North Gibson School Corporation

Grade 3 Mathematics
North Gibson
SY 2022-2023

Grade 3 Mathematics

Units of Study			
Unit 1A:	Place Value to 10,000	19 days	1st quarter
Unit 1B:	Addition and Subtraction within 1,000	6 days	1st quarter
Unit 1C:	Money	6 days	1st quarter
Unit 2A:	Multiplication	18 days	1st-2nd quarter
Unit 2B:	Division	16 days	2nd quarter
Unit 2C:	Real-World Problems	11 days	2nd quarter
Unit 3A:	Fraction Number Sense	13 days	2nd-3rd quarter
Unit 3B:	Equivalent Fractions	7 days	3rd quarter
Unit 3C:	Comparing Fractions	8 days	3rd quarter
Unit 4A:	Time	9 days	3rd quarter
Unit 4B:	Data and Measurement	16 days	3rd quarter
Unit 4C:	Area and Perimeter	16 days	4th quarter
Unit 5:	Geometry	12 days	4th quarter
Unit 6:	Measurement-Mass, Capacity, Weight, & Temp.	11 days	4th quarter

Appendices

Appendix A: Proficiency Scale Template

Appendix B: Curriculum Refinement Form

Appendix C: K-12 Math Priority Standards Vertical Articulation

Grade 3 Priority Standards

Priority Standards	**3.AT.2**	Solve real-world problems involving whole number multiplication and division within 100 in situations involving equal groups, arrays, and measurement quantities (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).
	3.C.1	Fluently add and subtract whole numbers within 1000 using strategies and algorithms based on place value, properties of operations, and relationships between addition and subtraction.
	3.C.2	Represent the concept of multiplication of whole numbers with the following models: equal-sized groups, arrays, area models, and equal "jumps" on a number line. Understand the properties of 0 and 1 in multiplication.
	3.C.3	Represent the concept of division of whole numbers with the following models: partitioning, sharing, and an inverse of multiplication. Understand the properties of 0 and 1 in division.
	3.DA.2	Generate measurement data by measuring lengths with rulers to the nearest quarter of an inch. Display the data by making a line plot, where the horizontal scale is marked off in appropriate units, such as whole numbers, halves, or quarters.
	3.G.2	Understand that shapes (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize and draw rhombuses, rectangles, and squares as examples of quadrilaterals. Recognize and draw examples of quadrilaterals that do not belong to any of these subcategories.
	3.M.3	Tell and write time to the nearest minute from analog clocks, using a.m. and p.m., and measure time intervals in minutes. Solve real-world problems involving addition and subtraction of time intervals in minutes.
	3.M.4	Find the value of any collection of coins and bills. Write amounts less than a dollar using the ¢ symbol and write larger amounts using the $ symbol in the form of dollars and cents (e.g., $4.59). Solve real-world problems to determine whether there is enough money to make a purchase.
	3.M.5	Find the area of a rectangle with whole-number side lengths by modeling with unit squares, and show that the area is the same as would be found by multiplying the side lengths. Identify and draw rectangles with the same perimeter and different areas or with the same area and different perimeters.
	3.NS.1	Use words, models, standard form and expanded form to represent and show equivalent forms of whole numbers up to 10,000.
	3.NS.3	Understand a fraction, 1/b, as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction, a/b, as the quantity formed by a parts of size 1/b. [In grade 3, limit denominators of fractions to 2, 3, 4, 6, 8.]
	3.NS.7	Recognize and generate simple equivalent fractions (e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent (e.g., by using a visual fraction model).

Standards Breakdown

★: Priority Standards ●: Supporting Standards —: Additional Standards X: Fact Fluency Standard

STANDARDS		UNITS													
		1A	1B	1C	2A	2B	2C	3A	3B	3C	4A	4B	4C	5	6
Number Sense	1	★													
	2	●													
	3							★							
	4							●							
	5							●							
	6								●						
	7								★						
	8									●					
	9	●													
Computation	1		★												
	2				★										
	3					★									
	4					●									
	5					●									
	6				X	X	X	X	X	X	X	X	X	X	X
Algebraic Thinking	1		●				●								
	2						★								
	3						●								
	4				●										
	5					●									
	6				●										
Geometry	1													—	
	2													★	
	3													●	
	4							●							
Measurement	1														●
	2														●
	3										★				
	4			★											
	5												★		
	6												●		
	7												●		
Data Analysis	1											●			
	2											★			

General Description of the Unit

In this unit students will develop number sense with numbers within 10,000. Students will represent numbers to 10,000 in all forms, compare them using comparison symbols, and round to the nearest 10 or 100. In second grade, students worked with numbers within 1,000.

Priority Standards

- **3.NS.1:** Use words, models, standard form and expanded form to represent and show equivalent forms of whole numbers up to 10,000.

Supporting Standards

- **3.NS.2:** Compare two whole numbers up to 10,000 using >, =, and < symbols.
- **3.NS.9:** Use place value understanding to round 2- and 3-digit whole numbers to the nearest 10 or 100.

Enduring Understandings

- Four-digit numbers are created using groups of thousands, hundreds, tens, and ones and can be represented in multiple ways.
- Using number sense, numbers can be compared and ordered.
- Three-digit numbers can be rounded to the nearest hundred and ten and rounded numbers are useful in estimation.

Essential Questions

- How are the numbers 1,546 and 1,645 alike? How are they different? How could you represent 1,645 using only hundreds, tens, and ones? Using only tens and ones?
- What is a real-world example of 4,567? What is an example that makes this number seem small? What is an example that makes this number seem big? What would it be impossible to represent with 4,567? What would it be reasonable to represent with 4,567?
- What is a real-world example of when you might need to be able to compare large numbers?
- What is a reasonable estimate for 785 - 422? How do you know?

Key Concepts

- I can read and write numbers to 10,000. (3.NS.1)
- I can write numbers in word form. (3.NS.1)
- I can write numbers in expanded form. (3.NS.1)
- I can use models to represent numbers. (3.NS.1)

Related Concepts

- I can compare numbers to 10,000 using greater than, less than, and equal to symbols. (3.NS.2)
- I can round numbers to the nearest 10. (3.NS.9)
- I can round numbers to the nearest 100. (3.NS.9)

Vocabulary

- Equal
- Expanded form
- Greater than
- Less than
- Place value
- Round
- Standard form
- Word form

Mathematical Processes

- PS.7 Look for and make use of structure.
- PS.8 Look for and express regularity in repeated reasoning.

Resources

Proficiency Scales

- 3.NS.1

Digital

- IDOE Examples/Tasks 3.NS.1
- IDOE Examples/Tasks 3.NS.2
- IDOE Examples/Tasks 3.NS.9

Manipulatives

- Interactive Number Line
- Online Spinner

School Resources	
Textbook Textbook Name: Ready Math, Second Edition Lessons: Lesson 0: Lessons for the First Five Days (3 days) Lesson 1: Understand Additive Patterns (3 days) Lesson 2: Read, Write, and Compare Four-Digit Numbers (5 days) Lesson 3: Use Place Value to Round Numbers (5 days)	**Formative Assessments** Lesson 1-2 Quiz 1 day Review Unit 1A Assessment

General Description of the Unit

In this unit students will fluently add and subtract numbers within 1,000. Students will use these skills to solve real-world problems involving addition and subtraction within 1,000. In second grade, students are introduced to addition and subtraction within 1,000 and solve real-world problems involving addition and subtraction within 100.

Priority Standards

- **3.C.1:** Fluently add and subtract whole numbers within 1000 using strategies and algorithms based on place value, properties of operations, and relationships between addition and subtraction.

Supporting Standards

- **3.AT.1:** Solve real-world problems involving addition and subtraction of whole numbers within 1000 (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).

Enduring Understandings

- Methods for adding and subtracting are based on place-value computation. Fluency is the ability to work efficiently, accurately, and flexibly.
- Addition and subtraction are inverse operations and inverse operations can help to work flexibly between both operations.
- Connecting multiple representations for adding and subtracting, such as modeling and drawing, provide context for using equations.

Essential Questions

- How many different methods could you use to solve 687 - 459?
- Is 687 - 459 more difficult than 328 - 113? Explain why or why not?
- How can addition help you subtract? How can subtraction help you add?
- Can you think of a real-world problem where you would need to add two three-digit numbers? Can you think of a realistic real-world problem where you would need to subtract a three-digit number from a three-digit number?

Key Concepts

- I can add numbers within 1000. (3.C.1)
- I can subtract numbers within 1000. (3.C.1)

Related Concepts

- I can solve real-world problems involving addition within 1000. (3.AT.1)
- I can solve real-world problems involving subtraction within 1000. (3.AT.1)

Vocabulary

- Addend
- Difference
- Place value
- Sum

Mathematical Processes

- PS.1 Make sense of problems and persevere in solving them.
- PS.6 Attend to precision.

Resources

Proficiency Scales

- 3.AT.1
- 3.C.1 - Template

Digital

- IDOE Examples/Tasks 3.C.1
- IDOE Examples/Tasks 3.AT.1

Manipulatives

- Bar Model Tool
- Base Ten Blocks
- Place-Value Discs
- Place-Value Mat

School Resources	
Textbook Lesson 4: Use Place Value to Add and Subtract (5 days)	**Formative Assessments** Quiz lesson 4

General Description of the Unit

In this unit students will find the value of coins and bills in any combination and solve real-world problems to determine whether there is enough money to make a purchase. Students will use proper money notation with the cent symbol and dollar symbol. In second grade, students found the value of a collection of coins and bills.

Priority Standards

- **3.M.4:** Find the value of any collection of coins and bills. Write amounts less than a dollar using the ¢ symbol and write larger amounts using the $ symbol in the form of dollars and cents (e.g., $4.59). Solve real-world problems to determine whether there is enough money to make a purchase.

Supporting Standards

- N/A

Enduring Understandings

- Different combinations of coins and dollars can make the same amount of money.
- Amounts of money can be counted in and represented in different ways.

Essential Questions

- How many different coin combinations can be used to make $1.49? How does that change if you add in a one-dollar bill?
- Why is money important? How do you earn money? How many different methods of transferring money, or representations of money are you aware of?
- Is $10 enough to purchase a hamburger at a fast-food restaurant? Is $10 enough to purchase a gallon of milk? How many candy bars do you think you can purchase with $10? What number is too high? What number is too little? How do you know?

Key Concepts

- I can find the value of a set of money. (3.M.4)
- I can use the cents sign to show money less than one dollar. (3.M.4)
- I can use the dollar sign to show money more than one dollar. (3.M.4)
- I can solve real-world problems that involve determining whether there is enough money to buy something. (3.M.4)

Related Concepts

- N/A

Vocabulary

- Cents
- Dollars

Mathematical Processes

- PS.2 Reason abstractly and quantitatively.
- PS.6 Attend to precision.

Resources

Proficiency Scales

- 3.M.4

Digital

- IDOE Examples/Tasks 3.M.4

Manipulatives

- Money Pieces

School Resources	
Textbook Lesson 5: Find the Value of Coins and Bills (4 days)	**Formative Assessments** 1 Day Review Unit 1B and 1C Assessment

General Description of the Unit

In this unit students will understand the meaning of multiplication and learn many ways to represent it. Students will learn the special properties of 0 and 1 and recognize patterns in multiplication. Students will use strategies to build their fluency with multiplication. In second grade, students learned arrays by partitioning rectangles with up to 5 rows and 5 columns and representing the arrays with a repeated addition equation.

Priority Standards

- **3.C.2:** Represent the concept of multiplication of whole numbers with the following models: equal-sized groups, arrays, area models, and equal "jumps" on a number line. Understand the properties of 0 and 1 in multiplication.

Supporting Standards

- **3.AT.4:** Interpret a multiplication equation as equal groups (e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each). Represent verbal statements of equal groups as multiplication equations.
- **3.AT.6:** Create, extend, and give an appropriate rule for number patterns within 100 (including patterns in the addition table or multiplication table).

Fluency Standard

- **3.C.6:** Demonstrate fluency with mastery of multiplication facts and corresponding division facts of 0 to 10.

Enduring Understandings

- Multiplication can be represented in many ways including arrays, equal groups, repeated addition, area models, and equal jumps on a number line.
- Zero and one have special properties in multiplication.
- Multiplication patterns can be created, extended, and identified.
- Math fact fluency refers to being able to efficiently, accurately, and flexibly solve multiplication facts. There are many strategies that can be used to solve multiplication facts for different factors.

Essential Questions

- How would you describe multiplication to someone else?
- How are multiplication and addition similar? How are they different?
- How many ways can you think of to represent 6 x 3?
- How do you figure out a multiplication number pattern? Can there be more than one right answer?
- Why is it important to be able to find answers to multiplication facts quickly?

Key Concepts

- I can use arrays to demonstrate multiplication. (3.C.2)
- I can use groups to demonstrate multiplication. (3.C.2)
- I can use area models to demonstrate multiplication. (3.C.2)
- I can “jump” to demonstrate multiplication on a number line. (3.C.2)
- I can show that multiplying any number by 0, the product is always 0. (3.C.2)
- I can show that multiplying any number by 1 will produce the same number. (3.C.2)

Related Concepts

- I can represent a multiplication problem by creating equal groups. (3.AT.4)
- I can create multiplication number patterns within 100. (3.AT.6)
- I can extend multiplication number patterns within 100. (3.AT.6)
- I can explain multiplication number patterns within 100. (3.AT.6)
- I can multiply fluently from 0 to 10. (3.C.6)

Vocabulary

- Area model
- Array
- Dividend
- Divisor
- Factor
- Multiple
- Multiplicative Identity Property
- Product
- Quotient

Mathematical Processes

- PS.1 Make sense of problems and persevere in solving them.
- PS.4 Model with mathematics.

Resources		
Proficiency Scales • 3.C.2	**Digital** • IDOE Examples/Tasks 3.C.2 • IDOE Examples/Tasks 3.AT.4 • IDOE Examples/Tasks 3.AT.6 • IDOE Examples/Tasks 3.C.6	**Manipulatives** • Arrays • Bar Model Tool • Color Counters • Multiple Representation Math Fact Cards • Multiplication Chart • Number Line • Partial Product Finder • Tic Tac Toe Products

School Resources	
Textbook Notes: Supplement lesson 6 through Unit 2A Lessons: Lesson 6: Understand the Meaning of Multiplication (5 days) Lesson 7: Work with Order and Grouping to Multiply (5 days) Lesson 8: Split Numbers to Multiply (5 days)	**Formative Assessments** Lesson 6-7 quiz 1 Day Review Unit Assessment 2A

General Description of the Unit

In this unit students will be introduced to the meaning of division and learn many ways to represent it. Students will explore the inverse relationship between multiplication and division and will learn the special properties of 0 and 1 in division.

Priority Standards

- **3.C.3:** Represent the concept of division of whole numbers with the following models: partitioning, sharing, and an inverse of multiplication. Understand the properties of 0 and 1 in division.

Supporting Standards

- **3.AT.5:** Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
- **3.C.4:** Interpret whole-number quotients of whole numbers (e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each).
- **3.C.5:** Multiply and divide within 100 using strategies, such as the relationship between multiplication and division (e.g., knowing that 8 x 5 = 40, one knows 40 ÷ 5 = 8), or properties of operations.

Fluency Standard

- **3.C.6:** Demonstrate fluency with mastery of multiplication facts and corresponding division facts of 0 to 10.

Enduring Understandings

- Division is separating objects into sets which can also be thought of as repeated subtraction.
- Division can be modeled using arrays, partitioning and sharing.
- Zero and one have special properties in division.
- The three numbers in multiplication and division equations are related to one another and can be used to find an unknown in any part of the equation.
- The quotient represents the number of shares in equal groups, or the number of equal groups of a specified size.
- Multiplication and division are inverse operations and can be used to help find unknowns in multiplication and division problems.

Essential Questions

- What is the relationship between division and subtraction? How are they similar? How are they different?
- What are all of the ways you can think of to represent 42 divided by 6?
- How can you use the product and a factor to find a missing factor?
- What is a quotient?
- How are multiplication and division similar? How are they different? How can they be used together to help you?

Key Concepts

- I can use partitioning to solve division problems. (3.C.3)
- I can use sharing to solve division problems. (3.C.3)
- I can show how division is the inverse of multiplication. (3.C.3)
- I can demonstrate that when dividing 0 by an number, the quotient is 0. (3.C.3)
- I can demonstrate that when dividing any number by 1, the quotient is the original number. (3.C.3)

Related Concepts

- I can solve for the missing number in a multiplication equation that relates 3 numbers. (3.AT.5)
- I can solve for the missing number in a division equation that relates 3 numbers. (3.AT.5)
- I can explain that a quotient is the number of groups a number can be shared into. (3.C.4)
- I can use the relationship between multiplication and division operations to solve multiplication and division problems within 100. (3.C.5)
- I can divide fluently from 0 to 10. (3.C.6)

Vocabulary

- Dividend
- Divisor
- Equation
- Factor
- Multiplicative Identity Property
- Partition
- Product
- Quotient

Mathematical Processes

- PS.7 Look for and make use of structure.
- PS.8 Look for and express regularity in repeated reasoning.

Resources

Proficiency Scales	Digital	Manipulatives
• 3.C.3	• IDOE Examples/Tasks 3.C.3 • IDOE Examples/Tasks 3.AT.5 • IDOE Examples/Tasks 3.C.4 • IDOE Examples/Tasks 3.C.5 • IDOE Examples/Tasks 3.C.6	• Arrays • Bar Model Tool • Color Counters • Multiple Representation Math Fact Cards • Multiplication Chart • Multiplication Chart • Number Line • Partial Product Finder • Tic Tac Toe Products

School Resources

Textbook	Formative Assessments
Notes: Supplement lesson 9 throughout Unit 2B Lessons: Lesson 9: Understand the Meaning of Division (5 days) Lesson 10: Understand How Multiplication and Division Are Connected (3 days) Lesson 11: Multiplication and Division Facts (5 days)	Lesson 9-10 quiz 1 Day Review Unit 2B Assessment

General Description of the Unit
In this unit students will begin by learning to solve real-world problems using multiplication and division. The unit will culminate with students solving two-step real-world problems with all four operations using drawings, equations, and symbols to represent the problem.

Priority Standards

- **3.AT.2:** Solve real-world problems involving whole number multiplication and division within 100 in situations involving equal groups, arrays, and measurement quantities (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).

Supporting Standards

- **3.AT.1:** Solve real-world problems involving addition and subtraction of whole numbers within 1000 (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).
- **3.AT.3:** Solve two-step real-world problems using the four operations of addition, subtraction, multiplication and division (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).

Fluency Standard

- **3.C.6:** Demonstrate fluency with mastery of multiplication facts and corresponding division facts of 0 to 10.

Enduring Understandings

- Multiplication and division are used in many real-world situations.
- Word problems can be multi-step problems that require you to perform more than one operation to solve.

Essential Questions

- Can you think of a real-world example where you would need to multiply? Can you think of a real-world situation where you would need to divide?
- How do you determine what operation to use when solving a word problem?
- Can you think of a realistic real-world problem when you would need to use two steps or operations to solve it?

Key Concepts

- I can solve real-world multiplication problems that involve arrays. (3.AT.2)
- I can solve real-world multiplication problems that involve grouping. (3.AT.2)
- I can solve real-world multiplication problems that involve measurements. (3.AT.2)
- I can solve real-world division problems that involve arrays. (3.AT.2)
- I can solve real-world division problems that involve grouping. (3.AT.2)
- I can solve real-world division problems that involve measurements. (3.AT.2)

Related Concepts

- I can solve real-world problems involving addition within 1000. (3.AT.1)
- I can solve real-world problems involving subtraction within 1000. (3.AT.1)
- I can solve real-world problems that are two steps by using addition, subtraction, multiplication, or division. (3.AT.3)

Vocabulary

- Addend
- Array
- Difference
- Product
- Quotient
- Sum

Mathematical Processes

- PS.2 Reason abstractly and quantitatively.
- PS.3 Construct convincing arguments and critique the reasoning of others.

Resources		
Proficiency Scales • 3.AT.1 • 3.AT.2 - template	**Digital** • IDOE Examples/Tasks 3.AT.2 • IDOE Examples/Tasks 3.AT.1	**Manipulatives** • Bar Model Tool • Base Ten Blocks

School Resources	
Textbook Lessons: Lesson 12: Solve One-Step Word Problems Using Multiplication and Division (4 days) Lesson 13: Solve Two-Step Word Problems Using the Four Operations (5 days)	**Formative Assessments** 1 Day Review Unit 2C Assessment

General Description of the Unit

In this unit students will understand the parts of a fraction and what each part represents. Students will work with fractions that have denominators 2,3,4,6, or 8. Students will be able to partition shapes into parts with equal area. In second grade, students partitioned rectangles and circles into 2, 3, and 4 parts and used fraction vocabulary to describe the parts.

Priority Standards

- **3.NS.3:** Understand a fraction, 1/b, as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction, a/b, as the quantity formed by a parts of size 1/b. [In grade 3, limit denominators of fractions to 2, 3, 4, 6, 8.]

Supporting Standards

- **3.G.4:** Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole (1/2, 1/3, 1/4, 1/6, 1/8).
- **3.NS.4:** Represent a fraction, 1/b, on a number line by defining the interval from 0 to 1 as the whole, and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.
- **3.NS.5:** Represent a fraction, a/b, on a number line by marking off lengths 1/b from 0. Recognize that the resulting interval has size a/b, and that its endpoint locates the number a/b on the number line.

Fluency Standard

- **3.C.6:** Demonstrate fluency with mastery of multiplication facts and corresponding division facts of 0 to 10.

Enduring Understandings

- Fractions represent a numeric quantity/measurement for something that is less than a whole.
- In a fraction, the numerator represents the quantity of portions, while the denominator represents the size of the portions.
- Shapes can divided into equal size parts to represent different fractional amounts.
- Fractions can be represented on a number line with equal parts marked between 0 and 1. Each equal part represents a unit fraction.

Essential Questions

- Where and when do you see fractions at home or in the real world? What is a fraction? How would you describe it?
- How are the fractions ¼ and ¾ alike? How are they different? How are the fractions ¼ and ⅛ alike and different?
- Can fractions have the number 0 in them? Explain why or why not.
- What shapes are easy to use to show fractions? What shapes would be hard? What fractions are easy to show? What fractions are hard to show on a shape?

Key Concepts

- I can explain a fraction as a piece of something that has been cut into equal parts. (3.NS.3)
- I can explain the denominator of a fraction as the total number of parts in which something has been separated. (3.NS.3)
- I can explain the numerator as one or more parts of the whole. (3.NS.3)

Related Concepts

- I can separate shapes into parts with equal areas. (3.G.4)
- I can show that when shapes are broken into parts with equal areas, these are fractions of the whole. (3.G.4)
- I can create a number line and break it into equal parts. (3.NS.4)
- I can show that equal parts of a number line are fractions with equal value. (3.NS.4)
- I can successfully place a fraction on a number line. (3.NS.4)
- I can identify the location of a fraction on a number line by marking off intervals. (3.NS.5)

Vocabulary

- Denominator
- Fraction
- Fraction of the whole
- Interval
- Number line
- Numerator
- Partition

Mathematical Processes

- PS.6 Attend to precision.
- PS.7 Look for and make use of structure.

Resources

Proficiency Scales	Digital	Manipulatives
• 3.NS.3	• IDOE Examples/Tasks 3.NS.3 • IDOE Examples/Tasks 3.G.4 • IDOE Examples/Tasks 3.NS.4 • IDOE Examples/Tasks 3.NS.5	• Fraction Bars • Fraction Circles • Fraction Strips • Fraction Wall • Number Line

School Resources

Textbook

Notes:
Supplement Lesson 14
Goal- complete lesson 31 by semester break

Lessons:

Lesson 14: Understand What a Fraction Is (5 days)
Lesson 31: Divide Shapes into Parts with Equal Areas (3 days)
Lesson 15: Understand Fractions on a Number Line (3 days)

Formative Assessments

Lesson 14+31 Quiz

Lesson 15 Quiz

General Description of the Unit
In this unit students will explore equivalent fractions using visual models and explain why the fractions are equivalent.

Priority Standards
- **3.NS.7:** Recognize and generate simple equivalent fractions (e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent (e.g., by using a visual fraction model).

Supporting Standards
- **3.NS.6:** Understand two fractions as equivalent (equal) if they are the same size, based on the same whole or the same point on a number line.

Fluency Standard
- **3.C.6:** Demonstrate fluency with mastery of multiplication facts and corresponding division facts of 0 to 10.

Enduring Understandings
- Fractions can be equivalent, or represent equal amounts, even if they have different numbers in the numerator and denominator.
- The size of the fraction, the size of the whole, and the point on the number line are all important in fraction equivalence.

Essential Questions
- How are 2/4 and 3/6 alike? How are they different?
- How many equivalent fractions can you think of for 1/4?
- What does it mean for two fractions to be equivalent? How can equivalent fractions be helpful?
- If Jose gets half of a 12-inch sandwich and Nina gets half of a 6-inch sandwich, did they get equivalent amounts? Why or why not?

Key Concepts
- I can identify equivalent fractions. (3.NS.7)
- I can create equivalent fractions. (3.NS.7)
- I can explain why one fraction is equivalent to another. (3.NS.7)

Related Concepts
- I can demonstrate that two fractions are equivalent based on their size. (3.NS.6)
- I can demonstrate that two fractions are equivalent based on their location on a number line. (3.NS.6)

Vocabulary
- Denominator
- Equivalent
- Fraction
- Number line

Mathematical Processes
- PS.2 Reason abstractly and quantitatively.
- PS.4 Model with mathematics.

Resources

Proficiency Scales
- 3.NS.7

Digital
- IDOE Examples/Tasks 3.NS.7
- IDOE Examples/Tasks 3.NS.6

Manipulatives
- Fraction Bars
- Fraction Circles
- Fraction Strips
- Fraction Wall
- Number Line

School Resources

Textbook

Formative Assessments

Lesson 16: Understand When Fractions Are Equivalent (3 days) Lesson 17: Find Equivalent Fractions (3 days)	Lesson16-17 Quiz

Unit 3C: Comparing Fractions (8 days, 3rd quarter)

General Description of the Unit

In this unit students will compare fractions with the same numerator or denominator and record the results using comparison symbols. Students will justify their conclusions using a visual fraction model.

Priority Standards

- N/A

Supporting Standards

- **3.NS.8:** Compare two fractions with the same numerator or the same denominator by reasoning about their size based on the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions (e.g., by using a visual fraction model).

Fluency Standard

- **3.C.6:** Demonstrate fluency with mastery of multiplication facts and corresponding division facts of 0 to 10.

Enduring Understandings

- Fractions can be compared using number lines, visual fraction models, and number sense.

Essential Questions

- Is 1/2 of a pizza greater or less than 1/3 of the same pizza? How do you know? Could you convince someone else?
- If two fractions have the same numerator, how would you compare them? If two fractions have the same denominator, how would you compare them?

Key Concepts

- N/A

Related Concepts

- I can compare two fractions using greater than, less than, and equal to signs. (3.NS.8)
- I can use what I know about the relationship between numerators and denominators to compare two fractions. (3.NS.8)

Vocabulary

- Denominator
- Equal
- Greater than
- Less than
- Numerator

Mathematical Processes

- PS.3 Construct convincing arguments and critique the reasoning of others.
- PS.4 Model with mathematics.

Resources

Proficiency Scales

- **N/A**

Digital

- IDOE Examples/Tasks 3.NS.8

Manipulatives

- Fraction Bars
- Fraction Circles
- Fraction Strips
- Fraction Wall
- Number Line

School Resources	
Textbook Lessons: Lesson 18: Understand Comparing Fractions (3 days) Lesson 19: Work with Symbols to Compare Fractions (3 days)	**Formative Assessments** 1 Day Review Unit 3B and 3C Assessment

General Description of the Unit

In this unit students will tell and write time to the nearest minute and measure intervals of time in minutes. Students will solve real-world problems involving addition and subtraction of time intervals in minutes. In second grade, students learned to tell time to the nearest minute and solve problems with intervals to the half hour.

Priority Standards

- **3.M.3:** Tell and write time to the nearest minute from analog clocks, using a.m. and p.m., and measure time intervals in minutes. Solve real-world problems involving addition and subtraction of time intervals in minutes.

Supporting Standards

- N/A

Fluency Standard

- **3.C.6:** Demonstrate fluency with mastery of multiplication facts and corresponding division facts of 0 to 10.

Enduring Understandings

- Elapsed time represents the amount of time that has passed between a start and end time.
- Start times, end times, and elapsed time are related, and if you have two of the three of these times you can determine the missing third.
- Analog clocks can be read to the nearest second, minute, and hour.

Essential Questions

- What examples can you think of when you need to calculate elapsed time in your life?
- How would you describe a.m. and p.m. to someone? What are the important things that someone would need to know about a.m. and p.m.?

Key Concepts

- I can use an analog clock to tell time to the nearest minute. (3.M.3)
- I can write time to the nearest minute. (3.M.3)
- I can measure time intervals in minutes. (3.M.3)
- I can solve real-world problems that involve adding and subtracting time. (3.M.3)
- I can use a.m. and p.m. to write the time. (3.M.3)

Related Concepts

- N/A

Vocabulary

- Analog clock
- Time interval

Mathematical Processes

- PS.1 Make sense of problems and persevere in solving them.
- PS.2 Reason abstractly and quantitatively.

Resources

Proficiency Scales

- 3.M.3

Digital

- IDOE Examples/Tasks 3.M.3

Manipulatives

- Clock
- One Clock
- Two-Clocks- Elapsed Time

School Resources	
Textbook Notes: Supplement Telling Time Lessons: Supplement Telling Time to the Minute (3 days) Lesson 20: Solve Problems About Time (5 days)	**Formative Assessments** Lesson 20 Quiz

General Description of the Unit

In this unit students will combine skills of measuring length and generating data and display the data on a line plot using various units. Students will use scaled picture graphs, bar graphs, and frequency table to display a data set and solve one and two-step problems regarding the data. In second grade, students worked with single scale bar and picture graphs and solved simple problems using the data.

Priority Standards

- **3.DA.2:** Generate measurement data by measuring lengths with rulers to the nearest quarter of an inch. Display the data by making a line plot, where the horizontal scale is marked off in appropriate units, such as whole numbers, halves, or quarters.

Supporting Standards

- **3.DA.1:** Create scaled picture graphs, scaled bar graphs, and frequency tables to represent a data set—including data collected through observations, surveys, and experiments—with several categories. Solve one- and two-step "how many more" and "how many less" problems regarding the data and make predictions based on the data.

Fluency Standard

- **3.C.6:** Demonstrate fluency with mastery of multiplication facts and corresponding division facts of 0 to 10.

Enduring Understandings

- Measurement data can be represented on a line plot.
- Data can be represented using multiple types of graphs. Choosing the correct type of graphs can show different aspects of the collected data.
- The scale on a graph represents the value of a single box or picture in the graph.
- Data collection starts by identifying what question you want answered.
- Data can be collected in multiple methods such as via surveys, observations, and experiments. Based on what question is being addressed, there may be one or more methods of data collection best suited for the situation.

Essential Questions

- How are line plots useful in displaying measurement data?
- In what instances would data best be collected through observation? Through surveys? Through experiments?
- What are the important parts of a graph? Why are they important?
- Why is it important to not only collect data, but also to represent that data on a graph or a table?

Key Concepts

- I can use a ruler to measure to the nearest quarter inch. (3.DA.2)
- I can gather data by measuring lengths with a ruler. (3.DA.2)
- I can display collected data on a line plot designed with appropriate unit. (3.DA.2)

Related Concepts

- I can represent data by creating picture graphs. (3.DA.1)
- I can represent data by creating bar graphs. (3.DA.1)
- I can represent data by creating frequency tables. (3.DA.1)
- I can collect data through observations. (3.DA.1)
- I can collect data through surveying. (3.DA.1)
- I can collect data through experiments. (3.DA.1)
- I can make predictions based on data. (3.DA.1)
- I can solve problems based on data. (3.DA.1)

Vocabulary

- Bar graph
- Data
- Frequency table
- Line plot
- Observation
- Picture graph
- Ruler
- Survey

Mathematical Processes

- PS.3 Construct convincing arguments and critique the reasoning of others.
- PS.7 Look for and make use of structure.

Resources		
Proficiency Scales • 3.DA.1 • 3.DA.2 - template	**Digital** • IDOE Examples/Tasks 3.DA.2 • IDOE Examples/Tasks 3.DA.1	**Manipulatives** • Color Graph • Graph

School Resources	
Textbook Lessons: Lesson 23: Solve Problems Using Scaled Graphs (4 days) Lesson 24: Draw Scaled Graphs (4 days) Lesson 25: Measure Length and Plot Data on Line Plots (5 days)	**Formative Assessments** Lessons 23-24 Quiz 1 Day Review Unit 4B Assessment

General Description of the Unit

In this unit students will be introduced to area and perimeter of rectangles with unit squares and by using side lengths. Students will learn to multiply whole number side lengths to solve real-world and other mathematical problems. Students will find the perimeter of polygons given the side lengths or by finding an unknown side length.

Priority Standards

- **3.M.5:** Find the area of a rectangle with whole-number side lengths by modeling with unit squares, and show that the area is the same as would be found by multiplying the side lengths. Identify and draw rectangles with the same perimeter and different areas or with the same area and different perimeters.

Supporting Standards

- **3.M.6:** Multiply side lengths to find areas of rectangles with whole-number side lengths to solve real-world problems and other mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
- **3.M.7:** Find perimeters of polygons given the side lengths or by finding an unknown side length.

Fluency Standard

- **3.C.6:** Demonstrate fluency with mastery of multiplication facts and corresponding division facts of 0 to 10.

Enduring Understandings

- Perimeter is a measurement that represents the length of the outside of an object, and area is a measurement that represents the square units within a two-dimensional object's perimeter.
- Shapes with the same perimeters can have different areas, and shapes with the same areas can have different perimeters.

Essential Questions

- If you were going to help design a new playground, how would perimeter and area be important?
- How would you describe the size of your bedroom to someone who had never seen it? How would you describe the size of our classroom?
- If you know the perimeter of a shape, can you always figure out the area? If you know the area of a shape, can you always figure out the perimeter?

Key Concepts

- I can use unit squares to find the area of a rectangle. (3.M.5)
- I can demonstrate that multiplying the side lengths of a rectangle and filling it with unit squares creates the same area. (3.M.5)
- I can identify and draw rectangles that have the same perimeter and different areas. (3.M.5)
- I can identify and draw rectangles that have different perimeters and the same area. (3.M.5)

Related Concepts

- I can solve real-world problems by finding the area of rectangles. (3.M.6)
- I can show how the area of a rectangle is the product of a multiplication equation. (3.M.6)
- I can find the perimeter of a polygon by adding the side lengths. (3.M.7)
- I can find the perimeter of a polygon by finding an unknown side length. (3.M.7)

Vocabulary

- Area
- Factor
- Perimeter
- Product
- Rectangle
- Square
- Unit squares

Mathematical Processes

- PS.4 Model with mathematics.
- PS.6 Attend to precision.

Resources

Proficiency Scales

- 3.M.5

Digital

- IDOE Examples/Tasks 3.M.5
- IDOE Examples/Tasks 3.M.6
- IDOE Examples/Tasks 3.M.7

Manipulatives

- Area/Perimeter Explorer
- Digital Geoboards

School Resources	
Textbook Lessons: Lesson 26: Understand Area (3 days) Lesson 27: Multiply to Find Area (5 days) Lesson 28: Connect Area and Perimeter (5 days)	**Formative Assessments** Lesson 26-27 Quiz 1 Day Review Unit 4C Assessment

General Description of the Unit

In this unit students will understand attributes of two- and three-dimensional shapes. Students will categorize shapes by their attributes and recognize quadrilaterals as a larger category of shapes with shared attributes. Students will identify, describe, and draw points, lines, and line segments and use these term to describe shapes. In second grade, students learned to create simple two and three-dimensional shapes and to classify shapes by faces, vertices, sides, etc.

Priority Standards

- **3.G.2:** Understand that shapes (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize and draw rhombuses, rectangles, and squares as examples of quadrilaterals. Recognize and draw examples of quadrilaterals that do not belong to any of these subcategories.

Supporting Standards

- **3.G.3:** Identify, describe and draw points, lines and line segments using appropriate tools (e.g., ruler, straightedge, and technology), and use these terms when describing two-dimensional shapes.

Additional Standards

- **3.G.1:** Identify and describe the following: cube, sphere, prism, pyramid, cone, and cylinder.

Fluency Standard

- **3.C.6:** Demonstrate fluency with mastery of multiplication facts and corresponding division facts of 0 to 10.

Enduring Understandings

- Shapes have shared attributes that indicate larger classifications. Shapes can be classified in more than one category.
- Quadrilaterals are shapes with 4 connected sides and 4 angles. The orientation, length of side or, degree of angles do not impact a shape's classification as a quadrilateral.
- Shapes are made of points, lines, and line segments and tools can be used to create shapes from these things.
- Cubes, spheres, prisms, pyramids, cones, and cylinders are 3D figures whose faces are made from 2D shapes. 3D shapes have faces, vertices, and edges.

Essential Questions

- What are all the different ways you can think of to classify a square? A rectangle? A rhombus? Any shape?
- What tools might you use in geometry? How are those tools used?
- How are 3D shapes different from 2D shapes? How are they similar?
- What are attributes of 3D shapes that you can describe?
- What real-world examples of 3D shapes can you think of?

Key Concepts

- I can explain how shapes are related to one another by identify features they have in common. (3.G.2)
- I can put different shapes into categories by their common features. (3.G.2)
- I can identify and draw rhombi. (3.G.2)
- I can identify and draw rectangles. (3.G.2)
- I can identify and draw squares. (3.G.2)
- I can identify and draw quadrilaterals that cannot be categorized. (3.G.2)

Related Concepts

- I can identify points, lines and line segments. (3.G.3)
- I can explain what a point is. (3.G.3)
- I can explain what a line is. (3.G.3)
- I can explain what a line segment is. (3.G.3)
- I can draw a point. (3.G.3)
- I can draw a line. (3.G.3)
- I can draw a line segment. (3.G.3)
- I can identify cubes and explain their features. (3.G.1)
- I can identify spheres and explain their features. (3.G.1)
- I can identify prisms and explain their features. (3.G.1)
- I can identify pyramids and explain their features. (3.G.1)
- I can identify cones and explain their features. (3.G.1)

Vocabulary

- Angle
- Base
- Cone
- Cube
- Cylinder
- Line
- Line segment
- Parallel
- Perpendicular
- Point
- Prism
- Pyramid
- Quadrilateral
- Rectangle
- Rhombus
- Right angle
- Side
- Sphere
- Square

	• I can identify cylinders and explain their features. (3.G.1)	

Mathematical Processes
- PS.4 Model with mathematics.
- PS.5 Use tools appropriately.

Resources

Proficiency Scales	Digital	Manipulatives
• 3.G.2	• IDOE Examples/Tasks 3.G.2 • IDOE Examples/Tasks 3.G.3 • IDOE Examples/Tasks 3.G.1	• Geogebra Geometry • Geometric Solids • Interactive Cone • Interactive Cylinder • Interactive Prisms • Interactive Spheres • Interactive Triangular/Rectangular Pyramids • Pattern Blocks

School Resources

Textbook	Formative Assessments
Lessons: Lesson 29: Describe Two- and Three-Dimensional Shapes (5 days) Lesson 30: Geometric Shapes (5 days)	1 Day Review Unit 5 Assessment

General Description of the Unit

In this unit students will estimate and measure mass, volume, and length of objects using appropriate tools. Students will use all four operations to solve real-world problems involving mass or volume in the same given units. In second grade, students use tools and estimated length in different units and measured volume in cups and pints.

Priority Standards

- N/A

Supporting Standards

- **3.M.1:** Estimate and measure the mass of objects in grams (g) and kilograms (kg) and the volume of objects in quarts (qt), gallons (gal), and liters (l). Add, subtract, multiply, or divide to solve one-step real-world problems involving masses or volumes that are given in the same units (e.g., by using drawings, such as a beaker with a measurement scale, to represent the problem).
- **3.M.2:** Choose and use appropriate units and tools to estimate and measure length, weight, and temperature. Estimate and measure length to a quarter-inch, weight in pounds, and temperature in degrees Celsius and Fahrenheit.

Fluency Standard

- **3.C.6:** Demonstrate fluency with mastery of multiplication facts and corresponding division facts of 0 to 10.

Enduring Understandings

- There are different systems of measuring length, weight, and temperature. A relative understanding of how these systems compare to one another can help in choosing which system to use.
- Measurements like length, weight, mass, volume, and temperature help us quantify and understand the world around us.

Essential Questions

- In what units would you measure the length of a pencil? A classroom? The distance from your house to your school? Could you use the same units for each of these?
- What tool or tools would you use to measure the weight of an object? The length? The mass? The volume? The temperature?

Key Concepts

- N/A

Related Concepts

- I can estimate and measure the mass of objects in g and kg. (3.M.1)
- I can estimate and measure the volume of objects in qt, gal, and l. (3.M.1)
- I can add, subtract, multiply or divide to solve real-world problems involving mass. (3.M.1)
- I can add, subtract, multiply, or divide to solve real-world problems that involve volume. (3.M.1)
- I can measure length, weight, and temperature with appropriate tools. (3.M.2)
- I can estimate and measure length to a quarter-inch. (3.M.2)
- I can estimate and measure weight in pounds. (3.M.2)
- I can estimate and measure temperature in both Celsius and Fahrenheit. (3.M.2)

Vocabulary

- Celsius
- Estimate
- Fahrenheit
- Gallon
- Gram
- Inch
- Kilogram
- Length
- Liter
- Mass
- Pound
- Quart
- Ruler
- Scale
- Temperature
- Thermometer
- Volume
- Weight

Mathematical Processes

- PS.2 Reason abstractly and quantitatively.
- PS.5 Use tools appropriately.

Resources		
Proficiency Scales	**Digital**	**Manipulatives**
• 3.M.2	• IDOE Examples/Tasks 3.M.1 • IDOE Examples/Tasks 3.M.2	• Ruler Games • Thermometer

School Resources	
Textbook	**Formative Assessments**
Lessons: Lesson 21: Mass and Liquid Volume (5 days) Lesson 22: Measure Weight and Temperature (5 days)	Lesson 21-22 Quiz