

Grade 4 : Illustrative Mathematics Units and topics

Unit	Approximate Length	Topics	Family Support
1: Factors and Multiples	2 weeks: Sept	Students apply understanding of multiplication and area to work with factors and multiples. • Relate the side lengths and area of a rectangle to factors and multiples. • Determine if a number is prime or composite. • Explain what it means to be a factor or a multiple of a whole number. • Apply multiplication fluency within 100 and the relationship between multiplication and division to find factor pairs and multiples.	Letter Video
2: Fraction Equivalence and Comparison	5 weeks: Oct	Students generate and reason about equivalent fractions and compare and order fractions with the following denominators: 2, 3, 4, 5, 6, 8, 10, 12, and 100. • Make sense of fractions with denominators 2, 3, 4, 5, 6, 8, 10, and 12 through physical representations and diagrams. • Reason about the location of fractions on the number line. • Generate equivalent fractions with the following denominators: 2, 3, 4, 5, 6, 8, 10, 12, and 100. • Use visual representations to reason about fraction equivalence, including using benchmarks • such as $\frac{1}{2}$ and 1. • Use visual representations or a numerical process to reason about fraction comparison.	Letter Video

3: Extending Operations to Fractions	4 weeks: Nov - early Dec	Students learn that a fraction $\frac{a}{b}$ is a product of a whole number a and a unit fraction $\frac{1}{b}$ or $\frac{a}{b} = a \times \frac{1}{b}$, and that $n \times \frac{a}{b} = \frac{(n \times a)}{b}$. Students learn to add and subtract fractions with like denominators, and to add and subtract tenths and hundredths. • Recognize that $n \times \frac{a}{b} = \frac{(n \times a)}{b}$ • Represent and explain that a fraction $\frac{a}{b}$ is a multiple of $\frac{1}{b}$ namely $a \times \frac{1}{b}$ • Represent and solve problems involving multiplication of a fraction by a whole number. • Create and analyze line plots that display measurement data in fractions of a unit ($\frac{1}{8}, \frac{1}{4}, \frac{1}{2}$). • Represent and solve problems that involve the addition and subtraction of fractions and mixed numbers, including measurements presented in line plots. • Use various strategies to add and subtract fractions and mixed numbers with like denominators. • Reason about equivalence to add tenths and hundredths. • Reason about equivalence to solve problems involving addition and subtraction of fractions and mixed numbers.	Letter Video
4: From Hundredths to Hundred-thousands	7 weeks: early Dec - Jan	Students read, write and compare numbers in decimal notation. They also extend place value understanding for multi-digit whole numbers and add and subtract within 1,000,000. • Represent, compare, and order decimals to the hundredths by reasoning about their size. • Write tenths and hundredths in decimal notation. • Read, represent, and describe the relative magnitude of	Letter Video

		multi-digit whole numbers up to 1 million • Recognize that in a multi-digit whole number, the value of a digit in one place represents ten times what it represents in the place to its right. • Compare, order, and round multi-digit whole numbers within 1,000,000. • Add and subtract multi-digit whole numbers using the standard algorithm.	
5: Multiplicative Comparison and Measurement	4 weeks: Feb	Students interpret, represent, and solve multiplicative comparison problems using an understanding of the relationship between multiplication and division. They use this thinking to convert units of measure within a given system from larger to smaller units. • Analyze, describe, and represent multiplicative comparison situations. • Solve one-step and two-step problems involving multiplicative comparison. • Convert from larger units to smaller units within a given system of measurement. • Solve multi-step problems involving multiplicative comparison and measurement. • Understand the relative sizes of kilometers, meters and centimeters, liters and milliliters, kilograms and grams, and pounds and ounces. • Solve multi-step problems involving multiplicative comparison and measurement.	Letter Video
6: Multiplying and Dividing Multi-digit Numbers	6 weeks: Mar - mid Apr	Students multiply and divide multi-digit whole numbers using partial products and partial quotients strategies, and apply this understanding to solve multi-step problems using the four operations.	Letter Video

		• Generate a number or shape pattern that follows a given rule. • Identify apparent features of a number pattern that were not explicit in the rule itself. • Multiply a whole number of up to four digits by a one-digit whole number, and 2 two-digit numbers using strategies based on place value and the properties of operations. • Use a partial quotients algorithm to divide multi-digit numbers of up to four digits by one-digit divisors, resulting in numbers with or without a remainder. • Use the four operations to solve problems that involve multi-digit whole numbers and assess the reasonableness of answers.	
7: Angles and Angle Measurement	5 weeks: mid Apr - May	Students learn to draw and identify points, rays, segments, angles, and lines, including parallel and perpendicular lines. Students also learn how to use a protractor to measure angles and draw angles of given measurements, and identify acute, obtuse, right, and straight angles in two-dimensional figures. • Draw and identify points, lines, rays, segments, and parallel and intersecting lines in geometric figures. • Recognize that angles are formed wherever two rays share a common endpoint and identify angles in two-dimensional figures. • Recognize that angles can be measured in degrees, and can be found using addition and subtraction • Use a protractor to measure and draw angles, and recognize that perpendicular lines meet or cross at a right angle. • Draw and identify acute, obtuse, right, and straight angles in two-dimensional figures.	Letter Video

		• Write equations to represent angle relationships and reason about and find unknown measurements.	
8: Properties of Two-dimensional Shapes	3 weeks: Jun	Students classify triangles and parallelograms based on the properties of their side lengths and angles, and learn about lines of symmetry in two-dimensional figures. They use their understanding of these attributes to solve problems, including problems involving perimeter and area. • Classify triangles (including right triangles), parallelograms, rectangles, rhombuses, and squares based on the properties of their side lengths and angles. • Identify and draw lines of symmetry in two-dimensional figures. • Solve problems involving unknown side lengths, perimeter, area, and angle measurements using the known attributes and properties of two-dimensional shapes.	Letter Video
9: Putting it All Together	<i>optional</i>	Students consolidate and solidify their understanding of various concepts and skills related to major work of the grade. They also continue to work toward fluency goals of the grade. • Solve problems involving fraction equivalence and operating with fractions. • Add, subtract, multiply, and divide multi-digit numbers using place value understanding. • Solve problems involving measurement comparison. • Review the major work of the grade by creating and designing instructional routines.	Letter Video