# Ganado Unified School District #20
# (Math/4th grade)

## PACING Guide SY 2021-2022

| Resources | AZ College and Career Readiness Standard | Essential Question (HESS Matrix) | Learning Goal | Vocabulary (Content/Academic) |
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| **First Quarter: July – October 2021<br>Volume 1<br>Unit 1-4** | | | | |
| Unit 1: Math Is…(Lessons 1-6)<br>Lesson 1.1: Math is Mine | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.NF.A.1:** 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. | What does it mean to do math?<br><br>What math do you see in the classroom?<br><br>What math do you see outside the window? | I can identify my strengths in math.<br><br>I can recognize that we all have math superpowers. | • Interview<br>• Strength |
| Lesson 1.2: Math is Exploring and Thinking | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.NF.A.1:** 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. | What does it mean to do math?<br><br>What math do you see in the classroom?<br><br>What math do you see outside the window? | I can recognize when I feed frustration during math class.<br><br>I can describe my feelings and attitudes towards mathematics. | • Analyze |

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| **Lesson 1.3: Math is in My World** | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.NF.A.3:** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. | What does it mean to do math?<br><br>What math do you see in the classroom?<br><br>What math do you see outside the window? | I can explain a real-world situation using mathematics.<br><br>I can explain tools I can use to solve a problem. | • Visualize<br>• Model |
| **Lesson 1.4: Math is Explaining and Sharing** | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.OA.A.2:** Multiply or divide within 1000 to solve word problems involving multiplicative comparison (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison). | What does it mean to do math?<br><br>What math do you see in the classroom?<br><br>What math do you see outside the window? | I can construct an argument to explain my thinking with clear and appropriate terms.<br><br>I can explain my thinking with clear and appropriate terms. | • Estimate<br>• Exact<br>• Critique<br>• Defend<br>• Precise |
| **Lesson 1.5: Math is Finding Patterns** | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.NF.A.3:** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. | What does it mean to do math?<br><br>What math do you see in the classroom?<br><br>What math do you see outside the window? | I can use patterns to develop efficient strategies to solve problems.<br><br>I can explain why patterns are useful to solve problems. | • Efficient<br>• Generalize |
| **Lesson 1.6: Math is Ours** | | | | |
| **McGraw-Hill My Math:** Go Digital at | **4.NF.A.3:** Explain equivalence of fractions in special cases, and | What does it mean to do math? | I can describe the behaviors and attitudes that support a | • Generalization<br>• Norms |

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| connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | compare fractions by reasoning about their size.<br><br>**4.NF.A.3:** Use multiplication and division within 100 to solve problems 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 problems. | What math do you see in the classroom?<br><br>What math do you see outside the window? | productive classroom learning environment.<br><br>I can describe the mindsets that help me problem solve. | • Promise<br>• Respectful |
| **Volume 1 Unit 2:** Generalize Place-Value Structure (Lessons 1-4) | | | | |
| Lesson 2.1: Understand the Structure of Multi-Digit Numbers | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.NBT.A.1:** Apply concepts of place value, multiplication, and division to understand that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.<br><br>**4.NBT.A.2:** Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. | What do we already know about place value?<br><br>How can we describe the relationship among the digits in a 3-digit number?<br><br>How can I use place value to work with multi-digit numbers? | I can use place value to determine the value of a digit.<br><br>I can identify relationships between the values of digits. | • Base-ten number<br>• System<br>• Digit<br>• Expanded form<br>• Generalize<br>• Notice |
| Lesson 2.2: Read and Write Numbers to One-Million | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** | **4.NBT.A:** Generate place value understand for multi-digit whole numbers.<br><br>**4.NBT.A.2:** Read and write multi-digit whole numbers using base-ten | What do we already know about place value?<br><br>How can we describe the relationship among the | I can read and write numbers from 1 to 1,000,000 in standard form, word form, and expanded form. | • Expanded form<br>• Standard form<br>• Word form<br>• Period<br>• Notice |

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| Fraction tiles and place value mats | numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. | digits in a 3-digit number?<br><br>How can I use place value to work with multi-digit numbers? | I can explain how to use place-value structure to read and write greater numbers. | • Represent |
| Lesson 2.3: Compare Multi-Digit Numbers | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.NBT.A:** Generate place value understand for multi-digit whole numbers.<br><br>**4.NBT.A.2:** Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. | What do we already know about place value?<br><br>How can we describe the relationship among the digits in a 3-digit number?<br><br>How can I use place value to work with multi-digit numbers?<br><br>How does place value help represent the value of numbers? | I can compare two multi-digit numbers based on the value of the digits in each place.<br><br>I can use >, =. < symbols to record the results of comparisons. | • Digit<br>• Value<br>• Conjecture<br>• Represent |
| Lesson 2.4: Round Multi-Digit Numbers | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.NBT.A:** Generate place value understand for multi-digit whole numbers.<br><br>**4.NBT.A.3:** Use place value understanding to round multi-digit whole numbers to any place. | What do we already know about place value?<br><br>How can we describe the relationship among the digits in a 3-digit number?<br><br>How can I use place value to work with multi-digit numbers? | I can round multi-digit numbers to any place.<br><br>I can explain why rounding multi-digit numbers is useful. | • Halfway point<br>• Round<br>• Estimate<br>• Explain<br>• Justify |
| **Volume 1 Unit 3:** Addition and Subtraction Strategies and Algorithms (Lessons 1-9) | | | | |

| Lesson 3.1: Estimate Sums or Differences | | | | |
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| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.OA.A.3:** Solve multistep word problems using the four operations, including problems in which remainders must be interpreted. Understand how the remainder is a fraction of the divisor. Represent these problems using equations with a letter standing for the unknown quantity. | How can I add and subtract with strategies and algorithms?<br><br>How can you show that value the responses of other students? | I can estimate sums and difference involving multi-digit numbers.<br><br>I can use estimates to help me determine whether my answer is reasonable. | • Estimate<br>• Front-end estimation<br>• Round<br>• Reasonable<br>• Strategy |
| **Lesson 3.2: Strategies to Add Multi-Digit Numbers** | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.NBT.B:** Use place value understand and properties of operations to perform multi-digit arithmetic.<br><br>**4.NBT.B.4:** Fluently add and subtract multi-digit whole numbers using a standard algorithm. | How can I add and subtract with strategies and algorithms?<br><br>How can working with someone new expand your thinking? | I can add multi-digit numbers by adjusting numbers or decomposing the numbers by place value.<br><br>I can explain how to use strategies to add multi-digit numbers. | • Decompose<br>• Partial sums<br>• Focus<br>• Scan |
| **Lesson 3.3: Understand an Addition Algorithm** | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.NBT.B:** Use place value understand and properties of operations to perform multi-digit arithmetic.<br><br>**4.NBT.B.4:** Fluently add and subtract multi-digit whole numbers using a standard algorithm. | How can I add and subtract with strategies and algorithms?<br><br>How can you figure out which things are challenging for you? | I can use an algorithm to add multi-digit numbers.<br><br>I can explain how an addition algorithm works. | • Algorithm<br>• Consider<br>• Efficiently |
| **Lesson 3.4: Understand an Addition Algorithm involving Regrouping** | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook** | **4.NBT.B:** Use place value understand and properties of operations to perform multi-digit arithmetic. | How can I add and subtract with strategies and algorithms? | I can use an algorithm to add multi-digit numbers with regrouping. | • Regroup<br>• Indicate<br>• Logical |

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| **Digital tools:** Fraction tiles and place value mats | **4.NBT.B.4:** Fluently add and subtract multi-digit whole numbers using a standard algorithm. | When might you use math outside of class? | I can explain how an addition algorithm with regrouping works. | |
| Lesson 3.5: Strategies to Subtract Multi-Digit Numbers | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.NBT.B:** Use place value understand and properties of operations to perform multi-digit arithmetic.<br><br>**4.NBT.B.4:** Fluently add and subtract multi-digit whole numbers using a standard algorithm. | How can I add and subtract with strategies and algorithms?<br><br>How can you justify your thinking? | I can subtract multi-digit numbers by adjusting numbers or by decompose the numbers by place value.<br><br>I can explain how to use strategies to subtract multi-digit numbers. | • Decompose<br>• Difference<br>• Prove<br>• Valid |
| Lesson 3.6: Understand a Subtraction Algorithm | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.NBT.B:** Use place value understand and properties of operations to perform multi-digit arithmetic.<br><br>**4.NBT.B.4:** Fluently add and subtract multi-digit whole numbers using a standard algorithm. | How can I add and subtract with strategies and algorithms?<br><br>What goal do you want to accomplish today? | I can use an algorithm to subtract multi-digit numbers.<br><br>I can explain how a subtraction algorithm works. | • Algorithm<br>• Difference<br>• Check<br>• Modify |
| Lesson 3.7: Understand a Subtraction Algorithm Involving Regrouping | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.NBT.B:** Use place value understand and properties of operations to perform multi-digit arithmetic.<br><br>**4.NBT.B.4:** Fluently add and subtract multi-digit whole numbers using a standard algorithm. | How can I add and subtract with strategies and algorithms?<br><br>How can working with a partner be helpful when solving problems? | I can use an algorithm to subtract multi-digit numbers with regrouping,<br><br>I can explain how a subtraction algorithm with regrouping works. | • Regroup<br>• Clarify<br>• Indicate |
| Lesson 3.8: Represent and Solve Multi-Digit Step Problems | | | | |
| **McGraw-Hill My Math:** Go Digital at | **4.OA.A.3:** Solve multistep word problems using the four operations, including problems in which | How can I add and subtract with strategies and algorithms? | I can use representations and equations to show the relationship between | • Variable<br>• Check<br>• Represent |

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| connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | remainders must be interpreted. Understand how the remainder is a fraction of the divisor. Represent these problems using equations with a letter standing for the unknown quantity. | How can you identify important information in a problem? | quantities in a multi-step word problem.<br><br>I can use representations to determine what mathematical operations can be used to solve each step of a multi-step problem. | |
| Lesson 3.9: Solve Multi-Step Problems Involving Addition and Subtraction | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.OA.A.3:** Solve multistep word problems using the four operations, including problems in which remainders must be interpreted. Understand how the remainder is a fraction of the divisor. Represent these problems using equations with a letter standing for the unknown quantity. | How can I add and subtract with strategies and algorithms?<br><br>How can you break down a problem to make it easier to solve? | I can use equations with variables and representations to solve multi-step problems.<br><br>I can explain how to solve multi-step addition and subtraction word problems. | • Multi-step<br>• Strategies<br>• Correspond<br>• Process |
| **Volume 1 Unit 4:** Multiplication as Comparison (Lessons 1-4) | | | | |
| Lesson 4.1: Understand Comparing with Multiplication | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.OA.A:** Use the four operations with whole numbers to solve problems.<br><br>**4.OA.A.1:** Represent verbal statements of multiplicative comparisons as multiplication equations. Interpret a multiplication equation as a comparison (e.g., 35 is the number of objects in 5 groups, each containing 7 objects, and is also the number of objects in 7 groups, each containing 5 objects). | How can I compare using multiplication?<br><br>How can your math skills or interests help you with your work today? | I can use multiplication to compare quantities.<br><br>I can explain how to use multiplication comparison statement to explain the relationships between quantities. | • Multiplicative<br>• Comparison<br>• Represent<br>• State |
| Lesson 4.2: Represent Comparison Problems | | | | |

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| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.OA.A.1:** Represent verbal statements of multiplicative comparisons as multiplication equations. Interpret a multiplication equation as a comparison (e.g., 35 is the number of objects in 5 groups, each containing 7 objects, and is also the number of objects in 7 groups, each containing 5 objects).<br><br>**4.OA.A.2:** Multiply or divide within 1000 to solve word problems involving multiplicative comparison (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison). | How can I compare using multiplication?<br><br>How can working together as team help you accomplish your goal? | | • Additive comparison<br>• Multiplicative comparison<br>• Distinguish between<br>• Indicate |
| Lesson 4.3: Solve Comparison Problems Using Multiplication | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.OA.A:** Use the four operations with whole numbers to solve problems.<br><br>**4.OA.A.2:** Multiply or divide within 1000 to solve word problems involving multiplicative comparison (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison). | How can I compare using multiplication?<br><br>What steps can you take to focus on your work today? | I can represent word problems involving multiplicative using bar diagrams and multiplication equations.<br><br>I can use multiplication to solve word problems involving multiplicative comparison. | • Bar diagram<br>• Unknown<br>• Consider<br>• Vary |
| Lesson 4.4: Solve Comparison Problems Using Division | | | | |

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| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.OA.A:** Use the four operations with whole numbers to solve problems.<br><br>**4.OA.A.2:** Multiply or divide within 1000 to solve word problems involving multiplicative comparison (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison). | How can I compare using multiplication?<br><br>What steps might you follow to help you solve a problem? | I can represent word problems involving multiplicative comparison using bar diagrams and division equations.<br><br>I can use division to solve word problems involving multiplicative comparisons. | • Bar diagram<br>• Unknown<br>• Correspond<br>• Suppose |
| **Second Quarter: November – December 2021**<br>**Volume 1**<br>**Unit 5-7** | | | | |
| **Volume 1 Unit 5:** Numbers and Number Patterns (Lessons 1-6) | | | | |
| Lesson 5.1: Understand Factors of Number | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.OA.B.4:** Find all factor pairs for a whole number in the range 1 to 100 and understand 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 a prime or composite. | What do you already know about patterns?<br><br>Where have you seen patterns in the real world?<br><br>What do you think you will be doing in this unit? | I can multiplicatively decompose a number into two factors, called factor pairs.<br><br>I can explain how to find all factor pairs of a number. | • Factor<br>• Factor pairs<br>• Predict<br>• Process |
| Lesson 5.2: Understand Prime and Composite Numbers | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook** | **4.OA.B:** Gain familiarity with factors and multiples.<br><br>**4.OA.B.4:** Find all factor pairs for a whole number in the range 1 to 100 | What do you already know about patterns?<br><br>Where have you seen | I can identify a while number as prime or composite based on the number of factor pairs it has. | • Composite number<br>• Factor pairs<br>• Prime number<br>• Categorize |

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| **Digital tools:** Fraction tiles and place value mats | and understand 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 a prime or composite. | patterns in the real world?<br><br>What do you think you will be doing in this unit? | | • State |
| Lesson 5.3: Understand Multiples | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.OA.B:** Gain familiarity with factors and multiples.<br><br>**4.OA.B.4:** Find all factor pairs for a whole number in the range 1 to 100 and understand 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 a prime or composite. | What do you already know about patterns?<br><br>Where have you seen patterns in the real world?<br><br>What do you think you will be doing in this unit? | I can find multiples of a while number in the range of 1-100. | • Factor<br>• Multiple<br>• Notice<br>• Product<br>• Reasonable |
| Lesson 5.4: Number or Shape Patterns | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.OA.C:** Generate and analyze patterns.<br><br>**4.OA.C.5:** Generate a number pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself and explain the pattern informally (e.g., given the rule “add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms | What do you already know about patterns?<br><br>Where have you seen patterns in the real world?<br><br>What do you think you will be doing in this unit? | I can recognize, extend, and describe a number or shape pattern. | • Pattern<br>• Pattern rule<br>• Sequence<br>• Examine<br>• Process |

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| | appear to alternate between odd and even numbers). | How can you show others you respect this idea? | | |
| Lesson 5.5: Generate Patterns | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.OA.C:** Generate and analyze patterns.<br><br>**4.OA.C.5:** Generate a number pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself and explain the pattern informally (e.g., 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). | What do you already know about patterns?<br><br>Where have you seen patterns in the real world?<br><br>What do you think you will be doing in this unit? | I can generate a number or shape pattern from a given rule. | • Pattern rule<br>• Tern<br>• Predict<br>• Represent |
| Lesson 5.6: Analyze Features of a Pattern | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.OA.C:** Generate and analyze patterns.<br><br>**4.OA.C.5:** Generate a number pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself and explain the pattern informally (e.g., 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). | What do you already know about patterns?<br><br>Where have you seen patterns in the real world?<br><br>What do you think you will be doing in this unit? | I can identify and explain features of a number or shape pattern. | • Pattern rule<br>• Sequence<br>• Term<br>• Assess<br>• Prediction |
| **Volume 1 Unit 6:** Multiplication Strategies with Multi-Digit Numbers (Lessons 1-8) | | | | |

| Lesson 6.1: Multiply by Multiples of 10, 100, or 1,000 | | | | |
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| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.NBT.B.5:** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | How can I multiply multi-digit numbers?<br><br>What do you already know about multiplying multi-digit numbers?<br><br>Where have you seen multiplication of multi-digit numbers used in the real world? | I can identify patterns of zeros that exist in products of a 1-digit number and multiples of 10, 100, and 1,000. | • Associative Property of Multiplication<br>• Multiple(s)<br>• Notice<br>• Represent<br>• Utilize |
| Lesson 6.2: Estimate Products | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.NBT.B.5:** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | How can I multiply multi-digit numbers?<br><br>What do you already know about multiplying multi-digit numbers?<br><br>Where have you seen multiplication of multi-digit numbers used in the real world? | I can use estimation strategies such as rounding and compatible number to estimate products. | • Compatible numbers<br>• Rounding<br>• Accurate<br>• Focus<br>• Method |
| Lesson 6.3: Use the Distributive Property to Multiply | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.NBT.B.5:** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | How can I multiply multi-digit numbers?<br><br>What do you already know about multiplying multi-digit numbers?<br><br>Where have you seen multiplication of multi- | I can use array models and the distributive property of multiplication to multiply two 1-digit factors.<br><br>I can explain how to use the distributive property of multiplication to find products. | • Decompose<br>• Distributive property<br>• Partial products<br>• Clarify<br>• Oppose |

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| | | digit numbers used in the real world? | | |
| Lesson 6.4: Multiply 2-Digit by 1-Digit Factors | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.NBT.B.5:** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | How can I multiply multi-digit numbers?<br><br>What do you already know about multiplying multi-digit numbers?<br><br>Where have you seen multiplication of multi-digit numbers used in the real world? | I can use the area model to determine the product of 2-digit and 1–digit factors.<br><br>I can find partial products to multiply 2-digit by 1-digit factors.<br><br>I can explain how to use partial products to multiply 2-digit by 1-digit factors. | • Area model<br>• Distributive Property<br>• Factor<br>• Product<br>• Develop<br>• Logical |
| Lesson 6.5: Multiply Multi-Digit by 1-Digit Factors | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.NBT.B.5:** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | How can I multiply multi-digit numbers?<br><br>What do you already know about multiplying multi-digit numbers?<br><br>Where have you seen multiplication of multi-digit numbers used in the real world? | I can use the area model to determine the product of a multi-digit factor and a 1-digit factor.<br><br>I can explain how to use partial products to multiply 3-digit and 4-digit factors by 1-digit factors. | • Area model<br>• Distributive Property<br>• Partial Products<br>• Clarify<br>• Oppose |
| Lesson 6.6: Multiply Two 2-Digit Factors | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** | **4.NBT.B.5:** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation | How can I multiply multi-digit numbers?<br><br>What do you already know about multiplying multi-digit numbers? | I can identify patterns with zeros in products of two multiples of 10.<br><br>I can identify patterns that exist in products of two multiples of 10. | • Associative Property of Multiplication<br>• Multiple<br>• Examine<br>• Recognize |

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| Fraction tiles and place value mats | by using equations, rectangular arrays, and/or area models. | Where have you seen multiplication of multi-digit numbers used in the real world? | | |
| Lesson 6.7: Multiply Two 2-Digit Factors | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.NBT.B.5:** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | How can I multiply multi-digit numbers?<br><br>What do you already know about multiplying multi-digit numbers?<br><br>Where have you seen multiplication of multi-digit numbers used in the real world? | I can use the area model to determine the product of two 2-digit factors.<br><br>I can find partial products to multiply two 2-digit factors.<br><br>I can describe how to use partial products to multiply two 2-digit factors. | • Area model<br>• Distributive Property<br>• Partial Products<br>• Reasonable<br>• Represent |
| Lesson 6.8: Solve Multi-Step Problems Involving Multiplication | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.OA.A.3**: Solve multistep word problems using the four operations, including problems in which remainders must be interpreted. Understand how the remainder is a fraction of the divisor. Represent these problems using equations with a letter standing for the unknown quantity. | How can I multiply multi-digit numbers?<br><br>What do you already know about multiplying multi-digit numbers?<br><br>Where have you seen multiplication of multi-digit numbers used in the real world? | I can represent and solve multi-step word problems involving multiplication. Representations include equations with a variable. | • Variable<br>• Check<br>• Examine |
| **Volume 1 Unit 7:** Division Strategies with Multi-Digit Dividends and 1-Digit Divisors (Lessons 1-8) | | | | |
| Lesson 7.1: Divide Multiples of 10, 100, or 1,000 | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com | **4.NBT.B:** Use place value understanding and properties of operations to perform multi-digit arithmetic. | What do you already know about dividing with multi-digit numbers? | I can divide multiples of 10, 100, and 1,000 by using the relationship between | • Dividend<br>• Divisor<br>• Multiples<br>• Quotients |

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| **Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.NBT.B.6:** Demonstrate understanding of division by finding whole-number quotients and remainders with up to four-digit dividends and one-digit divisors. | What does it mean to divide with multi-digit numbers?<br><br>What do you think you will be doing in this unit? | multiplication and division and place value.<br><br>I can identify patterns with zeros in the quotients when dividing multiples of 10,100, 1,000 by 1-digit divisors. | • Consider<br>• Notice |
| Lesson 7.2: Estimate Quotients | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.NBT.B:** Use place value understanding and properties of operations to perform multi-digit arithmetic.<br><br>**4.NBT.B.6:** Demonstrate understanding of division by finding whole-number quotients and remainders with up to four-digit dividends and one-digit divisors. | What do you already know about dividing with multi-digit numbers?<br><br>What does it mean to divide with multi-digit numbers?<br><br>What do you think you will be doing in this unit? | I can estimate quotients using compatible numbers and related division facts.<br><br>I can determine a range for the estimated quotients. | • Compatible numbers<br>• Range<br>• Develop<br>• Reasonable |
| Lesson 7.3: Find Equal Shares | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:**<br>Fraction tiles and place value mats | **4.NBT.B:** Use place value understanding and properties of operations to perform multi-digit arithmetic.<br><br>**4.NBT.B.6:** Demonstrate understanding of division by finding whole-number quotients and remainders with up to four-digit dividends and one-digit divisors. | What do you already know about dividing with multi-digit numbers?<br><br>What does it mean to divide with multi-digit numbers?<br><br>What do you think you will be doing in this unit? | I can divide 2-digit dividends by 1-digit divisors by using the equal sharing meaning of division.<br><br>I can explain how to find how many in each ground by using equal sharing. | • Dividend<br>• Divisor<br>• Equal sharing<br>• Quotient<br>• Examine<br>• Represent |
| Lesson 7.4: Understand Partial Quotients | | | | |

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| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.NBT.B:** Use place value understanding and properties of operations to perform multi-digit arithmetic.<br><br>**4.NBT.B.6:** Demonstrate understanding of division by finding whole-number quotients and remainders with up to four-digit dividends and one-digit divisors. | What do you already know about dividing with multi-digit numbers?<br><br>What does it mean to divide with multi-digit numbers?<br><br>What do you think you will be doing in this unit? | I can divide 3-digit dividends by 1-digit divisors by using partial quotients.<br><br>I can explain how to use partial quotients to solve a division problem with a 3-digit dividend. | • Partial quotients<br>• Algorithm<br>• Process<br>• Represent |
| Lesson 7.5: Divide 4-Digit Dividends by 1-Digit Divisors | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.NBT.B:** Use place value understanding and properties of operations to perform multi-digit arithmetic.<br><br>**4.NBT.B.6:** Demonstrate understanding of division by finding whole-number quotients and remainders with up to four-digit dividends and one-digit divisors. | What do you already know about dividing with multi-digit numbers?<br><br>What does it mean to divide with multi-digit numbers?<br><br>What do you think you will be doing in this unit? | I can divide 4-digit dividends by 1-digit divisors by using partial quotients.<br><br>I can explain how to use partial quotients to solve a division problem with a 4-digit dividend. | • Area model<br>• Partial quotients<br>• Algorithm<br>• Modify<br>• Process |
| Lesson 7.6: Understand Remainders | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.NBT.B:** Use place value understanding and properties of operations to perform multi-digit arithmetic.<br><br>**4.NBT.B.6:** Demonstrate understanding of division by finding whole-number quotients and | What do you already know about dividing with multi-digit numbers?<br><br>What does it mean to divide with multi-digit numbers? | I can divide multi-digit numbers and find quotients and remainders.<br><br>I can explain the meaning of the remainder in a division problem. | • Remainder<br>• Indicate<br>• Recognize |

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| | remainders with up to four-digit dividends and one-digit divisors. | What do you think you will be doing in this unit? | | |
| Lesson 7.7: Make Sense of a Remainder | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.OA.A:** Use the four operations with whole numbers to solve problems.<br><br>**4.OA.A.3**: Solve multistep word problems using the four operations, including problems in which remainders must be interpreted. Understand how the remainder is a fraction of the divisor. Represent these problems using equations with a letter standing for the unknown quantity. | What do you already know about dividing with multi-digit numbers?<br><br>What does it mean to divide with multi-digit numbers?<br><br>What do you think you will be doing in this unit? | I can solve division problems by finding the quotient and the remainder.<br><br>I can decide how to interpret the remainder based on the context of the problem. | • Remainder<br>• Consider<br>• Persuade |
| Lesson 7.8: Solve Multi-Step Problems Using Division | | | | |
| **McGraw-Hill My Math:** Go Digital at connected.mcgraw-hill.com<br>**Math textbook**<br>**Digital tools:** Fraction tiles and place value mats | **4.OA.A:** Use the four operations with whole numbers to solve problems.<br><br>**4.OA.A.3**: Solve multistep word problems using the four operations, including problems in which remainders must be interpreted. Understand how the remainder is a fraction of the divisor. Represent these problems using equations with a letter standing for the unknown quantity. | What do you already know about dividing with multi-digit numbers?<br><br>What does it mean to divide with multi-digit numbers?<br><br>What do you think you will be doing in this unit? | I can solve multistep word problems involving division by representing these problems using equations with a variable to represent the unknown. | • Variable<br>• Assess<br>• Effective |

***PACING Guide SY 2021/2022***

| Timeline & Resources | AZ College and Career Readiness Standard | Essential Question (HESS Matrix) | Learning Goal | Vocabulary (Content/Academic) |
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| **Quarter 3: January-March UNITS: 8-11** | | | | |
| **(9 days) Reveal Math Grade 4 Volume 2: <u>Unit 8: Fraction Equivalence</u> 8-1, 8-2, 8-3, 8-4, 8-5** | **4.OA.C Generate and analyze patterns.**<br>4.OA.C.5<br>Generate a number pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself and explain the pattern informally (e.g., 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).<br>**4.NF.A Extend understanding of fraction equivalence and ordering.**<br>4.NF.A.1<br>Explain why a fraction a/b is equivalent to a fraction (n x a)/(n x 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 understand and generate equivalent fractions.<br>4.NF.A.2 | **How can I use equivalent fractions to help me compare fractions?** | 8-1<br>• Student use fraction models to recognize equivalent fractions and explain their equivalence by reasoning about the number of parts in the fraction and the number of parts in the whole.<br>8-2<br>• Students use multiplication and division to generate equivalent fractions.<br>8-3<br>• Students use number line representations with different intervals and use multiplication and division to generate equivalent fractions.<br>8-4 | Equivalent fractions<br>Denominator<br>Numerator<br>Benchmark fractions<br>Like denominators<br>Like numerators |

| Timeline & Resources | AZ College and Career Readiness Standard | Essential Question (HESS Matrix) | Learning Goal | Vocabulary (Content/Academic) |
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| | Compare two fractions with different numerators and different denominators (e.g., by creating common denominators or numerators and by comparing to a benchmark fraction).<br>a. Understand that comparisons are valid only when the two fractions refer to the same size whole.<br>b. Record the results of comparisons with symbols >, =, or <, and justify the conclusions.<br>**Number and Operations – Fractions (NF)**<br>**4.NF.A Extend understanding of fraction equivalence and ordering.**<br>4.NF.A.1<br>Explain why a fraction *a/b* is equivalent to a fraction (*n x a*)/(*n x 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 understand and generate equivalent fractions.<br><br>4.NF.A.2<br>Compare two fractions with different numerators and different denominators (e.g., by creating common denominators or numerators and by comparing to a benchmark fraction).<br>a. Understand that comparisons are valid only when the two fractions refer to the same size whole. | | • Students compare two fractions using the benchmark numbers 0, ½, and 1.<br>8-5<br>• Students compare two fractions by generating equivalent fractions with like numerators or denominators. | |

| Timeline & Resources | AZ College and Career Readiness Standard | Essential Question (HESS Matrix) | Learning Goal | Vocabulary (Content/Academic) |
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| | b. Record the results of comparisons with symbols >, =, or <, and justify the conclusions. | | | |
| **(10 days)**<br>**Reveal Math Grade 4 Volume 2:**<br>**<u>Unit 9: Addition and Subtraction Meanings and Strategies with Fractions:</u>**<br>**9-1, 9-2, 9-3, 9-4, 9-5, 9-6** | **4.NF.B**<br>**Build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers.**<br>4.NF.B.3<br>Understand a fraction a/b with a > 1 as a sum of unit fractions (1/b).<br>a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.<br>b. Decompose a fraction into a sum of fractions with the same denominator in more than one way (e.g., 3/8 = 1/8 + 1/8+1/8; 3/8 = 2/8 + 1/8; 2 1/8 = 1 + 1 + 1/8 + or 2 1/8 = 8/8 + 8/8 + 1/8).<br>c. Add and subtract mixed numbers with like denominators (e.g., by using properties of operations and the relationship between addition and subtraction and/or by replacing each mixed number with an equivalent fraction).<br>d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators. | **How can I add and subtract fractions with like denominators?** | 9-1<br>• Students use fraction models to decompose fractions into sums of fractions with the same denominator in more than one way.<br>9-2<br>• Students use fraction models to understand addition of fractions as joining parts that refer to the same whole.<br>• Students add fractions with like denominators.<br>9-3<br>• Students use representations to show what the sum of fractions with like denominators can be found by adding the numerators and keeping the denominators the same.<br>9-4 | Addend<br>Decompose<br>Like denominators<br>Sum<br>Unit fractions<br>Difference<br>Minuend<br>Subtrahend<br>Denominator<br>numerator |

| Timeline & Resources | AZ College and Career Readiness Standard | Essential Question (HESS Matrix) | Learning Goal | Vocabulary (Content/Academic) |
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| | | | • Students use fraction models to understand subtraction of fractions as separating parts that refer to the same whole.<br>• Students subtract fractions with like denominators.<br>9-5<br>• Students use representations to show that the difference of fractions like denominators can be found by subtracting the numerators and keeping the denominators the same.<br>9-6<br>• Students solve word problems involving addition and subtraction of fractions with like denominators. | |
| **(10 days)**<br>**Reveal Math Grade 4 Volume 2:** | **4.NF.B**<br>**Build fractions from unit fractions by applying and extending previous** | **How can I add and subtract mixed numbers with like denominators?** | 10-1<br>• Students use mixed numbers as another way to write | Decompose<br>Mixed number<br>Sum<br>Equivalent fractions |

| Timeline & Resources | AZ College and Career Readiness Standard | Essential Question (HESS Matrix) | Learning Goal | Vocabulary (Content/Academic) |
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| **Unit: 10:Addition and Subtraction Strategies with Mixed Numbers 10-1, 10-2, 10-3, 10-4, 10-5, 10-6** | **understanding of operations on whole numbers.**<br>4.NF.B.3<br>Understand a fraction a/b with a > 1 as a sum of unit fractions (1/b).<br>a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.<br>b. Decompose a fraction into a sum of fractions with the same denominator in more than one way (e.g., 3/8 = 1/8 + 1/8+1/8; 3/8 = 2/8 + 1/8; 2 1/8 = 1 + 1 + 1/8 + or 2 1/8 = 8/8 + 8/8 + 1/8).<br>c. Add and subtract mixed numbers with like denominators (e.g., by using properties of operations and the relationship between addition and subtraction and/or by replacing each mixed number with an equivalent fraction).<br>d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators. | | fractions greater than 1.<br>• Students use fraction models to decompose a mixed number in more than one way and write equations to record their decompositions.<br>10-2<br>• Students represent addition of mixed numbers with like denominators using fraction models, such as area models and number lines.<br>10-3<br>• Students add mixed numbers using various strategies, such as using equivalent fractions that are greater than 1 and decomposing the mixed numbers.<br>10-4<br>• Students represent subtraction of mixed numbers with like denominators using fraction models, such | Regroup<br>Difference<br>Bar diagram<br>variable |

| Timeline & Resources | AZ College and Career Readiness Standard | Essential Question (HESS Matrix) | Learning Goal | Vocabulary (Content/Academic) |
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| | | | as area models and number lines.<br>10-5<br>• Students subtract mixed numbers using various strategies, such as using equivalent fractions and related addition equations.<br>10-6<br>• Students represent and solve word problems involving addition and subtraction of mixed numbers with like denominators. | |
| **(9 days)**<br>**Reveal Math Grade 4 Volume 2:**<br>**<u>Unit 11: Multiply Fractions by Whole Numbers</u>**<br>**11-1, 11-2, 11-3, 11-4, 11-5** | **4.NF.B**<br>**Build fractions from unit fractions by applying and extending previous understanding of operations on whole numbers**<br>4.NF.B.4<br>Build fractions from unit fractions.<br>a. Understand a fraction a/b as a multiple of a unit fraction 1/b. In general, a/b = a x 1/b .<br>b. Understand a multiple of a/b as a multiple of a unit fraction 1/b , and use this understanding to multiply a whole number by a fraction. In general, n x a/b = (n x a)/b. | **How Can I multiply a fraction by a whole number?** | 11-1<br>• Students apply their understanding of fractions and multiplication to multiply a unit fraction by a whole number. Students use fraction models to represent a fraction as a multiple of a unit fraction.<br>11-2<br>• Students multiply a fraction by a whole | Denominator<br>Multiple<br>Numerator<br>Unit fraction<br>Equal groups<br>Associative property of multiplication<br>Distributive property of multiplication<br>mixed number<br>Fraction |

| Timeline & Resources | AZ College and Career Readiness Standard | Essential Question (HESS Matrix) | Learning Goal | Vocabulary (Content/Academic) |
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| | c. Solve word problems involving multiplication of a whole number by a fraction. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie? | | number using visual fraction models. Students write multiples of fractions as multiples of a unit fraction.<br>11-3<br>• Students use their understanding of fractions as multiples of unit fractions to multiply a fraction by a whole number.<br>11-4<br>• Students multiply mixed numbers by using strategies, such as equivalent fractions and decomposing the mixed number into whole number and fractional parts.<br>11-5<br>• Students represent and solve word problems involving multiplying fractions by whole numbers with visual fraction models and multiplication equations. | |

| Timeline & Resources | AZ College and Career Readiness Standard | Essential Question (HESS Matrix) | Learning Goal | Vocabulary (Content/Academic) |
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| **Quarter 34: March-May<br>UNITS: 12-14** | | | | |
| **(9 days)<br>Reveal Math Grade 4 Volume 2:<br><u>Unit 12: Decimal Fractions</u><br>12-1, 12-2, 12-3, 12-4, 12-5** | **4.NF.C Understand decimal notation for fractions, and compare decimal fractions.**<br>4.NF.C.5<br>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 (tenths) and 100 (hundredths). For example, express 3/10 as 30/100, and and 3/10 + 4/100 = 34/100. (Note: Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators, in general, is not a requirement at this grade.)<br>4.NF.C.6<br>Use decimal notation for fractions with denominators 10 (tenths) or 100 (hundredths), and locate these decimals on a number line.<br>4.NF.C.7<br>Compare two decimals to hundredths by reasoning about their size. Understand that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <. | **How can I represent and compare decimal fractions?** | 12-1<br>• Students represent fractions with denominators of 10 and denominators of 100 using fraction models; express a fraction with a denominator of 10 as an equivalent fraction with a denominator of 100.<br>12-2<br>• Students express fractions with denominators of 10 or 100 using decimal notations; extend the place-value chart to hundredths, and use place-value reasoning to understand that the decimal point separates the ones place from the tenths place.<br>12-3<br>• Students compare two decimals using representations, such | Equivalent fractions<br>Hundredths<br>One-hundredth<br>One-tenth<br>Tenths<br>Decimal<br>Decimal point<br>Cents<br>dollars |

| Timeline & Resources | AZ College and Career Readiness Standard | Essential Question (HESS Matrix) | Learning Goal | Vocabulary (Content/Academic) |
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| | **4.MD.A Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.**<br>4.MD.A.2<br>Use the four operations to solve word problems and problems in real-world context involving distances, intervals of time (hr, min, sec), liquid volumes, masses of objects, and money, including decimals and problems involving fractions with like denominators, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using a variety of representations, including number lines that feature a measurement scale. | | as area models and number lines, compare two decimals by expressing the decimals as fractions.<br>12-4<br>• Students use equivalent fractions to add fractions with denominators of 10 and 100.<br>12-5<br>• Students solve problems involving money using the relationship between tenths and hundredths by representing with dollars, dimes and pennies. | |
| **(15 days) Reveal Math Grade 4 Volume 2: <u>Unit 13: Units of Measurement and Data:</u> 13-1, 13-2, 13-3, 13-4, 13-5, 13-6, 13-7,** | **4.MD.A Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.**<br>4.MD.A.1<br>Know relative sizes of measurement units within one system of units which could include km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms | **How can I use and compare units of measurement?** | 13-1<br>• Student convert larger metric units of length, liquid volume, and mass to smaller equivalent units.<br>13-2<br>• Students express larger units of weight | Centimeters<br>Convert<br>Grams<br>Kilograms<br>Kiloliters<br>Customary unit<br>Equivalence table<br>Ounces<br>Capacity<br>Cup<br>Days |

| Timeline & Resources | AZ College and Career Readiness Standard | Essential Question (HESS Matrix) | Learning Goal | Vocabulary (Content/Academic) |
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| **13-8, 13-9, 13-10, 13-11** | of a smaller unit and in a smaller unit in terms of a larger unit. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1,12), 2,24), (3,36).<br>4.MD.A.2<br>Use the four operations to solve word problems and problems in real-world context involving distances, intervals of time (hr, min, sec), liquid volumes, masses of objects, and money, including decimals and problems involving fractions with like denominators, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using a variety of representations, including number lines that feature a measurement scale.<br>4.MD.A.3<br>Apply the area and perimeter formulas for rectangles in mathematical problems and problems in real-world contexts including problems with unknown side lengths. See Table 2.<br>**4.MD.B Represent and interpret data.**<br>4.MD.B.4<br>Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems | | in terms of smaller units.<br>13-3<br>• Students express larger units of capacity in terms of smaller units.<br>13-4<br>• Students express larger units of time in terms of smaller units.<br>13-5<br>• Students solve word problems that involve converting metric units of measure by using representations.<br>13-6<br>• Students use representations to solve word problems that involve converting units of measure.<br>13-7<br>• Students develop the formula for the perimeter of a rectangle. Students use the formula to | Hours<br>Bar diagram<br>Number line<br>Elapsed time<br>Time interval<br>Formula<br>Length<br>Area<br>Rectangle<br>Perimeter<br>Data<br>Eighth(s)<br>Fourth(s)<br>Like denominators<br>Line plot |

| Timeline & Resources | AZ College and Career Readiness Standard | Essential Question (HESS Matrix) | Learning Goal | Vocabulary (Content/Academic) |
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| | involving addition and subtraction of fractions by using information presented in line plots. | | solve real-world problems.<br>13-8<br>• Students develop the formula for the area of a rectangle. Students use the formula for the area of a rectangle to solve real-world problems.<br>13-9<br>• Students solve real-world problems by applying the area and perimeter formulas.<br>13-10<br>• Students create line plots to display measurements data sets in fractions of a unit. Students interpret measurements data displayed on a line plot to answer questions.<br>13-11<br>• Students solve problems involving addition and subtraction of fractions based on | |

| Timeline & Resources | AZ College and Career Readiness Standard | Essential Question (HESS Matrix) | Learning Goal | Vocabulary (Content/Academic) |
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| | | | analysis of data displayed in line plots. | |
| **(16 days) Reveal Math Grade 4 Volume 2: <u>Unit 14: Geometric Figures:</u> 14-1, 14-2, 14-3, 14-4, 14-5, 14-6, 14-7, 14-8, 14-9, 14-10** | **4.MD.C Geometric measurement: Understand concepts of angle and measure angles.**<br>4.MD.C.5<br>Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:<br>a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles.<br>b. An angle that turns through n one-degree angles is said to have an angle measure of n degrees.<br><br>4.MD.C.6<br>Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.<br><br>4.MD.C.7<br>Understand angle measures as additive. (When an angle is | **How can I solve problems involving geometric figures?** | 14-1<br>• Students identify and draw points, lines, line segments, and rays.<br>14-2<br>• Students recognize that an angle is formed when two rays share a common endpoint and they classify angles as right, acute, or obtuse.<br>14-3<br>• Students recognize that an angle's measure is the number of degrees one ray rotates about the endpoint. Students measure angles.<br>14-4<br>• Students draw and identify perpendicular and parallel lines.<br>14-5 | Endpoint<br>Line<br>Line segment<br>Acute angle<br>Angle<br>Degrees<br>Parallel lines<br>Perpendicular lines<br>Protractor<br>Equilateral triangle<br>Isosceles triangle<br>Line of symmetry<br>Symmetrical |

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| | decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts.) Solve addition and subtraction problems to find unknown angles on a diagram within mathematical problems as well as problems in real-world contexts.<br><br>**4.G.A Draw and identify lines and angles, and classify shapes by properties of their lines and angles.**<br>4.G.A.1<br>Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.<br><br>4.G.A.2<br>Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size (e.g., understand right triangles as a category, and identify right triangles).<br><br>4.G.A.3<br>Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching | | • Students decompose and angle into two or more angles is the sum of the decomposed angles.<br>14-6<br>• Students represent and solve problems involving an unknown angle measure using an equation with a variable.<br>14-7<br>• Students identify properties of two-dimensional figures and classify figures based on these properties.<br>14-8<br>• Students use side lengths and angle size to classify triangles.<br>14-9<br>• Students identify lines of symmetry on 2-dimensional figures.<br>14-10<br>• Students draw lines of symmetry on 2- | |

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| | parts. Identify line-symmetric figures and draw lines of symmetry. | | dimensional figures. Students identify attributes of 2-dimensional figures that are symmetrical. | |