

Math Unit 2 (23-24)

Content Area: **Mathematics**
Course(s): **Mathematics 5**
Time Period: **January**
Length: **12 Weeks- 60 Instructional Days**
Status: **Published**

Unit Overview

Students will be working on:

- Long Division
- Dividing Decimals
- Adding & Subtracting Fractions
- Multiplying Fractions
- Dividing Fractions

Priority Standards

MATH.5.NBT.A.2	Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
MATH.5.NBT.A.4	Use place value understanding to round decimals to any place.
MATH.5.NBT.B.6	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
MATH.5.NBT.B.7	Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.
MATH.5.NF.A.1	Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.
MATH.5.NF.A.2	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.
MATH.5.NF.B.3	Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). 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.

MATH.5.NF.B.4.a	Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$.
MATH.5.NF.B.4.b	Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
MATH.5.NF.B.5.a	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.
MATH.5.NF.B.5.b	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; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.
MATH.5.NF.B.6	Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
MATH.5.NF.B.7.a	Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.
MATH.5.NF.B.7.b	Interpret division of a whole number by a unit fraction, and compute such quotients.
MATH.5.NF.B.7.c	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.

Learning Goals and Learning Targets

CCS Priority Standard	Learning Goals	Learning Targets
NBT.B.6	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	-I can use multiplication to divide. (6-1)
	-Students will be able to find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.	-I can use place value and division facts to find quotients.(6-2)
		-I can use division facts and compatible numbers to estimate quotients. (6-3)
		-I can divide multi-digit numbers by one-digit numbers. (6-4)
		-I can use an area model and partial quotients to divide (6-5)
		-I can use partial quotients to divide with a remainder. (6-6)
		-I can divide three-digit numbers by two-digit numbers. (6-7)
		-I can divide four-digit numbers by two-digit numbers. (6-8)

-I can solve word problems involving division of whole numbers. (6-9)

-I can find quotients involving decimals and power of 10 (7-1)

-I can use compatible numbers to estimate quotients involving decimals. (7-2)

-I can use models to divide decimals by whole numbers. (7-3)

I can divide decimals by one-digit whole numbers. (7-4)

I can divide decimals by two-digit whole numbers. (7-5)

I can use models to divide decimals by decimals. (7-6)

I can divide decimals by decimals. (7-7)

I can insert zeros in the dividend when dividing with decimals and whole numbers. (7-8)

I can solve word problems involving decimals. (7-9)

5.NBT.B.7

Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

-Students will be able to divide decimals.

NF.A.1

Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$. (In general, $\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$.)

-Students will be able to add and subtract fractions with unlike denominators.

I can write fractions in simplest form.

I can estimate sums and differences of fractions.

I can write fractions using a common denominator.

I can add fractions with unlike denominators.

I can subtract fractions with unlike denominators.

I can add mixed numbers with unlike denominators.

I can subtract mixed numbers with unlike denominators.

I can solve multi-step word problems involving fractions and mixed numbers.

5.NF.A.2

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 $\frac{2}{5} + \frac{1}{2} = \frac{3}{7}$, by observing that $\frac{3}{7} < \frac{1}{2}$.

-Students will be able to solve word problems involving addition and subtraction of fractions.

I can estimate sums and differences of fractions. (8-2)

I can add fractions with unlike denominators. (8-4)

I can subtract fractions with unlike denominators.(8-5)

I can add mixed numbers with unlike denominators. (8-6)

I can subtract mixed numbers with unlike denominators. (8-7)

I can solve multi-step word problems involving fractions and mixed numbers. (8-8)

5.NF.B.4

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

-Students will be able to multiply a fraction or whole number by a fraction.

-I can multiply whole numbers by fractions. (9-1)

-I can multiply fractions by whole numbers. (9-2 & 9-3)

-I can use models to multiply a fraction by a fraction.(9-4)

-I can multiply a fraction by a fraction. (9-5)

-I can find areas of rectangles. (9-6)

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

Students will be able to solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

I can multiply whole numbers by fractions. (9-1)

I can multiply fractions by whole numbers. (9-2 & 9-3)

I can use models to multiply a fraction by a fraction.(9-4)

I can multiply a fraction by a fraction. (9-5)

I can find areas of rectangles. (9-6)

I can multiply a mixed number by a mixed number (9-7)

I can divide whole numbers by unit fractions. (10-3)

5.NF.B.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.1

-Students will be able to apply their understanding of division to divide unit fractions by whole numbers and whole numbers by unit fractions.

I can divide unit fractions by whole numbers. (10-4)

I can solve multi-step word problems involving division with fractions. (10-5)

- Students will be able to add and subtract fractions with unlike denominators
- Students will be able to solve word problems involving addition and subtraction of fractions.

- Students will be able to find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.
- Students will be able to apply their understanding of division to divide unit fractions by whole numbers and whole numbers by unit fractions.
- Students will be able to divide decimals.
- Students will be able to multiply a fraction or whole number by a fraction.
- Students will be able to solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

Materials & Resources

*Big Ideas Materials

*Stop watches/timers

*Multiplication and division charts

*Manipulatives (cubes, money, coins, counters)

*Paper (chart, graph, lined, and blank)

*Dry erase boards

Menus from a restaurant

Base 10 blocks

10x10 grids

Index cards (blank and numbers 0-9)

Dominos

Shopping catalogs

Play money

Number cubes

Google Classroom Math

Iready math

Reflex Math

Fraction Strips

Fraction Circles

Prodigy (free online games) <https://www.prodigygame.com/>

Education (printable sheets)

Math Worksheets <http://www.mathworksheetsland.com/5/>

Lumos Learning <http://www.lumoslearning.com/llwp/resources/common-core-parcc-practice-tests-and-sample-questions/sample-questions.html?cur=555&id=7607>

LearnZillion (free online games) <https://learnzillion.com/p/>

Purchase games and activities from TpT for Daily 3 Math centers

- 10x10 grids
- Base 10 blocks
- Big Ideas Materials
- Dominos
- Dry erase boards
- Education (printable sheets) <https://www.education.com/worksheets/fifth-grade/decimal-numbers/>
- Google classroom Math
- Index cards (blank and numbers 0-9)
- Iready Math
- LearnZillion (free online games) <https://learnzillion.com/p/>
- Lumos Learning <http://www.lumoslearning.com/llwp/resources/common-core-parcc-practice-tests-and-sample-questions/sample-questions.html?cur=555&id=7607>
- Manipulatives (cubes, money, coins, counters)
- Math Worksheets <http://www.mathworksheetsland.com/5/>
- Menus from a restaurant
- Multiplication and division charts
- Number cubes
- Paper (chart, graph, lined, and blank)
- Play money
- Prodigy (free online games) <https://www.prodigygame.com/>
- Reflex
- Shopping catalogs
- Stop watches/timers

Unit Assessments

Big Ideas Chapter Assessments

Linkit-Winter

STAR assessments for differentiated instruction

- Big Ideas assessments
- iReady

Learning Plan and Pacing Guides

Time Frame	Lesson	Standard(s)	Target
Chapter 6 13 days	Chapter 6 Opener: Divide Whole Numbers	Performance Task Preview & Vocabulary	
	Lesson 6.1: Relate Multiplication and Division	5.NBT.B.6	Use multiplication to divid
	Lesson 6.2: Division Patterns	5.NBT.B.6	Use place value and divisio
	Lesson 6.3: Estimate Quotients	5.NBT.B.6	Use division facts and com
	Lesson 6.4: Divide by One-Digit Numbers	5.NBT.B.6	Divide multi-digit numbers
	Lesson 6.5: Use Partial Quotients to Divide by Two-Digit Numbers	5.NBT.B.6	Use an area model and par
	Lesson 6.6: Use Partial Quotients with a Remainder	5.NBT.B.6	Use partial quotients to div
	Lesson 6.7: Divide Three-Digit Numbers by Two-Digit Numbers	5.NBT.B.6	Divide three-digit numbers
	Lesson 6.8: Divide Four-Digit Numbers by Two-Digit Numbers	5.NBT.B.6	Divide four-digit numbers
	Lesson 6.9: Problem Solving: Division	5.NBT.B.6 5.NF.B.3	Solve word problems invol
	End of Chapter 6: Divide Whole Numbers	Day 1 Performance Task	
End of Chapter 6: Divide Whole Numbers	Day 2 Centers		

End of Chapter 6:
Divide Whole Numbers Day 3 Chapter Assessment

Chapter 7
12 days

Chapter 7 Opener: Divide Decimals	Performance Task Preview & Vocabulary	
Lesson 7.1: Division Patterns with Decimals	5.NBT.A.2 5.NBT.B.7	Find quotients involving de
Lesson 7.2: Estimate Decimal Quotients	5.NBT.A.4 5.NBT.B.7	Use compatible numbers to decimals.
Lesson 7.3: Use Models to Divide Decimals by Whole Numbers	5.NBT.B.7	Use models to divide decir
Lesson 7.4: Divide Decimals by One-Digit Numbers	5.NBT.B.7	Divide decimals by one-di
Lesson 7.5: Divide Decimals by Two-Digit Numbers	5.NBT.B.7	Divide decimals by two-di
Lesson 7.6: Use Models to Divide Decimals	5.NBT.B.7	Use models to divide decir
Lesson 7.7: Divide Decimals	5.NBT.B.7	Divide decimals by decima
Lesson 7.8: Insert Zeros in the Dividend	5.NBT.B.7	Insert zeros in the dividend whole numbers.
Lesson 7.9: Problem Solving: Decimal Operations	5.NBT.B.7	Solve word problems invol
End of Chapter 7: Divide Decimals	Day 1 Performance Task & Centers	
End of Chapter 7: Divide Decimals	Day 2 Chapter Assessment	

Chapter 8
12 days

Chapter 8 Opener: Add and Subtract Fractions	Performance Task Preview & Vocabulary	
Lesson 8.1: Simplest Form	5.NF.A.1	Write fractions in simplest
Lesson 8.2: Estimate Sums and Differences of Fractions	5.NF.A.1 5.NF.A.2	Estimate sums and differer
Lesson 8.3: Find Common	5.NF.A.1	Write fractions using a con

Denominators		
Lesson 8.4: Add Fractions with Unlike Denominators	5.NF.A.1	Add fractions with unlike c
	5.NF.A.2	
Lesson 8.5: Subtract Fractions with Unlike Denominators	5.NF.A.1	Subtract fractions with unl
	5.NF.A.2	
Lesson 8.6: Add Mixed Numbers	5.NF.A.1	Add mixed numbers with u
	5.NF.A.2	
Lesson 8.7: Subtract Mixed Numbers	5.NF.A.1	Subtract mixed numbers w
	5.NF.A.2	
Lesson 8.8: Problem Solving: Fractions	5.NF.A.1	Solve multi-step word prob
	5.NF.A.2	numbers.
End of Chapter 8: Add and Subtract Fractions	Day 1	Performance Task
End of Chapter 8: Add and Subtract Fractions	Day 2	Centers
End of Chapter 8: Add and Subtract Fractions	Day 3	Chapter Assessment

Chapter 9

11 days

Chapter 9 Opener: Multiply Fractions	Performance Task Preview & Vocabulary	
Lesson 9.1: Multiply Whole Numbers by Fractions	5.NF.B.4a	Multiply whole numbers b
	5.NF.B.6	
Lesson 9.2: Use Models to Multiply Fractions by Whole Numbers	5.NF.B.4a	Multiply fractions by whol
	5.NF.B.6	
Lesson 9.3: Multiply Fractions and Whole Numbers	5.NF.B.4a	Multiply fractions and whc
	5.NF.B.6	
Lesson 9.4: Use Models to Multiply Fractions	5.NF.B.4a	Use models to multiply a f
	5.NF.B.6	
Lesson 9.5: Multiply Fractions	5.NF.B.4a	Multiply a fraction by a fra
	5.NF.B.6	
Lesson 9.6: Find Areas of Rectangles	5.NF.B.4b	Find areas of rectangles.
	5.NF.B.6	
Lesson 9.7: Multiply Mixed Numbers	5.NF.B.6	Multiply a mixed number t

Lesson 9.8: Compare Factors and Products	5.NF.B.5a 5.NF.B.5b	Compare a product to each
End of Chapter 9: Multiply Fractions	Day 1 Performance Task & Centers	
End of Chapter 9: Multiply Fractions	Day 2 Chapter Assessment	

Chapter 10

7 days

Lesson 10.1: Interpret Fractions as Division	5.NF.B.3	Understand how fractions 1
Lesson 10.2: Mixed Numbers as Quotients	5.NF.B.3	Understand how mixed nu
Lesson 10.3: Divide Whole Numbers by Unit Fractions	5.NF.B.7b 5.NF.B.7c	Divide whole numbers by 1
Lesson 10.4: Divide Unit Fractions by Whole Numbers	5.NF.B.7a 5.NF.B.7c	Divide unit fractions by wl
Lesson 10.5: Problem Solving: Fraction Division	5.NF.B.7c	Solve multi-step word prob fractions.
End of Chapter 10: Divide Fractions	Day 1 Performance Task & Centers	
End of Chapter 10: Divide Fractions	Day 2 Chapter Assessment	

Strategies for Multilingual Learners

For Spanish Speaking, students can use the Student Edition Spanish book, multi-language dictionary and Family Letters in Spanish for parents. Others need one on one support, vocabulary flashcards, eliminate word problems (computational problems only), pictures clues, use Google Translate, peer buddy

- Family Letter in Spanish
- Multi- Language Dictionary
- Student Edition Spanish Book

Strategies for Students in Need of Intervention

Strategy

Learner Focus
(G&T, ELL, etc)

When students struggle with facts: Reflex Math, multiplication chart, flash cards, timed tests	ACES/Struggling
When students struggle with word problems: highlight clue words, underline question, break down steps, read aloud, review vocabulary	ACES/Struggling
Reteach Pages for each chapter	ACES/Struggling
Skill Review Handbook	ACES/Struggling

- 1:1 Conferencing
- Flexible Grouping based on Iready Scores
- Incorporate centers that focus on skills that students are struggling with
- Tiered Activities/ Lessons
- Use of Big Ideas Reteaching pages/problems
- Chart with keywords for word problems to determine operation used
- Choice Boards-Ex: Word Problems, decimal operations, order of operations
- Constant progress monitoring and use of data to drive instruction
- Draw pictures to solve problems
- Extended pacing for lessons
- Highlight key terms in word problems
- Independent Study on topic of interest
- Iready math
- LearnZillion videos on topics of study
- Manipulatives (ex. place value chart, fraction strips, etc.)
- Math games on topics of instruction/ review
- Multiplication chart
- Pre-typed notes on unit of study
- Provide opportunities for higher-level activities to be completed
- Provide written notes/directions
- Skill Review Pages
- Small group and flexible grouping based on the progress monitoring data (Tier 1,2 and/or 3)

interventions)

- Tic-Tac Toe Boards- Ex: Word Problems with varying degrees of difficulty
- Use approaching level problems/assignments
- Use graph paper
- Use of a calculator for multi-step problems
- Use of Prodigy Math
- Use visual aids
- Visual Vocabulary/ Vocabulary journal

Strategies for Enrichment

*Enrichment and extension pages in each lesson

*Khan Academy- 6th grade standards

* Desmos

*Iready Pathway- 6th grade standards

- Desmos
- Enrichment and extension page in each lesson
- Iready Pathway-6th grade standards
- Khan Academy- 6th grade standards

Technology Integration

- 8.1.5.A.1 Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
- Education (printable sheets) <https://www.education.com/worksheets/fifth-grade/decimal-numbers/>
- LearnZillion (free online games) <https://learnzillion.com/p/>
- Lumos Learning <http://www.lumoslearning.com/llwp/resources/common-core-parcc-practice-tests-and-sample-questions/sample-questions.html?cur=555&id=7607>
- Math Worksheets <http://www.mathworksheetsland.com/5/>
- Prodigy (free online games) <https://www.prodigygame.com/>
- 8.1.5.A.4 Graph data using a spreadsheet, analyze and produce a report that explains the analysis of the data.
- 8.2.5.C.4 Collaborate and brainstorm with peers to solve a problem evaluating all solutions to provide the best results with supporting sketches or models.
- Iready math
- Reflex Learning
- Splash Math

Interdisciplinary Connections

- Next Gen Science Standards (5. Structure and Properties of Matter Unit have connections to 5.NBT.A.1; 5.NF.B.7; 5.MD.A.1; 5.MD.C.3; 5.MD.C.4)
- L.5.4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.
- Reading Connection: RI.5.4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
- RI.5.9 Integrate and reflect on (e.g. practical knowledge, historical/cultural context, and background knowledge) information from several texts on the same topic in order to write or speak about the subject knowledgeably.

21st Century Life & Career Ready Practices

- CRP6. Demonstrate creativity and innovation.
- CRP11. Use technology to enhance productivity.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.