

Grade 4: Primary Mathematics 2022 Video Correlation

Videos are a great way to support both students and educators with content. Check out the descriptions here to see what videos are available as part of the paying membership for [Jessica Kaminski's Teaching and Learning Library](#). Primary Mathematics 2022 videos will now be held in the new Teachable course format! Check your email as an existing member for information or [sign up here](#) as a new member!

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These videos are not aligned to the specific lesson in the book. Instead they are designed to be used as a preview of the task, remediation or as professional development for the educator. You can learn more about that in the 4C Math Mastery Model Course included in your yearly subscription. However, this year there are now specific videos for Primary Mathematics 2022. These are highlighted by PM Exclusive and match the problem in the textbook directly.

Chapters	Student Concept Videos	Educator Concept Videos
Content Videos		• Concrete-Pictorial- Abstract • 3rd and 4th Grade Manipulatives • Bar Models

1- Multi-Digit Whole Numbers	1A Numbers to 1,000,000 • COMPREHEND: PM Exclusive: Place Value of 6-Digit Numbers (Think! Pg. 10) 1B Compare and Order Numbers • COLLABORATE: Comparing Multi-Digit Numbers • COLLABORATE: Renaming to Compare Numbers • COMPREHEND: PM Exclusive: Comparing 5-Digit Numbers (Think! Pg. 14) 1C Number and Shape Patterns • COMMUNICATE: Determining the Rule for a Number Pattern • COMPREHEND: PM Exclusive: Number and Shape Patterns (Think pg. 20) 1D Rounding Numbers (1) • COMPREHEND: PM Exclusive: Rounding to the Nearest Thousand (THINK pg. 26) 1D Rounding Numbers (2)	This is a mastery based chapter. At this point, students are applying things they have already learned to a new place value. By the end of the chapter, students should: • read, write and compare numbers to 1,000,000. • find the rule for number patterns. • extend shape patterns. • use place value to round multi-digit numbers to various place values.
2- Addition and Subtraction	2A Add Multi-Digit Whole Numbers • COMPREHEND: PM Exclusive: Missing Digits in 6-Digit Addition (THINK pg. 44) 2B Subtract Multi-Digit Whole Numbers • COMPREHEND: PM Exclusive: Missing Digits in 6-Digit Subtraction (THINK pg. 48) 2C Word Problems (1) 2C Word Problems (2) • COLLABORATE: Word Problems: Bar Models: 2-Step Subtraction Word Problems 2C Word Problems (3) • COMPREHEND: PM Exclusive: Solving Multi-Step Word Problems with Addition and Subtraction (THINK pg. 62)	• Developing Addition Algorithms • Developing Subtraction Algorithms

	Chapter Practice - PM Exclusive: Evaluating a Multi-Step Word Problem (pg. 68) Heuristics: - PM Exclusive: Use Before-After Concept	This is a mastery based chapter. By this point, addition and subtraction should just be a maintenance with application to a different place value. By the end of this chapter, students should be able to: - fluently add and subtract multi-digit numbers using the standard algorithm. - estimate the answers to addition and subtraction problems using rounding strategies and mental math. - solve one-step, two-part and two-step word problems involving addition and subtraction.
3-Multiplication and Division	3A Multiplication Comparisons COLLABORATE: Compare: Unknown Product: Build It! COLLABORATE: Compare: Unknown Product: Show It COLLABORATE: Compare: Group Size Unknown: Build It COLLABORATE: Compare: Group Size Unknown: Show It 3B Word Problems COLLABORATE: Compare: Group Size Unknown: Challenge COLLABORATE: Compare: Unknown Product: Challenge COMPREHEND: PM Exclusive: Solving Multi-Step Comparison Word Problems (THINK pg. 84) 3C Factors, Multiples and Prime Numbers (1) COMMUNICATE: What is a Factor?	- Development of Multiplication Algorithms - Development of Division Algorithms - Number Bonds to Multiply - Multiplication Subitizing - Visual Multiplication Fact Fluency Strategies

- **COMPREHEND:** PM Exclusive: Factors of Even Numbers (THINK pg. 90)

3C Factors, Multiples, and Prime Numbers (2)

- **COMMUNICATE:** What are Multiples?
- **COMPREHEND:** PM Exclusive: Finding Common Multiples (THINK pg. 94)

3C Factors, Multiples, and Prime Numbers (3)

- **COMMUNICATE:** Prime vs. Composite Numbers
- **COMPREHEND:** PM Exclusive: Prime Numbers Riddle (THINK! Pg. 98)

3D Multiply by Tens, Hundreds and Thousands

- **COLLABORATE:** Patterns When Multiplying by Tens, Hundreds and Thousands
- **COMPREHEND:** PM Exclusive: Multiplying by Hundreds and Thousands (THINK pg. 102)

3E Multiply a 2-Digit Number by a 1-Digit Number

- **COMMUNICATE:** Area Models for 2-Digit by 1-Digit Multiplication
- **COLLABORATE:** Multiply a 2-Digit Number by a 1-Digit Number without Regrouping

3F Multiply a 3-Digit or 4-Digit Number by a 1-Digit Number

- **COMMUNICATE:** Multiply a 3-Digit Number by a 1-Digit Number without Regrouping
- **COMPREHEND:** PM Exclusive: Missing Digits when Multiplying a 3-Digit by a 1-Digit Number (THINK pg. 112)

3G Word Problems

3H Multiply a 2-Digit Number by a 2-Digit Number

- **COLLABORATE:** Area Models for Multiplication
- **COLLABORATE:** Partial Products Multiplication

3I Quotient and Remainder

- **COMMUNICATE:** What's a Remainder in Division?
- **COMPREHEND:** PM Exclusive: Understanding Quotient and Remainder (THINK pg. 124)

3J Divide a 2-Digit Number by a 1-Digit Number

- **COMPREHEND:** PM Exclusive: Area Models for 2-Digit by 1-Digit Division (THINK pg. 130)

3K Divide a 3-Digit or 4-Digit Number by a 1-Digit Number (1)

- **COLLABORATE:** Long Division without Regrouping
- **COLLABORATE:** Area Model of Division



Mastery Meter



This is a mastery based chapter with some exceptions. Students should be able to multiply by a 1-digit number using the algorithm by the end of the year. They should be able to divide by a 1-digit number and multiply by a 2-digit number using models. Spend time developing meaning instead of focusing on algorithms.

By the end of the chapter, students will:

- solve problems with multiplicative comparison.
- find common factors and multiples.
- multiply a 1-digit number by a 4-digit number.
- multiply a 2-digit number by a 2-digit number.
- divide a 4-digit number by a 1-digit number.
- use bar models to solve two-step word problems involving multiplication and division.

	• COLLABORATE: Long Division with Regrouping 3K Divide a 3-Digit or 4-Digit Number by a 1-Digit Number (2) • COLLABORATE: Divide a 4-Digit Number by a 1-Digit Number without Regrouping • COLLABORATE: Divide a 4-Digit Number by a 1-Digit Number with Regrouping • COMPREHEND: PM Exclusive: Dividing 4-Digit Numbers (THINK pg. 142) 3L Estimate Quotients • COMMUNICATE: Estimating Quotients • COMPREHEND: PM Exclusive: Estimating Quotients in a Word Problem (THINK pg. 146) 3M Word Problems (1) • COLLABORATE: Word Problems: Bar Models: Interpreting a Remainder • COMPREHEND: PM Exclusive: Division with a Remainder Word Problem (THINK pg. 150) 3M Word Problems (2) • COLLABORATE: Word Problems: Bar Models: 2-Step Multiplicative Comparison • COLLABORATE: Arrays and Area Models: Unknown Product: Challenge • COLLABORATE: Equal Groups: Group Size Unknown: Challenge • COLLABORATE: Equal Groups: Number of Groups Unknown: Challenge Chapter Practice • PM Exclusive: Divide a 4-Digit Number by a 1-Digit Number (pg. 162)	
4- The Four Operations Using Bar Models	4A Word Problems (1) • COMMUNICATE: PM Exclusive: T-Shirt Bargain Store (pg. 167) • COLLABORATE: PM Exclusive: Farmer Cooper's Eggs (pg. 169) • COLLABORATE: PM Exclusive: Vegetable Garden (pg. 170) • COMPREHEND: PM Exclusive: Dairy (pg. 172) • COMPREHEND: PM Exclusive: Mr. Lopez (pg. 173) • COMPREHEND: PM Exclusive: Outdoor Market (pg. 174) 4A Word Problems (2)	

	• COMMUNICATE: PM Exclusive: Pottery Class (pg. 175) • COLLABORATE: PM Exclusive: Stationary Supplies (pg. 177) • COLLABORATE: PM Exclusive: Apple Farm (pg. 178) • COLLABORATE: PM Exclusive: Alyssa's Building Blocks (pg. 179) • COMPREHEND: PM Exclusive: Stadium Seating (pg. 180) • COMPREHEND: PM Exclusive: Library Books (pg. 181) • COMPREHEND: PM Exclusive: Solving Multi-Step Word Problems (THINK pg. 182) Chapter Practice • PM Exclusive: Before and After Word Problem (#4 pg. 190) Heuristics • PM Exclusive: Tabulating (pg. 191)	This is an opportunity for students to apply computation of all operations. Students should master addition and subtraction while practicing multiplication and division. Remember that students have until the end of year to master multiplication. By the end of the chapter, students should be able to: • use bar models to solve two-step and multi-step problems involving all four operations.
5- Fractions	5A Equivalent Fractions (1) • COMMUNICATE: What are Equivalent Fractions? 5A Equivalent Fractions (2) • COMMUNICATE: Finding Equivalent Fractions • COMPREHEND: PM Exclusive: Multiply to Find Equivalent Fractions (THINK pg. 204) 5A Equivalent Fractions (3) • COMMUNICATE: Simplest Form 5B Compare and Order Fractions (1) • COMMUNICATE: Comparing Fractions • COLLABORATE: Using Equivalent Fractions to Compare Unlike Fractions • COLLABORATE: Using Benchmark Fractions to Compare Unlike Fractions 5B Compare and Order Fractions (2) • COMPREHEND: PM Exclusive: Ordering Three Fractions (THINK pg. 216) 5C Add and Subtract Like Fractions (1) • COMMUNICATE: Adding Like Fractions • COMPREHEND: PM Exclusive: Adding Like Fractions (THINK pg. 220) 5C Add and Subtract Like Fractions (2) • COMMUNICATE: Subtract Like Fractions • COMPREHEND: PM Exclusive: Subtracting Like Fractions	This is a mastery based chapter. Students will extend their understanding of fractions and use these skills in the next chapter. • By the end of the chapter, students should be able to: • compare fractions using size and equivalent fractions. • express fractions in simplest form. • add and subtract like fractions. • solve up to two-step word problems involving

	(THINK pg. 224) 5D Word Problems (1) • COLLABORATE: Word Problems: Add Like Fractions 5D Word Problems (2) 5D Word Problems (3) Chapter Practice • PM Exclusive: Addition of Unknown Like Fractions (pg. 248)	the addition and subtraction of like fractions.
6- Mixed Numbers, Improper Fractions, and Operations on Fractions	6A Mixed Numbers and Improper Fractions (1) • COMMUNICATE: What are Mixed Numbers? 6A Mixed Numbers and Improper Fractions (2) • COMMUNICATE: What are Improper Fractions? 6A Mixed Numbers and Improper Fractions (3) • COLLABORATE: How are Mixed Numbers and Improper Fractions Related? 6A Mixed Numbers and Improper Fractions (4) • COMPREHEND: PM Exclusive: Mixed Numbers to Improper Fractions (THINK pg. 270) 6B Add and Subtract Mixed Numbers (1) • COMPREHEND: PM Exclusive: Adding Mixed Numbers (THINK pg. 274) 6B Add and Subtract Mixed Numbers (2) • COLLABORATE: Subtracting Mixed Numbers with Renaming • COMPREHEND: PM Exclusive: Subtracting Mixed Numbers (THINK pg. 278) 6C Word Problems (1) • COLLABORATE: Word Problems: Subtract Mixed Numbers with Like Denominators without Renaming 6C Word Problems (2) 6C Word Problems (3) 6D Multiply a Fraction and a Whole Number (1) 6D Multiply a Fraction and a Whole Number (2) • COMMUNICATE: Multiplying a Fraction by a Whole Number • COLLABORATE: Word Problems: Understanding Multiplication of a Whole Number and a Fraction • COLLABORATE: Word Problems: Using Bar Models to Multiply a Fraction by a Whole Number • COLLABORATE: Word Problems: Multiplicative Comparison of Fractions	This is a mastery based chapter. Students will work with fractions greater than 1 whole and be able to do basic operations with like denominators. By the end of the chapter, students will: • write and show mixed numbers and improper fractions. • express mixed numbers as improper fractions and improper fractions as mixed numbers. • add and subtract mixed numbers. • solve up to two-step word problems involving mixed numbers. • understand the meaning of multiplication of a whole number and a fraction. • interpret and create line plots using fractions.

	6D Multiply a Fraction and a Whole Number (3) • COMMUNICATE: Finding Fraction of a Set Using Models • COLLABORATE: Finding Fraction of a Set • COMPREHEND: PM Exclusive: Multiply a Whole Number and a Fraction Riddle (THINK pg. 310) 6E Line Plots (1) • COMMUNICATE: Reading and Interpreting a Line Plot with Fractions • COLLABORATE: Drawing a Line Plot with Fractions 6E Line Plots (2) • COMPREHEND: PM Exclusive: Interpreting a Line Plot (THINK pg. 320) Chapter Practice • PM Exclusive: Multiplying Fractions and Whole Numbers (pg. 330) Heuristics • PM Exclusive: Simplify the Problem (pg 331)	
7- Decimals	7A Tenths (1) • COMMUNICATE: Understanding the Concept of Decimals (Use first part for Lesson 2) • COMPREHEND: PM Exclusive: Expressing Fractions as Tenths (THINK pg. 10) 7A Tenths (2) • COMPREHEND: PM Exclusive: Using Tenths of a Meter (THINK pg. 16) 7A Tenths (3) • COMMUNICATE: Converting Decimals and Fractions (Use first part Lesson 4) 7B Hundredths (1) • COMMUNICATE: Understanding the Concept of Decimals (Use second part for Lesson 5) • COMPREHEND: PM Exclusive: Using Place Value to Identify Hundredths (THINK pg. 26) 7B Hundredths (2) • COMMUNICATE: Comparing Decimals 7B Hundredths (3) • COMMUNICATE: Converting Decimals and Fractions (use first part Lesson 7)	 Mastery Meter  This chapter requires students to apply place value concepts to decimals. While the concept of decimals will be repeated in Grade 5, students will need to master to the hundredths place. By the end of this chapter, students should be

	7C Number Patterns COMPREHEND: PM Exclusive: Decimal Number Patterns (THINK pg. 40) Chapter Practice - PM Exclusive: Comparing Decimals to the Hundredths (pg. 48) Heuristics - PM Exclusive: Look for a Pattern (pg 49)	able to: - read, write and compare decimals to the hundredths place. - convert decimals to fractions and fractions to decimals. - add or subtract 0.1 and 0.01 to a decimal. - explore number patterns with decimals.
8- Area and Perimeter	8A Rectangles and Squares (1) COMMUNICATE: Understanding Area COMMUNICATE: PM Exclusive: Using a Formula to Find Perimeter of Squares and Rectangles (pg. 53 and 54) COMPREHEND: PM Exclusive: Solving a Multi-Step Perimeter Word Problem (THINK pg. 58) 8A Rectangles and Squares (2) COMMUNICATE: PM Exclusive: Finding the Unknown Side Length of a Rectangle with a Given Perimeter (pg. 59) COLLABORATE: Finding Perimeter Using Area COMPREHEND: PM Exclusive: Finding Perimeter Using a Comparison (THINK pg. 64) 8B Composite Figures COMMUNICATE: Find the Area of a Composite Figure COMPREHEND: PM Exclusive: Area of a Composite Figure (THINK pg. 72) Heuristics - PM Exclusive: Make a Supposition (pg. 81) - PM Exclusive: Make a Supposition #2 (pg. 82)	 Mastery Meter  This chapter is mastery based. Students will apply understanding from multiplication and division to develop formulas for area and perimeter. - By the end of this chapter, students will be able to: - find the area and perimeter of a square or rectangle. - find an unknown side of a square or rectangle given its area or perimeter. - find the area and perimeter of a composite figure. - find an unknown side of a composite figure.

9-Geometry	9A Points, Lines, Line Segments, Rays and Angles • COLLABORATE: Learning Geometry Vocabulary 9B Acute Angles, Right Angles and Obtuse Angles • COMMUNICATE: What is an Angle? • COLLABORATE: Identifying Acute and Obtuse Angles (pg. 92) • COMPREHEND: PM Exclusive: Making Angles in Shapes (THINK pg. 96) 9C Measure Angles (1) • COLLABORATE: Exploring a Protractor • COLLABORATE: Using a Protractor to Measure Angles 9C Measures Angles (2) • COMMUNICATE: PM Exclusive: Draw Angles Using a Protractor (pg. 107) • COMPREHEND: PM Exclusive: Finding a Missing Angle (THINK pg. 114) 9C Measure Angles (3) • COLLABORATE: PM Exclusive: Understanding Straight Angles (pg. 117 #3) • COMPREHEND: PM Exclusive: Missing Angles and Straight Angles (THINK pg. 120) 9D Perpendicular and Parallel Lines (1) • COMMUNICATE: Identifying Parallel and Perpendicular Lines • COLLABORATE: Drawing Parallel and Perpendicular Lines 9D Perpendicular and Parallel Lines (2) 9E Line of Symmetry • COMMUNICATE: Finding Lines of Symmetry Chapter Practice • Problem Solving with Angles (#11)	This is a mastery based chapter that has some introductory elements. Students will need to master the types of angles and how to identify them. However, the specific skills with the angles are laying the foundation for Grade 5 concepts. By the end of this chapter, students will: • name obtuse, acute and right angles. • measure angles using a protractor. • identify and draw parallel and perpendicular lines. • classify 2D shapes by their angles and lines. • identify lines of symmetry.
10-Measurement , Time and Conversion	10A Metric Units of Measurement and Conversion (1) • COMMUNICATE: PM Exclusive: Converting Kilometers to Meters (pg. 159) • COLLABORATE: Measuring in Meters • COLLABORATE: Measuring in Kilometers • COLLABORATE: PM Exclusive: Converting Meters to Centimeters (pg. 160) • COLLABORATE: PM Exclusive: Converting Meters to Centimeters Using Mixed Numbers (pg. 161) • COMPREHEND: PM Exclusive: Converting Metric Units of	This is a mixed chapter with some mastery components and other exposure components.

	Length (THINK pg. 162) 10A Metric Units of Measurement and Conversion (2) • COMMUNICATE: PM Exclusive: Converting Kilograms to Grams (pg. 163) • COLLABORATE: Measuring in Kilograms • COLLABORATE: Measuring in Grams • COLLABORATE: PM Exclusive: Converting Kilograms to Grams with Mixed Numbers (pg. 164) • COMPREHEND: PM Exclusive: Using Place Value to Represent Mass in Grams (THINK pg. 166 #3) • COMPREHEND: PM Exclusive: Using Supposition to Compare Masses (THINK pg 166 #4) 10A Metric Units of Measurement and Conversion (3) • COMMUNICATE: PM Exclusive: Converting Liters to Milliliters (pg. 167) • COLLABORATE: PM Exclusive: Converting Liters to Milliliters with Mixed Numbers (pg. 168) • COMPREHEND: PM Exclusive: Work Backwards to Find Capacity (THINK pg. 170) 10B Customary Units of Measurement and Conversion (1) • COLLABORATE: Measuring Length in Feet • COLLABORATE: Measuring Length in Yards • COMPREHEND: PM Exclusive: Customary Units of Length (THINK pg. 176) 10B Customary Units of Measurement and Conversion (2) • COLLABORATE: Converting Pounds to Ounces • COLLABORATE: Converting Tons to Pounds • COMPREHEND: PM Exclusive: Comparing Pounds and Ounces (THINK pg. 180) 10B Customary Units of Measurement and Conversion (3) • COMMUNICATE: PM Exclusive: Converting Cups to Fluid Ounces pg. 181 • COLLABORATE: PM Exclusive: Converting Pints to Cups pg. 182 • COLLABORATE: PM Exclusive: Converting Quarts to Pints pg. 184 10C Time and Conversion • COLLABORATE: Convert Hours to Minutes • COLLABORATE: Convert Minutes to Hours	By the end of Grade 4, students should have a firm understanding of both metric units and customary units. By the end of the chapter, student should be able to: • identify the correct unit of customary or metric unit of length, capacity or mass for a specific measurement. • convert from larger units to smaller units using a model and algorithms. • measure time to the nearest second. • convert time units.
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	• COMPREHEND: PM Exclusive: Using a 24 Hour Clock (THINK pg. 190) 10D Word Problems • COMPREHEND: PM Exclusive: Customary Units of Mass Word Problem (THINK pg. 196) Heuristics • PM Exclusive: Guess and Check (pg. 205)	
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