








# Elementary - 4th Grade Math

## North Boone CUSD 200

UNITS (7/7 SELECTED)

SUGGESTED DURATION

 Unit 1: Place Value and Whole Number Operations	<i>9 lessons</i>
 Unit 2: Multiplication and Division Problems	<i>27 lessons</i>
 Unit 3: Extend and Apply Multiplication	<i>11 lessons</i>
 Unit 4: Fractions and Decimals	<i>25 lessons</i>
 Unit 5: Operations with Fractions	<i>16 lessons</i>
 Unit 6: Two-Dimensional Figures and Symmetry	<i>8 lessons</i>
 Unit 7: Measurement, Data, and Time	<i>13 lessons</i>

# Unit 1: Place Value and Whole Number Operations

Elementary - 4th Grade Math - Last Updated on July 16, 2021

## STANDARDS

<b>National Common Core State Standards - Grade 4 - Mathematics</b>
CCSS.Math.Content.4.NBT.A.3
Use place value understanding to round multi-digit whole numbers to any place.
CCSS.Math.Content.4.MD.A.3
Apply the area and perimeter formulas for rectangles in real world and mathematical problems.
CCSS.Math.Content.4.NBT.A.1
Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
CCSS.Math.Content.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.
CCSS.Math.Content.4.NBT.B.4
Fluently add and subtract multi-digit whole numbers using the standard algorithm.
CCSS.Math.Content.4.NBT.A
Generalize place value understanding for multi-digit whole numbers.
CCSS.Math.Content.4.NBT.B
Use place value understanding and properties of operations to perform multi-digit arithmetic.
CCSS.Math.Content.4.MD.A
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

## PRIORITY STANDARDS

CCSS.Math.Content.4.NBT.A.3: Use place value understanding to round multi-digit whole numbers to any place.

CCSS.Math.Content.4.MD.A.3: Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

# Unit 1: Place Value and Whole Number Operations

Elementary - 4th Grade Math - Last Updated on July 16, 2021

## LEARNING PLAN

### Learning Targets / Focusing Questions:

- I can use a place-value chart to compare the values of different digits and justify the comparisons.
- I can read and write 6-digit numbers in standard form, word form, and expanded form.
- I can regroup and rename multi-digit whole numbers.
- I can compare and order three numbers to the hundred thousands place.
- I can record and justify the comparisons.
- I can use place-value understanding to round whole numbers through 1,000,000 and estimate.
- I can add whole numbers greater than 1,000 using place value and a grid with regrouping.
- I can subtract whole numbers greater than 1,000 using place value and a grid with regrouping.
- I can draw a bar model for a comparison problem.
- I can write an equation and use addition or subtraction to find the unknown number in the bar model.
- I can apply the perimeter formula to find the perimeter of a rectangle.

### Unit Resources:

- HMH Into Math 2020 - Grade 4

### Summary of Learning Activities:

Trimester 1:

- Module 1: Place Value of Whole Numbers
  - 1.1 Understand Place Value Relationships
  - 1.2 Read and Write Numbers
  - 1.3 Regroup and Rename Numbers
  - 1.4 Compare and Order Numbers
  - 1.5 Use Place Value Understanding to Round Numbers
- Module 2: Addition and Subtraction of Whole Numbers
  - 2.1 Add Whole Numbers and Assess Reasonableness
  - 2.2 Subtract Whole Numbers and Assess Reasonableness
  - 2.3 Use Addition and Subtraction to Solve Comparison Problems
  - 2.4 Apply the Perimeter Formula for Rectangles

## Unit 2: Multiplication and Division Problems

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### STANDARDS

#### National Common Core State Standards - Grade 4 - Mathematics

CCSS.Math.Content.4.OA.A.3

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

CCSS.Math.Content.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.

CCSS.Math.Content.4.NBT.A.3

Use place value understanding to round multi-digit whole numbers to any place.

CCSS.Math.Content.4.NBT.B.6

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

CCSS.Math.Content.4.OA.A.1

Interpret a multiplication equation as a comparison, e.g., interpret  $35 = 5 \times 7$  as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.

CCSS.Math.Content.4.OA.A.2

Multiply or divide 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.

CCSS.Math.Content.4.OA.A

Use the four operations with whole numbers to solve problems.

CCSS.Math.Content.4.NBT.A

Generalize place value understanding for multi-digit whole numbers.

CCSS.Math.Content.4.NBT.B

## Unit 2: Multiplication and Division Problems

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Use place value understanding and properties of operations to perform multi-digit arithmetic.

### PRIORITY STANDARDS

CCSS.Math.Content.4.OA.A.3: Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted.

Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

CCSS.Math.Content.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.

CCSS.Math.Content.4.NBT.A.3: Use place value understanding to round multi-digit whole numbers to any place.

CCSS.Math.Content.4.NBT.B.6: Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

## Unit 2: Multiplication and Division Problems

Elementary - 4th Grade Math - Last Updated on July 16, 2021

### LEARNING PLAN

#### Learning Targets / Focusing Questions:

- I can use visual models and equations to represent and interpret a multiplicative comparison.
- I can identify and represent multiplicative and additive comparison problems.
- I can solve a multiplicative comparison problem using division with drawings and equations.
- I can write equations with letters for the unknown values to model and solve multiplicative and additive comparison problems.
- I can solve multistep problems with multiplication and division by writing equations with letters representing the unknown quantities.
- I can use basic facts, patterns, and place value to multiply a multiple of 10, 100, or 1,000 by a 1-digit number.
- I can use basic facts, patterns, and place value to divide a multiple of 10, 100, or 1,000 by a 1-digit number.
- I can estimate products of 1-digit numbers and determine whether the exact product is reasonable.
- I can estimate the quotient of a division problem involving a 1-digit divisor using compatible numbers.
- I can use the properties of operations and the relationship between multiplication and division to find products and quotients using mental math.
- I can describe how to represent multiplication using arrays or concrete models such as counters and base-ten blocks.
- I can break apart a 2-digit factor to multiply a 2-digit factor by a 1-digit factor.
- I can use partial products to find the product of a 1-digit number and a 3-digit number.
- I can record partial products to multiply a multi-digit number by a 1-digit number.
- I can use place value and regrouping to multiply a 2-digit number by a 1-digit number.
- I can use the standard algorithm to find the product of a multi-digit number and a single-digit number.
- I can use equations to solve multistep problems.
- I can use visual models and equations to represent division problems.
- I can use visual models to identify the whole-number quotient and remainder in a division problem.
- I can solve a division problem and interpret the remainder in the context of the problem.
- I can solve multi-digit division problems using area models and the Distributive Property.
- I can write an equation to represent a division problem and use repeated subtraction to solve.
- I can use partial quotients to divide multi-digit numbers by 1-digit numbers.
- I can represent and record division problems with a 1-digit divisor and regrouping.
- I can determine how many digits a whole-number quotient will have and use long division to divide.
- I can divide a multi-digit number by a 1-digit number and check the answer.
- I can solve multistep word problems involving multiplication, division, and interpretation of remainders.

#### Unit Resources:

- HMH Into Math 2020 - Grade 4

#### Summary of Learning Activities:

Trimester 1:

## Unit 2: Multiplication and Division Problems

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- Module 3: Interpret and Solve Problem Situations
  - 3.1 Explore Multiplicative Comparisons to Solve Problems
  - 3.2 Distinguish Between Multiplicative and Additive Comparisons
  - 3.3 Use Division to Solve Multiplicative Comparison Problems
  - 3.4 Use Comparisons to Solve Problem Situations
  - 3.5 Solve Multiplication and Division Problems
- Module 4: Mental Math and Estimation Strategies
  - 4.1 Explore Multiplication Patterns w/ Tens, Hundreds, & Thousands
  - 4.2 Explore Division Patterns w/ Tens, Hundreds, & Thousands
  - 4.3 Estimate Products by 1-Digit Numbers
  - 4.4 Estimate Quotients Using Compatible Numbers
  - 4.5 Use Mental Math Strategies for Multiplication and Division
- Module 5: Multiply by 1-Digit Numbers
  - 5.1 Represent Multiplication
  - 5.2 Use Area Models and the Distributive Property to Multiply
  - 5.3 Multiply Using Expanded Form
  - 5.4 Multiply Using Partial Products
  - 5.5 Use Place Value to Multiply 2-Digit Numbers
  - 5.6 Multiply 3-Digit and 4-Digit Numbers
  - 5.7 Use Equations to Solve Multistep Problems
- Module 6: Understand Division by 1-Digit Numbers
  - 6.1 Represent Division
  - 6.2 Investigate Remainders
  - 6.3 Interpret Remainders
  - 6.4 Use Area Models and the Distributive Property to Divide
  - 6.5 Divide Using Repeated Subtraction
  - 6.6 Divide Using Partial Quotients
- Module 7: Divide by 1-Digit Numbers
  - 7.1 Represent Division with Regrouping
  - 7.2 Use Place Value to Divide
  - 7.3 Divide by 1-Digit Numbers
  - 7.4 Solve Multistep Multiplication and Division Problems

## Unit 3: Extend and Apply Multiplication

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### STANDARDS

#### National Common Core State Standards - Grade 4 - Mathematics

CCSS.Math.Content.4.OA.A.3

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

CCSS.Math.Content.4.NBT.B.6

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

CCSS.Math.Content.4.NBT.A.3

Use place value understanding to round multi-digit whole numbers to any place.

CCSS.Math.Content.4.MD.A.3

Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

CCSS.Math.Content.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.

CCSS.Math.Content.4.OA.A

Use the four operations with whole numbers to solve problems.

CCSS.Math.Content.4.NBT.A

Generalize place value understanding for multi-digit whole numbers.

CCSS.Math.Content.4.NBT.B

Use place value understanding and properties of operations to perform multi-digit arithmetic.

CCSS.Math.Content.4.MD.A

Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.



## Unit 3: Extend and Apply Multiplication

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### PRIORITY STANDARDS

CCSS.Math.Content.4.OA.A.3: Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted.

Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

CCSS.Math.Content.4.NBT.B.6: Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

CCSS.Math.Content.4.NBT.A.3: Use place value understanding to round multi-digit whole numbers to any place.

CCSS.Math.Content.4.MD.A.3: Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

## Unit 3: Extend and Apply Multiplication

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### LEARNING PLAN

#### Learning Targets / Focusing Questions:

- I can use different strategies to multiply with multiples of ten.
- I can estimate products using a variety of methods and predict how the estimated product will relate to the actual product.
- I can use area models and partial products to multiply two 2-digit numbers.
- I can multiply two 2-digit numbers using different methods.
- I can fluently multiply two 2-digit numbers using the method of regrouping.
- I can fluently multiply two 2-digit numbers using the method of my choice.
- I can solve word problems that involve two and three steps using whole numbers and all four operations.
- I can find the area of a rectangle by using the formula for area.
- I can find the area of a figure made of combined rectangles.
- I can find the unknown measure of a rectangle given the length of one side and the area or perimeter.
- I can find the area of a rectangular region that is formed by taking away rectangular pieces from its interior.

#### Unit Resources:

- HMH Into Math 2020 - Grade 4

#### Summary of Learning Activities:

Trimester 2:

- Module 8: Multiply with 2-Digit Numbers
  - 8.1 Multiply with Tens
  - 8.2 Estimate Products
  - 8.3 Relate Area Models and Partial Products
  - 8.4 Multiply Using Partial Products
  - 8.5 Multiply with Regrouping
  - 8.6 Choose a Multiplication Strategy
  - 8.7 Solve Multistep Problems and Assess Reasonableness
- Module 9: Apply Multiplication to Area
  - 9.1 Apply the Area Formula to Rectangles
  - 9.2 Find the Area of Combined Rectangles
  - 9.3 Find Unknown Measures
  - 9.4 Solve Area Problems

## Unit 4: Fractions and Decimals

Elementary - 4th Grade Math - Last Updated on July 16, 2021

### STANDARDS

#### National Common Core State Standards - Grade 4 - Mathematics

CCSS.Math.Content.4.OA.B.4

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

CCSS.Math.Content.4.OA.C.5

Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

CCSS.Math.Content.4.NF.A.2

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

CCSS.Math.Content.4.NF.C.6

Use decimal notation for fractions with denominators 10 or 100.

CCSS.Math.Content.4.NF.C.7

Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols  $>$ ,  $=$ , or  $<$ , and justify the conclusions, e.g., by using a visual model.

CCSS.Math.Content.4.MD.C.6

Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

CCSS.Math.Content.4.NF.A.1

Explain why a fraction  $\frac{a}{b}$  is equivalent to a fraction  $\frac{n \times a}{n \times b}$  by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

CCSS.Math.Content.4.NF.C.5

Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.

CCSS.Math.Content.4.MD.A.2

## Unit 4: Fractions and Decimals

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Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

CCSS.Math.Content.4.G.A

Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

CCSS.Math.Content.4.G.A.1

Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

CCSS.Math.Content.4.MD.C.5

Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:

CCSS.Math.Content.4.MD.C.5a

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  $\frac{1}{360}$  of a circle is called a "one-degree angle," and can be used to measure angles.

CCSS.Math.Content.4.MD.C.5b

An angle that turns through  $n$  one-degree angles is said to have an angle measure of  $n$  degrees.

CCSS.Math.Content.4.MD.C.7

Recognize angle measure as additive. When an angle is 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 in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.

CCSS.Math.Content.4.OA.B

Gain familiarity with factors and multiples.

CCSS.Math.Content.4.OA.C

Generate and analyze patterns.

CCSS.Math.Content.4.MD.A

Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

## Unit 4: Fractions and Decimals

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CCSS.Math.Content.4.MD.C

Geometric measurement: understand concepts of angle and measure angles.

CCSS.Math.Content.4.NF.A

Extend understanding of fraction equivalence and ordering.

### PRIORITY STANDARDS

CCSS.Math.Content.4.OA.B.4: Find all factor pairs for a whole number in the range 1—100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1—100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1—100 is prime or composite.

CCSS.Math.Content.4.OA.C.5: Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

CCSS.Math.Content.4.NF.A.2: Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as  $\frac{1}{2}$ .

Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols  $>$ ,  $=$ , or  $<$ , and justify the conclusions, e.g., by using a visual fraction model.

CCSS.Math.Content.4.NF.C.6: Use decimal notation for fractions with denominators 10 or 100.

CCSS.Math.Content.4.NF.C.7: Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols  $>$ ,  $=$ , or  $<$ , and justify the conclusions, e.g., by using a visual model.

CCSS.Math.Content.4.MD.C.6: Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

# Unit 4: Fractions and Decimals

Elementary - 4th Grade Math - Last Updated on July 16, 2021

## LEARNING PLAN

### Learning Targets / Focusing Questions:

- I can use visual models and equations to find all the factor pairs of a number.
- I can use division to determine whether a number is a factor of another number.
- I can determine whether a number is a multiple of another number and generate lists of multiples.
- I can determine whether a number is prime or composite.
- I can follow a given rule to write numbers in a pattern and identify other features of the pattern that are not stated in the rule.
- I can use visual models to compare two fractions with different numerators and denominators.
- I can use benchmarks to compare two fractions and record the comparison with the symbols  $<$  or  $>$ .
- I can use a visual model to show that two fractions are equivalent and explain why they are equivalent.
- I can use multiplication and division to write fractions that are equivalent to a given fraction.
- I can use common multiples to rewrite two fractions so they have a common denominator or a common numerator.
- I can use common numerators or denominators to compare two fractions that have different numerators and denominators.
- I can use different strategies to compare and order three or more fractions.
- I can use a visual model and decimal notation to represent fractions, mixed numbers, and decimals in tenths.
- I can use a visual model and decimal notation to represent fractions, mixed numbers, and decimals in hundredths.
- I can write a fraction in tenths as a fraction in hundredths and as a decimal in tenths and hundredths.
- I can use decimal models, number lines, and place-value charts to compare decimals. I can use  $<$ ,  $>$ , and  $=$  to write decimal comparisons.
- I can use hundredths models, fractions, and decimals to represent money amounts.
- I can solve multistep money problems using bills and coins, visual models, or cents and represent money amounts as fractions, mixed numbers, and decimals.
- I can identify, draw, and name angles.
- I can compare angles and use unit angles to find how many of the unit angles complete a circle.
- I can measure an angle as it relates to the fractional part of the circle.
- I can find the measure of an angle by using its fractional part of a circle.
- I can use a protractor to accurately and precisely measure and draw angles.
- I can find the measure of angles that are joined or separated.
- I can use the relationship between known angles to find the measure of unknown angles.

### Unit Resources:

- HMH Into Math 2020 - Grade 4

### Summary of Learning Activities:

Trimester 2:

## Unit 4: Fractions and Decimals

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- Module 10: Algebraic Thinking - Number Theory
  - 10.1 Investigate Factors
  - 10.2 Identify Factors
  - 10.3 Generate Multiples Using Factors
  - 10.4 Identify Prime and Composite Numbers
  - 10.5 Generate and Analyze Number Patterns
- Module 11: Fraction Equivalence and Comparison
  - 11.1 Compare Fractions Using Visual Models
  - 11.2 Compare Fractions Using Benchmarks
  - 11.3 Explain Fraction Equivalence Using Visual Models
  - 11.4 Generate Equivalent Fractions
  - 11.5 Use Common Multiples to Write Equivalent Fractions
  - 11.6 Compare Fractions Using Strategies
  - 11.7 Use Comparison to Order Fractions
- Module 12: Relate Fractions and Decimals
  - 12.1 Represent Tenths as Fractions and Decimals
  - 12.2 Represent Hundredths as Fractions and Decimals
  - 12.3 Identify Equivalent Fractions and Decimals
  - 12.4 Compare Decimals
  - 12.5 Relate Fractions, Decimals, and Money
  - 12.6 Solve Multistep Money Problems
- Module 13: Use Fractions to Understand Angles
  - 13.1 Explore Lines, Rays, and Angles
  - 13.2 Explore Angles
  - 13.3 Relate Angles to Fractional Parts of a Circle
  - 13.4 Relate Degrees to Fractional Parts of a Circle
  - 13.5 Measure and Draw Angles Using a Protractor
  - 13.6 Join and Separate Angles
  - 13.7 Find Unknown Angle Measures

## Unit 5: Operations with Fractions

Elementary - 4th Grade Math - Last Updated on July 16, 2021

### STANDARDS

#### National Common Core State Standards - Grade 4 - Mathematics

CCSS.Math.Content.4.NF.B.3a

Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

CCSS.Math.Content.4.NF.B.3b

Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model.

CCSS.Math.Content.4.NF.C.6

Use decimal notation for fractions with denominators 10 or 100.

CCSS.Math.Content.4.NF.B.3c

Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.

CCSS.Math.Content.4.NF.B.3d

Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.

CCSS.Math.Content.4.NF.C.5

Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.

CCSS.Math.Content.4.NF.B

Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

CCSS.Math.Content.4.NF.C

Understand decimal notation for fractions, and compare decimal fractions.

CCSS.Math.Content.4.NF.B.3

Understand a fraction  $a/b$  with  $a > 1$  as a sum of fractions  $1/b$ .

CCSS.Math.Content.4.NF.B.4c

Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models



## Unit 5: Operations with Fractions

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and equations to represent the problem.

CCSS.Math.Content.4.NF.B.4b

Understand a multiple of  $\frac{a}{b}$  as a multiple of  $\frac{1}{b}$ , and use this understanding to multiply a fraction by a whole number.

CCSS.Math.Content.4.NF.B.4a

Understand a fraction  $\frac{a}{b}$  as a multiple of  $\frac{1}{b}$ .

CCSS.Math.Content.4.NF.B.4

Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

### PRIORITY STANDARDS

CCSS.Math.Content.4.NF.B.3a: Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

CCSS.Math.Content.4.NF.B.3b: Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model.

CCSS.Math.Content.4.NF.B.3c: Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.

CCSS.Math.Content.4.NF.B.3d: Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.

CCSS.Math.Content.4.NF.C.6: Use decimal notation for fractions with denominators 10 or 100.

# Unit 5: Operations with Fractions

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## LEARNING PLAN

### Learning Targets / Focusing Questions:

- I can decompose visual fraction models into sums and model the decomposition with addition equations.
- I can use fraction models to solve problems and describe joining fractions with like denominators.
- I can use visual representations to add fractions. I can write equations to model a given number line or word problem.
- I can show subtraction of fractions with visual models and use words to describe the difference.
- I can write equations and find the difference of fractions with like denominators.
- I can rename fractions with denominators of 10 and 100 so both have denominators of 100. I can add the fractions.
- I can add and subtract fractions greater than one with like denominators to solve real-world problems.
- I can rename mixed numbers as a sum of fractions with like denominators.
- I can use visual models and equations to add and subtract mixed numbers with like denominators.
- I can rename mixed numbers to subtract fractions with like denominators to solve real-world problems.
- I can add fractions and mixed numbers using the properties of addition.
- I can add and subtract fractions and mixed numbers with like denominators to solve real-world problems.
- I can represent a fraction as the product of a whole number and a unit fraction and as an equation using repeated addition.
- I can find the product of a whole number and a fraction using a visual representation or an equation.
- I can solve problems involving the multiplication of mixed numbers and whole numbers.

### Unit Resources:

- HMH Into Math 2020 - Grade 4

### Summary of Learning Activities:

Trimester 3:

- Module 14: Understand Addition and Subtraction of Fractions with Like Denominators
  - 14.1 Decompose Fractions into Sums
  - 14.2 Join Parts of the Same Whole
  - 14.3 Represent Addition of Fractions
  - 14.4 Separate Parts of the Same Whole
  - 14.5 Represent Subtraction of Fractions
  - 14.6 Add Fractional Parts of 10 and 100
- Module 15: Add and Subtract Fractions and Mixed Numbers with Like Denominators
  - 15.1 Add and Subtract Fractions to Solve Problems
  - 15.2 Rename Fractions and Mixed Numbers
  - 15.3 Add and Subtract Mixed Numbers to Solve Problems
  - 15.4 Rename Mixed Numbers to Subtract

## Unit 5: Operations with Fractions

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- 15.5 Apply Properties of Addition to Add Fractions and Mixed Numbers
- 15.6 Practice Solving Fraction Problems
- Module 16: Multiply Fractions by Whole Numbers
  - 16.1 Understand Multiples of Unit Fractions
  - 16.2 Find Multiples of Fractions
  - 16.3 Represent Multiplication of a Fraction by a Whole Number
  - 16.4 Solve Problems Using Multiplication of a Fraction or Mixed Number by a Whole

# Unit 6: Two-Dimensional Figures and Symmetry

Elementary - 4th Grade Math - Last Updated on July 16, 2021

## STANDARDS

<b>National Common Core State Standards - Grade 4 - Mathematics</b>
CCSS.Math.Content.4.OA.C.5
Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.
CCSS.Math.Content.4.MD.C.6
Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
CCSS.Math.Content.4.G.A.2
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. Recognize right triangles as a category, and identify right triangles.
CCSS.Math.Content.4.OA.C
Generate and analyze patterns.
CCSS.Math.Content.4.G.A.1
Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
CCSS.Math.Content.4.G.A.3
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 parts. Identify line-symmetric figures and draw lines of symmetry.
CCSS.Math.Content.4.MD.C
Geometric measurement: understand concepts of angle and measure angles.

## PRIORITY STANDARDS

CCSS.Math.Content.4.OA.C.5: Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.

CCSS.Math.Content.4.MD.C.6: Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

CCSS.Math.Content.4.G.A.2: 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. Recognize right triangles as a category, and identify right triangles.

# Unit 6: Two-Dimensional Figures and Symmetry

Elementary - 4th Grade Math - Last Updated on July 16, 2021

## LEARNING PLAN

### Learning Targets / Focusing Questions:

- I can identify parallel lines, perpendicular lines, and lines that are neither parallel nor perpendicular.
- I can measure and classify all of the angles in a triangle.
- I can describe the differences between equilateral, isosceles, and scalene triangles.
- I can identify trapezoids, parallelograms, rectangles, rhombuses, and squares.
- I can use a protractor to accurately and precisely measure and draw angles in two-dimensional figures.
- I can identify a line of symmetry on a two-dimensional figure.
- I can identify two-dimensional figures that have line symmetry.
- I can draw all lines of symmetry on a two-dimensional figure.
- I can describe and extend shape patterns.

### Unit Resources:

- HMH Into Math 2020 - Grade 4

### Summary of Learning Activities:

Trimester 3:

- Module 17: Two-Dimensional Figures
  - 17.1 Identify and Draw perpendicular and Parallel Lines
  - 17.2 Identify and Classify Triangles by Angles
  - 17.3 Identify and Classify Triangles by Sides
  - 17.4 Identify and Classify Quadrilaterals
  - 17.5 Measure and Draw Angles of Two-Dimensional Figures
- Module 18: Symmetry and Patterns
  - 18.1 Recognize Lines of Symmetry
  - 18.2 Identify and Draw Lines of Symmetry
  - 18.3 Generate and Identify Shape Patterns

## Unit 7: Measurement, Data, and Time

Elementary - 4th Grade Math - Last Updated on July 16, 2021

### STANDARDS

#### National Common Core State Standards - Grade 4 - Mathematics

##### CCSS.Math.Content.4.MD.A.1

Know relative sizes of measurement units within one system of units including 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 of a smaller unit. Record measurement equivalents in a two column table.

##### CCSS.Math.Content.4.MD.A.2

Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.

##### CCSS.Math.Content.4.MD.B.4

Make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$ ). Solve problems involving addition and subtraction of fractions by using information presented in line plots.

##### CCSS.Math.Content.4.MD.B

Represent and interpret data.

##### CCSS.Math.Content.4.MD.A

Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

### PRIORITY STANDARDS

CCSS.Math.Content.4.MD.A.1: Know relative sizes of measurement units within one system of units including 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 of a smaller unit. Record measurement equivalents in a two column table.

# Unit 7: Measurement, Data, and Time

Elementary - 4th Grade Math - Last Updated on July 16, 2021

## LEARNING PLAN

### Learning Targets / Focusing Questions:

- I can select and use nonstandard units to measure lengths, weights, and liquid volume.
- I can represent and compare measurements given in feet and inches, feet and yards, and inches and yards.
- I can represent and compare different units of weight.
- I can represent and compare different customary units of liquid volume.
- I can make a line plot and use a line plot to answer questions.
- I can choose an appropriate metric unit and estimate the measure of the length, mass, or liquid volume of an object.
- I can represent and compare measurements given in different metric units of length.
- I can represent and compare measurements given in different metric units of mass and liquid volume.
- I can use my understanding of the relative sizes of measurement units to solve problems involving metric units and customary units of measure.
- I can represent and compare units of time given in hours, minutes, and seconds.
- I can use visual models to represent, add, and subtract times to solve problems involving elapsed time.
- I can use visual models to represent, add, and subtract times to solve problems involving start and end times.
- I can use my understanding of the relative size of measurement units and more than one operation to solve problems involving length and time.

### Unit Resources:

- HMH Into Math 2020 - Grade 4

### Summary of Learning Activities:

Trimester 3:

- Module 19: Relative Sizes of Customary Measurement Units
  - 19.1 Identify Customary measurement Benchmarks
  - 19.2 Compare Customary Units of Length
  - 19.3 Compare Customary Units of Weight
  - 19.4 Compare Customary Unit of Liquid Volume
  - 19.5 Represent and Interpret Measurement Data in Line Plots
- Module 20: Relative Sizes of Metric Measurement Units
  - 20.1 Identify Metric Measurement Benchmarks
  - 20.2 Compare Metric Units of Length
  - 20.3 Compare Metric Units of Mass and Liquid Volume
  - 20.4 Solve Problems Using Measurements
- Module 21: Solve Problems with Time and Measurement
  - 21.1 Compare Units of Time
  - 21.2 Solve Problems Involving Elapsed Time

## Unit 7: Measurement, Data, and Time

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- 21.3 Solve Problems Involving Start Time and End Time
- 21.4 Practice with Mixed Measures