

Knowre Math: **Grade 4** Curriculum

Chapter 1 Whole Numbers

| Lesson | Topic | CCSS |
|-----------------------|---|------------------|
| 1-1 Place Value | A) Place Values to Millions | 4.NBT.1, 4.NBT.2 |
| | B) Expanded and Standard Form of Numbers | |
| 1-2 Reading Numbers | A) Reading Numbers to Millions | 4.NBT.2 |
| 1-3 Writing Numbers | A) Writing Numbers to Millions | 4.NBT.2 |
| 1-4 Comparing Numbers | A) Comparing Numbers with Six or Fewer Digits | 4.NBT.2 |
| 1-5 Ordering Numbers | A) Ordering Whole Numbers | |
| 1-6 Rounding | A) Rounding to a Given Place Value | 4.NBT.3 |
| | B) Rounding to a Lead Digit | |

Chapter 2 Adding and Subtracting Whole Numbers

| Lesson | Topic | CCSS |
|--|--|-----------------|
| 2-1 Vertical Addition | A) Vertical Addition of Two Numbers with Six or Fewer Digits | 4.OA.3, 4.NBT.4 |
| | B) Vertical Addition of Three or More Numbers | |
| 2-2 Horizontal Addition | A) Horizontal Addition of Two Numbers | 4.OA.3, 4.NBT.4 |
| | B) Horizontal Addition of Three or More Numbers | |
| 2-3 Vertical Subtraction | A) Vertical Subtraction of Numbers with Six or Fewer Digits | 4.OA.3, 4.NBT.4 |
| 2-4 Horizontal Subtraction | A) Horizontal Subtraction of Two Numbers | 4.OA.3, 4.NBT.4 |
| | B) Horizontal Addition or Subtraction of Three or More Numbers | |
| 2-5 Addition and Subtraction Relations | A) Relationships Between Addition and Subtraction Sentences | 4.OA.3, 4.NBT.4 |
| | B) Missing Numbers in Addition and Subtraction Sentences | |
| 2-6 Estimating Sums and Differences | A) Estimating Sums and Differences | 4.OA.3 |

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Chapter 3 Multiplying Whole Numbers

| Lesson | Topic | CCSS |
|--|---|--|
| 3-1 Basic Multiplication Facts | A) Single Digit Multiplication | 4.OA.1, 4.OA.2, 4.OA.3 |
| 3-2 Products with Multiples of 10 | A) Multiplying a One-Digit Number and Ten | 4.OA.1, 4.OA.2, 4.OA.3, 4.NBT.1, 4.NBT.5 |
| | B) Pattern of Zeros – Multiplication | 4.NBT.5 |
| 3-3 Multiply by One-Digit Numbers - Models | A) Base Ten Blocks to Multiply by One-Digit Numbers | 4.OA.3, 4.NBT.5 |
| | B) Tables to Multiply by One-Digit Numbers | |
| | C) Partial Products to Multiply by One-Digit Numbers | |
| 3-4 Multiplying by One-Digit Numbers - Standard Algorithm with No Regrouping | A) Standard Algorithm to Multiply by One-Digit Numbers without Regrouping | 4.OA.3, 4.NBT.5 |
| 3-5 Multiplying by One-Digit Numbers - Standard Algorithm with Regrouping | A) Standard Algorithm to Multiply by One-Digit Numbers with Regrouping | 4.OA.3, 4.NBT.5 |
| 3-6 Multiplying Two-Digit Numbers - Models | A) Tables to Multiply Two-Digit Numbers | 4.OA.3, 4.NBT.5 |
| | B) Partial Products to Multiply Two-Digit Numbers | |
| 3-7 Multiplying Two-Digit Numbers - Standard Algorithm | A) Standard Algorithm to Multiply Two-Digit Numbers without Regrouping | 4.OA.3, 4.NBT.5 |
| | B) Standard Algorithm to Multiply Two-Digit Numbers with Regrouping | |
| 3-8 Horizontal Multiplication - No Regrouping | A) Horizontal Multiplication of One-Digit Numbers without Regrouping | 4.OA.3, 4.NBT.5 |
| | B) Horizontal Multiplication of Two-Digit Numbers without Regrouping | |
| 3-9 Horizontal Multiplication - Regrouping | A) Horizontal Multiplication of One-Digit Numbers with Regrouping | 4.OA.3, 4.NBT.5 |
| | B) Horizontal Multiplication of Two-Digit Numbers with Regrouping | |
| 3-10 Estimating Products | A) Estimating Products | 4.OA.3 |

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Chapter 4 Dividing Whole Numbers

| Lesson | Topic | CCSS |
|---|---|-----------------|
| 4-1 Basic Division Facts | A) One-Digit Quotients When Dividing by One-Digit Numbers | 4.OA.3 |
| 4-2 Quotients with Multiples of Ten | A) One Digit Quotients When Dividing by Ten | 4.OA.3, 4.NBT.1 |
| | B) Pattern of Zeros - Division | |
| 4-3 Dividing by One-Digit Numbers with No Remainders - Models | A) Base Ten Blocks to Divide Two-Digit by One-Digit Numbers | 4.OA.3, 4.NBT.6 |
| | B) Base Ten Blocks to Divide by Three-Digit by One-Digit Numbers | |
| 4-4 Dividing by One-Digit Numbers with No Remainders - Partial Quotients | A) Partial Quotients to Divide by One-Digit Numbers | 4.OA.3, 4.NBT.6 |
| 4-5 Dividing by One-Digit Numbers with No Remainders - Standard Algorithm | A) Long Division to Divide by One-Digit Numbers | 4.OA.3, 4.NBT.6 |
| 4-6 Dividing by One-Digit Numbers with Remainders - Models | A) Quotient and Remainder from Base Ten Blocks | 4.OA.3, 4.NBT.6 |
| | B) Base Ten Blocks to Divide Two-Digit by One-Digit Numbers with Remainders | |
| | C) Base Ten Blocks to Divide Three-Digit by One-Digit Numbers with Remainders | |
| 4-7 Dividing by One-Digit Numbers with Remainders - Partial Quotients | A) Quotient and Remainder from Partial Quotients | 4.OA.3, 4.NBT.6 |
| | B) Partial Quotients to Divide by One-Digit Numbers with Remainders | |
| 4-8 Dividing by One-Digit Numbers with Remainders - Standard Algorithm | A) Long Division to Divide by One-Digit Numbers with Remainders | 4.OA.3, 4.NBT.6 |
| 4-9 Horizontal Division - No Remainders | A) Horizontal Division by One-Digit Numbers | 4.OA.3, 4.NBT.6 |
| | B) Estimating Quotients | |
| 4-10 Horizontal Division - Remainders | A) Horizontal Division by One-Digit Numbers with Remainders | 4.OA.3, 4.NBT.6 |
| 4-11 Estimating Quotients | A) Estimating Quotients | 4.OA.3 |

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Chapter 5 Operations and Patterns

| Lesson | Topic | CCSS |
|---|---|---------|
| 5-1 Multiplication and Division Relations | A) Relationships Between Multiplication and Division Sentences | 4.NBT.6 |
| | B) Missing Numbers in Multiplication and Division Sentences | |
| 5-2 Mixed Operations | A) Horizontal Multiplication and Division of Three or More Numbers | 4.OA.3 |
| | B) Order of Operations to Evaluate Expressions without Grouping Symbols | |
| 5-3 Expressions and Equations | A) Addition and Subtraction Expressions | 4.OA.3 |
| | B) Multiplication and Division Expressions | |
| | C) Expressions with More Than One Operation | |
| | D) Number Sentences | |
| 5-4 Introduction to Patterns | A) Repeating Patterns | 4.OA.5 |
| 5-5 Rules and Patterns | A) Patterns and Rules | 4.OA.5 |
| | B) Continuing and Completing Patterns | |

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Chapter 6 Fraction Concepts

| Lesson | Topic | CCSS |
|--------------------------------|---|-----------|
| 6-1 Divisibility and Multiples | A) Divisibility by 2, 3, 5, and 10 | 4.OA.4 |
| | B) Multiples | |
| 6-2 Factors | A) Factors | 4.OA.4 |
| | B) Prime and Composite Numbers | |
| 6-3 Introduction to Fractions | A) Word Form of Fractions | |
| | B) Writing Fractions from Models | |
| | C) Modeling Fractions with Fraction Bars | |
| 6-4 Fractions on Number Lines | A) Writing Fractions from Number Lines | 3.NF.2.a, |
| | B) Modeling Fractions on Number Lines | 3.NF.2.b |
| 6-5 Equivalent Fraction Models | A) Models to Write Equivalent Fractions | 4.NF.1 |
| | B) Models to Simplify Fractions | |
| | C) Models to Identify Equivalent Fractions | |
| 6-6 Equivalent Fractions | A) Writing Equivalent Fractions | 4.NF.1 |
| | B) Simplifying Fractions | |
| 6-7 Comparing Fractions | A) Comparing Fractions with the Same Denominator | 4.NF.2 |
| | B) Comparing Fractions with the Same Numerator | |
| | C) Comparing Fractions with Different Numerators and Denominators | |
| 6-8 Ordering Fractions | A) Ordering Fractions with the Same Denominator or Numerator | 4.NF.2 |
| | B) Ordering Fractions with Different Numerators or Denominators | |

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Chapter 7 Fraction Addition, Subtraction, and Multiplication

| Lesson | Topic | CCSS |
|---|---|---------------------------------|
| 7-1 Fraction Decomposition with Models | A) Fractions Bars to Decompose Fractions | 4.NF.3.a, |
| | B) Number Lines to Decompose Fractions | 4.NF.3.b |
| 7-2 Fraction Decomposition with Same Denominators | A) Decomposition of Fractions | 4.NF.3.a, 4.NF.3.b |
| 7-3 Add Fractions - No Regrouping | A) Models to Add Fractions with Like Denominators - No Regrouping | |
| | B) Adding Fractions with Like Denominators - No Regrouping | 4.NF.3.a, 4.NF.3.c, 4.NF.3.d |
| | C) Vertical Addition with Mixed Numbers - No Regrouping | |
| 7-4 Using Models to Add Fractions - Regrouping | A) Models to Write Improper Fractions as Mixed Numbers | 4.NF.3.a, |
| | B) Models to Add Fractions with Like Denominators - Regrouping | 4.NF.3.c, 4.NF.3.d |
| 7-5 Adding Fractions - Regrouping | A) Decomposition to Write Improper Fractions as Mixed Numbers | |
| | B) Adding Fractions with Like Denominators - Regrouping | 4.NF.3.a, 4.NF.3.c, 4.NF.3.d |
| | C) Vertical Addition with Mixed Numbers - Regrouping | |
| 7-6 Adding Mixed Numbers Horizontally | A) Horizontal Addition with Mixed Numbers - No Regrouping | 4.NF.3.a, |
| | B) Horizontal Addition with Mixed Numbers - Regrouping | 4.NF.3.c, 4.NF.3.d |
| 7-7 Subtracting Fractions - No Regrouping | A) Models to Subtract Fractions with Like Denominators | 4.NF.3.a, |
| | B) Subtracting Fractions with Like Denominators | 4.NF.3.c, 4.NF.3.d |
| | C) Vertical Subtraction with Mixed Numbers - No Regrouping | |
| 7-8 Subtracting Mixed Numbers Vertically | A) Regrouping to Rewrite Whole and Mixed Numbers | 4.NF.3.a, |
| | B) Vertical Subtraction with Mixed Numbers - Regrouping | 4.NF.3.c, 4.NF.3.d |

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Chapter 7 Fraction Addition and Subtraction (cont.)

| Lesson | Topic | CCSS |
|---|---|--|
| 7-9 Subtracting Mixed Numbers Horizontally | A) Horizontal Subtraction with Mixed Numbers - No Regrouping | 4.NF.3.a, |
| | B) Horizontal Subtraction with Mixed Numbers - Regrouping | 4.NF.3.c, 4.NF.3.d |
| 7-10 Add and Subtract Fractions - Denominators 10 and 100 | A) Models of Equivalent Fractions with Denominators of 10 and 100 | 4.NF.3.a, 4.NF.3.c, 4.NF.3.d, 4.NF.5 |
| | B) Models to Add Fractions with Different Denominators | |
| | C) Models to Subtract Fractions with Different Denominators | |
| 7-11 Multiplying Whole Numbers and Unit Fractions | A) Multiplication as Repeated Addition | 4.NF.4.a, 4.NF.4.c |
| | B) Fractions as Whole Numbers Times Unit Fractions | |
| | C) Multiplying Whole Numbers and Unit Fractions | |
| 7-12 Multiplying Whole Numbers and Fractions | A) Multiplying Whole Numbers and Fractions | 4.NF.4.b, 4.NF.4.c |
| | B) Changing Multiplying by a Fraction to Multiplying by a Unit Fraction | |

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Chapter 8 Decimals

| Lesson | Topic | CCSS |
|--|---|--------|
| 8-1 Decimal Models - Tenths | A) Models of Decimals Less Than One - Tenths | 4.NF.6 |
| | B) Models of Decimals Greater Than One - Tenths | |
| | C) Models of Decimals and Fractions - Tenths | |
| 8-2 Decimal Models - Hundredths | A) Models of Decimals Less Than One - Hundredths | 4.NF.6 |
| | B) Models of Decimals Greater Than One - Hundredths | |
| | C) Models of Decimals and Fractions - Hundredths | |
| 8-3 Decimals on a Number Line - Tenths | A) Number Lines and Decimals - Tenths | 4.NF.6 |
| 8-4 Decimals on a Number Line - Hundredths | A) Number Lines and Decimals - Hundredths | 4.NF.6 |
| 8-5 Decimal Place Value | A) Decimal Place Value | |
| | B) Reading and Writing Decimals | |
| | C) Values of Digits in Decimals | |
| 8-6 Comparing and Ordering Decimals | A) Models to Compare Decimals | 4.NF.7 |
| | B) Comparing Decimals | |
| | C) Ordering Decimals | |
| 8-7 Decimals and Fractions | A) Writing Decimals as Fractions | 4.NF.6 |
| | B) Writing Fractions as Decimals | |

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Chapter 9 Measurement and Data

| Lesson | Topic | CCSS |
|-------------------------------------|---|----------------|
| 9-1 Customary Units of Length | A) Estimating Customary Units of Length | 4.MD.1, 4.MD.2 |
| | B) Converting Customary Units of Length | |
| 9-2 Customary Units of Volume | A) Estimating Customary Units of Volume | 4.MD.1, 4.MD.2 |
| | B) Converting Customary Units of Volume | |
| 9-3 Customary Units of Weight | A) Estimating Customary Units of Weight | 4.MD.1, 4.MD.2 |
| | B) Converting Customary Units of Weight | |
| 9-4 Metric Units of Length | A) Estimating Metric Units of Length | 4.MD.1, 4.MD.2 |
| | B) Converting Metric Units of Length | |
| 9-5 Metric Units of Volume and Mass | A) Estimating Metric Units of Volume | 4.MD.1, 4.MD.2 |
| | B) Converting Metric Units of Volume | |
| | C) Estimating Metric Units of Mass | |
| | D) Converting Metric Units of Mass | |
| 9-6 Units of Time | A) Converting Units of Time | 4.MD.1, 4.MD.2 |
| 9-7 Elapsed Time | A) a.m. or p.m. | 4.MD.1, 4.MD.2 |
| | B) Elapsed Time | |
| 9-8 Line Plots | A) Line Plots and Data Sets | 4.MD.4 |
| | B) Interpreting Data in Line Plots | |

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Chapter 10 Points, Lines, and Angles

| Lesson | Topic | CCSS |
|--|--|---|
| 10-1 Points, Lines, and Segments | A) Points and Lines | 4.G.1 |
| | B) Segments | |
| 10-2 Parallel and Perpendicular Lines | A) Parallel and Perpendicular Lines | 4.G.1 |
| 10-3 Rays and Angles | A) Rays | 4.G.1 |
| | B) Angles | |
| 10-4 Measuring Angles | A) Degrees in a Circle | 4.MD.5.a, 4.MD.5.b, 4.MD.6 |
| | B) Using a Protractor | |
| | C) Measuring Angles Starting at Zero | |
| | D) Measuring Angles Not Starting at Zero | |
| 10-5 Constructing Angles | A) Drawing Angles Opening to the Right | 4.MD.5.a, 4.MD.5.b, 4.MD.6, 4.G.1 |
| | B) Drawing Angles Opening to the Left | |
| 10-6 Using Addition and Subtraction to Find Angle Measures | A) Angle Addition | 4.MD.7 |

Chapter 11 Triangles and Quadrilaterals

| Lesson | Topic | CCSS |
|-------------------------------------|---|--------|
| 11-1 Classifying Triangles | A) Angle Classification | 4.G.2 |
| | B) Angle Measures to Classify Triangles | |
| 11-2 Classifying Quadrilaterals | A) Types of Quadrilaterals | 4.G.2 |
| 11-3 Perimeter of Rectangles | A) Perimeter of Squares and Rectangles on a Grid | 4.MD.3 |
| | B) Perimeters of Rectangles | |
| 11-4 Perimeter of Squares | A) Perimeters of Squares | 4.MD.3 |
| 11-5 Area of Rectangles and Squares | A) Areas of Rectangles and Squares Given Figures | 4.MD.3 |
| | B) Areas of Rectangles and Squares Given Descriptions | |
| 11-6 Lines of Symmetry | A) Identifying Lines of Symmetry | 4.G.3 |
| | B) Figures with a Given Number of Lines of Symmetry | |
| | C) Results of Reflecting Over Lines of Symmetry | |