Table of Contents – Grade 5

Go Math! Scope and Sequence

	Introduction	Instruction	Assessment	TOTAL
Chapter 1: Place Value, Multiplication, and Expression	1 day	12 days	2 days	15 days
Chapter 2: Divide Whole Numbers	1 day	9 days	2 days	12 days
Chapter 3: Add and Subtract Decimals	1 day	12 days	2 days	15 days
Chapter 4: Multiply Decimals	1 day	8 days	2 days	11 days
Chapter 5: Divide Decimals	1 day	8 days	2 days	11 days
Chapter 6: Add and Subtract Fractions With Unlike Denominators	1 day	10 days	2 days	13 days
Chapter 7: Multiply Fractions	1 day	10 days	2 days	13 days
Chapter 8: Divide Fractions	1 day	5 days	2 days	8 days
Chapter 9: Algebra: Patterns and Graphing	1 day	7 days	2 days	10 days
Chapter 10: Convert Units of Measure	1 day	7 days	2 days	10 days
Chapter 11: Geometry and Volume	1 day	12 days	2 days	15 days
End of the Year Planner: Getting ready for Grade 6	3 days	20 days	2 days	25 days
Flex Days (projects, reteaching, standardized testing, etc.)	--	22 days	--	--
TOTAL DAYS	14 days	142 days	24 days	180 days

Common Core

Domain: 5.OA – Operations & Algebraic Thinking

Cluster: 5.OA.A – Write and interpret numerical expressions.

Standard: 5.OA.A.1

Essential Questions:	Enduring Understandings:
• In what order must operations be evaluated to find the solution to a problem? • In what order must operations be evaluated to find a solution when there are parentheses within parentheses?	Students will: • Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

Standards: 5.OA.A.1, 5.OA.A.2

Technology Standard(s)	Interdisciplinary Standard(s)
• 8.1.4.A.1-5 • 8.1.4.D.1-3 • 8.1.4.E.2 • 8.2.4.A.1-2 • 8.2.4.B.2 • 8.2.4.B.4 • 8.2.4.F.1 • 8.2.4.G.3	• Mathematical Practices ○ CCSS.Math.Practice.MP1-8 • Science ○ 5.1.4.A.2 ○ 5.1.4.B.3, 5.1.4.B.4 ○ 5.1.4.C.2 ○ 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3 • Social Studies ○ 6.1.4.A.15 ○ 6.1.4.B.1, 6.1.4.B.3 ○ 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13 ○ 6.1.4.D.19, 6.1.4.D.20 • Literacy ○ CCSS.ELA-Literacy.SL.5.1-5.3 ○ CCSS.ELA-Literacy.SL.5.4-5.6 ○ CCSS.ELA-Literacy.RF.5.3-5.4c

21st Century Themes: (Check all that apply)	21st Century Skills:
☐ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

- Use the order of operations to evaluate numerical expressions.
- Evaluate numerical expressions with parentheses, brackets, and braces.

Instructional Strategies

- Write the expression 10 – 2 x 3 on the board. Ask students what they think the value of the expression is. Point out that in today's lesson, students will learn why the value of the expression is 4, and not 24.
- Introduce the lesson to the students by asking them which operation they need to perform first in the following expressions:
    - 12 x 6 + 7 – 5
    - 12 x (6 + 7) – 5
    - (12 x 6) + 7 – 5
    - 12 x 6 + (7 – 5)

  If two expressions have the same numbers and operations in the same order, can adding parentheses change the value of the expression? Explain.

Resources

- Refer to Go Math! Lesson(s): 1.11, 1.12
- Refer to Go Math! Teacher Edition and Student Edition page(s): *47A–47B, 47–50, 51A–51B, 51–54* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

2 Days

Domain: 5.OA – Operations & Algebraic Thinking

Cluster: 5.OA.A – Write and interpret numerical expressions.

Standard: 5.OA.A.2

Essential Questions:	Enduring Understandings:
• How can you use a numerical expression to describe a situation?	Students will: • Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). • Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.

Standards: 5.OA.A.1, 5.OA.A.2

Technology Standard(s)	Interdisciplinary Standard(s)

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	   o CCSS.Math.Practice.MP1-8
	• Science
	   o 5.1.4.A.2
	   o 5.1.4.B.3, 5.1.4.B.4
	   o 5.1.4.C.2
	   o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	   o 6.1.4.A.15
	   o 6.1.4.B.1, 6.1.4.B.3
	   o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	   o 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	   o CCSS.ELA-Literacy.SL.5.1-5.3
	   o CCSS.ELA-Literacy.SL.5.4-5.6
	   o CCSS.ELA-Literacy.RF.5.3-5.4c

21st Century Themes: (Check all that apply)	**21st Century Skills:**
☐ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives	
• Write numerical expressions.	
Instructional Strategies	
• Ask students to describe fishing trips they have taken, read about, or plan to take. Explain that a fishing tournament, or tourney, is a contest to see who catches the most fish. Discuss different ways to compare each person's catch to determine the winner, including number of fish, size of fish, or pounds of fish.	
Resources	
• Refer to Go Math! Lesson(s): 1.10 • Refer to Go Math! Teacher Edition and Student Edition page(s): *43A–43B, 43–46* (Note: *Pages only in Teacher Edition are italics)* • Go Math! Animated Math Models (via Think Central) • HMH Mega Math (via Think Central) • Go Math! iTools (via Think Central) • Go Math! eGlossary (via Think Central) • Go Math! Destination Math (via Student Edition in Think Central) • Corresponding Go Math! Grab and Go for Activities/Literature/Games • Corresponding Go Math! Daily Routines • https://www-k6.thinkcentral.com/ePC/start.do • http://www.firstinmath.com/ • http://www.corestandards.org/Math	
Suggested Time Frame:	
1 Day	

Domain: 5.OA – Operations & Algebraic Thinking

Cluster: 5.OA.B – Analyze patterns and relationships.

Standard: 5.OA.B.3

Essential Questions:	Enduring Understandings:
- How can you identify a relationship between two numerical patterns? - How can you use the strategy *solve a simpler* problem to help you solve a problem with patterns? - How can you write and graph ordered pairs on a coordinate grid using two numerical patterns?	Students will: - Generate two numerical patterns using two given rules. - Identify apparent relationships between corresponding terms. - Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.

Standards: 5.OA.B.3

Technology Standard(s)	Interdisciplinary Standard(s)
8.1.4.A.1-5 8.1.4.D.1-3 8.1.4.E.2 8.2.4.A.1-2 8.2.4.B.2 8.2.4.B.4 8.2.4.F.1 8.2.4.G.3	- Mathematical Practices - CCSS.Math.Practice.MP1-8 - Science 5.1.4.A.2 5.1.4.B.3, 5.1.4.B.4 5.1.4.C.2 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3 - Social Studies 6.1.4.A.15 6.1.4.B.1, 6.1.4.B.3 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13 6.1.4.D.19, 6.1.4.D.20 - Literacy - CCSS.ELA-Literacy.SL.5.1-5.3 - CCSS.ELA-Literacy.SL.5.4-5.6 - CCSS.ELA-Literacy.RF.5.3-5.4c
21st Century Themes: (Check all that apply)	**21st Century Skills:**
☒ Global Awareness ☐ Environmental Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving

☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

- Use two rules to generate a numerical pattern and identify the relationship between the corresponding terms in the patterns.
- Solve problems using the strategy solve a simpler problem.
- Graph the relationship between two numerical patterns on a coordinate grid.

Instructional Strategies

- Use iTools: Number lines to model sequences such as "0, 2, 4, 5, 8, 10." How can you describe the pattern shown by the jumps? What would be the next three numbers in the sequence? How do you find them?
- Introduce the lesson by asking students: Do you know what archaeology is? Archaeology is a science that attempts to understand human cultures by documenting and analyzing historical objects. Examples of historical objects include artifacts that are unearthed by digging (such as ancient tombs and everything in them) and architecture that still exists today but was built long ago (such as the pyramids in Egypt and the Colosseum in Rome). If you've ever visited a museum or traveled to a historic place, you probably have seen the work of an archaeologist. In this lesson, you will solve a problem about an archaeological dig by first solving a simpler problem.
- Remind students of their work in the previous two lessons. They learned how to generate and extend 2 sequences, using a rule for each one and then how to identify the relationship between the 2 sequences. Invite volunteers to describe 2 simple sequences and how the sequences are related.

Resources

- Refer to Go Math! Lesson(s): 9.5, 9.6, 9.7
- Refer to Go Math! Teacher Edition and Student Edition page(s): *387A–387B, 387–390, 391A–391B, 391–394, 395A–395B, 395–398* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/

- http://www.corestandards.org/Math

Suggested Time Frame:

3 Days

Domain: 5.NBT – Numbers & Operations in Base Ten	
Cluster: 5.NBT.A – Understand the place value system.	
Standard: 5.NBT.A.1	
Essential Questions:	**Enduring Understandings:**
- How can you describe the relationship between two place-value positions? - How do you read, write, and represent whole numbers through hundred millions? - How can you describe the relationship between two decimal place-value positions?	Students will: Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
Standards: 5.NBT.A.1, 5.NBT.A.2, 5.NBT.A.3a, 5.NBT.A.3b, 5.NBT.A.4	
Technology Standard(s)	**Interdisciplinary Standard(s)**
8.1.4.A.1-5 8.1.4.D.1-3 8.1.4.E.2 8.2.4.A.1-2 8.2.4.B.2 8.2.4.B.4 8.2.4.F.1 8.2.4.G.3	- Mathematical Practices - CCSS.Math.Practice.MP1-8 - Science 5.1.4.A.2 5.1.4.B.3, 5.1.4.B.4 5.1.4.C.2 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3 - Social Studies 6.1.4.A.15 6.1.4.B.1, 6.1.4.B.3 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13 6.1.4.D.19, 6.1.4.D.20 - Literacy - CCSS.ELA-Literacy.SL.5.1-5.3 - CCSS.ELA-Literacy.SL.5.4-5.6 - CCSS.ELA-Literacy.RF.5.3-5.4c
21st Century Themes: (Check all that apply)	**21st Century Skills:**
☒ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration
Student Learning Targets/Objectives	

• Recognize the 10 to 1 relationship among place-value positions.
• Read and write whole numbers through hundred millions.
• Model, read, and write decimals to thousandths.

Instructional Strategies
• Use the iTools to model tens to 100. Record the numbers on the board. Ask students to explain how to recognize multiples of 10. Work with students to model hundreds to 1,000. Write the numbers on the board and ask students how they can recognize multiples of 100.
• Introduce the lesson by discussing the sun's size and its location in our solar system. Explain that distances between the sun and the planets are very large numbers. Students might find it interesting to research some ways scientists measure those distances.
• Have students outline several 10 x 10 squares on grid paper. As you name fractions with denominators of ten or one hundred, have different volunteers shade the grids and share them with the class. Then have students write the shaded part as a fraction and as a decimal. Use these fractions: 6 tenths, 25 hundredths, 2 tenths, 50 hundredths.

Resources
• Refer to Go Math! Lesson(s): 1.1, 1.2, 3.1
• Refer to Go Math! Teacher Edition and Student Edition page(s): *5A–5B, 5–8, 9A–9B, 9–12, 105A–105B, 105–108* (Note: *Pages only in Teacher Edition are italics*)
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• HMH Mega Math (via Think Central)
• Go Math! iTools (via Think Central)
• Go Math! eGlossary (via Think Central)
• Go Math! Destination Math (via Student Edition in Think Central)
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• Corresponding Go Math! Daily Routines
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• http://www.firstinmath.com/
• http://www.corestandards.org/Math

Suggested Time Frame:
3 Days

Domain: 5.NBT – Numbers & Operations in Base Ten

Cluster: 5.NBT.A – Understand the place value system.

Standard: 5.NBT.A.2

Essential Questions:	Enduring Understandings:
- How can you use an exponent to show powers of 10? - How can you use a basic fact and a pattern to multiply by a 2-digit number? - How can patterns help you place the decimal point in a product? - How can you use drawings and place value to multiply a decimal and a whole number? - How can you use expanded form and place value to multiply a decimal and a whole number? - What strategies can you use to place a decimal point in a product? - How do you know you have the correct number of decimal places in your product? - How can patterns help you place the decimal point in a quotient? - How can you divide decimals by whole numbers? - How can you place the decimal point in the quotient?	Students will: - Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. - Use whole-number exponents to denote powers of 10.

Standards: 5.NBT.A.1, 5.NBT.A.2, 5.NBT.A.3a, 5.NBT.A.3b, 5.NBT.A.4

Technology Standard(s)	Interdisciplinary Standard(s)
8.1.4.A.1-5 8.1.4.D.1-3 8.1.4.E.2 8.2.4.A.1-2 8.2.4.B.2 8.2.4.B.4 8.2.4.F.1 8.2.4.G.3	- Mathematical Practices - CCSS.Math.Practice.MP1-8 - Science 5.1.4.A.2 5.1.4.B.3, 5.1.4.B.4 5.1.4.C.2 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3 - Social Studies 6.1.4.A.15 6.1.4.B.1, 6.1.4.B.3

	o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13 o 6.1.4.D.19, 6.1.4.D.20 • Literacy o CCSS.ELA-Literacy.SL.5.1-5.3 o CCSS.ELA-Literacy.SL.5.4-5.6 o CCSS.ELA-Literacy.RF.5.3-5.4c
21st Century Themes: (Check all that apply)	**21st Century Skills:**
☒ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

- Write and evaluate repeated factors in exponent form.
- Use a basic fact and a pattern to multiply mentally by multiples of 10, 100, and 1,000.
- Find patterns in products when multiplying by powers of 10.
- Multiply a decimal and a whole number using drawings and place value.
- Use expanded form and place value to multiply a decimal and a whole number.
- Place the decimal point in decimal multiplication.
- Multiply decimals with zeros in the product.
- Find patterns in quotients when dividing by powers of 10.
- Divide decimals by whole numbers.
- Place the decimal point in decimal division.

Instructional Strategies

- Write the following problems on the board and have students call out the answers. 10 x 1; 10 x 10; 10 x 10 x 10. Discuss how you write a zero at the end of the product each time you multiply by 10.
- Introduce the lesson by asking students: Did you know that the first magnifying lenses were developed in Italy in the 14th century? In 1590, the first microscope was made by putting two lenses in a tube. What are some things you can study by looking at them through a microscope?
- Introduce the lesson to students by asking them to solve the following questions. Find the following products: 12 x 1; 12 x 10; 12 x 100; 12 x 1,000. What patterns do you notice in the products? Use the pattern to find the following products: 12 x 10,000; 12 x 100,000.
- Introduce the lesson to the students by asking them to find a few different coins in their pockets, bags, or wallets. How are the coins that you have alike? How are the coins that you have different? Which of your coins feels the heaviest? Which feels the lightest?

- Introduce the lesson by asking students to compare Jupiter and Earth. Which planet has a shorter day? Explain how you know. Which planet spins faster on its axis? Explain how you know.
- Write the following problem on the board: 12 x 34. What is the first step I should take to find this product? Work the problem out on the board, discussing each step as you go. For students having difficulty with the recording process, allow them to model the problem with iTools as they follow along. What are some important things to remember when solving problems like this one?
- Have students watch the Real World Video, *Sea Lion Feeding and Training*. Have you ever wondered how sea lions are trained to do tricks? Sea lions are trained using special clicks and food. The sea lion in the video ate a special diet of fish each day: 4.4 pounds of squid, 7 pounds of smelt, and 1 pound of special fish. Trainers must carefully monitor the amount of food they give animals every day. How would you determine the amount of squid to buy for a sea lion for 1 week?
- Have students review multiplying by powers of 10 by solving the problems below. $3 \times 10^0 = $ ___; $3 \times 10^1 = $ ___; $3 \times 10^2 = $ ___; $3 \times 10^3 = $ ___. How do the powers of 10 compare? How do the products compare?
- Have students use base-ten blocks to find the following quotients. Ask students to draw quick pictures of their models. $3.5 \div 5 = $ ___; $3.24 \div 3 = $ ___; $6.24 \div 4 = $ ___. Ask students to explain how they found each quotient.
- Ask students to describe any collections they may have. Do any of you have a sticker collection? What kinds of stickers would you like to have in a collection? Discuss different kinds of stickers, from bumper stickers to small paper stickers.

Resources

- Refer to Go Math! Lesson(s): 1.4, 1.5, 4.1, 4.3, 4.4, 4.7, 4.8, 5.1, 5.4, 5.6
- Refer to Go Math! Teacher Edition and Student Edition page(s): *17A–17B, 17–20, 21A–21B, 21–24, 161A–161B, 161–164, 169A–169B, 169–172, 173A–173B, 173–176, 187A–187B, 187–190, 191A–191B, 191–194, 201A–201B, 201–204, 213A–213B, 213–216, 223A–223B, 223–226* (Note: *Pages only in Teacher Edition are italics)*
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- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
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- http://www.corestandards.org/Math

Suggested Time Frame:

10 Days

Domain: 5.NBT – Numbers & Operations in Base Ten	
Cluster: 5.NBT.A – Understand the place value system.	
Standard: 5.NBT.A.3a	

Essential Questions:	**Enduring Understandings:**
• How do you read, write, and represent decimals through thousandths?	Students will: • Read, write, and compare decimals to thousandths. • Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).

Standards: 5.NBT.A.1, 5.NBT.A.2, 5.NBT.A.3a, 5.NBT.A.3b, 5.NBT.A.4	
Technology Standard(s)	**Interdisciplinary Standard(s)**

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	   o CCSS.Math.Practice.MP1-8
	• Science
	   o 5.1.4.A.2
	   o 5.1.4.B.3, 5.1.4.B.4
	   o 5.1.4.C.2
	   o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	   o 6.1.4.A.15
	   o 6.1.4.B.1, 6.1.4.B.3
	   o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	   o 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	   o CCSS.ELA-Literacy.SL.5.1-5.3
	   o CCSS.ELA-Literacy.SL.5.4-5.6
	   o CCSS.ELA-Literacy.RF.5.3-5.4c

21ˢᵗ Century Themes: (Check all that apply)	**21ˢᵗ Century Skills:**
☐ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives
• Read and write decimals through thousandths.

Instructional Strategies
• Introduce the lesson by discussing how measurements are often given using decimals to provide a more precise measurement. Brainstorm examples when decimals are used for measuring. For example, swimming competitions give times using decimals to the hundredths place to determine a winner.

Resources
• Refer to Go Math! Lesson(s): 3.2 • Refer to Go Math! Teacher Edition and Student Edition page(s): *109A–109B, 109–112* (Note: *Pages only in Teacher Edition are italics)* • Go Math! Animated Math Models (via Think Central) • HMH Mega Math (via Think Central) • Go Math! iTools (via Think Central) • Go Math! eGlossary (via Think Central) • Go Math! Destination Math (via Student Edition in Think Central) • Corresponding Go Math! Grab and Go for Activities/Literature/Games • Corresponding Go Math! Daily Routines • https://www-k6.thinkcentral.com/ePC/start.do • http://www.firstinmath.com/ • http://www.corestandards.org/Math

Suggested Time Frame:
1 Day

Domain: 5.NBT – Numbers & Operations in Base Ten	
Cluster: 5.NBT.A – Understand the place value system.	
Standard: 5.NBT.A.3b	
Essential Questions:	**Enduring Understandings:**
• How can you use place value to compare and order decimals?	Students will: • Read, write, and compare decimals to thousandths. • Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
Standards: 5.NBT.A.1, 5.NBT.A.2, 5.NBT.A.3a, 5.NBT.A.3b, 5.NBT.A.4	
Technology Standard(s)	**Interdisciplinary Standard(s)**

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	  o CCSS.Math.Practice.MP1-8
	• Science
	  o 5.1.4.A.2
	  o 5.1.4.B.3, 5.1.4.B.4
	  o 5.1.4.C.2
	  o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	  o 6.1.4.A.15
	  o 6.1.4.B.1, 6.1.4.B.3
	  o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	  o 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	  o CCSS.ELA-Literacy.SL.5.1-5.3
	  o CCSS.ELA-Literacy.SL.5.4-5.6
	  o CCSS.ELA-Literacy.RF.5.3-5.4c

21st Century Themes: (Check all that apply)	**21st Century Skills:**
☐ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration
Student Learning Targets/Objectives	
• Compare and order decimals to thousandths using place value.	
Instructional Strategies	

- Write the following numbers on the board: 32,045; 321,459; 32,405. Discuss how to order the whole numbers. How can you order these numbers from least to greatest?

Resources

- Refer to Go Math! Lesson(s): 3.3
- Refer to Go Math! Teacher Edition and Student Edition page(s): *113A–113B, 113–116* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

1 Day

Domain: 5.NBT – Numbers & Operations in Base Ten	
Cluster: 5.NBT.A – Understand the place value system.	

Standard: 5.NBT.A.4

Essential Questions:	**Enduring Understandings:**
• How can you use place value to round decimals to a given place?	Students will: • Use place value understanding to round decimals to any place.

Standards: 5.NBT.A.1, 5.NBT.A.2, 5.NBT.A.3a, 5.NBT.A.3b, 5.NBT.A.4

Technology Standard(s)	**Interdisciplinary Standard(s)**

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	  o CCSS.Math.Practice.MP1-8
	• Science
	  o 5.1.4.A.2
	  o 5.1.4.B.3, 5.1.4.B.4
	  o 5.1.4.C.2
	  o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	  o 6.1.4.A.15
	  o 6.1.4.B.1, 6.1.4.B.3
	  o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	  o 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	  o CCSS.ELA-Literacy.SL.5.1-5.3
	  o CCSS.ELA-Literacy.SL.5.4-5.6
	  o CCSS.ELA-Literacy.RF.5.3-5.4c

21st Century Themes: (Check all that apply)	**21st Century Skills:**
☐ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives
• Round decimals to any place.
Instructional Strategies
• Write the following number on the board: 45,926. Explain how you can round this number to the nearest thousand.
Resources

- Refer to Go Math! Lesson(s): 3.4
- Refer to Go Math! Teacher Edition and Student Edition page(s): *117A–117B, 117–120* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

1 Day

Domain: 5.NBT – Numbers & Operations in Base Ten	
Cluster: 5.NBT.B – Perform operations with multi-digit whole numbers and with decimals to hundredths.	
Standard: 5.NBT.B.5	
Essential Questions:	**Enduring Understandings:**
- How do you multiply by 1-digit numbers? - How do you multiply by 2-digit numbers?	Students will: Fluently multiply multi-digit whole numbers using the standard algorithm.
Standards: 5.NBT.B.5, 5.NBT.B.6, 5.NBT.B.7	
Technology Standard(s)	**Interdisciplinary Standard(s)**
8.1.4.A.1-5 8.1.4.D.1-3 8.1.4.E.2 8.2.4.A.1-2 8.2.4.B.2 8.2.4.B.4 8.2.4.F.1 8.2.4.G.3	- Mathematical Practices - CCSS.Math.Practice.MP1-8 - Science 5.1.4.A.2 5.1.4.B.3, 5.1.4.B.4 5.1.4.C.2 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3 - Social Studies 6.1.4.A.15 6.1.4.B.1, 6.1.4.B.3 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13 6.1.4.D.19, 6.1.4.D.20 - Literacy - CCSS.ELA-Literacy.SL.5.1-5.3 - CCSS.ELA-Literacy.SL.5.4-5.6 - CCSS.ELA-Literacy.RF.5.3-5.4c
21st Century Themes: (Check all that apply)	**21st Century Skills:**
☐ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration
Student Learning Targets/Objectives	
- Multiply by 1-digit numbers. - Multiply by 2-digit numbers.	
Instructional Strategies	

- Show students the Real-World Video, *Forestry and Replanting*. The forester said the latest planting was 22,000 trees. How would you determine the number of trees in 4 plantings? Discuss how foresters use large numbers in determining planting success rates for large acreages.
- Introduce the lesson by discussing tigers in the wild. The tiger, an endangered species, is the largest wild cat in the world. Weighing as much as 570 pounds, the tiger is a fierce predator. The tiger hunts alone and at night and can eat up to 40 pounds of meat at a time. Most tigers have more than 100 stripes.

Resources

- Refer to Go Math! Lesson(s): 1.6, 1.7
- Refer to Go Math! Teacher Edition and Student Edition page(s): *27A–27B, 27–30, 31A–31B, 31–34* (Note: *Pages only in Teacher Edition are italics*)
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
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- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

2 Days

Domain: 5.NBT – Numbers & Operations in Base Ten

Cluster: 5.NBT.B – Perform operations with multi-digit whole numbers and with decimals to hundredths.

Standard: 5.NBT.B.6

Essential Questions:	Enduring Understandings:
- How can you use properties of operations to solve problems? - How is multiplication used to solve a division problem? - How can you use the strategy *solve a simpler problem* to help you solve a division problem? - How can you tell where to place the first digit of a quotient without dividing? - How do you solve and check division problems? - How can you use base-ten blocks to model and understand division of whole numbers? - How can you use partial quotients to divide by 2-digit divisors? - How can you use compatible numbers to estimate quotients? - How can you divide by 2-digit divisors? - How can you adjust the quotient if your estimate is too high or too low?	Students will: Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Standards: 5.NBT.B.5, 5.NBT.B.6, 5.NBT.B.7

Technology Standard(s)	Interdisciplinary Standard(s)
8.1.4.A.1-5 8.1.4.D.1-3 8.1.4.E.2 8.2.4.A.1-2 8.2.4.B.2 8.2.4.B.4 8.2.4.F.1 8.2.4.G.3	- Mathematical Practices - CCSS.Math.Practice.MP1-8 - Science 5.1.4.A.2 5.1.4.B.3, 5.1.4.B.4 5.1.4.C.2 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3 - Social Studies 6.1.4.A.15

	o 6.1.4.B.1, 6.1.4.B.3
	o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	o 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	o CCSS.ELA-Literacy.SL.5.1-5.3
	o CCSS.ELA-Literacy.SL.5.4-5.6
	o CCSS.ELA-Literacy.RF.5.3-5.4c

21st Century Themes: (Check all that apply)	21st Century Skills:
☐ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

- Use properties of operations to solve problems.
- Use multiplication to solve division problems.
- Use the strategy *solve a simpler problem* to solve problems.
- Place the first digit in the quotient by estimating or using place value.
- Divide 3- and 4-digit dividends by 1-digit divisors.
- Model division with 2-digit divisors using base-ten blocks.
- Use partial quotients to divide by 2-digit divisors.
- Estimate quotients using compatible numbers.
- Divide by 2-digit divisors.
- Adjust the quotient if the estimate is too high or too low.

Instructional Strategies

- Introduce the lesson by writing this expression on the board: 13 + 9 + 7. How would you find the sum? Would it be easier to add 13 and 9 and then add 7, or would it be easier to add 13 and 7 and then add 9? Explain.
- Review basic multiplication facts. Write *factor* x *factor* = *product* on the board. Invite one student to name two factors and a second student to name the product. Repeat the activity until each student has participated at least once.
- The first problem in this lesson is about pets. Invite volunteers to share a pet story with the class. Have you ever been responsible for feeding your pet? What does your pet eat? How much food does your pet eat each day?
- Introduce the lesson by asking: What do you know about daisies? Nearly 10 percent of all flowering plants are in the daisy family. Some members of the daisy family are medicinal herbs, like Echinacea, which can be used to treat colds. Other daisy family members, like artichokes, can be eaten. African daisies, Gerber daisies, and Black-Eyed Susans are popular garden daisies. The Shasta daisy, which has white petals and a

yellow center, is the flower that many people picture when they think about daisies.

- Write the numbers shown below on the board. Use the iTools: Base-Ten Blocks to review regrouping by having students model each number and explain how to perform the given regroupings.
  - ○ 24   regroup the tens
  - ○ 153   regroup the hundreds
  - ○ 3,544 regroup the thousands
- Have students draw a quick picture to show 14 x 15. What partial products does your picture show? How can you use your partial products to find the product of 14 x 15? Remind students that multiplication and division are inverse operations. So, just as they can multiply by drawing quick pictures to find products, they can divide by drawing quick pictures to find quotients.
- Write the multiplication problems shown below on the board:
  - ○ 4 x 10 = 40; 52 x 10 = 520; 916 x 10 = 9,160

  Discuss the pattern of zeros, and have students state a rule that can be used to find the product of a number and 10 using only mental math.
- Challenge each of your students to name a different basic division fact (such as 24 ÷ 3 = 8). If you have fewer than 20 students in your class, challenge students to each name two different facts.
- At the board, invite one volunteer to write a 2-digit divisor and another to write a 3- or 4-digit dividend. Invite a third volunteer to name compatible numbers that could be used to estimate the quotient, and explain why those numbers were named. Repeat the activity several times.
- Point out that the first problem in this lesson involves music CDs. Invite volunteers to tell what they know about music CDs. Then ask the class to create and solve a division problem about music CDs.

Resources

- Refer to Go Math! Lesson(s): 1.3, 1.8, 1.9, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.8
- Refer to Go Math! Teacher Edition and Student Edition page(s): *13A–13B, 13–16, 35A–35B, 35–38, 39A–39B,39–42, 61A–61B, 61–64, 65A–65B, 65–68, 69A–69B, 69–72, 73A–73B, 73–76, 79A–79B, 79–82, 83A–83B, 83–86, 91A–91B, 91–94,95A–95B, 95–98* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www.k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/

- http://www.corestandards.org/Math

Suggested Time Frame:

10 Days

Domain: 5.NBT – Numbers & Operations in Base Ten

Cluster: 5.NBT.B – Perform operations with multi-digit whole numbers and with decimals to hundredths.

Standard: 5.NBT.B.7

Essential Questions:	**Enduring Understandings:**
• How can you use base-ten blocks to model decimal addition? • How can you use base-ten blocks to model decimal subtraction? • How can you estimate decimal sums and differences? • How can place value help you add decimals? • How can place value help you subtract decimals? • How can you use addition or subtraction to describe a pattern or create a sequence with decimals? • How can the strategy *make a table* help you organize and keep track of your bank account balance? • Which method could you choose to find decimal sums and differences? • How can you use a model to multiply a whole number and a decimal? • How can you use drawings and place value to multiply a decimal and a whole number? • How can you use expanded form and place value to multiply a decimal and a whole number? • How can the strategy *draw a diagram* help you solve a decimal multiplication problem? • How can you use a model to multiply decimals? • What strategies can you use to place a decimal point in a product?	Students will: • Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. Relate the strategy to a written method and explain the reasoning used.

- How do you know you have the correct number of decimal places in your product?   - How can you use a model to divide a decimal by a whole number?   - How can you estimate decimal quotients?   - How can you divide decimals by whole numbers?   - How can you use a model to divide by a decimal?   - How can you place the decimal point in the quotient?   - When do you write zero in the dividend to find a quotient?   - How do you use the strategy *work backward* to solve multistep decimal problems?

Standards: 5.NBT.B.5, 5.NBT.B.6, 5.NBT.B.7

Technology Standard(s)	Interdisciplinary Standard(s)
8.1.4.A.1-5 8.1.4.D.1-3 8.1.4.E.2 8.2.4.A.1-2 8.2.4.B.2 8.2.4.B.4 8.2.4.F.1 8.2.4.G.3	- Mathematical Practices - CCSS.Math.Practice.MP1-8 - Science 5.1.4.A.2 5.1.4.B.3, 5.1.4.B.4 5.1.4.C.2 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3 - Social Studies 6.1.4.A.15 6.1.4.B.1, 6.1.4.B.3 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13 6.1.4.D.19, 6.1.4.D.20 - Literacy - CCSS.ELA-Literacy.SL.5.1-5.3 - CCSS.ELA-Literacy.SL.5.4-5.6 - CCSS.ELA-Literacy.RF.5.3-5.4c
21st Century Themes: (Check all that apply)	**21st Century Skills:**
☐ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Entrepreneurial Literacy	

Student Learning Targets/Objectives

- Model decimal addition using base-ten blocks.
- Model decimal subtraction using base-ten blocks.
- Make reasonable estimates of decimal sums and differences.
- Add decimals using place value.
- Subtract decimals using place value.
- Identify, describe, and create numeric patterns with decimals.
- Solve problems using the strategy make a table.
- Choose a method to find a decimal sum or difference.
- Model multiplication of whole numbers and decimals.
- Multiply a decimal and a whole number using drawings and place value.
- Use expanded form and place value to multiply a decimal and a whole number.
- Solve problems using the strategy draw a diagram to multiply money.
- Model multiplication by decimals.
- Place the decimal point in decimal multiplication.
- Multiply decimals with zeros in the product.
- Model division of decimals by whole numbers.
- Estimate decimal quotients.
- Divide decimals by whole numbers.
- Model division by decimals.
- Place the decimal point in decimal division.
- Write a zero in the dividend to find a quotient.
- Solve multistep decimal problems using the strategy work backward.

Instructional Strategies

- On the board, write the addition problem: 34 + 27 = ___. Have students explain and demonstrate the regrouping that is needed to complete the addition problem.
- On the board, write the subtraction problem: 500 – 249 = ___. Have students explain and demonstrate the regroupings that must occur to complete the subtraction.
- Tell students that music is often stored on a CD. Have students research what is a reasonable estimate for how much music a CD can hold.
- Point out that the average amount of rainfall a state receives each year may be described to the nearest inch or to the nearest centimeter. To the nearest centimeter, what is your estimate of the average amount of rainfall your town or city receives each year?
- Ask each student to name a favorite fruit. As a class, identify those fruits that are likely to be sold by the pound, and then discuss the accuracy that may be used to weigh the fruits. For example, is it reasonable for a store to round the weight to the nearest pound? What might be a more appropriate unit?
- Ask students if they have ever rented canoes at a state park. Have students recall, if possible, the cost of renting a canoe. How was the cost of renting a canoe determined?

- Introduce the lesson by asking students: Did you know that countries use different units of currency? You may wish to share the following information with students: The unit of currency in the United States is the dollar. In other countries different units of currency are used. Units of currency may have different values, so a dollar may be worth more or less than a unit of another currency. The value of the unit of one currency compared to the unit of another currency can change from one day to the next. You can exchange dollars for units of another currency. For example, in Germany their currency is the "euro". 1 U.S. dollar = 0.75 euros. In Japan their currency is the "yen". 1 U.S. dollar = 89 yen. How does making a table help determine how much $1, $2, and $5 are worth in euros?

- Point out that a problem in today's lesson involves a track-and-field event known as the long jump. Invite volunteers to suggest what a long jump might entail.

- Have you ever wondered what the slowest animals on earth are? Giant tortoises, sloths, and sea horses are among the slowest animals on earth. Consider whether a tortoise could move faster than or slower than the following animals: cougar, slug, human.

- Introduce the lesson to students by asking them to find a few different coins in their pockets, bags, or wallets. How are the coins that you have alike? How are the coins that you have different? Which of your coins feels the heaviest? Which feels the lightest?

- Introduce the lesson by asking students to compare Jupiter and Earth. Which planet has a shorter day? Explain how you know. Which planet spins faster on its axis? Explain how you know.

- Write these problems on the board: 4 x 16 = ___; 4 x $16 = ___. How are the ways you solve these problems the same? How are the ways you solve these problems different? Think about what you know about multiplying decimals. How do you think you could solve this problem: 4 x $16.35?

- Review with students how to use decimal squares to multiply a decimal and a whole number. Write 2 x 0.4 on the board. How do you show 0.4 on a decimal square? How do you show 2 of 0.4 on a decimal square? Have students find the product.

- Write the following problem on the board: 12 x 34 = ___. What is the first step I should take to find this product? Work the problem out on the board, discussing each step as you go. For students having difficulty with the recording process, allow them to model the problem with iTools as they follow along. What are some important things to remember when solving problems like this one?

- Have students watch the Real World Video, Sea Lion Feeding and Training. Have you ever wondered how sea lions are trained to do tricks? Sea lions are trained using special clicks and food. The sea lion in the video ate a special diet of fish each day: 4.4 pounds of squid, 7 pounds of smelt, and 1 pound of special fish. Trainers must carefully monitor the amount of food they give animals every day. How would you determine the amount of squid to buy for a sea lion for 1 week?

- Have students model the following numbers: 2.5, 3.6, 4.12, and 3.04. Remind students

that when representing decimals, a flat represents 1 whole, a long represents 1 tenth, and 1 small cube represents 1 hundredth. How can you model 3.04? Why did you not use any longs? How did you know which blocks to use?

- Have students use compatible numbers to estimate the following whole-number division problems: 352 ÷ 7; 474 ÷ 62; 1,233 ÷ 4; 6,518 ÷ 83. Ask students to explain how they got each estimate. What compatible numbers did you use to estimate 6,518 ÷ 83?
- Have students use base-ten blocks to find the following quotients. Ask students to draw quick pictures of their models. 3.5 ÷ 5 = ___; 3.24 ÷ 3 = ___; 6.24 ÷ 4 = ___. Ask students to explain how they found each quotient.
- Have students solve the following problem: Jamal buys 1.25 pounds of trail mix. He separates the trail mix equally into 5 bags. How many pounds of trail mix does each bag contain? What division sentence are you solving? What does the dividend represent? What does the divisor represent? What does the quotient represent?
- Ask students to describe any collections they may have. Do any of you have a sticker collection? What kinds of stickers would you like to have in a collection? Discuss different kinds of stickers, from bumper stickers to small paper stickers.
- Write the following problem on the board: 52 ÷ 1.3 = ___. How can you make the divisor a whole number before dividing? What power of 10 should we multiply the divisor and the dividend by to make the divisor a whole number?
- Show students the Real-World Video, Airboats. Discuss how the airboats in the video were originally made with jet engines, but were more easily maintained with combustion engines like those in cars. Ask students to explain how they would determine the fuel efficiency of an airboat engine.

Resources

- Refer to Go Math! Lesson(s): 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8
- Refer to Go Math! Teacher Edition and Student Edition page(s): *121A–121B, 121–124, 125A–125B, 125–128, 131A–131B, 131–134, 135A–135B, 135–138, 139A–139B, 139–142, 143A–143B, 143–146, 147A–147B, 147–150, 151A–151B, 151–154, 165A–165B, 165–168, 169A–169B, 169–172, 173A–173B, 173–176, 177A–177B, 177–180, 183A–183B, 183–186, 187A–187B, 187–190, 191A–191B, 191–194, 205A–205B, 205–208, 209A–209B, 209–212, 213A–213B, 213–216, 219A–219B, 219–222, 223A–223B, 223–226, 227A–227B, 227–230, 231A–231B, 231–234* (Note: *Pages only in Teacher Edition are italics*)
- Go Math! Animated Math Models (via Think Central)
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- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
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- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

22 Days

Domain: 5.NF – Numbers & Operations—Fractions	
Cluster: 5.NF.A – Use equivalent fractions as a strategy to add and subtract fractions.	
Standard: 5.NF.A.1	
Essential Questions:	**Enduring Understandings:**
- How can you rewrite a pair of fractions so that they have a common denominator? - How can you use a common denominator to add and subtract fractions with unlike denominators? - How can you add and subtract mixed numbers with unlike denominators? - How can you use renaming to find the difference of two mixed numbers? - How can you use addition or subtraction to describe a pattern or create a sequence with fractions? - How can properties help you add fractions with unlike denominators?	Students will: Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)
Standards: 5.NF.A.1, 5.NF.A.2	
Technology Standard(s)	**Interdisciplinary Standard(s)**
8.1.4.A.1-5 8.1.4.D.1-3 8.1.4.E.2 8.2.4.A.1-2 8.2.4.B.2 8.2.4.B.4 8.2.4.F.1 8.2.4.G.3	- Mathematical Practices - CCSS.Math.Practice.MP1-8 - Science 5.1.4.A.2 5.1.4.B.3, 5.1.4.B.4 5.1.4.C.2 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3 - Social Studies 6.1.4.A.15 6.1.4.B.1, 6.1.4.B.3 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13 6.1.4.D.19, 6.1.4.D.20 - Literacy - CCSS.ELA-Literacy.SL.5.1-5.3

	o CCSS.ELA-Literacy.SL.5.4-5.6
	o CCSS.ELA-Literacy.RF.5.3-5.4c
21ˢᵗ Century Themes: (Check all that apply)	**21ˢᵗ Century Skills:**
☐ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

- Find a common denominator or a least common denominator to write equivalent fractions.
- Use equivalent fractions to add and subtract fractions.
- Add and subtract mixed numbers with unlike denominators.
- Rename to find the difference of two mixed numbers.
- Identify, describe, and create numeric patterns with fractions.
- Add fractions and mixed numbers with unlike denominators using the properties.

Instructional Strategies

- Display the hundreds chart. Name two numbers (such as 3 and 4). Discuss the patterns formed by the multiples of those numbers, and have students note the common multiples. Repeat the activity using other number pairs.
- Did you know that some recycling centers pay by the pound for aluminum cans? If you have 5/8 pound of cans and your friend has 3/8 pound, what is the total weight of the cans? What operation do you perform to solve the problem? Why is addition used? Explain how you can use mental math to add 5/8 and 3/8. Have students note that adding fractions involves using common denominators.
- A hot-air balloon reached a height of 1/4 mile above ground. After hovering at that height, it moved up another 1/8 mile. How high above the ground was the hot-air balloon at that time? Have students identify the steps that are used to solve the problem. Make sure the answers include the following steps: Identify a common denominator or the least common denominator of 4 and 8. Use the common denominator to write equivalent fractions with like denominators. Add the fractions. Simply if necessary. Point out that these same steps are used to add mixed numbers.
- Write 6-5/8 – 1-3/8 and 8-1/4 – 2-3/4 in vertical form on the board. Which subtraction can be completed without renaming? Explain. Why is renaming needed to subtract 2-3/4 from 8-1/4? Lead students to generalize that subtracting mixed numbers sometimes involves renaming.
- Molly does 12 curl-ups on Monday, 18 curl-ups on Tuesday, and 24 curl-ups on Wednesday. If she continues this pattern on Thursday and Friday, how many curl-ups will she do on Friday? Invite volunteers to explain how finding a pattern can help them solve the problem.

- Write 5/12 + 1/2 + 7/12 and 5/12 + 7/12 + 1/2 on the board. Have students identify the expression that is easier to add using only mental math, and have them give reasons to support their answers. Ask students to name the sum of the addends. Point out that in today's lesson, students will learn how they can use addition properties to rearrange addends to find the sums of the addends using only mental math.

Resources

- Refer to Go Math! Lesson(s): 6.4, 6.5, 6.6, 6.7, 6.8, 6.10
- Refer to Go Math! Teacher Edition and Student Edition page(s): *255A–255B, 255–258, 259A–259B, 259–262, 265A–265B, 265–268, 269A–269B, 269–272, 273A–273B, 273–276, 281A–281B, 281–284* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

6 Days

Domain: 5.NF – Numbers & Operations—Fractions

Cluster: 5.NF.A – Use equivalent fractions as a strategy to add and subtract fractions.

Standard: 5.NF.A.2

Essential Questions:	Enduring Understandings:
• How can you use models to add fractions that have different denominators? • How can you use models to subtract fractions that have different denominators? • How can you make reasonable estimates of fraction sums and differences? • How can the strategy *work backward* help you solve a problem with fractions that involves addition and subtraction?	Students will: • Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. • Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.

Standards: 5.NF.A.1, 5.NF.A.2

Technology Standard(s)	Interdisciplinary Standard(s)

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	  o CCSS.Math.Practice.MP1-8
	• Science
	  o 5.1.4.A.2
	  o 5.1.4.B.3, 5.1.4.B.4
	  o 5.1.4.C.2
	  o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	  o 6.1.4.A.15
	  o 6.1.4.B.1, 6.1.4.B.3
	  o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	  o 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	  o CCSS.ELA-Literacy.SL.5.1-5.3
	  o CCSS.ELA-Literacy.SL.5.4-5.6
	  o CCSS.ELA-Literacy.RF.5.3-5.4c

21st Century Themes: (Check all that apply)	**21st Century Skills:**
☐ Global Awareness ☐ Environmental Literacy ☐ Health Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication

☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Collaboration

Student Learning Targets/Objectives

- Use models to add fractions with unlike denominators.
- Use models to subtract fractions with unlike denominators.
- Make reasonable estimates of fraction sums and differences.
- Solve problems using the strategy work backward.

Instructional Strategies

- Review with students how to model addition with fraction strips. Write 2/6 + 3/6 on the board. How many sixth fraction strips do you need to show 2/6? How many do you need to show 3/6? Have students place fraction strips for 3/6 next to fraction strips for 2/6. How many sixth fraction strips show the sum of 2/6 + 3/6? What is the sum of 2/6 + 3/6? Repeat this activity using other examples of adding fractions with like denominators.
- Use Fraction iTools to demonstrate the modeling of equivalent fractions. Name a fraction in simplest form. Use the fraction strips to model your fraction. Then use fraction strips of different denominators to find a fraction that is equivalent to your fraction. What fraction is equivalent to 2/3? How do you know? Repeat the activity for other fractions in simplest form.
- Have students watch the Real World Video *Testing Bike Wheels*. Have you ever wondered how manufacturers test bike wheels? Point out that manufacturers test bicycles' wheels before the bicycles are sold. In one test, for example, a bump machine simulates the bumps that a rider encounters on their bike. This test and others help to make sure that the wheels are built to last a long time.
- Provide a simple example of a problem using the *work backward* strategy to prepare students for this lesson. Priscilla had $20. She spent $7 on a book and $12 on a t-shirt. How much did she have left? Explain how you would solve the problem by working backward.

Resources

- Refer to Go Math! Lesson(s): 6.1, 6.2, 6.3, 6.9
- Refer to Go Math! Teacher Edition and Student Edition page(s): *243A–243B, 243–246, 247A–247B, 247–250, 251A–251B, 251–254, 277A–277B, 277–280* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games

- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

4 Days

Domain: 5.NF – Numbers & Operations—Fractions

Cluster: 5.NF.B – Apply and extend previous understandings of multiplication and division.

Standard: 5.NF.B.3

Essential Questions:	Enduring Understandings:
• When solving a division problem, when do you write the remainder as a fraction? • How does a fraction represent division?	Students will: • Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?

Standards: 5.NF.B.3, 5.NF.B.4a, 5.NF.B.4b, 5.NF.B.5a, 5.NF.B.5b, 5.NF.B.6, 5.NF.B.7a, 5.NF.B.7a, 5.NF.B.7b, 5.NF.B.7c

Technology Standard(s)	Interdisciplinary Standard(s)

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	  o CCSS.Math.Practice.MP1-8
	• Science
	  o 5.1.4.A.2
	  o 5.1.4.B.3, 5.1.4.B.4
	  o 5.1.4.C.2
	  o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	  o 6.1.4.A.15
	  o 6.1.4.B.1, 6.1.4.B.3
	  o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	  o 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	  o CCSS.ELA-Literacy.SL.5.1-5.3
	  o CCSS.ELA-Literacy.SL.5.4-5.6
	  o CCSS.ELA-Literacy.RF.5.3-5.4c

21st Century Themes: (Check all that	**21st Century Skills:**

apply)	
☐ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

- Use models to add fractions with unlike denominators.
- Use models to subtract fractions with unlike denominators.
- Make reasonable estimates of fraction sums and differences.
- Solve problems using the strategy work backward.

Instructional Strategies

- Challenge students to use only mental math and name the remainder for each of the following divisions: 17 ÷ 2; 10 ÷ 4; 13 ÷ 8; 12 ÷ 9; 16 ÷ 6; 17 ÷ 7; 14 ÷ 3; 21 ÷ 5.
- Show the division expression 5 ÷ 6 and ask students to suggest real-world problems that could be solved by dividing 5 by 6. Some examples are: Six people at a party shared 5 pints of punch equally. How many pints did each person receive? Jake shared 5 pies with 6 family members. How much pie did each family member get? During one week, Sarah divided 5 pounds of kitten food equally among 6 kittens. How much food did each kitten get?

Resources

- Refer to Go Math! Lesson(s): 2.7, 8.3
- Refer to Go Math! Teacher Edition and Student Edition page(s): *87A–87B, 87–90, 347A–347B, 347–350* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

2 Days

Domain: 5.NF – Numbers & Operations—Fractions

Cluster: 5.NF.B – Apply and extend previous understandings of multiplication and division.

Standard: 5.NF.B.4a

Essential Questions:	Enduring Understandings:
• How can you find a fractional part of a group? • How can you use a model to show the product of a fraction and a whole number? • How can you find the product of a fraction and a whole number without using a model? • How do you multiply fractions?	Students will: • Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. • Interpret the product (a/b) × q as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations a × q ÷ b. For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = ac/bd.)

Standards: 5.NF.B.3, 5.NF.B.4a, 5.NF.B.4b, 5.NF.B.5a, 5.NF.B.5b, 5.NF.B.6, 5.NF.B.7a, 5.NF.B.7a, 5.NF.B.7b, 5.NF.B.7c

Technology Standard(s)	Interdisciplinary Standard(s)

• 8.1.4.A.1-5
 • 8.1.4.D.1-3
 • 8.1.4.E.2
 • 8.2.4.A.1-2
 • 8.2.4.B.2
 • 8.2.4.B.4
 • 8.2.4.F.1
 • 8.2.4.G.3
	• Mathematical Practices
	      o CCSS.Math.Practice.MP1-8
	 • Science
	      o 5.1.4.A.2
	      o 5.1.4.B.3, 5.1.4.B.4
	      o 5.1.4.C.2
	      o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	 • Social Studies
	      o 6.1.4.A.15
	      o 6.1.4.B.1, 6.1.4.B.3
	      o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	      o 6.1.4.D.19, 6.1.4.D.20
	 • Literacy
	      o CCSS.ELA-Literacy.SL.5.1-5.3
	      o CCSS.ELA-Literacy.SL.5.4-5.6
	      o CCSS.ELA-Literacy.RF.5.3-5.4c

21st Century Themes: (Check all that apply)	**21st Century Skills:**
☒ Global Awareness ☐ Environmental Literacy ☐ Health Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication

☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Collaboration

Student Learning Targets/Objectives

- Model to find the fractional part of a group.
- Model the product of a fraction and a whole number.
- Multiply fractions and whole numbers.
- Multiply fractions.

Instructional Strategies

- Have students watch the Real World Video, *Electronic Drums*. Does anyone practice playing a musical instrument? What musical instruments do you play? In a song, the length of time a tone is held is indicated in the music by different types of notes. There are whole notes, half notes, quarter notes, and so on. How many quarter notes do you think equal a half note?
- Using counters, have students find 2/5 of 20. How many equal groups will you form? Explain. How many counters will be in each group? How will you find 2/5 of 20?
- Have students use the Fractions iTools to find the following products. 3 x 3/5 = ___; 2 x 2/3 = ___; 2 x ½ = ___. Ask students to explain how they found each product. How did you find the product for 2 x 2/3?
- Pose the following problem to students: Marisol is planting a vegetable garden. Each row of her garden is ¾ yard wide. If there are 3 rows in the garden, what is the width of the 3 rows altogether? How could you use repeated addition to calculate the total width of the three rows?

Resources

- Refer to Go Math! Lesson(s): 7.1, 7.2, 7.3, 7.6
- Refer to Go Math! Teacher Edition and Student Edition page(s): *291A–291B, 291–294, 295A–295B, 295–298, 299A–299B, 299–302, 311A–311B, 311–314* (Note: *Pages only in Teacher Edition are italics*)
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www.k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

4 Days

Domain: 5.NF – Numbers & Operations—Fractions

Cluster: 5.NF.B – Apply and extend previous understandings of multiplication and division.

Standard: 5.NF.B.4b

Essential Questions:	Enduring Understandings:
- How can you use an area model to show the product of two fractions? - How can you use a unit tile to find the area of a rectangle with fractional side lengths?	Students will: - Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. - Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. - Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.

Standards: 5.NF.B.3, 5.NF.B.4a, 5.NF.B.4b, 5.NF.B.5a, 5.NF.B.5b, 5.NF.B.6, 5.NF.B.7a, 5.NF.B.7a, 5.NF.B.7b, 5.NF.B.7c

Technology Standard(s)	Interdisciplinary Standard(s)
8.1.4.A.1-5 8.1.4.D.1-3 8.1.4.E.2 8.2.4.A.1-2 8.2.4.B.2 8.2.4.B.4 8.2.4.F.1 8.2.4.G.3	- Mathematical Practices - CCSS.Math.Practice.MP1-8 - Science 5.1.4.A.2 5.1.4.B.3, 5.1.4.B.4 5.1.4.C.2 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3 - Social Studies 6.1.4.A.15 6.1.4.B.1, 6.1.4.B.3 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13 6.1.4.D.19, 6.1.4.D.20 - Literacy - CCSS.ELA-Literacy.SL.5.1-5.3 - CCSS.ELA-Literacy.SL.5.4-5.6 - CCSS.ELA-Literacy.RF.5.3-5.4c

21st Century Themes: (Check all that apply)	21st Century Skills:
☒ Global Awareness ☐ Environmental Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving

☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

- Multiply fractions using models.
- Use a model to multiply two mixed numbers and find the area of a rectangle.

Instructional Strategies

- Have students find 4 x 3/4 without a model. How can you find the product without using a model? Have students find products in simplest form for 2/3 x 4 and 2 x 2/5.
- Draw a rectangle on the board. Label its side lengths as 4 centimeters and 2 centimeters. Ask students to suggest ways to find the area of the rectangle. Remind students that area is measured in square units.

Resources

- Refer to Go Math! Lesson(s): 7.4, 7.7
- Refer to Go Math! Teacher Edition and Student Edition page(s): *303A–303B, 303–306, 317A–317B, 317–320* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

2 Days

Domain: 5.NF – Numbers & Operations—Fractions	
Cluster: 5.NF.B – Apply and extend previous understandings of multiplication and division.	
Standard: 5.NF.B.5a	
Essential Questions:	**Enduring Understandings:**
- How does the size of the product compare to the size of one factor when multiplying fractions? - How does the size of the product compare to the size of one factor when multiplying fractions greater than one?	Students will: - Interpret multiplication as scaling (resizing), by: - Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.
Standards: 5.NF.B.3, 5.NF.B.4a, 5.NF.B.4b, 5.NF.B.5a, 5.NF.B.5b, 5.NF.B.6, 5.NF.B.7a, 5.NF.B.7a, 5.NF.B.7b, 5.NF.B.7c	
Technology Standard(s)	**Interdisciplinary Standard(s)**
8.1.4.A.1-5 8.1.4.D.1-3 8.1.4.E.2 8.2.4.A.1-2 8.2.4.B.2 8.2.4.B.4 8.2.4.F.1 8.2.4.G.3	- Mathematical Practices - CCSS.Math.Practice.MP1-8 - Science 5.1.4.A.2 5.1.4.B.3, 5.1.4.B.4 5.1.4.C.2 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3 - Social Studies 6.1.4.A.15 6.1.4.B.1, 6.1.4.B.3 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13 6.1.4.D.19, 6.1.4.D.20 - Literacy - CCSS.ELA-Literacy.SL.5.1-5.3 - CCSS.ELA-Literacy.SL.5.4-5.6 - CCSS.ELA-Literacy.RF.5.3-5.4c
21ˢᵗ Century Themes: (Check all that apply)	**21ˢᵗ Century Skills:**
☒ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives
• Relate the size of the product compared to the size of one factor when multiplying fractions.   • Relate the size of the product to the factors when multiplying fractions greater than one.
Instructional Strategies
• Have students find the following products in simplest form: 3 x 2/3; 5/8 x 4; 2 x 3/4; 1/7 x 3. Compare the size of the fraction factor and the product in these problems. What do you notice?   • Discuss the measurements used in cooking. What are common amounts of ingredients you might use in cooking?
Resources
• Refer to Go Math! Lesson(s): 7.5, 7.8   • Refer to Go Math! Teacher Edition and Student Edition page(s): *307A–307B, 307–310, 321A–321B, 321–324* (Note: *Pages only in Teacher Edition are italics)*   • Go Math! Animated Math Models (via Think Central)   • HMH Mega Math (via Think Central)   • Go Math! iTools (via Think Central)   • Go Math! eGlossary (via Think Central)   • Go Math! Destination Math (via Student Edition in Think Central)   • Corresponding Go Math! Grab and Go for Activities/Literature/Games   • Corresponding Go Math! Daily Routines   • https://www-k6.thinkcentral.com/ePC/start.do   • http://www.firstinmath.com/   • http://www.corestandards.org/Math
Suggested Time Frame:
2 Days

Domain: 5.NF – Numbers & Operations—Fractions

Cluster: 5.NF.B – Apply and extend previous understandings of multiplication and division.

Standard: 5.NF.B.5b

Essential Questions:	Enduring Understandings:

• How does the size of the product compare to the size of one factor when multiplying fractions?
 • How does the size of the product compare to the size of one factor when multiplying fractions greater than one?
 • How can you use the strategy *guess, check, and revise* to solve problems with fractions?
	Students will:
	 • Interpret multiplication as scaling (resizing), by:
	     ○ Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case).
	     ○ Explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number.
	     ○ Relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.

Standards: 5.NF.B.3, 5.NF.B.4a, 5.NF.B.4b, 5.NF.B.5a, 5.NF.B.5b, 5.NF.B.6, 5.NF.B.7a, 5.NF.B.7a, 5.NF.B.7b, 5.NF.B.7c

Technology Standard(s)	Interdisciplinary Standard(s)

• 8.1.4.A.1-5
 • 8.1.4.D.1-3
 • 8.1.4.E.2
 • 8.2.4.A.1-2
 • 8.2.4.B.2
 • 8.2.4.B.4
 • 8.2.4.F.1
 • 8.2.4.G.3
	• Mathematical Practices
	     ○ CCSS.Math.Practice.MP1-8
	 • Science
	     ○ 5.1.4.A.2
	     ○ 5.1.4.B.3, 5.1.4.B.4
	     ○ 5.1.4.C.2
	     ○ 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	 • Social Studies
	     ○ 6.1.4.A.15
	     ○ 6.1.4.B.1, 6.1.4.B.3
	     ○ 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	     ○ 6.1.4.D.19, 6.1.4.D.20
	 • Literacy
	     ○ CCSS.ELA-Literacy.SL.5.1-5.3
	     ○ CCSS.ELA-Literacy.SL.5.4-5.6
	     ○ CCSS.ELA-Literacy.RF.5.3-5.4c

21ˢᵗ Century Themes: (Check all that	**21ˢᵗ Century Skills:**

apply)	
☒ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

- Relate the size of the product compared to the size of one factor when multiplying fractions.
- Relate the size of the product to the factors when multiplying fractions greater than one.

Instructional Strategies

- Have students find the following products in simplest form: 3 x 2/3; 5/8 x 4; 2 x 3/4; 1/7 x 3. Compare the size of the fraction factor and the product in these problems. What do you notice?
- Discuss the measurements used in cooking. What are common amounts of ingredients you might use in cooking?
- Discuss gardening with students. Have you ever planted a garden? Ask students to describe objects in gardens they have seen or planted. Discuss how butterfly gardens include plants that attract butterflies and usually include lots of flowers.

Resources

- Refer to Go Math! Lesson(s): 7.5, 7.8, 7.10
- Refer to Go Math! Teacher Edition and Student Edition page(s): *307A–307B, 307–310, 321A–321B, 321–324, 329A–329B, 329–332* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

3 Days

Domain: 5.NF – Numbers & Operations—Fractions

Cluster: 5.NF.B – Apply and extend previous understandings of multiplication and division.

Standard: 5.NF.B.6

Essential Questions:	Enduring Understandings:
• How do you multiply mixed numbers?	Students will: • Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

Standards: 5.NF.B.3, 5.NF.B.4a, 5.NF.B.4b, 5.NF.B.5a, 5.NF.B.5b, 5.NF.B.6, 5.NF.B.7a, 5.NF.B.7a, 5.NF.B.7b, 5.NF.B.7c

Technology Standard(s)	Interdisciplinary Standard(s)

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	    o CCSS.Math.Practice.MP1-8
	• Science
	    o 5.1.4.A.2
	    o 5.1.4.B.3, 5.1.4.B.4
	    o 5.1.4.C.2
	    o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	    o 6.1.4.A.15
	    o 6.1.4.B.1, 6.1.4.B.3
	    o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	    o 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	    o CCSS.ELA-Literacy.SL.5.1-5.3
	    o CCSS.ELA-Literacy.SL.5.4-5.6
	    o CCSS.ELA-Literacy.RF.5.3-5.4c

21st Century Themes: (Check all that apply)	21st Century Skills:
☒ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

• Multiply mixed numbers.

Instructional Strategies

• Use iTools to review using grids to model multiplying fractions. Ask students to shade the grid to show 1/3 x 3/4 and then type in the product. How does the grid show the product?

Resources

• Refer to Go Math! Lesson(s): 7.9
• Refer to Go Math! Teacher Edition and Student Edition page(s): *325A–325B, 325–328* (Note: *Pages only in Teacher Edition are italics)*
• Go Math! Animated Math Models (via Think Central)
• HMH Mega Math (via Think Central)
• Go Math! iTools (via Think Central)
• Go Math! eGlossary (via Think Central)
• Go Math! Destination Math (via Student Edition in Think Central)
• Corresponding Go Math! Grab and Go for Activities/Literature/Games
• Corresponding Go Math! Daily Routines
• https://www-k6.thinkcentral.com/ePC/start.do
• http://www.firstinmath.com/
• http://www.corestandards.org/Math

Suggested Time Frame:

1 Day

Domain: 5.NF – Numbers & Operations—Fractions

Cluster: 5.NF.B – Apply and extend previous understandings of multiplication and division.

Standard: 5.NF.B.7a

Essential Questions:	Enduring Understandings:
• How do you divide a whole number by a fraction and divide a fraction by a whole number?	Students will: • Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. • Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. • Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3.

Standards: 5.NF.B.3, 5.NF.B.4a, 5.NF.B.4b, 5.NF.B.5a, 5.NF.B.5b, 5.NF.B.6, 5.NF.B.7a, 5.NF.B.7a, 5.NF.B.7b, 5.NF.B.7c

Technology Standard(s)	Interdisciplinary Standard(s)

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	  o CCSS.Math.Practice.MP1-8
	• Science
	  o 5.1.4.A.2
	  o 5.1.4.B.3, 5.1.4.B.4
	  o 5.1.4.C.2
	  o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	  o 6.1.4.A.15
	  o 6.1.4.B.1, 6.1.4.B.3
	  o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	  o 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	  o CCSS.ELA-Literacy.SL.5.1-5.3
	  o CCSS.ELA-Literacy.SL.5.4-5.6
	  o CCSS.ELA-Literacy.RF.5.3-5.4c

21ˢᵗ Century Themes: (Check all that apply)	**21ˢᵗ Century Skills:**
☒ Global Awareness ☐ Environmental Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving

☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

- Divide a whole number by a fraction and divide a fraction by a whole number.

Instructional Strategies

- Help students recall the inverse relationship between multiplication and division, which is central to their understanding of this lesson. How can you use division to check that 13 x 7 = 91? How can you use multiplication to check that 72 ÷ 6 = 12? Describe the relationship between multiplication and division.

Resources

- Refer to Go Math! Lesson(s): 8.1
- Refer to Go Math! Teacher Edition and Student Edition page(s): *339A–339B, 339–342* (Note: *Pages only in Teacher Edition are italics*)
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

1 Day

Domain: 5.NF – Numbers & Operations—Fractions

Cluster: 5.NF.B – Apply and extend previous understandings of multiplication and division.

Standard: 5.NF.B.7b

Essential Questions:	Enduring Understandings:
• How do you divide a whole number by a fraction and divide a fraction by a whole number? • How can the strategy *draw a diagram* help you solve division problems by writing a multiplication sentence?	Students will: • Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. • Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. • Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4.

Standards: 5.NF.B.3, 5.NF.B.4a, 5.NF.B.4b, 5.NF.B.5a, 5.NF.B.5b, 5.NF.B.6, 5.NF.B.7a, 5.NF.B.7a, 5.NF.B.7b, 5.NF.B.7c

Technology Standard(s)	Interdisciplinary Standard(s)

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	   ○ CCSS.Math.Practice.MP1-8
	• Science
	   ○ 5.1.4.A.2
	   ○ 5.1.4.B.3, 5.1.4.B.4
	   ○ 5.1.4.C.2
	   ○ 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	   ○ 6.1.4.A.15
	   ○ 6.1.4.B.1, 6.1.4.B.3
	   ○ 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	   ○ 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	   ○ CCSS.ELA-Literacy.SL.5.1-5.3
	   ○ CCSS.ELA-Literacy.SL.5.4-5.6
	   ○ CCSS.ELA-Literacy.RF.5.3-5.4c

21ˢᵗ Century Themes: (Check all that apply)	**21ˢᵗ Century Skills:**
☒ Global Awareness ☐ Environmental Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving

☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

- Divide a whole number by a fraction and divide a fraction by a whole number.
- Solve problems using the strategy draw a diagram.

Instructional Strategies

- Help students recall the inverse relationship between multiplication and division, which is central to their understanding of this lesson. How can you use division to check that 13 x 7 = 91? How can you use multiplication to check that 72 ÷ 6 = 12? Describe the relationship between multiplication and division.
- Use real-world examples to review with students how to write equations and model dividing 1 by a unit fraction. How many quarters are there in a football game? Write this equation to express this fact: 1 ÷ ¼ = 4. How many half-dollars are there in one dollar? What equation can you write to express this fact? For each equation, work with students to draw 1 rectangle to represent the dividend. Discuss how the denominator of the divisor determines the number of equal-size pieces the rectangle should be divided into.

Resources

- Refer to Go Math! Lesson(s): 8.1, 8.2
- Refer to Go Math! Teacher Edition and Student Edition page(s): *339A–339B, 339–342, 343A–343B, 343–346* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

2 Days

Domain: 5.NF – Numbers & Operations—Fractions

Cluster: 5.NF.B – Apply and extend previous understandings of multiplication and division.

Standard: 5.NF.B.7c

Essential Questions:	Enduring Understandings:
• How can you divide fractions by solving a related multiplication sentence? • How can you use diagrams, equations, and story problems to represent division?	Students will: • Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. • Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share 1/2 lb. of chocolate equally? How many 1/3-cup servings are in 2 cups of raisins?

Standards: 5.NF.B.3, 5.NF.B.4a, 5.NF.B.4b, 5.NF.B.5a, 5.NF.B.5b, 5.NF.B.6, 5.NF.B.7a, 5.NF.B.7a, 5.NF.B.7b, 5.NF.B.7c

Technology Standard(s)	Interdisciplinary Standard(s)

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	  ○ CCSS.Math.Practice.MP1-8
	• Science
	  ○ 5.1.4.A.2
	  ○ 5.1.4.B.3, 5.1.4.B.4
	  ○ 5.1.4.C.2
	  ○ 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	  ○ 6.1.4.A.15
	  ○ 6.1.4.B.1, 6.1.4.B.3
	  ○ 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	  ○ 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	  ○ CCSS.ELA-Literacy.SL.5.1-5.3
	  ○ CCSS.ELA-Literacy.SL.5.4-5.6
	  ○ CCSS.ELA-Literacy.RF.5.3-5.4c

21st Century Themes: (Check all that apply)	**21st Century Skills:**

☒ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☒ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

- Divide a whole number by a fraction and divide a fraction by a whole number.
- Represent division by drawing diagrams and writing story problems and equations.

Instructional Strategies

- Introduce the lesson by asking: Have you ever seen a space capsule? You have probably seen a space capsule if you are one of the millions of people from around the world who have visited the Kennedy Space Center. A tour of the Space Center also includes interactive simulators and live shows, and the opportunity to meet a member of NASA's Astronaut Corps. Do you think that mathematics plays a small or enormous role in our space program? Why?
- In this chapter, students have solved numerous story problems involving division of fractions and whole numbers. In this lesson they reverse the procedure, writing story problems of their own to illustrate given division expressions. As a warm-up exercise, present simple numerical expressions and ask students to think of story problems they could solve by evaluating the expressions. Examples: 5 x 12; 14 + 9.

Resources

- Refer to Go Math! Lesson(s): 8.4, 8.5
- Refer to Go Math! Teacher Edition and Student Edition page(s): *353A–353B, 353–356, 357A–357B, 357–360* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

2 Days

Domain: 5.MD – Measurement & Data

Cluster: 5.MD.A – Convert like measurement units within a given measurement system.

Standard: 5.MD.A.1

Essential Questions:	Enduring Understandings:
- How can you compare and convert customary units of length? - How can you compare and convert customary units of capacity? - How can you compare and convert customary units of weight? - How can you solve multistep problems that include measurement conversions? - How can you compare and convert metric units? - How can you use the strategy *make a table* to help solve problems about customary and metric conversions? - How can you solve elapsed time problems by converting units of time?	Students will: Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

Standards: 5.MD.A.1

Technology Standard(s)	Interdisciplinary Standard(s)
8.1.4.A.1-5 8.1.4.D.1-3 8.1.4.E.2 8.2.4.A.1-2 8.2.4.B.2 8.2.4.B.4 8.2.4.F.1 8.2.4.G.3	- Mathematical Practices - CCSS.Math.Practice.MP1-8 - Science 5.1.4.A.2 5.1.4.B.3, 5.1.4.B.4 5.1.4.C.2 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3 - Social Studies 6.1.4.A.15 6.1.4.B.1, 6.1.4.B.3 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13 6.1.4.D.19, 6.1.4.D.20 - Literacy - CCSS.ELA-Literacy.SL.5.1-5.3 - CCSS.ELA-Literacy.SL.5.4-5.6 - CCSS.ELA-Literacy.RF.5.3-5.4c
21st Century Themes: (Check all that	**21st Century Skills:**

apply)	
☒ Global Awareness	☒ Creativity and Innovation
☐ Environmental Literacy	☒ Critical Thinking and Problem Solving
☐ Health Literacy	☒ Communication
☒ Civic Literacy	☒ Collaboration
☒ Financial, Economic, Business, and Entrepreneurial Literacy	

Student Learning Targets/Objectives

- Compare, contrast, and convert customary units of length.
- Compare, contrast, and convert customary units of capacity.
- Compare, contrast, and convert customary units of weight.
- Convert measurement units to solve multistep problems.
- Compare, contrast, and convert metric units.
- Solve problems about customary and metric conversions using the strategy make a table.
- Convert units of time to solve elapsed time problems.

Instructional Strategies

- Point out that in the customary system of measurement, we commonly use four different-sized units to measure length. Challenge students to name those units and give an example of how each unit could be used.
- In previous grades, students used the term *liquid volume*, which is the amount of liquid in a container. In today's lesson they use the more common term *capacity*, the amount a container can hold. Challenge students to name or describe real-world situations that involve these units of capacity: fluid ounces, cups, pints, quarts, and gallons.
- Have you ever wondered what it would be like to be a test pilot or an astronaut? Colonel Rick Searfoss is both a former test pilot and a space shuttle commander. The Real-World Video tells about Colonel Searfoss and his career in space. By watching the video, you will learn about space flight and see his favorite activity while orbiting the Earth—staring out a window at the awesome view!
- Ask students to name the most reasonable unit for measuring the capacity of a container holding one drop of water. Is it reasonable to say that a drop of water is equal to 1 fluid ounce? Point out that a convenient way of measuring a small object like a drop of water is to measure the length, capacity, or weight of a large number of them and then to divide by the number of objects. What fraction of a cup is a drop of water if it takes 960 drops to fill a cup?
- Invite volunteers to name metric units of length, mass, and capacity and to give an example of how each unit is used.
- Did you know that different parts of our country are in different time zones? Florida is in the Eastern time zone, which is 3 hours ahead of the Pacific time zone. When it is 12 noon in the Eastern time zone, it is 9 AM in the Pacific time zone. How could you determine what time it is in California (Pacific time zone) when it is 3 PM in Pennsylvania (Eastern time zone)?

Resources
- Refer to Go Math! Lesson(s): 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7   - Refer to Go Math! Teacher Edition and Student Edition page(s): *405A–405B, 405–408, 409A–409B, 409–412, 413A–413B, 413–416, 417A–417B, 417–420, 423A–423B, 423–426, 427A–427B, 427–430, 431A–431B, 431–434* (Note: *Pages only in Teacher Edition are italics)*   - Go Math! Animated Math Models (via Think Central)   - HMH Mega Math (via Think Central)   - Go Math! iTools (via Think Central)   - Go Math! eGlossary (via Think Central)   - Go Math! Destination Math (via Student Edition in Think Central)   - Corresponding Go Math! Grab and Go for Activities/Literature/Games   - Corresponding Go Math! Daily Routines   - https://www-k6.thinkcentral.com/ePC/start.do   - http://www.firstinmath.com/   - http://www.corestandards.org/Math

Suggested Time Frame:
7 Days

Domain: 5.MD – Measurement & Data

Cluster: 5.MD.B – Represent and interpret data.

Standard: 5.MD.B.2

Essential Questions:	Enduring Understandings:
• How can a line plot help you find an average with data given in fractions?	Students will: • Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). • Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.

Standards: 5.MD.B.2

Technology Standard(s)	Interdisciplinary Standard(s)

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	   o CCSS.Math.Practice.MP1-8
	• Science
	   o 5.1.4.A.2
	   o 5.1.4.B.3, 5.1.4.B.4
	   o 5.1.4.C.2
	   o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	   o 6.1.4.A.15
	   o 6.1.4.B.1, 6.1.4.B.3
	   o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	   o 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	   o CCSS.ELA-Literacy.SL.5.1-5.3
	   o CCSS.ELA-Literacy.SL.5.4-5.6
	   o CCSS.ELA-Literacy.RF.5.3-5.4c

21st Century Themes: (Check all that apply)	**21st Century Skills:**
☒ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☒ Civic Literacy ☒ Financial, Economic, Business, and	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Entrepreneurial Literacy	

Student Learning Targets/Objectives

- Make and use line plots with fractions to solve problems.

Instructional Strategies

- Have students share their experiences with using the word average in their everyday lives. Use the following examples as a springboard: What does it mean when we say, "The average of a student's test scores is 92?" What does it mean when the weather report says, "The temperatures this month were above average?"

Resources

- Refer to Go Math! Lesson(s): 9.1
- Refer to Go Math! Teacher Edition and Student Edition page(s): *369A–369B, 369–372* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

1 Day

Domain: 5.MD – Measurement & Data

Cluster: 5.MD.C – Geometric measurement: understand concepts of volume.

Standard: 5.MD.C.3a

Essential Questions:	Enduring Understandings:
- How can you identify, describe, and classify three-dimensional figures? - What is a unit cube and how can you use it to build a solid figure?	Students will: - Recognize volume as an attribute of solid figures and understand concepts of volume measurement. - A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.

Standards: 5.MD.C.3a, 5.MD.C.3b, 5.MD.C.4, 5.MD.C.5a, 5.MD.C.5b, 5.MD.C.5c

Technology Standard(s)	Interdisciplinary Standard(s)
8.1.4.A.1-5 8.1.4.D.1-3 8.1.4.E.2 8.2.4.A.1-2 8.2.4.B.2 8.2.4.B.4 8.2.4.F.1 8.2.4.G.3	- Mathematical Practices - CCSS.Math.Practice.MP1-8 - Science 5.1.4.A.2 5.1.4.B.3, 5.1.4.B.4 5.1.4.C.2 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3 - Social Studies 6.1.4.A.15 6.1.4.B.1, 6.1.4.B.3 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13 6.1.4.D.19, 6.1.4.D.20 - Literacy - CCSS.ELA-Literacy.SL.5.1-5.3 - CCSS.ELA-Literacy.SL.5.4-5.6 - CCSS.ELA-Literacy.RF.5.3-5.4c
21st Century Themes: (Check all that apply)	**21st Century Skills:**
☐ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

- Identify, describe, and classify three - dimensional figures.

Instructional Strategies
• Show students the Real-World Video, Structures that Move. Ask students to describe the shapes of the structures they see in the video and similar shapes they see in other real-world places. Discuss that two-dimensional figures have two dimensions—length and width, while three-dimensional figures have length, width, and height. • Have students make as many different rectangles as they can with 6 unit squares using iTools: Geometry. What dimensions does a rectangle have? What are the dimensions of your rectangles? Have students make as many rectangles as possible with 12 unit squares and state the dimensions.

Resources
• Refer to Go Math! Lesson(s): 11.5, 11.6 • Refer to Go Math! Teacher Edition and Student Edition page(s): *457A–457B, 457–460, 463A–463B, 463–466* (Note: *Pages only in Teacher Edition are italics)* • Go Math! Animated Math Models (via Think Central) • HMH Mega Math (via Think Central) • Go Math! iTools (via Think Central) • Go Math! eGlossary (via Think Central) • Go Math! Destination Math (via Student Edition in Think Central) • Corresponding Go Math! Grab and Go for Activities/Literature/Games • Corresponding Go Math! Daily Routines • https://www-k6.thinkcentral.com/ePC/start.do • http://www.firstinmath.com/ • http://www.corestandards.org/Math

Suggested Time Frame:
2 Days

Domain: 5.MD – Measurement & Data

Cluster: 5.MD.C – Geometric measurement: understand concepts of volume.

Standard: 5.MD.C.3b

Essential Questions:	Enduring Understandings:
• How can you use unit cubes to find the volume of a rectangular prism?	Students will: • Recognize volume as an attribute of solid figures and understand concepts of volume measurement. • A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.

Standards: 5.MD.C.3a, 5.MD.C.3b, 5.MD.C.4, 5.MD.C.5a, 5.MD.C.5b, 5.MD.C.5c

Technology Standard(s)	Interdisciplinary Standard(s)

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	   o CCSS.Math.Practice.MP1-8
	• Science
	   o 5.1.4.A.2
	   o 5.1.4.B.3, 5.1.4.B.4
	   o 5.1.4.C.2
	   o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	   o 6.1.4.A.15
	   o 6.1.4.B.1, 6.1.4.B.3
	   o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	   o 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	   o CCSS.ELA-Literacy.SL.5.1-5.3
	   o CCSS.ELA-Literacy.SL.5.4-5.6
	   o CCSS.ELA-Literacy.RF.5.3-5.4c

21st Century Themes: (Check all that apply)	**21st Century Skills:**
☐ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

• Count unit cubes that fill a solid figure to find volume.

Instructional Strategies

- Have students explore how many different rectangular prisms can be built with 12 unit cubes. Describe the different rectangular prisms you can make with 12 unit cubes. Compare the rectangular prisms.

Resources

- Refer to Go Math! Lesson(s): 11.7
- Refer to Go Math! Teacher Edition and Student Edition page(s): *467A–467B, 467–470* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

1 Day

Domain: 5.MD – Measurement & Data

Cluster: 5.MD.C – Geometric measurement: understand concepts of volume.

Standard: 5.MD.C.4

Essential Questions:	Enduring Understandings:
• How can you use unit cubes to find the volume of a rectangular prism? • How can you use an everyday object to estimate the volume of a rectangular prism?	Students will: • Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft., and improvised units.

Standards: 5.MD.C.3a, 5.MD.C.3b, 5.MD.C.4, 5.MD.C.5a, 5.MD.C.5b, 5.MD.C.5c

Technology Standard(s)	Interdisciplinary Standard(s)

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	  o CCSS.Math.Practice.MP1-8
	• Science
	  o 5.1.4.A.2
	  o 5.1.4.B.3, 5.1.4.B.4
	  o 5.1.4.C.2
	  o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	  o 6.1.4.A.15
	  o 6.1.4.B.1, 6.1.4.B.3
	  o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	  o 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	  o CCSS.ELA-Literacy.SL.5.1-5.3
	  o CCSS.ELA-Literacy.SL.5.4-5.6
	  o CCSS.ELA-Literacy.RF.5.3-5.4c

21ˢᵗ Century Themes: (Check all that apply)	21ˢᵗ Century Skills:
☐ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

• Count unit cubes that fill a solid figure to find volume.
• Estimate the volume of a rectangular prism.

Instructional Strategies

- Have students explore how many different rectangular prisms can be built with 12 unit cubes. Describe the different rectangular prisms you can make with 12 unit cubes. Compare the rectangular prisms.
- Have students find the volume of a rectangular prism that has a length of 3 centimeter cubes, a width of 2 centimeter cubes, and a height of 3 centimeter cubes. Explain how you can find the volume.

Resources

- Refer to Go Math! Lesson(s): 11.7, 11.8
- Refer to Go Math! Teacher Edition and Student Edition page(s): *467A–467B, 467–470, 471A–471B, 471–474* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

2 Days

Domain: 5.MD – Measurement & Data

Cluster: 5.MD.C – Geometric measurement: understand concepts of volume.

Standard: 5.MD.C.5a

Essential Questions:	Enduring Understandings:
• How can you find the volume of a rectangular prism?	Students will: • Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. • Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. • Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.

Standards: 5.MD.C.3a, 5.MD.C.3b, 5.MD.C.4, 5.MD.C.5a, 5.MD.C.5b, 5.MD.C.5c

Technology Standard(s)	Interdisciplinary Standard(s)

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	   o CCSS.Math.Practice.MP1-8
	• Science
	   o 5.1.4.A.2
	   o 5.1.4.B.3, 5.1.4.B.4
	   o 5.1.4.C.2
	   o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	   o 6.1.4.A.15
	   o 6.1.4.B.1, 6.1.4.B.3
	   o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	   o 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	   o CCSS.ELA-Literacy.SL.5.1-5.3
	   o CCSS.ELA-Literacy.SL.5.4-5.6
	   o CCSS.ELA-Literacy.RF.5.3-5.4c

21ˢᵗ Century Themes: (Check all that apply)	**21ˢᵗ Century Skills:**
☐ Global Awareness ☐ Environmental Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving

☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

- Find the volume of rectangular prisms.

Instructional Strategies

- Show students a centimeter cube and several empty boxes. Challenge them to estimate how many centimeter cubes can fit in each box and record the estimates. In today's lesson, students learn to find the volume of rectangular prisms. After the lesson, measure the dimensions of each box to the nearest centimeter. Have students find the volume of the boxes and check the results against the predictions made earlier.

Resources

- Refer to Go Math! Lesson(s): 11.9
- Refer to Go Math! Teacher Edition and Student Edition page(s): *4475A–475B, 475–478* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

1 Day

Domain: 5.MD – Measurement & Data

Cluster: 5.MD.C – Geometric measurement: understand concepts of volume.

Standard: 5.MD.C.5b

Essential Questions:	Enduring Understandings:
• How can you use a formula to find the volume of a rectangular prism? • How can you use the strategy *make a table* to compare different rectangular prisms with the same volume?	Students will: • Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. • Apply the formulas V = l × w × h and V = b × h for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.

Standards: 5.MD.C.3a, 5.MD.C.3b, 5.MD.C.4, 5.MD.C.5a, 5.MD.C.5b, 5.MD.C.5c

Technology Standard(s)	Interdisciplinary Standard(s)

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	   o CCSS.Math.Practice.MP1-8
	• Science
	   o 5.1.4.A.2
	   o 5.1.4.B.3, 5.1.4.B.4
	   o 5.1.4.C.2
	   o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	   o 6.1.4.A.15
	   o 6.1.4.B.1, 6.1.4.B.3
	   o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	   o 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	   o CCSS.ELA-Literacy.SL.5.1-5.3
	   o CCSS.ELA-Literacy.SL.5.4-5.6
	   o CCSS.ELA-Literacy.RF.5.3-5.4c

21ˢᵗ Century Themes: (Check all that apply)	**21ˢᵗ Century Skills:**
☐ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

- Use a formula to find the volume of a rectangular prism.
- Use the strategy *make a table* to compare volumes.

Instructional Strategies

- Draw a rectangle and a rectangular prism on the board. How are these two figures different? Discuss how to find the area of the rectangle. Ask students to suggest how to find the amount of space the prism occupies.
- Pose the following problem: Suppose a rectangle has an area of 36 square units. What different whole-number dimensions could the rectangle have?

Resources

- Refer to Go Math! Lesson(s): 11.10, 11.11
- Refer to Go Math! Teacher Edition and Student Edition page(s): *479A–479B, 479–482, 483A–483B, 483–486* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

2 Days

Domain: 5.MD – Measurement & Data

Cluster: 5.MD.C – Geometric measurement: understand concepts of volume.

Standard: 5.MD.C.5c

Essential Questions:	Enduring Understandings:
• How can you find the volume of rectangular prisms that are combined?	Students will: • Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. • Recognize volume as additive. • Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

Standards: 5.MD.C.3a, 5.MD.C.3b, 5.MD.C.4, 5.MD.C.5a, 5.MD.C.5b, 5.MD.C.5c

Technology Standard(s)	Interdisciplinary Standard(s)

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	  o CCSS.Math.Practice.MP1-8
	• Science
	  o 5.1.4.A.2
	  o 5.1.4.B.3, 5.1.4.B.4
	  o 5.1.4.C.2
	  o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	  o 6.1.4.A.15
	  o 6.1.4.B.1, 6.1.4.B.3
	  o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	  o 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	  o CCSS.ELA-Literacy.SL.5.1-5.3
	  o CCSS.ELA-Literacy.SL.5.4-5.6
	  o CCSS.ELA-Literacy.RF.5.3-5.4c

21st Century Themes: (Check all that apply)	**21st Century Skills:**
☐ Global Awareness ☐ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives	
• Find the volume of combined rectangular prisms.	
Instructional Strategies	
• Show two rectangular prisms. How could we find the volume of each of these prisms? Discuss how the two prisms can have different volumes. Stack the two prisms together. Have students suggest how the volume of the combined prisms relates to each of the smaller volumes.	
Resources	
• Refer to Go Math! Lesson(s): 11.12 • Refer to Go Math! Teacher Edition and Student Edition page(s): *487A–487B, 487–490* (Note: *Pages only in Teacher Edition are italics)* • Go Math! Animated Math Models (via Think Central) • HMH Mega Math (via Think Central) • Go Math! iTools (via Think Central) • Go Math! eGlossary (via Think Central) • Go Math! Destination Math (via Student Edition in Think Central) • Corresponding Go Math! Grab and Go for Activities/Literature/Games • Corresponding Go Math! Daily Routines • https://www-k6.thinkcentral.com/ePC/start.do • http://www.firstinmath.com/ • http://www.corestandards.org/Math	
Suggested Time Frame:	
1 Day	

Domain: 5.G – Geometry	
Cluster: 5.G.A – Graph points on the coordinate plane to solve real-world and mathematical problems.	
Standard: 5.G.A.1	
Essential Questions:	**Enduring Understandings:**
• How can you identify and plot points on a coordinate grid?	Students will: • Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
Standards: 5.G.A.1, 5.G.A.2	
Technology Standard(s)	**Interdisciplinary Standard(s)**

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	   o CCSS.Math.Practice.MP1-8
	• Science
	   o 5.1.4.A.2
	   o 5.1.4.B.3, 5.1.4.B.4
	   o 5.1.4.C.2
	   o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	   o 6.1.4.A.15
	   o 6.1.4.B.1, 6.1.4.B.3
	   o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	   o 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	   o CCSS.ELA-Literacy.SL.5.1-5.3
	   o CCSS.ELA-Literacy.SL.5.4-5.6
	   o CCSS.ELA-Literacy.RF.5.3-5.4c

21ˢᵗ Century Themes: (Check all that apply)	**21ˢᵗ Century Skills:**
☒ Global Awareness	☒ Creativity and Innovation

☒ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

- Graph and name points on a coordinate grid using ordered pairs.

Instructional Strategies

- View the Designing Windsurfing Sails video with students. Then draw a first quadrant grid on the board. Plot two points and label each with a specific location students might find at the beach, such as Windsurfing Rental Shop or Lifeguard Stand. Invite volunteers to each trace a different path from one point to the other. Then, as a class, discuss ways to describe the paths. Counting numbers and words such as *left*, *right*, *up*, and *down* can be used to describe the paths.

Resources

- Refer to Go Math! Lesson(s): 9.2
- Refer to Go Math! Teacher Edition and Student Edition page(s): *373A–373B, 373–376* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

1 Day

Domain: 5.G – Geometry

Cluster: 5.G.A – Graph points on the coordinate plane to solve real-world and mathematical problems.

Standard: 5.G.A.2

Essential Questions:	Enduring Understandings:
• How can you use a coordinate grid to display data collected in an experiment? • How can you use a line graph to display and analyze real-world data?	Students will: • Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

Standards: 5.G.A.1, 5.G.A.2

Technology Standard(s)	Interdisciplinary Standard(s)

• 8.1.4.A.1-5
 • 8.1.4.D.1-3
 • 8.1.4.E.2
 • 8.2.4.A.1-2
 • 8.2.4.B.2
 • 8.2.4.B.4
 • 8.2.4.F.1
 • 8.2.4.G.3
	• Mathematical Practices
	     o CCSS.Math.Practice.MP1-8
	 • Science
	     o 5.1.4.A.2
	     o 5.1.4.B.3, 5.1.4.B.4
	     o 5.1.4.C.2
	     o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	 • Social Studies
	     o 6.1.4.A.15
	     o 6.1.4.B.1, 6.1.4.B.3
	     o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	     o 6.1.4.D.19, 6.1.4.D.20
	 • Literacy
	     o CCSS.ELA-Literacy.SL.5.1-5.3
	     o CCSS.ELA-Literacy.SL.5.4-5.6
	     o CCSS.ELA-Literacy.RF.5.3-5.4c

21st Century Themes: (Check all that apply)	**21st Century Skills:**
☒ Global Awareness ☒ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

• Collect and graph data on a coordinate grid.

• Analyze and display data in a line graph.

Instructional Strategies

- Have students review how to read a thermometer. Today's activity involves some of the steps used in constructing a line graph to display data over time. Use the question below to get students thinking about why data are displayed in a graph. Suppose you have information that has two parts, like temperature and time. For instance, what if you placed a pot of soup on a hot stove for 15 minutes? What would be the advantage of seeing the information on a graph instead of in a table?

- Write the table of data shown below on the board.

Time (in hrs.)	0	1	2	3	4
Distance (in miles)	0	60	120	140	200

Point out that the data describe a 4-hour car trip. Invite volunteers to describe what a graph of the data might look like. Have students describe how the distance traveled changes from one hour to the next.

Resources

- Refer to Go Math! Lesson(s): 9.3, 9.4

- Refer to Go Math! Teacher Edition and Student Edition page(s): *377A–377B, 377–380, 381A–381B, 381–384* (Note: *Pages only in Teacher Edition are italics*)

- Go Math! Animated Math Models (via Think Central)

- HMH Mega Math (via Think Central)

- Go Math! iTools (via Think Central)

- Go Math! eGlossary (via Think Central)

- Go Math! Destination Math (via Student Edition in Think Central)

- Corresponding Go Math! Grab and Go for Activities/Literature/Games

- Corresponding Go Math! Daily Routines

- https://www-k6.thinkcentral.com/ePC/start.do

- http://www.firstinmath.com/

- http://www.corestandards.org/Math

Suggested Time Frame:

2 Days

Domain: 5.G – Geometry

Cluster: 5.G.B – Classify two-dimensional figures into categories based on their properties.

Standard: 5.G.B.3

Essential Questions:	**Enduring Understandings:**
• How can you identify and classify polygons? • How can you classify triangles? • How can you use the strategy *act it out* to approximate whether the sides of a figure are congruent?	Students will: • Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.

Standards: 5.G.B.3, 5.G.B.4

Technology Standard(s)	**Interdisciplinary Standard(s)**

• 8.1.4.A.1-5
 • 8.1.4.D.1-3
 • 8.1.4.E.2
 • 8.2.4.A.1-2
 • 8.2.4.B.2
 • 8.2.4.B.4
 • 8.2.4.F.1
 • 8.2.4.G.3
	• Mathematical Practices
	     o CCSS.Math.Practice.MP1-8
	 • Science
	     o 5.1.4.A.2
	     o 5.1.4.B.3, 5.1.4.B.4
	     o 5.1.4.C.2
	     o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	 • Social Studies
	     o 6.1.4.A.15
	     o 6.1.4.B.1, 6.1.4.B.3
	     o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	     o 6.1.4.D.19, 6.1.4.D.20
	 • Literacy
	     o CCSS.ELA-Literacy.SL.5.1-5.3
	     o CCSS.ELA-Literacy.SL.5.4-5.6
	     o CCSS.ELA-Literacy.RF.5.3-5.4c

21st Century Themes: (Check all that apply)	**21st Century Skills:**
☒ Global Awareness ☒ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives
• Identify and classify polygons.

- Classify and draw triangles using their properties.
- Solve problems using the strategy act it out.

Instructional Strategies

- If Geometry iTools is not available use the board. Display or draw three polygons. Point out that the figures are polygons and have students count the number of sides in each shape. Discuss how the figures are alike and different.
- If Geometry iTools is not available use the board. Display or draw a rectangle that is not a square, and draw one diagonal of the rectangle. Give students an opportunity to compare and contrast the sides and angles of the two triangles that are formed by the diagonal. Draw the other diagonal and ask students to compare and contrast the sides and angles of the four triangles that are formed by the two diagonals.
- If Geometry iTools is not available use the board. Display or draw different figures. For each, ask: Do the sides and angles of the figure appear to be congruent? How could you decide for certain if the sides and angles are congruent?

Resources

- Refer to Go Math! Lesson(s): 11.1, 11.2, 11.4
- Refer to Go Math! Teacher Edition and Student Edition page(s): *441A–441B, 441–444, 445A–445B, 445–448, 453A–453B, 453–456* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
- Go Math! iTools (via Think Central)
- Go Math! eGlossary (via Think Central)
- Go Math! Destination Math (via Student Edition in Think Central)
- Corresponding Go Math! Grab and Go for Activities/Literature/Games
- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

3 Days

Domain: 5.G – Geometry

Cluster: 5.G.B – Classify two-dimensional figures into categories based on their properties.

Standard: 5.G.B.4

Essential Questions:	Enduring Understandings:
• How can you classify triangles? • How can you classify and compare quadrilaterals?	Students will: • Classify two-dimensional figures in a hierarchy based on properties.

Standards: 5.G.B.3, 5.G.B.4

Technology Standard(s)	Interdisciplinary Standard(s)

• 8.1.4.A.1-5
• 8.1.4.D.1-3
• 8.1.4.E.2
• 8.2.4.A.1-2
• 8.2.4.B.2
• 8.2.4.B.4
• 8.2.4.F.1
• 8.2.4.G.3
	• Mathematical Practices
	  o CCSS.Math.Practice.MP1-8
	• Science
	  o 5.1.4.A.2
	  o 5.1.4.B.3, 5.1.4.B.4
	  o 5.1.4.C.2
	  o 5.1.4.D.1, 5.1.4.D.2, 5.1.4.D.3
	• Social Studies
	  o 6.1.4.A.15
	  o 6.1.4.B.1, 6.1.4.B.3
	  o 6.1.4.C.10, 6.1.4.C.11, 6.1.4.C.13
	  o 6.1.4.D.19, 6.1.4.D.20
	• Literacy
	  o CCSS.ELA-Literacy.SL.5.1-5.3
	  o CCSS.ELA-Literacy.SL.5.4-5.6
	  o CCSS.ELA-Literacy.RF.5.3-5.4c

21st Century Themes: (Check all that apply)	21st Century Skills:
☒ Global Awareness ☒ Environmental Literacy ☐ Health Literacy ☐ Civic Literacy ☒ Financial, Economic, Business, and Entrepreneurial Literacy	☒ Creativity and Innovation ☒ Critical Thinking and Problem Solving ☒ Communication ☒ Collaboration

Student Learning Targets/Objectives

• Classify and draw triangles using their properties.
• Classify and compare quadrilaterals using their properties.

Instructional Strategies

• If Geometry iTools is not available use the board. Display or draw a rectangle that is not

a square, and draw one diagonal of the rectangle. Give students an opportunity to compare and contrast the sides and angles of the two triangles that are formed by the diagonal. Draw the other diagonal and ask students to compare and contrast the sides and angles of the four triangles that are formed by the two diagonals.

- Invite volunteers to sketch a variety of figures on the board. Discuss the characteristics of each figure and classify it in as many ways as possible.

Resources

- Refer to Go Math! Lesson(s): 11.2, 11.3
- Refer to Go Math! Teacher Edition and Student Edition page(s): *445A–445B, 445–448, 449A–449B, 449–452* (Note: *Pages only in Teacher Edition are italics)*
- Go Math! Animated Math Models (via Think Central)
- HMH Mega Math (via Think Central)
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- Corresponding Go Math! Daily Routines
- https://www-k6.thinkcentral.com/ePC/start.do
- http://www.firstinmath.com/
- http://www.corestandards.org/Math

Suggested Time Frame:

2 Days