K-5 Math Teaching Resources – One Hundred Hungry Ants |
| <u>Lesson 4.9</u> 3.OA.7 | Lesson 2-2 | Properties Scholastic Study Jams - Multiplication- Student Interactive Tutorial EngageNY – The Distributive Property – Lesson |
| <u>Lesson 4.10</u> 3.OA.8 | Lesson 2-6, 5-5, 5-6 | |

Unit of Study 4 - Additional Resources - Continued

GSD Additional Teacher Resources

- [Math Investigation Centers – Units 3-5](#)
- [Multiplying 1-digit by 2-digit Numbers – Teacher Tutorial](#)
- [Multiplication Tic Tac Toe - Game](#)
- [Multiplication Chart](#)
- [How Many? - Game](#)
- [Circle Patterns](#)
- [Array a Day](#)
- [Narrowing the Multiplication Facts to 15 – Teacher Tutorial](#)
- [Narrowing the Multiplication Facts to 15 – Teacher Tutorial - Charts](#)
- [Facts That Used to “Bug” Me – Teacher Tutorial](#)

Literature

- [2 x 2 = Boo: A Set of Multiplication Stories](#) by Loreen Leedy
- [Amanda Bean’s Amazing Dream](#) by Cindy Neuschwander
- [Best of Times](#) by Greg Tang
- [Breakfast at Danny’s Diner](#) by Judith Bauer Stamper
- [Bunches and Bunches of Bunnies](#) by Louise Mathews
- [Each Orange Had 8 Slices](#) by Paul Giganti, Jr.
- [Even Steven and Odd Todd](#) by Kathryn Cristaldi
- [Too Many Kangaroo Things to Do!](#) By Stuart J. Murphy
- [Two Ways to Count to Ten](#) by Ruby Dee
- [What Comes in 2’s, 3’s, and 4’s?](#) by Suzanne Aker

*Note: 3.OA.7 Third grade students are expected to multiply 1-digit by 2-digit numbers when the products are within 100. (e.g., 5×15 ; 3×14 , etc.) Use concrete materials and the distributive property. Click [here](#) to see GSD teacher reference page.

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 | 3 rd Grade | Quarter 2 | Approx. 7 – 9 days | GSD Revised 6/1/18 |
|--|--|--|--------------------|--------------------|
| Strand: Operations and Algebraic Thinking | | | | 3.OA |
| Represent and solve problems involving multiplication and division within 100. | | | | |
| <p>4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers. <i>For example, determine the unknown number—product, factor, quotient, dividend, or divisor—that makes the equation true in each of the equations $8 \times ? = 48$, $5 = ? \div 3$, $6 \times 6 = ?$.</i></p> | | | | |
| Use the four operations to identify and explain patterns in arithmetic. | | | | |
| Solve problems involving the four operations, and identify and explain patterns in arithmetic. | | | | |
| <p>9. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. <i>For example, observe that four times a number is always even, and explain why four times a number can be decomposed into two equal addends</i></p> | | | | |
| 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. | | | | |
| <p>3. Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (for example, 9×80, 5×60) using strategies based on place value and properties of operations.</p> | | | | |
| Math Content Objectives | Vocabulary | Vocabulary (cont.) | | |
| <p>I can:</p> <p>3.OA.4 ◦ Find the unknown number in a multiplication or division equation.</p> <p>3.OA.9 ◦ Identify arithmetic patterns.</p> <p>3.NBT.3 • Multiply a one-digit number by a multiple of 10.</p> <p>◦ Key Concepts for Differentiation - See p. 7.</p> | <ul style="list-style-type: none"> • addend • area model • arithmetic pattern • array • Associative Property of Multiplication • column • Commutative Property of Multiplication • Distributive Property • equation • fact family • factor • hundreds • multiple • number line • ones • parentheses • place value • product • related facts | <ul style="list-style-type: none"> • row • sum • tens • variable | | |

| Go Math! Utah Core Alignment | Envisions to Go Math! Alignment | Unit of Study 5 – Additional Resources |
|------------------------------------|--|---|
| <u>Lesson 5.1</u> 3.OA.9 | ----- | <p><u>Arithmetic Patterns</u> Learn Zillion – Identify Patterns on a Multiplication Chart – Student Tutorial</p> |
| <u>Lesson 5.2</u> 3.OA.4 | Lesson 4-8 | <p><u>Unknown Factors</u></p> |
| <u>Lesson 5.3</u> 3.NBT.3 | ----- | <p><u>Multiplication by 10’s with Models</u> BBC - Camel Times Tables - Game Quia - Times 10 Matching - Game Quia - Times 10 Concentration - Game</p> |
| <u>Lesson 5.4</u> 3.NBT.3 | Lessons 10-1, 10-2 | <p><u>Properties</u> Purplemath - Teacher Tutorial</p> |
| <u>Lesson 5.5</u> 3.NBT.3 | Lessons 10-3 | <p>EngageNY – The Distributive Property – Lesson</p> <p><u>Multiplication Fact Practice</u> Maths Games - Basic Fact Practice - Games Illuminations - The Product Game - Lessons 1 and 2 MathsFrame - Multiplication Rapid Recall - Game Arcademics Skill Builders - Meteor Multiplication - Game HMH School Publishers - Multiplication Mystery - Game APlus Math - Multiplication Picture - Game Math Is Fun - Multiplication Practice - Assessment Mr. Nussbaum - Around the World - Game Multiplication - Games River Tables - Multiplication Practice - Game Education Place - eManipulatives - Multiplication Table Georgia Standards Frameworks – Unit 2 - Lessons</p> <p><u>GSD Additional Teacher Resources</u> Math Investigation Centers – Units 3-5 Facts That Used to “Bug” Me – Teacher Tutorial Circle Patterns</p> |

Unit of Study 5 - Additional Resources - Continued

Literature

2 x 2 = Boo: A Set of Multiplication Stories by Loreen Leedy

Amanda Bean's Amazing Dream by Cindy Neuschwander

Best of Times by Greg Tang

Breakfast at Danny's Diner by Judith Bauer Stamper

Corkscrew Counts: A Story About Multiplication by Donna Jo Napoli

Each Orange Had 8 Slices by Paul Giganti, Jr.

Too Many Kangaroo Things to Do! By Stuart J. Murphy

Two Ways to Count to Ten by Ruby Dee

What Comes in 2's, 3's, and 4's? by Suzanne Aker

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

| Unit of Study 6 | 3 rd Grade | Quarter 2 | Approx. 11 – 16 days | GSD Revised 6/1/18 |
|---|--|---|----------------------|--------------------|
| Strand: Operations and Algebraic Thinking | | | | 3.OA |
| Represent and solve problems involving multiplication and division within 100. | | | | |
| <p>2. Interpret whole-number quotients of whole numbers. For example, interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into eight shares (partitive), or as a number of shares when 56 objects are partitioned into equal shares of eight objects each (quotative).</p> | | | | |
| <p>3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities. For example, use drawings and equations with a symbol for the unknown number to represent the problem.</p> | | | | |
| <p>7. Fluently multiply and divide.</p> | | | | |
| <p>a. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division or properties of operations. (For example, knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$.)</p> | | | | |
| <p>b. By the end of Grade 3, know from memory all products of two one-digit numbers.</p> | | | | |
| Demonstrate understanding of the properties of multiplication and the relationship between multiplication and division. | | | | |
| <p>5. Apply properties of operations as strategies to multiply and divide. For example: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known (commutative property of multiplication). $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$ (associative property of multiplication). Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$ (distributive property). (Third grade students may, but need not, use formal terms for these properties.)</p> | | | | |
| <p>6. Understand division as an unknown-factor problem. Understand the relationship between multiplication and division (multiplication and division are inverse operations). For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.</p> | | | | |
| Math Content Objectives | Vocabulary | Vocabulary (cont.) | | |
| <p>I can:</p> <p>3.OA.2</p> <ul style="list-style-type: none"> • Explain the meaning of partitive division. • Explain the meaning of quotative division. ☞ Model division using equal groups. ☞ Model division as repeated subtraction. | <ul style="list-style-type: none"> • array • bar model • column • Commutative Property of Multiplication • divide • dividend • divisor • equal groups • equation • expression • fact family • factor | <ul style="list-style-type: none"> • inverse operations • Multiplicative Identity Property of 1 • number line • partitive division • product • quotative division • quotient • related facts • repeated subtraction • row | | |

Unit of Study 6 (continued)

Math Content Objectives

3.OA.3

- Use multiplication to solve word problems.
- Use division to solve word problems.
- Use a drawing to solve a multiplication and division word problem.
- Use an equation to solve a multiplication and division word problem.
- Use a symbol for an unknown number in an equation.

3.OA.5

- Use the Commutative Property of Multiplication.
- Use the Associative Property of Multiplication.
- ☞ Use the Distributive Property.
- ☞ Use the Multiplicative Identity Property of 1.
- Use the Zero Property of Multiplication.

3.OA.6

- Use multiplication to answer a division problem.

3.OA.7

- Fluently multiply two one-digit numbers.
- ☞ Fluently divide within 100.
- Memorize all products of two one-digit numbers.

☞ Key Concepts for Differentiation - See p. 7.

| Go Math! Utah Core Alignment | Envisions to Go Math! Alignment | Unit of Study 6 - Additional Resources |
|------------------------------------|--|--|
| <u>Lesson 6.1</u> 3.OA.3 | Lessons 1-5 | <u>Basic Division Models and Strategies</u> Education Place - Relate Multiplication and Division - Student Tutorial Maths Frame - Linking Multiplication and Division - Interactive Applet |
| <u>Lesson 6.2</u> 3.OA.2 | Lesson 1-5 | Learn Alberta - Division (Equal Sharing; Equal Grouping) - Interactive Applet Education Place - Model Division as Repeated Subtraction - Student Tutorial Education Place – Divide Using a Multiplication Table - Student Tutorial |
| <u>Lesson 6.3</u> 3.OA.2 | ----- | YouTube - Modeling Division with Base 10 Blocks - Teacher Tutorial PBS Kids Cyberchase - Sharing Halloween Candy - Video Tutorial Harcourt School E-Lab - Modeling Division - Interactive Applet |
| <u>Lesson 6.4</u> 3.OA.2 | ----- | K-5 Math Teaching Resources – Missing Numbers - Division K-5 Math Teaching Resources – Division Squares K-5 Math Teaching Resources – Identify the Unknown |
| <u>Lesson 6.5</u> 3.OA.3 | Lesson 1-6 | Illustrative Mathematics – Markers in Boxes - Two Different Types of Division - Lesson Georgia Standards Frameworks – Unit 2 – Lessons Learn Zillion – Solve Division Problems by Drawing Pictures – Student Tutorial |
| <u>Lesson 6.6</u> 3.OA.3 | ----- | Learn Zillion – Use Repeated Subtraction for Division – Student Tutorial Learn Zillion – Use Division as an Unknown Factor Problem Using Arrays – Student Tutorial |
| <u>Lesson 6.7</u> 3.OA.6 | Lesson 4-1 | <u>GSD Additional Teacher Resources</u> Math Investigation Centers – Units 6 and 7 Part-Part-Whole Bar Models |
| <u>Lesson 6.8</u> 3.OA.7 | Lessons 4-1 | <u>Literature</u> Cheetah Math by Ann Whitehead Nagda Divide and Ride by Stuart J. Murphy The Doorbell Rang by Pat Hutchins |
| <u>Lesson 6.9</u> 3.OA.5 | Lesson 4-6 | |
| 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 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 | 3 rd Grade | Quarter 3 | Approx. 13 – 18 days | GSD Revised 6/1/18 |
|-----------------|-----------------------|-----------|----------------------|--------------------|

Strand: Operations and Algebraic Thinking 3.OA

Represent and solve problems involving multiplication and division within 100.

- 3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.** *For example, use drawings and equations with a symbol for the unknown number to represent the problem.*
- 4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers.** *For example, determine the unknown number—product, factor, quotient, dividend, or divisor—that makes the equation true in each of the equations $8 \times ? = 48$, $5 = ? \div 3$, $6 \times 6 = ?$.*
- 7. Fluently multiply and divide.**
- a. **Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division or properties of operations.** *(For example, knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$.)*
 - b. **By the end of Grade 3, know from memory all products of two one-digit numbers.**

Use the four operations to identify and explain patterns in arithmetic.

- 8. Solve two-step word problems.**
- a. **Solve two-step word problems using the four operations. Know how to perform operations in the conventional order when there are no parentheses to specify a particular order (Order of Operations).** *(Limit the problems posed with whole numbers and having whole number answers.)*
 - b. **Represent two-step problems using equations with a letter standing for the unknown quantity.**
 - c. **Assess the reasonableness of answers using mental computation and estimation strategies including rounding.**

| Math Content Objectives | Vocabulary | Vocabulary (cont.) |
|---|--|--|
| <p>I can:</p> <p>3.OA.3</p> <ul style="list-style-type: none"> • Use multiplication to solve word problems. • Use division to solve word problems. • Use a drawing to solve a multiplication and division word problem. • Use an equation to solve a multiplication and division word problem. • Use a symbol for an unknown number in an equation. <p>3.OA.4</p> <ul style="list-style-type: none"> • Find the unknown number in a multiplication or division equation. | <ul style="list-style-type: none"> • array • bar model • divide • dividend • divisor • equal groups • equation • fact family • factor • inverse operations • multiply • number line • Order of Operations • partitive division | <ul style="list-style-type: none"> • product • quotative division • quotient • related facts • variable |

Unit of Study 7 (continued)

Math Content Objectives

3.OA.7

- Fluently multiply two one-digit numbers.
- Fluently divide within 100.
- Memorize all products of two one-digit numbers.

3.OA.8

- Solve two-step word problems.
- Write an equation for a two-step word problem.
- Use a letter to stand for the missing number in an equation.
- Decide if my answer is reasonable.

◦→ Key Concepts for Differentiation - See p. 7.

Unit of Study 7 - Additional Resources - Continued

| Go Math! Utah Core Alignment | Envisions to Go Math! Alignment | |
|---|--|---|
| <u>Lesson 7.1</u> 3.OA.3 | Lesson 4-2 | <u>Basic Division Models and Strategies</u> Education Place - Relate Multiplication and Division - Student Tutorial |
| <u>Lesson 7.2</u> 3.OA.7 | ----- | Maths Frame - Linking Multiplication and Division - Interactive Applet Learn Alberta - Division (Equal Sharing; Equal Grouping) - Interactive Applet |
| <u>Lesson 7.3</u> 3.OA.3 | Lesson 4-2 | Education Place - Model Division as Repeated Subtraction - Student Tutorial Education Place – Divide Using a Multiplication Table - Student Tutorial |
| <u>Lesson 7.4</u> 3.OA.7 | Lesson 4-2 | YouTube - Modeling Division with Base 10 Blocks - Teacher Tutorial PBS Kids Cyberchase - Sharing Halloween Candy - Video Tutorial |
| <u>Lesson 7.5</u> 3.OA.7 | Lesson 4-2 | Harcourt School E-Lab - Modeling Division - Interactive Applet Georgia Standards Frameworks – Unit 2 - Lessons Illustrative Mathematics – Markers in Boxes – 2 different types of division K-5 Math Teaching Resources – Identify the Unknown |
| <u>Lesson 7.6</u> 3.OA.7 | Lesson 4-3 | <u>Division Fact Practice</u> Arcademic Skill Builders - Demolition Division - Game |
| <u>Lesson 7.7</u> 3.OA.7 | Lesson 4-3 | <u>Word Problems</u> Math Playground - Thinking Blocks (Bar Model) - Interactive Applet Learn Zillion – Solve 2-step word problems using a variable representing an unknown quantity |
| <u>Lesson 7.8</u> 3.OA.4 | Lesson 4-4 | <u>Order of Operations (No exponents or parentheses in 3rd Grade)</u> |
| <u>Lesson 7.9</u> 3.OA.7 | Lesson 4-4 | <u>GSD Additional Teacher Resources</u> Math Investigation Centers – Units 6 and 7 Part-Part-Whole Bar Models Comparison Bar Models |
| <u>Lesson 7.10</u> 3.OA.8 | Lesson 11-2, 11-3 | <u>Literature</u> Cheetah Math by Ann Whitehead Nagda Divide and Ride by Stuart J. Murphy The Doorbell Rang by Pat Hutchins |
| <u>Lesson 7.11</u> 3.OA.8 | ----- | |
| 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 7 Review/Test; Chapter 7 Test; Diagnostic Interview Assessment; Performance Assessment Chapters 1-7; Personal Math Trainer. • Daily/Weekly Formative Assessment Options: Exit Slips, Observation, Daily Work, Homework. |

| | | | | |
|-----------------|-----------------------|-----------|----------------------|--------------------|
| Unit of Study 8 | 3 rd Grade | Quarter 3 | Approx. 11 – 17 days | GSD Revised 6/1/18 |
|-----------------|-----------------------|-----------|----------------------|--------------------|

| | |
|---|------|
| Strand: Number and Operations – Fractions | 3.NF |
|---|------|

Develop understanding of fractions as numbers. Denominators are limited to 2, 3, 4, 6, and 8 in third grade.

1. Understand a unit fraction has a numerator of one and a non-zero denominator.
 - a. Understand a fraction $1/b$ as the quantity formed by one part when a whole is partitioned into b equal parts.
 - b. Understand a fraction a/b as the quantity formed by a parts of size $1/b$. For example: $1/4 + 1/4 + 1/4 = 3/4$.
2. Understand a fraction as a number on the number line; represent fractions on a number line diagram.
 - a. Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line.
 - b. Represent a fraction a/b on a number line diagram by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.
3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
 - c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. For example, express 3 in the form $3 = 3/1$; recognize that $6/1 = 6$; locate $4/4$ and 1 at the same point of a number line diagram.

| Math Content Objectives | Vocabulary | Vocabulary (cont.) |
|---|--|---|
| <p>I can:</p> <p><u>3.NF.1</u></p> <ul style="list-style-type: none"> • Identify a unit fraction of a whole. • Identify fractions that represent more than one part of a whole. <p><u>3.NF.2a</u></p> <ul style="list-style-type: none"> • Partition a number line into equal parts. • Locate a unit fraction on a number line. <p><u>3.NF.2b</u></p> <ul style="list-style-type: none"> • Partition a number line into equal parts. • Locate fractions that represent more than one part of a whole on a number line. <p><u>3.NF.3c</u></p> <ul style="list-style-type: none"> ◦ Write whole numbers as fractions. ◦ Recognize that fractions are equivalent to whole numbers. <p>◦ Key Concepts for Differentiation - See p. 7</p> | <ul style="list-style-type: none"> • denominator • eighths • endpoint • equal • equal parts • equivalent fractions • fourths • fraction • fraction bar • fraction greater than 1 • fraction less than 1 • halves • interval • number line • numerator • sixths | <ul style="list-style-type: none"> • thirds • unit fraction • whole • whole numbers |

| Go Math! Utah Core Alignment | Envisions to Go Math! Alignment | Unit of Study 8 – Additional Resources | |
|--|--|---|---|
| <u>Lesson 8.1</u> 3.NF.1 | Lesson 12-1 | <u>Identify Fractions</u> Visual Fractions - Identify with Lines - Fractions on a Number Line Assessment Teacher’s Domain - “Introducing Non-Unit Fractions and Equivalence” Lesson | <div style="border: 1px solid black; padding: 5px; color: red;"> Note: Lessons 8.7, 8.8 & 8.9 work with fractions of a group or set which is not part of the 3rd grade core. Set representations should be postponed until the fifth grade when multiplying to find part of a group. </div> |
| <u>Lesson 8.2</u> 3.NF.1 | Lesson 12-1 | Learn Alberta - Fractions - Interactive Applet HMH School Publishers - Bowling for Fractions - Game Education Place - Fractions and Regions - Student Tutorial | |
| <u>Lesson 8.3</u> 3.NF.1 | Lesson 12-2 | NLVM - Parts of a Whole - Interactive Applet Math Wire - I Have, Who Has - Game UEN - “Fractions” Lesson | |
| <u>Lesson 8.4</u> 3.NF.1 | Lesson 12-3 | PBS Kids Cyberchase - Melvin’s Make a Match - Game Phil Tulga - Musical Fraction Bars - Activity Sheppard Software - Matching Fractions - Interactive Applet | |
| <u>Lesson 8.5</u> 3.NF.2a; 3.NF.2b | Lessons 12-4, 12-5 | K-5 Math Teaching Resources – Roll a Fraction | |
| <u>Lesson 8.6</u> 3.NF.3c | Lesson 13-7 | <u>Unit Fraction</u> PBS Kids Cyberchase - Thirteen Ways of Looking at a Half - Game PBS Kids Cyberchase - Solving Sphinx - Video Tutorial Education Place - eManipulatives Fractions - Model HMH School Publishers - Cross the River - Interactive Applet | |
| <u>Lesson 8.7</u> 3.NF.1 | ----- | <u>GSD Additional Teacher Resources</u> Math Investigation Center – Units 8 and 9 | |
| <u>Lesson 8.8</u> 3.NF.1 | ----- | My Fraction Book Learn Zillion Videos – 3.NF. 1, 2, and 3 | |
| <u>Lesson 8.9</u> 3.NF.1 | ----- | | |

Unit of Study 8 - Additional Resources - Continued

Literature

- Apple Fractions by Jerry Pallotta
- Clean-Sweep Campers by Lucille Recht Penner
- The Doorbell Rang by Pat Hutchins
- Eating Fractions by Bruce McMillan
- Fraction Action by Loreen Leedy
- Give Me Half by Stuart J. Murphy
- Go Fractions by Judith Bauer Stamper
- The Hershey's Milk Chocolate Fraction Book by Jerry Pallotta
- How Many Snails? by Paul Giganti, Jr.
- Jump, Kangaroo, Jump by Stuart J. Murphy
- Whole-y Cow! By Taryn Souders

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

| Unit of Study 9 | 3 rd Grade | Quarter 3 | Approx. 9 – 15 days | GSD Revised 6/1/18 |
|--|---|-----------|---------------------|--------------------|
| Strand: Number and Operations – Fractions | | | | 3.NF |
| Develop understanding of fractions as numbers. Denominators are limited to 2, 3, 4, 6, and 8 in third grade. | | | | |
| <p>3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.</p> <p>a. Understand two fractions as equivalent if they are the same size, or the same point on a number line.</p> <p>b. Recognize and generate simple equivalent fractions, such as $1/2 = 2/4$, $4/6 = 2/3$. Explain why the fractions are equivalent by using a visual fraction model, for example</p> <p>d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, for example, by using a visual fraction model.</p> | | | | |
| Math Content Objectives | Vocabulary | | | |
| <p>I can:</p> <p>3.NF.3a</p> <ul style="list-style-type: none"> ☞ Understand that two fractions of the same size are equivalent. ☞ Understand that fractions that are on the same point on a number line are equivalent. <p>3.NF.3b</p> <ul style="list-style-type: none"> ☞ Identify equivalent fractions. <ul style="list-style-type: none"> • Make equivalent fractions. • Show that fractions are equivalent using a model. <p>3.NF.3d</p> <ul style="list-style-type: none"> • Compare two fractions with the same numerator. • Compare two fractions with the same denominator. • Understand that fractions can only be compared if they refer to the same whole. ☞ Use $>$, $=$, or $<$ to compare fractions. • Use a model to prove my answer when comparing fractions. <p>☞ Key Concepts for Differentiation - See p. 7.</p> | <ul style="list-style-type: none"> • compare • denominator • equal • equal parts • equivalent fractions • fraction • fraction bar • greater than • less than • number line • numerator • order • whole | | | |

| Go Math! Utah Core Alignment | Envisions to Go Math! Alignment | Unit of Study 9 - Additional Resources |
|--|--|--|
| <p><u>Lesson 9.1</u> 3.NF.3d</p> <p><u>Lesson 9.2</u> 3.NF.3d</p> <p><u>Lesson 9.3</u> 3.NF.3d</p> <p><u>Lesson 9.4</u> 3.NF.3d</p> <p><u>Lesson 9.5</u> 3.NF.3d</p> <p><u>Lesson 9.6</u> 3.NF.3a</p> <p><u>Lesson 9.7</u> 3.NF.3b</p> | <p>-----</p> <p>Lesson 13-6, 13-3</p> <p>Lesson 13-4</p> <p>Lessons 13-6</p> <p>-----</p> <p>Lessons 13-1, 13-2</p> <p>-----</p> | <p>Compare Fractions with Same Numerator Math Playground - Fraction Bars - Model K-5 Math Teaching Resources – Compare Fractions of a Whole Illustrative Mathematics – Comparing Fractions Game</p> <p>Compare Fractions with Same Denominator Education Place - Compare Fractions - Student Tutorial Math Playground - Fraction Bars - Model K-5 Math Teaching Resources – Compare Fractions of a Whole Illustrative Mathematics – Comparing Fractions Game</p> <p>Order Fractions (Same Numerator or Denominator) Illustrative Mathematics – Locating Fractions Greater Than One on a Number Line – Lesson</p> <p>Equivalent Fractions PBS Kids Cyberchase - Equal Amounts of Gold - Video Tutorial Annenberg Learner - Fraction Tracks - Video Tutorial of Game NCTM - Playing Fraction Tracks - Game Sums Math - Fraction Monkeys - Game Illustrative Mathematics – Halves, Thirds, and Sixths</p> <p>GSD Additional Teacher Resources Math Investigation Centers – Units 8 and 9 The Exchange Game Rules for Comparing Fractions</p> <p>Literature Fraction Action by Loreen Leedy Go Fractions by Judith Bauer Stamper Jump, Kangaroo, Jump by Stuart J. Murphy</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 9 Review/Test; Chapter 9 Test; Diagnostic Interview Assessment; Performance Assessment Chapters 8-9; Personal Math Trainer. • Daily/Weekly Formative Assessment Options: Exit Slips, Observation, Daily Work, Homework. |

| Unit of Study 10 | 3 rd Grade | Quarter 4 | Approx. 11 days | GSD Revised 6/1/18 |
|--|--|--|-----------------|--------------------|
| Strand: Measurement and Data | | | | 3.MD |
| Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. | | | | |
| <p>1. Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, for example, by representing the problem on a number line diagram.</p> <p>2. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), milliliters (ml), and liters (l). (Excludes compound units such as cubic centimeters [cc or cm³] and finding the geometric volume of a container.) Add, subtract, multiply, or divide to solve one-step word problems involving masses of objects or volumes of liquids that are given in the same units, for example., by using drawings (such as a beaker with a measurement scale) to represent the problem. (Excludes multiplicative comparison problems.)</p> | | | | |
| Represent and interpret data. | | | | |
| <p>4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.</p> | | | | |
| Strand: GSD | | | | |
| 1. Identify the number of days and weeks in a year. | | | | |
| Math Content Objectives | Vocabulary | Vocabulary (cont.) | | |
| <p>I can:</p> <p>3.MD.1</p> <ul style="list-style-type: none"> ☞ Tell and write time to the nearest minute. <ul style="list-style-type: none"> • Measure time intervals in minutes. ☞ Solve word problems involving elapsed time. <ul style="list-style-type: none"> • Use a number line to solve word problems involving elapsed time. <p>3.MD.2</p> <ul style="list-style-type: none"> ☞ Measure and estimate liquid volume using liters. ☞ Measure and estimate masses of objects using grams and kilograms. <ul style="list-style-type: none"> • Solve word problems involving mass. • Solve word problems involving volume. <p>3.MD.4</p> <ul style="list-style-type: none"> • Measure lengths with halves and fourths of an inch. • Show measurement data on a line plot. <p>GSD</p> <ul style="list-style-type: none"> • Tell the number of days in a year. • Tell the number of weeks in a year. <p>☞ Key Concepts for Differentiation - See p. 7.</p> | <ul style="list-style-type: none"> • a.m. • analog clock • bar model • customary system • digital clock • elapsed time • estimate • fourths • gram • half hour • halves • hour • inch • kilogram | <ul style="list-style-type: none"> • length • line plot • liter • mass • metric system • midnight • minute • noon • number line • p.m. • quarter hour • time interval • volume (liquid) | | |

| Go Math! Utah Core Alignment | Envisions to Go Math! Alignment | Unit of Study 10 – Additional Resources |
|------------------------------------|--|--|
| <u>Lesson 10.1</u> 3.MD.1 | Lesson 14-1 | <u>Telling Time (to the minute; a.m.; p.m.)</u> Time for Time - Telling Time - Teacher Demonstration Tool Mr. Nussbaum - Bedtime Bandits - Game |
| <u>Lesson 10.2</u> 3.MD.1 | Lesson 14-2 | Mr. Nussbaum - Clockworks - Game IXL - Read Clocks and Write Times - Assessment Georgia Standards Frameworks – Unit 6 Lessons |
| <u>Lesson 10.3</u> 3.MD.1 | Lesson 14-2 | <u>Elapsed Time</u> Education Place - Elapsed Time - Student Tutorial |
| <u>Lesson 10.4</u> 3.MD.1 | Lesson 14-3 | Harcourt School E-Lab - Elapsed Time on a Clock - Interactive Applet NLVM - What Time Is It? - Interactive Applet IXL - Elapsed Time II - Assessment |
| <u>Lesson 10.5</u> 3.MD.1 | Lesson 14-3 | BBC - Clockworks - Interactive Applet Georgia Standards Frameworks – Unit 6 Lessons |
| <u>Lesson 10.6</u> 3.MD.4 | Lesson 12-6, 12-7 | <u>Measuring Length in Halves and Fourths of Inches</u> Education Place - Measure to the Nearest Half-Inch - Student Tutorial Georgia Standards Frameworks – Unit 6 Lessons |
| <u>Lesson 10.7</u> 3.MD.2 | Lesson 14-4, 14-5 | <u>GSD Additional Teacher Resources</u> Math Investigation Centers – Unit 10 |
| <u>Lesson 10.8</u> 3.MD.2 | Lesson 14-6, 14-7 | Learn Zillion Links – Chapter 10 Centimeter Jump Time Check |
| <u>Lesson 10.9</u> 3.MD.2 | Lesson 14-8 | Don't Hold Your Breath Biggest, Strongest, Fastest Measurement and Art |

Unit of Study 10 - Additional Resources - Continued

Literature

- Carrie Measures Up by Linda Williams Aber
- Clocks and More Clocks by Pat Hutchins
- How Do You Know What Time It Is? by Robert E. Wells
- Inchworm and A Half by Elinor J. Pinczes
- Math Curse by Jon Scieszka
- A Second is a Hiccup by Hazel Hutchins
- Slowpoke by Lucille Recht Penner
- Telling Time by Jules Older
- 365 Penguins by Jean-Luc Fromental
- Tuesday by David Wiesner

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 | 3 rd Grade | Quarter 4 | Approx. 11 days | GSD Revised 6/1/18 |
|------------------|-----------------------|-----------|-----------------|--------------------|

Strand: Measurement and Data 3.MD

Understand concepts of area and relate area to multiplication and addition.

5. Recognize area as an attribute of plane figures and understand concepts of area measurement.
 - a. A square with side length one unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.
 - b. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.
6. Measure area by counting unit squares (square centimeters, square meters, square inches, square feet, and improvised units).
7. Relate area to the operations of multiplication and addition (refer to 3.OA.5).
 - a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
 - b. Multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
 - c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.
 - d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

Recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

8. Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

| Math Content Objectives | Vocabulary | Vocabulary (cont.) |
|--|---|---|
| <p>I can:</p> <p><u>3.MD.5a</u></p> <ul style="list-style-type: none"> • Use a unit square to measure area. <p><u>3.MD.5b</u></p> <ul style="list-style-type: none"> • Cover a plane figure with unit squares. • Record area in square units. <p><u>3.MD.6</u></p> <ul style="list-style-type: none"> • Measure area by counting unit squares. | <ul style="list-style-type: none"> • area • area model • centimeter • column • decompose • Distributive Property • foot • inch • length • meter • multiply • pattern • perimeter • plane figure | <ul style="list-style-type: none"> • polygon • rectangle • rectilinear figure • repeated addition • row • square unit • tiling • unit square • width |

Unit of Study 11 (continued)

Math Content Objectives

3.MD.7a

- ☞ Find the area of a rectangle by tiling it.
- ☞ Find the area of a rectangle by multiplying the side lengths.

3.MD.7b

- Solve problems by multiplying the side lengths to find the area.

3.MD.7c

- ☞ Use the Distributive Property to find the area of a rectangle.

3.MD.7d

- Decompose a rectilinear figure into rectangles.
- Find the area of each rectangle in a rectilinear figure.
- ☞ Find the area of a rectilinear figure.
- Solve problems with area of rectilinear figures.

3.MD.8

- ☞ Solve problems involving perimeter of polygons.
- Find the unknown side length of a polygon.
- Show rectangles that have the same perimeter but have different areas.
- Show rectangles that have the same area, but have different perimeters.

☞ Key Concepts for Differentiation - See p. 7.

| Go Math! Utah Core Alignment | Envisions to Go Math! Alignment | Unit of Study 11 - Additional Resources |
|------------------------------------|--|---|
| <u>Lesson 11.1</u> 3.MD.8 | Lesson 16.1 | Area Education Place - Find Area - Student Tutorial |
| <u>Lesson 11.2</u> 3.MD.8 | Lesson 16.2 | PBS Kids Cyberchase - Calculating Rectangular Area - Video Tutorial PBS Kids Cyberchase - U Fix It With Ziff - Game |
| <u>Lesson 11.3</u> 3.MD.8 | Lesson 16.3 | Georgia Standards Frameworks – Unit 3 Lessons (Pages 26, 29) Georgia Standards Frameworks – Unit 4 Lessons (Pages 113, 119, 124, 130) GFletchy – Paper Cut Task Illustrative Mathematics – Three Hidden Rectangles |
| <u>Lesson 11.4</u> 3.MD.5 & 5a | Lesson 6-1 | Perimeter Learn Alberta - Perimeter - Interactive Applet Georgia Standards Frameworks – Unit 3 Lessons (Pages 26, 29) |
| <u>Lesson 11.5</u> 3.MD.5b & 6 | Lesson 6-2 | Georgia Standards Frameworks – Unit 4 Lessons (Pages 113, 119, 124, 130) GFletchy – Paper Cut Task |
| <u>Lesson 11.6</u> 3.MD.7 & 7a | Lesson 6-3 | Same Perimeter, Different Areas/Same Area, Different Perimeters PBS Kids Cyberchase - Airlines Builder - Game Math Playground - Same Area, Different Perimeters - Video Tutorial Smart Exchange - Same Perimeter, Different Area - Teacher Demonstration Tool |
| <u>Lesson 11.7</u> 3.MD.7b | Lessons 6-4, 6-5 | PBS Kids Cyberchase - Skate-Off: Final Round, Inez vs. Rimm - Video |
| <u>Lesson 11.8</u> 3.MD.7c & 7d | Lesson 6-6 | GSD Additional Teacher Resources Math Investigation Centers – Units 11 Learn Zillion Links – Chapter 11 Chickens on the Move |
| <u>Lesson 11.9</u> 3.MD.8 | Lesson 16-4 | Perimeter and Area PowerPoint Pentomino Activity Racing Around |
| <u>Lesson 11.10</u> 3.MD.8 | Lesson 16-5 | Bigger, Better, Best |

| | | |
|----------------------------------|---|--|
| | | <p><u>Literature</u> <u>Bigger, Better, Best!</u> by Stuart J. Murphy <u>Chickens on the Move</u> by Pam Pollack <u>Pezzettino</u> by Leo Lionni <u>Racing Around</u> by Stuart J. Murphy <u>Spaghetti and Meatballs for All: A Mathematical Story</u> by Marilyn Burns <u>Perimeter, Area, and Volume</u> by David Adler <u>Sam's Sneaker Squares</u> by Nat Gabrie</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 11 Review/Test; Chapter 11 Test; Diagnostic Interview Assessment; Performance Assessment Chapters 10-11; Personal Math Trainer. • Daily/Weekly Formative Assessment Options: Exit Slips, Observation, Daily Work, Homework. | |

Reason with shapes and their attributes.

1. Understand that shapes in different categories (for example, rhombuses, rectangles, and others) may share attributes (for example, having four sides), and that the shared attributes can share a larger category (for example, quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

2. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into four parts with equal area, and describe the area of each part as 1/4 of the area of the shape.*

| Math Content Objectives | Vocabulary | Vocabulary (cont.) |
|---|--|---|
| <p>I can:</p> <p>3.G.1</p> <ul style="list-style-type: none"> Identify the attributes of a shape. Classify shapes based on their attributes. Identify and draw quadrilaterals. Classify quadrilaterals based on their attributes. <p>3.G.2</p> <ul style="list-style-type: none"> Partition a shape into parts with equal areas. Express the area as a unit fraction of the whole. <p>Key Concepts for Differentiation - See p. 7.</p> | <ul style="list-style-type: none"> angle area attribute closed shape decagon denominator endpoint hexagon intersecting lines length line line segment numerator octagon open shape parallel lines parallelogram pentagon perpendicular lines plane shape point polygon | <ul style="list-style-type: none"> quadrilateral ray rectangle rhombus right angle side square trapezoid triangle two-dimensional shape unit fraction Venn diagram vertex (vertices) whole width |

| Go Math! Utah Core Alignment | Envisions to Go Math! Alignment | Unit of Study 12 - Additional Resources | |
|------------------------------------|--|--|---|
| <u>Lesson 12.1</u> 3.G.1 | ----- | <u>Attributes of Plane Shapes</u> K-5 Math Teaching Resources – Shape Match K-5 Math Teaching Resources – Quadrilateral Riddle Georgia Standards Frameworks – Unit 4 Lessons | <p>Note: USBE defines a trapezoid as a quadrilateral with at least one pair of parallel sides. For more information, click here.</p> |
| <u>Lesson 12.2</u> 3.G.1 | ----- | <u>Right Angles</u> UEN - "Mr. Bo Jangle, What's Your Angle" Lesson Georgia Standards Frameworks – Unit 4 Lessons | |
| <u>Lesson 12.3</u> 3.G.1 | ----- | <u>Identifying Polygons</u> Education Place - Quadrilaterals and Other Polygons - Student Tutorial Learn Alberta - 2-D Shapes - Interactive Applet Georgia Standards Frameworks – Unit 4 Lessons | |
| <u>Lesson 12.4</u> 3.G.1 | ----- | <u>Triangles</u> Georgia Standards Frameworks – Unit 4 Lessons | |
| <u>Lesson 12.5</u> 3.G.1 | Lessons 15-1, 15-2 | <u>Quadrilaterals</u> Education Place - Quadrilaterals and Other Polygons - Student Tutorial Georgia Standards Frameworks – Unit 4 Lessons | |
| <u>Lesson 12.6</u> 3.G.1 | Lesson 15-3 | <u>Partitioning Shapes into Unit Fractions</u> K-5 Math Teaching Resources – Partition a Square Georgia Standards Frameworks – Unit 4 Lessons | |
| <u>Lesson 12.7</u> 3.G.1 | ----- | <u>GSD Additional Teacher Resources</u> Math Investigation Centers – Unit 12 The Greedy Triangle If You Were a Quadrilateral | |
| <u>Lesson 12.8</u> 3.G.1 | Lesson 15-2 | <u>Literature</u> The Greedy Triangle by Marilyn Burns Shapes, Shapes, Shapes by Tana Hoban | |
| <u>Lesson 12.9</u> 3.G.2 | ----- | | |
| 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; Performance Assessment Chapters 12; 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](#)