IXL Skill Alignment

4th grade alignment for Math Expressions 2013 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 *Also consider* • Rounding puzzles XVJ

Big Idea 2: Addition with Greater Numbers

Textbook section	IXL skills
1-6: Make New Groups for Addition	1. Add two numbers up to five digits RG2 2. Add two numbers up to five digits: word problems ZPY
1-7: Add Greater Numbers	1. Add two numbers up to six digits HNH
1-8: Estimation and Mental Math	1. Estimate sums VMD 2. Estimate sums: word problems SB9 *Also consider* • 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	1. Subtract two numbers up to four digits BCD 2. Subtract across zeros 9G5 3. Subtract two numbers up to four digits: word problems 7KL
1-10: Subtraction Undoes Addition	1. Subtract numbers up to five digits VP2 *Also consider* • Subtraction: fill in the missing digits UXK
1-11: Subtract Greater Numbers	1. Subtract numbers up to seven digits VPX 2. Estimate differences QJY 3. Estimate differences: word problems GWS
1-12: Practice Addition and Subtraction	1. Two-step addition and subtraction word problems KFX 2. Add and subtract numbers up to six digits YUV

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1-13: Problem Solving with Greater Numbers	1. Multi-step addition and subtraction word problems CZM *Also consider* • Addition and subtraction word problems ZD7
1-14: Focus on Mathematical Practices	1. Interpret a table CLC *Also consider* • Create bar graphs WMA • Interpret bar graphs 48Z

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 *Also consider* • 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 *Also consider* • 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 *Also consider* • 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	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	1. Multiply 1-digit numbers by 4-digit numbers JRL 2. Estimate products: multiply by 1-digit numbers WDG
2-18: Practice Multiplying	1. Multiply 2-digit by 2-digit or 1-digit by 4-digit numbers DZD
2-19: Focus on Mathematical Practices	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	1. Divide 2-digit numbers by 1-digit numbers using arrays M49 2. Divide 2-digit numbers by 1-digit numbers: quotients up to 10 7BS 3. Divide numbers ending in zeroes by 1-digit numbers 6T2 *Also consider* • Division patterns over increasing place values SXJ
3-2: Relate 3-Digit Multiplication to Division	1. Divide using partial quotients with remainders EGL *Also consider* • Divide 3-digit numbers by 1-digit numbers using area models 6UL
3-3: Discuss 2-Digit and 4-Digit Quotients	1. Divide larger numbers by 1-digit numbers: complete the table 2UB
3-4: Digit-by-Digit Method	1. Divide 3-digit and 4-digit numbers by 1-digit numbers JWJ
3-5: Relate Three Methods	
3-6: Divide by Any Method	1. Divide larger numbers by 1-digit numbers without remainders: word problems FFT

Big Idea 2: Division Issues and Word Problems

Textbook section	IXL skills
3-7: Just-Under Quotient Digits	1. Divide larger numbers by 1-digit numbers GE8 2. Divide larger numbers by 1-digit numbers: word problems DKK
3-8: Estimate to Check Quotients	1. Estimate quotients using compatible numbers: 1-digit divisors CWE 2. Divide by 1-digit numbers: pick the better estimate 2FS *Also consider* • Estimate quotients MPG
3-9: Make Sense of Remainders	1. One-step word problems involving remainders GZL *Also consider* • Divide larger numbers by 1-digit numbers: interpret quotients and remainders SVK
3-10: Mixed Problem Solving	1. Addition, subtraction, multiplication, and division word problems QKS 2. Multi-step word problems EA9
3-11: Focus on Mathematical Practices	1. Multi-step word problems involving remainders SLS *Also consider* • 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 *Also consider* • 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 *Also consider* • 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 *Also consider* • 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

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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 *Also consider* • 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 *Also consider* • 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 *Also consider* • 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	1. Find the perimeter of rectangles using formulas KGJ 2. Find the area of rectangles using formulas JBF 3. Find the missing side length of a rectangle UPZ *Also consider* • Relationship between area and perimeter SKK
5-7: Solve Measurement Problems	1. Measurement word problems 2PY 2. Perimeter: word problems GBE 3. Area: word problems JW7
5-8: Focus on Mathematical Practices	1. Area and perimeter: word problems LTP 2. Compare area or perimeter: rectangles and squares LK8 *Also consider* • Use area and perimeter to determine cost 5GF • Rectangles: relationship between perimeter and area word problems S9M

Unit 6

Fraction Concepts and Operations

Big Idea 1: Fractions with Like Denominators

Textbook section	IXL skills
6-1: Understand Fractions	1. Decompose fractions into unit fractions using models QG2 2. Multiples of unit fractions XF7 3. Fractions of a whole: word problems XSB *Also consider* • Write a fraction as a sum of unit fractions 5WM
6-2: Fractions That Add to One	1. Compare unit fractions LZ6
6-3: Add and Subtract Fractions with Like Denominators	1. Add fractions with like denominators using strip models Z63 2. Subtract fractions with like denominators using strip models QAS 3. Add and subtract fractions 68J 4. Add and subtract fractions with like denominators: word problems 4K2 *Also consider* • 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	1. Convert between improper fractions and mixed numbers JFE
6-5: Add and Subtract Mixed Numbers with Like Denominators	1. Add mixed numbers AXT 2. 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	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	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 *Also consider* • 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	1. Find equivalent fractions using area models HYC 2. Are the fractions equivalent? CRS *Also consider* • 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

Unit 8

Geometry

Big Idea 1: Measuring and Drawing Angles

Textbook section	IXL skills
8-1: Points, Rays, and Angles	1. Points, lines, line segments, rays, and angles 9MK 2. Acute, right, and obtuse angles W6Z
8-2: Measuring Angles	1. Measure angles with a protractor NCN 2. Draw angles with a protractor R9K *Also consider* • Angles of 90, 180, 270, and 360 degrees UQV • Estimate angle measurements LUJ
8-3: Circles and Angles	1. Measure angles on a circle RK8 *Also consider* • 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	1. Acute, obtuse, and right triangles 7QK 2. Scalene, isosceles, and equilateral triangles 5UV 3. Classify triangles U59
8-5: Compose and Decompose Angles	1. Adjacent angles KGM 2. Angle measures: word problems YUA *Also consider* • Complementary and supplementary angles: find the missing measure BBB
8-6: Real World Problems	

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Big Idea 3: Analyzing Quadrilaterals

Textbook section	IXL skills
8-7: Parallel and Perpendicular Lines and Segments	1. Identify parallel lines SDQ 2. Identify perpendicular lines PMT *Also consider* • Identify parallel, perpendicular, and intersecting lines DSU
8-8: Classify Quadrilaterals	1. Classify quadrilaterals A6V 2. Draw quadrilaterals L5Y 3. Pick all the names for a quadrilateral 6CT 4. Describe relationships among quadrilaterals C98 *Also consider* • 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	1. Identify lines of symmetry 9FD 2. Line symmetry HB9 3. Draw lines of symmetry SQF
8-12: Focus on Mathematical Practices	1. Count lines of symmetry MWS