



IXL Skill Plan

Oklahoma Academic Standards: Grade 4



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N | Numbers & Operations

Standard	IXL skills
4.N.1 Compare and represent whole numbers up to 1,000,000 with an emphasis on place value and equality.	
4.N.1.1: Read, write, discuss, and represent whole numbers up to 1,000,000. Representations may include numerals, words, pictures, number lines, and manipulatives.	1. Place value models 2Y7 2. Writing numbers up to one million: convert between words and digits 5G4 3. Spell word names for numbers up to one million 2PZ 4. Writing numbers up to one million in words: convert digits to words 7WT
4.N.1.2: Use place value to describe whole numbers between 1,000 and 1,000,000 in terms of millions, hundred thousands, ten thousands, thousands, hundreds, tens, and ones with written, standard, and expanded forms.	Place value 1. Place value names Y7Q 2. Value of a digit WLP 3. Convert between place values KVR 4. Place value review B5N Standard and expanded form 5. Convert between standard and expanded form: up to 1,000,000 4R6
4.N.1.3: Applying knowledge of place value, use mental strategies (no written computations) to multiply or divide a number by 10, 100 and 1,000.	1. Relationship between place values 9DJ 2. Find 10 or 100 times a number 9R2 3. Multiply by 10 or 100 M2N
4.N.1.4: Use place value to compare and order whole numbers up to 1,000,000, using comparative language, numbers, and symbols.	1. Compare numbers up to one million 6Y2 2. Compare numbers in tables EFV 3. Order numbers up to one million 94E
4.N.2 Solve real-world and mathematical problems using multiplication and division.	
4.N.2.1: Demonstrate fluency with multiplication and division facts with factors up to 12.	Multiplication facts 1. Multiplication facts to 12 FW9 2. Multiplication facts to 12: find the missing factor 76F 3. Choose numbers with a particular product U9N 4. Multiplication word problems: factors up to 12 MFZ

4.N.2.2: Multiply 3-digit by 1-digit and 2-digit by 2-digit whole numbers, using various strategies, including but not limited to standard algorithms.

Division facts

5. Division facts to 12 R95
6. Division facts to 12: word problems XZA
7. Choose numbers with a particular quotient MYU

Multiply by 1-digit numbers using models

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

Multiply by 1-digit numbers

3. Multiply 1-digit numbers by 3-digit numbers using partial products 9N2
4. Multiply 1-digit numbers by 3-digit numbers W9X
5. Multiply 1-digit by 3-digit numbers: word problems 98A

Multiply by 2-digit numbers using models

6. Multiply 2-digit numbers by 2-digit numbers: choose the area model ASZ
7. Multiply 2-digit numbers by 2-digit numbers using area models 8K7
8. Box multiplication ERB
9. Lattice multiplication LBW

Multiply by 2-digit numbers

10. Multiply 2-digit numbers by 2-digit numbers using partial products XLZ
11. Multiply a 2-digit number by a 2-digit number: complete the missing steps XQ8
12. Multiply a 2-digit number by a 2-digit number MLC
13. Multiply a 2-digit number by a 2-digit number: word problems GZG

4.N.2.3: Estimate products of 3-digit by 1-digit and 2-digit by 2-digit whole number factors using a variety of strategies (e.g., rounding, front end estimation, adjusting, compatible numbers) to assess the reasonableness of results. Explore larger numbers using technology to investigate patterns.

1. Estimate products: multiply by 1-digit numbers WDG
2. Estimate products word problems: identify reasonable answers KLA
3. Estimate products: multiply by 2-digit numbers 2TR

4.N.2.4: Apply and analyze models to solve multi-step problems requiring the use of addition, subtraction, and multiplication of multi-digit whole numbers. Use various strategies, including the relationship between operations, the use of appropriate technology, and the context of the problem to assess the reasonableness of results.

4.N.2.5: Use strategies and algorithms (e.g., mental strategies, standard algorithms, partial quotients, repeated subtraction, the commutative, associative, and distributive properties) based on knowledge of place value, equality, and properties of operations to divide a 3-digit dividend by a 1-digit whole number divisor, with and without remainders.

4. Estimate products: word problems WGL

Addition and subtraction

1. Multi-step addition and subtraction word problems CZM
2. Multi-step word problems involving subtraction 68Y

Multiplication

3. Multiply 1-digit numbers by 2-digit numbers: multi-step word problems TFH
4. Multiply 1-digit numbers by 3-digit or 4-digit numbers: multi-step word problems M9R
5. Multiply a 2-digit number by a 2-digit number: multi-step word problems RM5
6. Use strip diagrams to solve multi-step word problems with multiplication S2L

Division strategies

1. Divide using the distributive property GDX
2. Divide using partial quotients YQL
3. Divide using repeated subtraction CCY

Two-digit dividends

4. Divide 2-digit numbers by 1-digit numbers using arrays M49
5. Divide 2-digit numbers by 1-digit numbers using area models 7LG
6. Divide 2-digit numbers by 1-digit numbers: quotients up to 10 7BS
7. Divide 2-digit numbers by 1-digit numbers 4T7
8. Divide 2-digit numbers by 1-digit numbers: complete the table UFM
9. Divide 2-digit numbers by 1-digit numbers: interpret remainders 5WV
10. Divide 2-digit numbers by 1-digit numbers: word problems QMT

Three-digit dividends

11. Divide 3-digit numbers by 1-digit numbers using area models 6UL
12. Divide using partial quotients 83C
13. Divide 3-digit numbers by 1-digit numbers TJS

14. Divide 3-digit numbers by 1-digit numbers with zeros in the quotient 6JF
15. Divide 3-digit numbers by 1-digit numbers: word problems X52
16. Divide 3-digit numbers by 1-digit numbers: interpret remainders BVE

4.N.3 Represent and compare fractions and decimals in real-world and mathematical situations; use place value to understand decimal quantities.

4.N.3.1: Represent and rename equivalent fractions using fraction models (e.g., parts of a set, area models, fraction strips, number lines).

1. Find equivalent fractions using area models HYC
2. Identify equivalent fractions using number lines CLW
3. Graph equivalent fractions on number lines WQL
4. Find equivalent fractions using multiplication and division K8C
5. Identify equivalent fractions GSG
6. Equivalent fractions: find the missing numerator or denominator 7CY
7. Fractions with denominators of 10 and 100 VLP

4.N.3.2: Use benchmark fractions (0 , $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$, $\frac{3}{4}$, 1) to locate additional fractions with denominators up to twelfths on a number line.

1. Benchmark fractions LUS

4.N.3.3: Use models to order and compare whole numbers and fractions less than and greater than one, using comparative language and symbols.

Compare using number lines

1. Graph and compare fractions with like numerators or denominators on number lines 9XF
2. Find smaller or larger fractions PDJ

Compare using models

3. Compare fractions with like numerators or denominators using models Q87
4. Compare fractions using models 7XF

Compare using benchmarks

5. Compare fractions using benchmarks EHJ
6. Compare fractions using benchmarks: find the missing numerator UKZ

Compare fractions

7. Compare fractions with like numerators or denominators M8E

8. Compare fractions 99U
9. Compare fractions: find the missing numerator or denominator KPU
10. Compare fractions in recipes U2K

Order fractions

11. Graph and order fractions on number lines 7GK
12. Order fractions with like numerators or denominators JU2
13. Order fractions MSB

4.N.3.4: Decompose a fraction into a sum of fractions with the same denominator in more than one way, using concrete and pictorial models and recording results with numerical representations (e.g., $\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$ and $\frac{3}{4} = \frac{2}{4} + \frac{1}{4}$).

1. Decompose fractions into unit fractions using models QG2
2. Decompose fractions into unit fractions XHG
3. Decompose fractions N2Z
4. Decompose fractions multiple ways UEW

4.N.3.5: Use models to add and subtract fractions with like denominators.

Add fractions

1. Add fractions with like denominators using area models Y5W
2. Add fractions with like denominators using strip models Z63
3. Add fractions with like denominators using number lines 6QH
4. Add fractions with like denominators PDU

Subtract fractions

5. Subtract fractions with like denominators using area models P99
6. Subtract fractions with like denominators using strip models QAS
7. Subtract fractions with like denominators using number lines MJX
8. Subtract fractions with like denominators AVF

Add and subtract fractions

9. Add and subtract fractions with like denominators using number lines GAK
10. Add and subtract fractions with like denominators FXD
11. Add and subtract fractions with like denominators: word problems XBR

4.N.3.6: Represent tenths and hundredths with concrete and pictorial models, making connections between fractions and decimals.

12. Add and subtract fractions with like denominators in recipes LYR

1. Model decimals and fractions TPV
2. Graph fractions as decimals on number lines 2N9
3. Convert fractions and mixed numbers to decimals - denominators of 10 and 100 6P7
4. Convert decimals to fractions and mixed numbers DBF

4.N.3.7: Read and write decimals in standard, word, and expanded form up to at least the hundredths place in a variety of contexts, including money.

Read and write decimals

1. What decimal number is illustrated? B7E
2. Place value models for decimal numbers 52Y
3. Place values in decimal numbers UFR
4. Understanding decimals expressed in words LUL

Expanded form

5. Convert decimals between standard and expanded form using fractions YCH
6. Convert decimals between standard and expanded form using fractions and decimals BBP
7. Convert decimals between standard and expanded form 2HJ

Money

8. Count coins and bills - up to \$20 bill M67
9. Count coins and bills word problems - up to \$20 bill NRY
10. Relate decimals and money NSC

4.N.3.8: Compare and order decimals and whole numbers using place value and various models including but not limited to grids, number lines, and base 10 blocks.

Graph decimals

1. Graph decimals on number lines N93
2. Decimal number lines EWY

Compare decimals

3. Compare decimals using models CV7
4. Compare decimals on number lines T2W
5. Compare decimal numbers DY5

Compare money

6. Compare money amounts EAL

Order decimals

7. Put decimal numbers in order I LVX

8. Put decimal numbers in order II WFD

4.N.3.9: Compare and order benchmark fractions (0 , $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$, $\frac{3}{4}$, 1) and decimals (0 , 0.25 , 0.50 , 0.75 , 1.00) in a variety of representations.

4.N.4 Determine the value of bills and coins in order to solve monetary transactions.

4.N.4.1: Select the fewest number of coins for a given amount of money up to one dollar.

1. Least number of coins L7B

4.N.4.2: Given a total cost (dollars and coins up to twenty dollars) and amount paid (dollars and coins up to twenty dollars), find the change required in a variety of ways.

1. Find the change, price, or amount paid RTE

A | Algebraic Reasoning & Algebra

Standard	IXL skills
4.A.1 Describe, create, and analyze multiple representations of patterns to solve real-world and mathematical problems.	
4.A.1.1: Create an input/output chart or table to represent or extend a numerical pattern.	1. Multiplication input/output tables BEP 2. Input/output tables with addition, subtraction, multiplication, and division HDS 3. Division input/output tables P2N
4.A.1.2: Describe the single operation rule for a pattern from an input/output table or function machine involving any operation of a whole number.	Input/output tables 1. Multiplication input/output tables: find the rule KQG 2. Addition input/output tables: find the rule QVV 3. Subtraction input/output tables: find the rule DHP 4. Division input/output tables: find the rule BWK 5. Input/output tables: find the rule YEK Number patterns 6. Use a rule to complete a number pattern 5P2 7. What is true about the given pattern? C9H 8. What is true about the pattern made by the rule? 35J
4.A.1.3: Construct models to show growth patterns involving geometric shapes and define the single operation rule of the pattern.	1. Extend growing shape patterns NVV 2. Find the next row in a growing pattern of shapes JZP
4.A.2 Use multiplication and division with variables to create number sentences representing a given mathematical situation.	
4.A.2.1: Use the relationships between multiplication and division with the properties of multiplication to solve problems and find values for variables that make number sentences true.	Multiplication 1. Multiplication word problems: find the missing factor RQ7 2. Multiplication facts to 12: find the missing factor 76F 3. Distributive property: find the missing factor US7

Division

4. Division facts to 12 R95
5. Division facts to 12: find the missing number NU8
6. Division facts to 12: word problems XZA

4.A.2.2: Solve for a variable in an equation involving addition, subtraction, multiplication, or division with whole numbers. Analyze models to represent number sentences and vice versa.

1. Write equations to represent word problems 5SJ
2. Solve equations XWW
3. Use equations to solve addition and subtraction word problems F5H
4. Use equations to solve multi-step addition and subtraction word problems J8E
5. Use equations to solve multi-step multiplication word problems ZJ5
6. Use equations to solve multi-step division word problems VDA

4.A.2.3: Determine the unknown addend or factor in equivalent and non-equivalent expressions (e.g., $5 + 6 = 4 + \underline{\quad}$, $3 \times 8 < 3 \times \underline{\quad}$).

Equivalent expressions

1. Balance addition equations NZS
2. Balance subtraction equations DCB

Non-equivalent expressions

3. Inequalities involving addition, subtraction, multiplication, and division 95Y
4. Inequalities with multiplication M9P
5. Inequalities with division JEH

GM | Geometry & Measurement

Standard	IXL skills
4.GM.1 Name, describe, classify, and construct polygons and three-dimensional figures based on their attributes; recognize polygons and three-dimensional figures in real-life and mathematical situations.	
4.GM.1.1: Identify points, lines, line segments, rays, angles, endpoints, and parallel and perpendicular lines in various models.	Parallel, perpendicular, and intersecting lines 1. Parallel, perpendicular, and intersecting lines 8VQ 2. Identify parallel, perpendicular, and intersecting lines DSU 3. Parallel sides in quadrilaterals 58M Points, lines, and angles 4. Points, lines, line segments, rays, and angles 9MK 5. Acute, right, obtuse, and straight angles R5K Two-dimensional figures 6. Sides and angles in polygons 67D
4.GM.1.2: Describe, classify, and construct quadrilaterals, including squares, rectangles, trapezoids, rhombuses, parallelograms, and kites. Recognize quadrilaterals in various models.	Describe quadrilaterals 1. Parallel sides in quadrilaterals 58M 2. Sides and angles of quadrilaterals PTK Classify quadrilaterals 3. Identify parallelograms DJ9 4. Identify trapezoids 9MJ 5. Identify rectangles GHH 6. Identify rhombuses KUU 7. Classify quadrilaterals A6V 8. Pick all the names for a quadrilateral 6CT 9. Name quadrilaterals more than one way TND Construct quadrilaterals 10. Draw quadrilaterals L5Y
4.GM.1.3: Given two three-dimensional shapes, identify each shape. Compare and contrast their similarities and differences based on their attributes.	1. Identify three-dimensional figures 42H 2. Count vertices, edges, and faces ZSY 3. Identify faces of three-dimensional figures K9A

4. Properties of three-dimensional figures BNJ

4.GM.2 Recognize and measure attributes in real-world and mathematical situations using various tools.

4.GM.2.1: Measure angles in geometric figures and real-world objects with a protractor or angle ruler.

1. Measure angles with a protractor NCN

4.GM.2.2: Find the area of polygons by determining if they can be decomposed into rectangles.

1. Area of complex figures 38W
2. Area of complex figures: word problems P5J

4.GM.2.3: Develop the concept that the volume of rectangular prisms with whole-number edge lengths can be found by counting the total number of same-sized unit cubes that fill a shape without gaps or overlaps. Use a variety of tools and create models to determine the volume using appropriate measurements (e.g., cm^3).

1. Volume YD2

4.GM.2.4: Choose an appropriate instrument to measure the length of an object to the nearest whole centimeter or quarter inch.

1. Measure using an inch ruler EDW
2. Measure using a centimeter ruler AAE

4.GM.2.5: Recognize and use the relationship between inches, feet, and yards to measure and compare objects.

1. Relate customary units of length 6AT
2. Compare customary units of length 49A

4.GM.2.6: Recognize and use the relationship between millimeters, centimeters, and meters to measure and compare objects.

1. Compare metric units of length WMR

4.GM.2.7: Determine and justify the best use of customary and metric measurements in a variety of situations (liquid volumes, mass vs. weight, temperatures above 0 (zero) degrees, and length).

1. Which customary unit is appropriate? YYA
2. Which metric unit is appropriate? FPM

4.GM.3 Determine elapsed time and convert between units of time.

4.GM.3.1: Determine elapsed time.

1. Find end times: word problems ZJU
2. Find the start time: word problems VRL
3. Elapsed time TUH
4. Elapsed time: word problems VCC
5. Find start and end times: multi-step word problems ZQP

6. Elapsed time: read a schedule FNR

7. Transportation schedules DYF

4.GM.3.2: Convert one measure of time to another including seconds to minutes, minutes to hours, hours to days, and vice versa, using various models.

1. Convert units of time QDA

2. Convert mixed time units: days, hours, minutes, and seconds SXH



D | Data & Probability

Standard	IXL skills
4.D.1 Summarize, construct, and analyze data.	
4.D.1.1: Create and organize data on a frequency table or line plot marked with whole numbers and fractions using appropriate titles, labels, and units.	1. Create line plots with fractions GNT 2. Create and interpret line plots with fractions QQB 3. Create frequency tables BVV
4.D.1.2: Organize data sets to create tables, bar graphs, timelines, and Venn diagrams. The data may include benchmark fractions or decimals ($\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$, $\frac{3}{4}$), 0.25, 0.50, 0.75).	1. Read a table B9R 2. Create bar graphs WMA
4.D.1.3: Solve one- and two-step problems by analyzing data in whole number, decimal, or fraction form in a frequency table and line plot.	Line plots 1. Interpret line plots G8K 2. Create and interpret line plots with fractions QQB 3. Interpret line plots with fractions: multi-step problems JVG Frequency charts 4. Interpret frequency tables PKD 5. Interpret frequency tables: multi-step problems XU7