# Math Unit 2 (23-24)

Mathematics
Mathematics 5
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12 Weeks- 60 Instructional Days
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## **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
		-I can use multiplication to divide. (6-1)
NBT.B.6		-I can use place value and division facts to find quotients.(6-2)
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.	-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 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 -g strategies based on place d 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.

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.

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

5.NF.A.2

I can add fractions with unlike Solve word problems denominators. (8-4) involving addition and subtraction of fractions I can subtract fractions with referring to the same whole, unlike denominators.(8-5) including cases of unlike -Students will be able to solve denominators, e.g., by using word problems involving I can add mixed numbers with visual fraction models or addition and subtraction of unlike denominators. (8-6) equations to represent the fractions. problem. Use benchmark I can subtract mixed numbers with fractions and number sense of unlike denominators. (8-7) fractions to estimate mentally I can solve multi-step word and assess the reasonableness problems involving fractions and of answers. For example, mixed numbers. (8-8) recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.

#### 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, 2/3 + 5/4 = 8/12 + 15/12 =23/12. (In general, a/b + c/d =(ad + bc)/bd.)

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

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-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 whole numbers by fractions. (9-1)

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

real world problems involving I can use models to multiply a multiplication of fractions and 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)

whole numbers. (10-4)

5.NF.B.7 Apply and extend -Students will be able to apply previous understandings of their understanding of division I can divide unit fractions by division to divide unit to divide unit fractions by fractions by whole numbers whole numbers and whole and whole numbers by unit numbers by unit fractions. fractions.1

> 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 find whole-number quotients of whole numbers with up to four-digit

#### 5.NF.B.4

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

NF. B.6 Solve real world

multiplication of fractions

and mixed numbers, e.g., by

using visual fraction models

or equations to represent the

problems involving

problem.

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

Students will be able to solve

mixed numbers, e.g., by using

visual fraction models or

equations to represent the

problem.

dividends and two-digit divisors.

- Students will be able to solve word problems involving addition and subtraction of fractions.
- 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-testsand-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 division
	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	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 Quotients v Remainder Lesson 6.7 Three-Digi by Two-Di Numbers Lesson 6.8 Four-Digit Two-Digit	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 5.1	5.NBT.B.6	
	Solving: Division	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	Chapter 7 Openary	Partarmanaa Task Praviaw &	
12 days	Divide Decimals	Vocabulary	
v	Lesson 7.1: Division Patterns with	5.NBT.A.2	Find quotients involving de
	Decimals	5.NBT.B.7	
	Lesson 7.2: Estimate	5.NBT.A.4	Use compatible numbers to
	Decimal Quotients	5.NBT.B.7	decimais.
	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-dia
	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 dividence 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	Chapter 8 Opener: Add	Performance Task Preview &	
12 davs	and Subtract Fractions	Vocabulary	
-	Lesson 8.1: Simplest Form	5.NF.A.1	Write fractions in simplest
	Lesson 8.2: Estimate Sums and Differences	5.NF.A.1	Estimate sums and differer
	of Fractions	5.NF.A.2	
	Lesson 8.3: Find Common	5.NF.A.1	Write fractions using a con

	Denominators		
	Lesson 8.4: Add Fractions with Unlike	5.NF.A.1	Add fractions with unlike (
	Denominators	5.NF.A.2	
	Lesson 8.5: Subtract Fractions with Unlike	5.NF.A.1	Subtract fractions with unl
	Denominators	5.NF.A.2	
	Lesson 8.6: Add Mixed	5.NF.A.1	Add mixed numbers with t
	Numbers	5.NF.A.2	Add mixed humbers with t
	Lesson 8.7: Subtract	5.NF.A.1	Culture of an investigation of any set
	Mixed Numbers	5.NF.A.2	Subtract mixed numbers w
	Lesson 8.8: Problem	5.NF.A.1	Solve multi-step word proł
	Solving: Fractions	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	Chanter 0 On an arr	Doutomoon on Tools During &	
11 davs	Multiply Fractions	Vocabulary	
11 uuj5	Lesson 9.1: Multiply Whole Numbers by	5.NF.B.4a	Multiply whole numbers b
	Fractions	5.NF.B.6	
	Lesson 9.2: Use Models to Multiply	5.NF.B.4a	Multiply fractions by whol
	Fractions by Whole Numbers	5.NF.B.6	Wattiply Hactons by who
	Lesson 9.3: Multiply Fractions and Whole	5.NF.B.4a	Multiply fractions and who
	Numbers	5.NF.B.6	
	Lesson 9.4: Use Models to Multiply	5.NF.B.4a	Use models to multiply a f
	Fractions	5.NF.B.6	
	Lesson 9.5: Multiply	5.NF.B.4a	Multiply a fraction by a fra
	Fractions	5.NF.B.6	1 5 5
	Lesson 9.6: Find Areas	5.NF.B.4b	Find areas of rectangles.
	of Kectangles	5.NF.B.6	č
	Lesson 9.7: Multiply Mixed Numbers	5.NF.B.6	Multiply a mixed number t

	Lesson 9.8: Compare Factors and Products End of Chapter 9: Multiply Fractions End of Chapter 9: Multiply Fractions	5.NF.B.5a 5.NF.B.5b Day 1 Performance Task & Centers Day 2 Chapter Assessment	Compare a product to each
Chapter 10 7 days	Lesson 10.1: Interpret Fractions as Division	5.NF.B.3	Understand how fractions 1
v	Lesson 10.2: Mixed Numbers as Quotients	5.NF.B.3	Understand how mixed nu
	Lesson 10.3: Divide Whole Numbers by	5.NF.B.7b	Divide whole numbers by
		5.NF.D.7	
	Unit Fractions by Whole Numbers	5.NF.B.7a 5.NF.B.7c	Divide unit fractions by wh
	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-testsand-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

- 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.