Unit 2 (Ch 5-8 & 10)

Content Area: **Mathematics**
Course(s): **Mathematics 4**
Time Period: **December**
Length: **67 days (including 2 days for iReady testing)**
Status: **Published**

Unit #2 Overview

The students will be working on:

Divide Multi-Digit Numbers by One-Digit Numbers

Factors, Multiples, and Patterns

Understand Fraction Equivalence and Comparison

Add and Subtract Fractions

Relate Fractions and Decimals

Priority Standards

MATH.4.OA.A.3	Solve multi-step word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
MATH.4.OA.B.4	Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.
MATH.4.OA.C.5	Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.
MATH.4.NBT.A.1	Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
MATH.4.NBT.B.6	Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area model.
MATH.4.NF.A.1	Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

MATH.4.NF.A.2	Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.
MATH.4.NF.B.3	Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.
MATH.4.NF.B.3.a	Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
MATH.4.NF.B.3.b	Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model.
MATH.4.NF.B.3.c	Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
MATH.4.NF.B.3.d	Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.
MATH.4.NF.C.5	Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.
MATH.4.NF.C.6	Use decimal notation for fractions with denominators 10 or 100.
MATH.4.NF.C.7	Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model.
MATH.4.M.A.2	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

Learning Targets

- I can compare 2 fractions by creating equivalent fractions with a common denominator (if needed).
- Lesson 10-1: I can write a fraction or mixed number involving tenths as a decimal.
- Lesson 10-2: I can write a fraction or mixed number involving hundredths as a decimal.
- Lesson 10-3: I can write tenths and hundredths as equivalent fractions and decimals.
- Lesson 10-4: I can compare decimals to the hundredths place.
- Lesson 10-5: I can use equivalent fractions to add decimal fractions and decimals.
- Lesson 10-6: I can write amounts of money in different ways.
- Lesson 10-7: I can add, subtract, multiply, and divide amounts of money.
- Lesson 5-1: I can use place value to divide tens, hundreds, or thousands.
- Lesson 5-2: I can use division facts and compatible numbers to estimate quotients.
- Lesson 5-3: I can use models to find quotients and remainders.
- Lesson 5-4: I can use partial quotients to divide.
- Lesson 5-5: I can use partial quotients to divide and find remainders.

- Lesson 5-6: I can divide two-digit numbers by one-digit numbers.

- Lesson 5-7: I can divide multi-digit numbers by one-digit numbers.

- Lesson 5-8: I can divide by one-digit numbers.

- Lesson 5-9: I can solve multi-step word problems involving division.

- Lesson 6-1: I can use models to find factor pairs.

- Lesson 6-2: I can use division to find factor pairs.

- Lesson 6-3: I can understand the relationship between factors and multiples.

- Lesson 6-4: I can tell whether a given number is prime or composite.

- Lesson 6-5: I can create and describe number patterns.

- Lesson 6-6: I can create and describe shape patterns.

- Lesson 7-1: I can model and write equivalent fractions.

- Lesson 7-2: I can use multiplication to find equivalent fractions.

- Lesson 7-3: I can use division to find equivalent fractions.

- Lesson 7-4: I can compare fractions using benchmarks.

- Lesson 7-5: I can compare fractions using equivalent fractions.

- Lesson 8-1: I can use area models and number lines to add fractions.

- Lesson 8-2: I can write a fraction as a sum of fractions.

- Lesson 8-3: I can add fractions with like denominators.

- Lesson 8-4: I can use area models and number lines to subtract fractions.

- Lesson 8-5: I can subtract fractions with like denominators.

- Lesson 8-6: I can write mixed numbers as fractions and fractions as mixed numbers.

- Lesson 8-7: I can add mixed numbers with like denominators.

- Lesson 8-8: I can subtract mixed numbers with like denominators.

- Lesson 8-9: I can solve multi-step word problems involving fractions and mixed numbers.

Essential Questions

- How are factors and multiples related?

- How are fractions and decimals related?

- How can different fractions name the same amount?

- How can I generate equivalent fractions?

- How can I identify and extend patterns?

- How does division affect numbers?

- What is fraction equivalence?

- What strategies can I use to add or subtract fractions?

- What strategies can I use to compare fractions?

Materials and Resources

- Big Ideas Online digital platform

- Big Ideas Workbook Volume 1

- Common Core Quick Check (Printable)

- Exit Tickets

- Foldables

- Hands-On Manipulatives

- iReady platform 40 minutes/week with individual paths for each student

- Problem of the Day (Printable)

- Reflex Math

- Visual Vocabulary Cards

- Weekly Calendar

Unit Assessments (Required)

- Big Ideas Chapter 10 Assessment Form B

- Big Ideas Chapter 5 Assessment Form B

- Big Ideas Chapter 6 Assessment Form B

- Big Ideas Chapter 7 Assessment Form B

- Big Ideas Chapter 8 Assessment Form B

Unit Assessments (Optional)

- Big Ideas Chapter Assessments Form A

- Big Ideas Created Assessment: Course Benchmark # 2 (for use after Chapter 7)

- Journal Writing

- Standardized Test Practice (NJSLA released items/iReady platform)

- Teacher Created Assessments/Exit Tickets Big Ideas

Learning Plan

Time Frame	Big Ideas	NJSLA Priority Standard	Learning Goals
		4.NBT.A.1 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.	
Chapter 5	Chapter 5:		● Divide a multi thousand by a or
(15 days)	Lesson 1	4.NBT.B.6	● Explain how to facts to divide te
		Find whole-number quotients and remainders with up to four-digit dividends and one digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays,	

and/or area models.

| Chapter 5 (15 days) | Chapter 5: Lesson 2 | 4.NBT.B.6

Find whole-number quotients and remainders with up to four-digit dividends and one digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | ● Use division fa estimate a quotie

● Find two estim |

| Chapter 5 (15 days) | Chapter 5: Lesson 3 | 4.NBT.B.6 Find whole-number quotients and remainders with up to four-digit dividends and one digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | ● Use models to divide evenly. ● Find a quotien ● Interpret the q division problem |

Chapter	Chapter	Standard	
Chapter 5 (15 days)	Chapter 5: Lesson 4	4.NBT.B.6 Find whole-number quotients and remainders with up to four-digit dividends and one digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	● Explain how t ● Write partial q ● Add the partia
Chapter 5 (15 days)	Chapter 5: Lesson 5	4.NBT.B.6 Find whole-number quotients and remainders with up to four-digit dividends and one digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.	● Use partial qu ● Find a remaind

Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

4.NBT.B.6

| Chapter 5 (15 days) | Chapter 5: Lesson 6 | Find whole-number quotients and remainders with up to four-digit dividends and one digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | ● Divide to find ● Show how to ● Use place valu |

| Chapter 5 (15 days) | Chapter 5: Lesson 7 | 4.NBT.B.6

Find whole-number quotients and remainders with up to four-digit dividends and one digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | ● Use place valu

● Show how to r tens.

● Find a quotien |

| Chapter 5 (15 days) | Chapter 5: Lesson 8 | 4.NBT.B.6 Find whole-number quotients and remainders with up to four-digit dividends and one digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | ● Use place valu ● Explain why tl quotient. ● Find a quotien |

4.NBT.B.6

Find whole-number quotients and remainders with up to four-digit dividends and one digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Chapter 5 (15 days)	Chapter 5: Lesson 9		

Chapter 5

Chapter 5:

(15 days)

Lesson 9

4.OA.A.3

Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

● Understand a
● Make a plan to the unknown nu
● Solve a proble

4.OA.B.4

Chapter 6

Chapter 6:

(12 days)

Lesson 1

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

● Draw area mo
● Find the facto
● Find the facto

		4.OA.B.4	
Chapter 6 (12 days)	Chapter 6: Lesson 2	Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	● Divide to find ● Use divisibility

| Chapter 6 (12 days) | Chapter 6: Lesson 3 | 4.OA.B.4

Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite. | ● Tell whether a number.

● Tell whether a number.

● Explain the rel multiples. |

		4.OA.B.4	
Chapter 6 (12 days)	Chapter 6: Lesson 4	Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	● Explain what ı are. ● Identify prime
Chapter 6 (12	Chapter 6: Lesson	4.OA.C.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1,	● Create a numb ● Describe featu

days) 5 generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.

Chapter 6 (12 days)	Chapter 6: Lesson 6	4.OA.C.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.	● Create a shape ● Find the shape ● Describe featu

Chapter 7

(12 days

= 10 + 2 days iReady testing)

Chapter 7:

Lesson 1

4.NF.A.1 Explain why a fraction a/b is equivalent to a fraction (n × a)/(n × b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

● Use an area m fractions.

● Use a number fractions.

● Write equivale

Chapter 7

(12 days = 10 + 2 days iReady testing)

Chapter 7:

Lesson 2

4.NF.A.1 Explain why a fraction a/b is equivalent to a fraction (n × a)/(n × b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

● Multiply a nu
chosen number.

● Multiply to fin

● Explain why n
find equivalent f

Chapter 7

(12 days = 10 + 2 days iReady testing)

Chapter 7: Lesson 3

4.NF.A.1 Explain why a fraction a/b is equivalent to a fraction (n × a)/(n × b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

● Find the factor

● Find the comn denominator.

● Divide to find

Chapter 7

(12 days = 10 + 2 days

Chapter 7: Lesson 4

4.NF.A.2 Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2 . Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

● Compare a fra 1.

● Use a benchma

Chapter
7

(12
days

= 10 +
2 days
iReady
testing)

Chapter
7:

Lesson
5

4.NF.A.2 Compare two fractions with different numerators and different
denominators, e.g., by creating common denominators or numerators, or by
comparing to a benchmark fraction such as 1/2 . Recognize that comparisons
are valid only when the two fractions refer to the same whole. Record the
results of comparisons with symbols >, =, or <, and justify the conclusions,
e.g., by using a visual fraction model.

● Compare the n
two fractions.

● Make the num
two fractions the

● Compare fract
like denominato

4.NF.B.3 Understand a fraction a/b with a > 1 as a sum of fractions 1/b.

Chapter 8 (15 days)	Chapter 8: Lesson 1	4.NF.B.3a Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. 4.NF.B.3d Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.	● Use an area m ● Use a number ● Explain what i

| Chapter 8 (15 days) | Chapter 8: Lesson 2 | 4.NF.B.3 Understand a fraction a/b with a > 1 as a sum of fractions 1/b. 4.NF.B.3b Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions. | ● Write a fractio
● Write a fractio
● Write a fractio than one way. |

		4.NF.B.3 Understand a fraction a/b with a > 1 as a sum of fractions 1/b.	
Chapter 8	Chapter 8:	4.NF.B.3a Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	● Use models to
			● Use a rule to a
(15 days)	Lesson 3	4.NF.B.3d	● Explain how to denominators.
		Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.	

		4.NF.B.3 Understand a fraction a/b with a > 1 as a sum of fractions 1/b.	
Chapter 8	Chapter 8:	4.NF.B.3a Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	● Use an area m
			● Use a number
(15 days)	Lesson 4	4.NF.B.3d	● Explain what i
		Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.	

| Chapter 8 (15 days) | Chapter 8: Lesson 5 | 4.NF.B.3 Understand a fraction a/b with a > 1 as a sum of fractions 1/b. 4.NF.B.3d Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators. | ● Use models to ● Use a rule to s ● Explain how t denominators. |

| Chapter 8 (15 days) | Chapter 8: Lesson 6 | 4.NF.B.3 Understand a fraction a/b with a > 1 as a sum of fractions 1/b.

 4.NF.B.3b Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions. | ● Model a mixed

 ● Write a mixed

 ● Write a fractio number. |

Chapter 8	Chapter 8:	4.NF.B.3 Understand a fraction a/b with a > 1 as a sum of fractions 1/b.	● Add fractional of mixed number
(15 days)	Lesson 7	4.NF.B.3c Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/ or by using properties of operations and the relationship between addition and subtraction. 4.NF.B.3d Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.	● Use equivalent numbers with like ● Explain two w like denominator

Chapter 8	Chapter 8:	4.NF.B.3 Understand a fraction a/b with a > 1 as a sum of fractions 1/b. 4.NF.B.3c	● Subtract fracti parts of mixed n
(15 days)	Lesson 8	Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/ or by using properties	● Use equivalent numbers with lik ● Explain two w

of operations and the relationship between addition and subtraction.

4.NF.B.3d

Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.

with like denomi

4.NF.B.3c

| Chapter 8 (15 days) | Chapter 8: Lesson 9 | Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/ or by using properties of operations and the relationship between addition and subtraction.

4.NF.B.3d

Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators. | ● Understand a p

● Make a plan to

● Solve a proble |

| Chapter 10 (13 days) | Chapter 10: Lesson 1 | 4.NF.C.6 Use decimal notation for fractions with denominators 10 or 100. | ● Extend a place ● Write fractions ● Write mixed n decimals. |

| Chapter 10 (13 days) | Chapter 10: Lesson 2 | 4.NF.C.6 Use decimal notation for fractions with denominators 10 or 100. | ● Extend a place hundredths. ● Write fractions decimals. ● Write mixed n decimals. |

| Chapter 10 (13 days) | Chapter 10: Lesson 3 | 4.NF.C.6 Use decimal notation for fractions with denominators 10 or 100. 4.NF.C.5 Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. | ● Write tenths as form and decima ● Write hundred form and decima ● Explain what e |
| Chapter 10 (13 days) | Chapter 10: Lesson 4 | 4.NF.C.7 Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions. | ● Choose a strat ● Use the symbo decimals to the h |

| Chapter 10 (13 days) | Chapter 10: Lesson 5 | 4.NF.C.6 Use decimal notation for fractions with denominators 10 or 100. 4.NF.C.5 Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. | ● Use equivalent fractions. ● Use equivalent |

| Chapter 10 (13 days) | Chapter 10: Lesson 6 | 4.NF.C.6

Use decimal notation for fractions with denominators 10 or 100. | ● Write money a a decimal point.

● Write money a numbers.

● Write money a |

4.MD.A.2

| Chapter 10 (13 days) | Chapter 10: Lesson 7 | Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. | ● Use the four o[problems.

● Explain why I solve. |

Technology Integration

Prodigy	https://www.prodigygame.com/
LearnZillion	https://learnzillion.com/
Math Playground	http://www.mathplayground.com/grade_4_games.html
Fact Freaks	https://www.factfreaks.com/
Math Game Time	http://www.mathgametime.com/
FunBrain	https://www.funbrain.com/
iReady Learning platform	Students can access through their Clever portal.

TECH.8.1.5.A.1	Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
TECH.8.1.5.A.3	Use a graphic organizer to organize information about problem or issue.
TECH.8.1.5.F.1	Apply digital tools to collect, organize, and analyze data that support a scientific finding.
TECH.8.2.5.D.3	Follow step by step directions to assemble a product or solve a problem.
TECH.8.2.5.E.4	Use appropriate terms in conversation (e.g., algorithm, program, debug, loop, events, procedures, memory, storage, processing, software, coding, procedure, and data).

Interdisciplinary Connections

• 4.DL.B.5 Math/Science: Climate Change data literacy-- make a line plot to display a data set of measurements in fractions of a unit in regards to natural resources.

• 4.M.A.2 Math/Science: Climate Change problem solving-- use the four operations to solve word problems related to the use of natural resources and involving distance, time, liquid volume, and/or the mass of objects.

• 4.NBT.2 Students will integrate science, technology, engineering, and/or art with math to develop a game that involves priority standards addressed in Unit #2

• 4.NF.3 Math/Health/Science: Develop recipes with fractions when planning a real world, large event (For example: birthday party, graduation, holiday)

• 4.OA.3 Math/Music/Reading: Big Ideas Math Musicals

• 4.OA.3 Math/Science/Reading: Big Ideas STEAM Videos & Performance Tasks

• 4.OA.3 Math/Social Studies/Reading: Leveled Readers

• 4.OA.A.3 Math/Science: Climate Change problem solving--use the four operations to solve multi-step word problems posed with whole numbers, having whole-number answers and that are based on energy, fuels, and natural resources.

• W.4.7 Math/Social Studies: Provide examples on a famous mathematician

21st Century Life & Career Ready Practices

CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP3	Attend to personal health and financial well-being.
CRP.K-12.CRP8	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP.K-12.CRP11	Use technology to enhance productivity.
PFL.9.1.4.B	Money Management