



IXL Skill Alignment

4th Grade alignment for Math Expressions Common Core



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Unit 1

Place Value and Multidigit Addition and Subtraction

Big Idea 1: Place Value to One Million

Textbook section	IXL skills
1-1: Place Value to Thousands	1. Place value models 2Y7
1-2: Place Value Patterns	1. Convert between standard and expanded form: up to 10,000 U7R 2. Writing numbers up to 100,000 in words: convert digits to words 2RZ 3. Writing numbers up to 100,000 in words: convert words to digits SQQ 4. Value of a digit YAV
1-3: Round Numbers	1. Round to the nearest ten, hundred, or thousand 97B 2. Compare numbers up to one hundred thousand DP2
1-4: Numbers to One Million	1. Convert between standard and expanded form: up to 1,000,000 4R6 2. Writing numbers up to one million in words: convert words to digits 5G4 3. Writing numbers up to one million in words: convert digits to words 7WT
1-5: Compare and Round Greater Numbers	1. Compare numbers up to one million 6Y2 2. Rounding: up to hundred thousands place QV7 <i>Also consider</i> <ul style="list-style-type: none"> Rounding puzzles XVJ

Big Idea 2: Addition with Greater Numbers

Textbook section	IXL skills
1-6: Make New Groups for Addition	<ol style="list-style-type: none"> Add two numbers up to five digits RG2 Add two numbers up to five digits: word problems ZPY
1-7: Add Greater Numbers	<ol style="list-style-type: none"> Add two numbers up to six digits HNH
1-8: Estimation and Mental Math	<ol style="list-style-type: none"> Estimate sums VMD Estimate sums: word problems SB9 <p><i>Also consider</i></p> <ul style="list-style-type: none"> Add two numbers up to seven digits PFA Addition: fill in the missing digits VQH Add 3 or more numbers up to millions ZMC

Big Idea 3: Subtraction with Greater Numbers

Textbook section	IXL skills
1-9: Subtract from Thousands	<ol style="list-style-type: none"> Subtract two numbers up to four digits BCD Subtract across zeros LZZ Subtract two numbers up to four digits: word problems 7KL
1-10: Subtraction Undoes Addition	<ol style="list-style-type: none"> Subtract numbers up to five digits VP2 <p><i>Also consider</i></p> <ul style="list-style-type: none"> Subtraction: fill in the missing digits UXK
1-11: Subtract Greater Numbers	<ol style="list-style-type: none"> Subtract numbers up to seven digits VPX Estimate differences QJY Estimate differences: word problems GWS
1-12: Practice Addition and Subtraction	<ol style="list-style-type: none"> Two-step addition and subtraction word problems KFX Add and subtract numbers up to six digits YUV

1-13: Problem Solving with Greater Numbers

1. Multi-step addition and subtraction word problems CZM

Also consider

- Addition and subtraction word problems ZD7
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1-14: Focus on Mathematical Practices

1. Interpret a table CLC

Also consider

- Create bar graphs WMA
 - Interpret bar graphs 48Z
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Unit 2

Multiplication with Whole Numbers

Big Idea 1: Multiplication with Tens and Hundreds

Textbook section	IXL skills
2-1: Arrays and Area Models	1. Make arrays to model multiplication HQK <i>Also consider</i> <ul style="list-style-type: none"> Multiply to find the area of a rectangle made of unit squares 79B
2-2: Connect Place Value and Multiplication	1. Multiply two multiples of ten A6Y <i>Also consider</i> <ul style="list-style-type: none"> Multiply a 1-digit number by a multiple of 10 JNA
2-3: Mental Math and Multiplication	1. Multiplication patterns: multiples of 10 and 100 ZXQ

Big Idea 2: Multiply by One-Digit Numbers

Textbook section	IXL skills
2-4: Model One-Digit by Two-Digit Multiplication	1. Multiply 1-digit numbers by 2-digit numbers using area models II HZX 2. Multiply 1-digit numbers by 2-digit numbers: word problems UR9 <i>Also consider</i> <ul style="list-style-type: none"> Multiply 1-digit numbers by teen numbers using grids 8UH Multiply 1-digit numbers by 2-digit numbers using area models I VCM
2-5: Estimate Products	1. Estimate products: multiply 1-digit numbers by 2-digit numbers 6C7
2-6: Use Place Value to Multiply	1. Multiply 1-digit numbers by 2-digit numbers using partial products Q2C

2-7: Algebraic Notation Method**2-8:** Compare Methods of One-Digit by Two-Digit Multiplication

1. Multiply 1-digit numbers by 2-digit numbers II EQ7

2-9: Discuss Different Methods

1. Multiply 1-digit numbers by 2-digit numbers GDW

2-10: One-Digit by Three-Digit Multiplication

1. Multiply 1-digit numbers by 3-digit numbers using area models II MTR
2. Multiply 1-digit numbers by 3-digit numbers using partial products 9N2
3. Multiply 1-digit numbers by 3-digit numbers W9X
4. Multiply money amounts: word problems TVA

Also consider

- Multiply 1-digit numbers by 3-digit numbers using area models I 2J9

2-11: Multistep Word Problems

1. Word problems with extra or missing information X64

Big Idea 3: Multiplication with Two-Digit Numbers**Textbook section****IXL skills****2-12:** Two-Digit by Two-Digit Multiplication

1. Multiply 2-digit numbers by 2-digit numbers using area models II 8K7

Also consider

- Multiply 2-digit numbers by 2-digit numbers using area models I ASZ

2-13: Different Methods for Two-Digit Multiplication

1. Multiply 2-digit numbers by 2-digit numbers using partial products XLZ
2. Multiply a 2-digit number by a 2-digit number MLC

Also consider

- Box multiplication ERB

2-14: Check Products of Two-Digit Numbers

1. Estimate products of two-digit numbers NGV
2. Estimate products of two-digit numbers: word problems 9HH

Also consider

- Estimate products word problems: identify reasonable answers KLA

2-15: Practice Multiplication

1. Review: Multiply a 2-digit number by a 2-digit number WBM
2. Multiply a 2-digit number by a 2-digit number: word problems GZG

Also consider

- Multiply a 2-digit number by a 2-digit number: complete the missing steps XQ8

Big Idea 4: Multiplication with Thousands

Textbook section	IXL skills
2-16: Multiply One-Digit and Four-Digit Numbers	<ol style="list-style-type: none"> 1. Multiply 1-digit by 4-digit numbers using area models S5P 2. Multiply 1-digit by 4-digit numbers H7A 3. Multiply 1-digit numbers by multi-digit numbers using partial products 23C 4. Multiply 1-digit numbers by 3-digit or 4-digit numbers using expanded form SEG
2-17: Use the Shortcut Method	<ol style="list-style-type: none"> 1. Multiply 1-digit numbers by 4-digit numbers JRL 2. Estimate products: multiply by 1-digit numbers WDG
2-18: Practice Multiplying	<ol style="list-style-type: none"> 1. Multiply 2-digit by 2-digit or 1-digit by 4-digit numbers DZD
2-19: Focus on Mathematical Practices	<ol style="list-style-type: none"> 1. Multiplication word problems BM5

Unit 3

Division with Whole Numbers

Big Idea 1: Dividing Whole Numbers

Textbook section	IXL skills
3-1: Divide with Remainders	<ol style="list-style-type: none"> 1. Divide 2-digit numbers by 1-digit numbers using arrays <small>M49</small> 2. Divide 2-digit numbers by 1-digit numbers: quotients up to 10 <small>7BS</small> 3. Divide numbers ending in zeroes by 1-digit numbers <small>6T2</small> <p><i>Also consider</i></p> <ul style="list-style-type: none"> • Division patterns over increasing place values <small>SXJ</small>
3-2: Relate 3-Digit Multiplication to Division	<ol style="list-style-type: none"> 1. Divide using partial quotients with remainders <small>EGL</small> <p><i>Also consider</i></p> <ul style="list-style-type: none"> • Divide 3-digit numbers by 1-digit numbers using area models <small>6UL</small>
3-3: Discuss 2-Digit and 4-Digit Quotients	<ol style="list-style-type: none"> 1. Divide larger numbers by 1-digit numbers: complete the table <small>2UB</small>
3-4: Digit-by-Digit Method	<ol style="list-style-type: none"> 1. Divide 3-digit and 4-digit numbers by 1-digit numbers <small>JWJ</small>
3-5: Relate Three Methods	
3-6: Divide by Any Method	<ol style="list-style-type: none"> 1. Divide larger numbers by 1-digit numbers without remainders: word problems <small>FFT</small>

Big Idea 2: Division Issues and Word Problems

Textbook section	IXL skills
3-7: Just-Under Quotient Digits	<ol style="list-style-type: none">1. Divide larger numbers by 1-digit numbers GE82. Divide larger numbers by 1-digit numbers: word problems DKK
3-8: Estimate to Check Quotients	<ol style="list-style-type: none">1. Estimate quotients using compatible numbers: 1-digit divisors CWE2. Divide by 1-digit numbers: pick the better estimate 2FS <p><i>Also consider</i></p> <ul style="list-style-type: none">• Estimate quotients MPG
3-9: Make Sense of Remainders	<ol style="list-style-type: none">1. One-step word problems involving remainders GZL <p><i>Also consider</i></p> <ul style="list-style-type: none">• Divide larger numbers by 1-digit numbers: interpret quotients and remainders SVK
3-10: Mixed Problem Solving	<ol style="list-style-type: none">1. Addition, subtraction, multiplication, and division word problems QKS2. Multi-step word problems EA9
3-11: Focus on Mathematical Practices	<ol style="list-style-type: none">1. Multi-step word problems involving remainders SLS <p><i>Also consider</i></p> <ul style="list-style-type: none">• Multi-step word problems: identify reasonable answers K6X

Unit 4

Equations and Word Problems

Big Idea 1: Reasoning and Solving Problems

Textbook section	IXL skills
4-1: Properties and Algebraic Notation	1. Evaluate variable expressions 88L 2. Evaluate numerical expressions with parentheses 6WS <i>Also consider</i> <ul style="list-style-type: none"> Properties of addition D9R Properties of multiplication B6N
4-2: Situation and Solution Equations for Addition and Subtraction	1. Solve one-step variable equations: addition and subtraction TBG 2. Addition and subtraction word problems 63R
4-3: Situation and Solution Equations for Multiplication and Division	1. Write variable equations to represent word problems: multiplication and division 72G 2. Multiplication and division word problems CZS <i>Also consider</i> <ul style="list-style-type: none"> Write variable equations to represent word problems 5SJ

Big Idea 2: Comparison Word Problems

Textbook section	IXL skills
4-4: Multiplication Comparisons	1. Compare numbers using multiplication: word problems QKB <i>Also consider</i> <ul style="list-style-type: none"> Compare numbers using multiplication GGE
4-5: Discuss Comparison Problems	1. Comparison word problems with addition and subtraction RJJ 2. Comparison word problems: addition or multiplication? YCW

4-6: Graphs and Comparison Problems

1. Interpret pictographs: comparisons 9ZG
2. Interpret bar graphs: one-step problems W8D

Big Idea 3: Problems with More Than One Step**Textbook section****IXL skills****4-7:** Solve Two-Step Problems

1. Two-step mixed operation word problems KJJ

4-8: Solve Multistep Problems

1. Multi-step word problems I U58

Also consider

- Multi-step word problems with strip diagrams CZQ

4-9: Practice with Multistep Problems

1. Multi-step word problems II R8U

Big Idea 4: Analyzing Patterns**Textbook section****IXL skills****4-10:** Factors and Prime Numbers

1. Find all the factor pairs of a number URL
2. Prime and composite: up to 100 L9R
3. Choose the multiples of a given number up to 10 EFB
4. Identify factors 2S9

4-11: Analyze Patterns

1. Use a rule to complete a number pattern 5P2
2. Shape patterns NVV

Also consider

- What is true about the given pattern? C9H
- What is true about the pattern made by the rule? 35J

4-12: Focus on Mathematical Practices

1. Complete a repeating pattern FNW
2. Multi-step word problems III 75Q

Also consider

- Number patterns: word problems C62

Unit 5

Measurement

Big Idea 1: Converting Measurements

Textbook section	IXL skills
5-1: Measure Length	1. Convert metric units of length Z5S 2. Conversion tables: metric units of length STH <i>Also consider</i> <ul style="list-style-type: none"> Compare metric units of length ETY
5-2: Metric Measures of Liquid Volume and Mass	1. Conversion tables: metric units of mass and capacity WZY <i>Also consider</i> <ul style="list-style-type: none"> Which metric unit is appropriate? FPM Compare and convert metric units UL5
5-3: Units of Time	1. Convert units of time QDA 2. Elapsed time TUH 3. Elapsed time: word problems VCC 4. Find end times: word problems ZJU <i>Also consider</i> <ul style="list-style-type: none"> Compare units of time V47 Find start and end times: multi-step word problems ZQP
5-4: Customary Measures of Length	1. Conversion tables: customary units of length T8A 2. Convert customary units of length GYU 3. Measure using an inch ruler EDW
5-5: Customary Measures of Weight and Liquid Volume	1. Convert customary units of weight L7G 2. Convert customary units of volume F8V 3. Customary conversion tables Z94

Big Idea 2: Perimeter and Area

Textbook section	IXL skills
5-6: Perimeter and Area of Rectangles	<ol style="list-style-type: none">1. Find the perimeter of rectangles using formulas <small>KGJ</small>2. Find the area of rectangles using formulas <small>JBF</small>3. Find the missing side length of a rectangle <small>UPZ</small> <p><i>Also consider</i></p> <ul style="list-style-type: none">• Relationship between area and perimeter <small>SKK</small>
5-7: Solve Measurement Problems	<ol style="list-style-type: none">1. Measurement word problems <small>2PY</small>2. Perimeter: word problems <small>GBE</small>3. Area: word problems <small>JW7</small>
5-8: Focus on Mathematical Practices	<ol style="list-style-type: none">1. Area and perimeter: word problems <small>LTP</small>2. Compare area or perimeter: rectangles and squares <small>LK8</small> <p><i>Also consider</i></p> <ul style="list-style-type: none">• Use area and perimeter to determine cost <small>5GF</small>• Rectangles: relationship between perimeter and area word problems <small>S9M</small>

Unit 6

Fraction Concepts and Operations

Big Idea 1: Fractions with Like Denominators

Textbook section	IXL skills
6-1: Understand Fractions	<ol style="list-style-type: none"> Decompose fractions into unit fractions using models QG2 Multiples of unit fractions XF7 Fractions of a whole: word problems XSB <p><i>Also consider</i></p> <ul style="list-style-type: none"> Write a fraction as a sum of unit fractions 5WM
6-2: Fractions That Add to One	<ol style="list-style-type: none"> Compare unit fractions LZ6
6-3: Add and Subtract Fractions with Like Denominators	<ol style="list-style-type: none"> Add fractions with like denominators using strip models Z63 Subtract fractions with like denominators using strip models QAS Add and subtract fractions 68J Add and subtract fractions with like denominators: word problems 4K2 <p><i>Also consider</i></p> <ul style="list-style-type: none"> Add fractions 2JP Subtract fractions ZLS

Big Idea 2: Mixed Numbers with Like Denominators

Textbook section	IXL skills
6-4: Mixed Numbers and Fractions Greater Than 1	<ol style="list-style-type: none"> Convert between improper fractions and mixed numbers JFE
6-5: Add and Subtract Mixed Numbers with Like Denominators	<ol style="list-style-type: none"> Add mixed numbers AXT Subtract mixed numbers RXU

6-6: Practice with Fractions and Mixed Numbers

1. Add and subtract mixed numbers with like denominators 9AS
2. Add and subtract mixed numbers with like denominators: word problems 6KM

Also consider

- Add and subtract fractions with like denominators in recipes LYR

Big Idea 3: Multiply Fractions and Whole Numbers**Textbook section****IXL skills****6-7: Multiply a Fraction by a Whole Number**

1. Multiply unit fractions by whole numbers using models 8J3
2. Multiples of unit fractions: find the missing numbers VYG
3. Multiply fractions by whole numbers using models Y5C
4. Multiply fractions by whole numbers using models: complete the equation CZ7

Also consider

- Multiply unit fractions by whole numbers using number lines XKJ
- Multiply fractions by whole numbers using number lines Q7B

6-8: Practice Multiplying a Fraction by a Whole Number

1. Multiply unit fractions by whole numbers EXQ
2. Multiply fractions by whole numbers JLH

Also consider

- Multiply unit fractions by whole numbers: word problems DSB
- Multiples of fractions: find the missing numbers RSY
- Multiply fractions by whole numbers: word problems LX8

6-9: Mixed Practice

1. Decompose fractions multiple ways UEW
2. Add, subtract, and multiply fractions 8QP
3. Add, subtract, and multiply fractions: word problems W8H



6-10: Focus on Mathematical Practices

Unit 7

Fractions and Decimals

Big Idea 1: Comparing Fractions

Textbook section	IXL skills
7-1: Compare Fractions	<ol style="list-style-type: none"> 1. Compare fractions with like numerators or denominators using models Q87 2. Compare fractions with like numerators or denominators M8E 3. Order fractions with like numerators or denominators JU2
7-2: Fractions on the Number Line	<ol style="list-style-type: none"> 1. Graph and compare fractions with like numerators or denominators on number lines 9XF 2. Compare fractions using benchmarks EHJ 3. Compare fractions in recipes U2K <p><i>Also consider</i></p> <ul style="list-style-type: none"> • Benchmark fractions LUS • Graph and order fractions on number lines 7GK
7-3: Fractions of Different Size Wholes	

Big Idea 2: Equivalent Fractions

Textbook section	IXL skills
7-4: Equivalent Fractions Using Multiplication	<ol style="list-style-type: none"> 1. Find equivalent fractions using area models HYC 2. Are the fractions equivalent? CRS <p><i>Also consider</i></p> <ul style="list-style-type: none"> • Graph equivalent fractions on number lines WQL • Identify equivalent fractions GSG • Fractions with denominators of 10 and 100 VLP • Equivalent fractions: word problems 5ZG

7-5: Equivalent Fractions Using Division

1. Patterns of equivalent fractions 7LH
2. Write fractions in lowest terms 3R5

Also consider

- Equivalent fractions: find the missing numerator or denominator 7CY

7-6: Compare Fractions With Unlike Denominators

1. Compare fractions using models 7XF
2. Compare fractions 99U
3. Add fractions: denominators 10 and 100 9RJ

Also consider

- Compare fractions using benchmarks: find the missing numerator UKZ
- Compare fractions: find the missing numerator or denominator KPU

7-7: Fractions and Line Plots

1. Create and interpret line plots with fractions QQB

Big Idea 3: Understanding Decimals**Textbook section****IXL skills****7-8: Relate Fractions and Decimals**

1. What decimal number is illustrated? B7E
2. Model decimals and fractions TPV

7-9: Explore Decimal Numbers

1. Convert fractions to decimals: denominators of 10 and 100 5G9
2. Graph decimals on number lines N93

Also consider

- Graph fractions as decimals on number lines 2N9

7-10: Compare Decimals to Hundredths

1. Word names for decimal numbers 6JR

7-11: Decimals Greater Than 1

1. Convert mixed numbers to decimals: denominators of 10 and 100 PYD
2. Convert decimals to fractions and mixed numbers DBF
3. Understanding decimals expressed in words LUL
4. Expanded form for decimals 5BM

Also consider

- Place values in decimal numbers UFR
- Relate decimals and money NSC

7-12: Compare Decimals Greater Than 1

1. Equivalent decimals BZ2
2. Compare decimal numbers DY5

Also consider

- Compare decimals using models CV7
- Compare decimals on number lines T2W
- Put decimal numbers in order II WFD

7-13: Focus on Mathematical Practices

1. Compare decimals and fractions on number lines 8YG
 2. Compare decimals and fractions TB7
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Unit 8

Geometry

Big Idea 1: Measuring and Drawing Angles

Textbook section	IXL skills
8-1: Points, Rays, and Angles	<ol style="list-style-type: none"> Points, lines, line segments, rays, and angles 9MK Acute, right, and obtuse angles W6Z
8-2: Measuring Angles	<ol style="list-style-type: none"> Measure angles with a protractor NCN Draw angles with a protractor R9K <p><i>Also consider</i></p> <ul style="list-style-type: none"> Angles of 90, 180, 270, and 360 degrees UQV Estimate angle measurements LUJ
8-3: Circles and Angles	<ol style="list-style-type: none"> Measure angles on a circle RK8 <p><i>Also consider</i></p> <ul style="list-style-type: none"> Angles as fractions of a circle N72 Use fractions to find the measure of an angle Q68

Big Idea 2: Triangles and Angle Measurements

Textbook section	IXL skills
8-4: Name Triangles	<ol style="list-style-type: none"> Acute, obtuse, and right triangles 7QK Scalene, isosceles, and equilateral triangles 5UV Classify triangles U59
8-5: Compose and Decompose Angles	<ol style="list-style-type: none"> Adjacent angles KGM Angle measures: word problems YUA <p><i>Also consider</i></p> <ul style="list-style-type: none"> Complementary and supplementary angles: find the missing measure BBB
8-6: Real World Problems	

Big Idea 3: Analyzing Quadrilaterals

Textbook section	IXL skills
8-7: Parallel and Perpendicular Lines and Segments	<ol style="list-style-type: none"> 1. Identify parallel lines SDQ 2. Identify perpendicular lines PMT <p><i>Also consider</i></p> <ul style="list-style-type: none"> • Identify parallel, perpendicular, and intersecting lines DSU
8-8: Classify Quadrilaterals	<ol style="list-style-type: none"> 1. Classify quadrilaterals A6V 2. Draw quadrilaterals L5Y 3. Pick all the names for a quadrilateral 6CT 4. Describe relationships among quadrilaterals C98 <p><i>Also consider</i></p> <ul style="list-style-type: none"> • Parallel sides in quadrilaterals 58M • Identify parallelograms DJ9 • Identify trapezoids 9MJ • Identify rectangles GHH • Identify rhombuses KUU
8-9: Decompose Quadrilaterals and Triangles	

Big Idea 4: Analyzing Polygons

Textbook section	IXL skills
8-10: Classify Polygons	
8-11: Line Symmetry	<ol style="list-style-type: none"> 1. Identify lines of symmetry 9FD 2. Line symmetry HB9 3. Draw lines of symmetry SQF
8-12: Focus on Mathematical Practices	<ol style="list-style-type: none"> 1. Count lines of symmetry MWS