



IXL Skill Alignment

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Chapter 1

Problem Solving and Critical Thinking

Textbook section

IXL skills

1.1: Inductive and Deductive Reasoning

1. Counterexamples 2GJ

Also consider

- Identify hypotheses and conclusions 7FW
- Number sequences: mixed review FEL
- Pascal's triangle G7Y

1.2: Estimation, Graphs, and Mathematical Models

1. Round decimals and mixed numbers LMG
2. Estimate percents of numbers L2V
3. Estimate tips ZNF

Also consider

- Interpret circle graphs UHY
- Interpret bar graphs KFW
- Interpret line graphs MWY

1.3: Problem Solving

Unit prices

1. Unit prices JHA

Real-world problems

2. Multi-step word problems WZ6
3. Guess-and-check word problems 6L4
4. Word problems: mixed review Z7P
5. Word problems with money FL6

Chapter 2

Set Theory

| Textbook section | IXL skills |
|--|--|
| 2.1: Basic Set Concepts | |
| 2.2: Subsets | |
| 2.3: Venn Diagrams and Set Operations | 1. Use Venn diagrams to solve problems QKH |
| 2.4: Set Operations and Venn Diagrams with Three Sets | |
| 2.5: Survey Problems | |

Chapter 3

Logic

| Textbook section | IXL skills |
|--|---|
| 3.1: Statements, Negations, and Quantified Statements | |
| 3.2: Compound Statements and Connectives | |
| 3.3: Truth Tables for Negation, Conjunction, and Disjunction | <ol style="list-style-type: none">1. Truth tables 6FJ2. Truth values JUJ |
| 3.4: Truth Tables for the Conditional and Biconditional | <ol style="list-style-type: none">1. Conditionals VU92. Biconditionals Q6E |
| 3.5: Equivalent Statements and Variations of Conditional Statements | <ol style="list-style-type: none">1. Converses, inverses, and contrapositives N5P |
| 3.6: Negations of Conditional Statements and De Morgan's Laws | <ol style="list-style-type: none">1. Negations VBY |
| 3.7: Arguments and Truth Tables | |
| 3.8: Arguments and Euler Diagrams | |

Chapter 4

Number Representation and Calculation

| Textbook section | IXL skills |
|--|---|
| 4.1: Our Hindu-Arabic System and Early Positional Systems | 1. Evaluate exponents with positive integer bases MMU |
| 4.2: Number Bases in Positional Systems | |
| 4.3: Computation in Positional Systems | |
| 4.4: Looking Back at Early Numeration Systems | |

Chapter 5

Number Theory and the Real Number System

Textbook section

IXL skills

5.1: Number Theory: Prime and Composite Numbers

Prime numbers

1. Prime or composite JL2
2. Prime factorization WF2

Factors

3. Factors YBV
4. Greatest common factor SKM

Multiples

5. Least common multiple ASU

Mixed practice

6. GCF and LCM: word problems DXE

Also consider

- Divisibility rules NVL

5.2: The Integers; Order of Operations

1. Evaluate numerical expressions involving integers ZFX
2. Add, subtract, multiply, and divide integers UNC
3. Compare and order integers ZXV

Also consider

- Exponents with integer bases EJ8
- Absolute value and opposites KGR
- Number lines GBW

5.3: The Rational Numbers

Introduction to rational numbers

1. Write fractions in lowest terms 97W
2. Convert between decimals and fractions WSD
3. Convert between repeating decimals and fractions AH5
4. Compare and order rational numbers ALW

Operations

5. Add and subtract rational numbers J8R
6. Multiply and divide rational numbers H6L
7. Evaluate numerical expressions involving rational numbers 8CU

5.4: The Irrational Numbers**Introduction to irrational numbers**

1. Sort rational and irrational numbers ALH
2. Classify rational and irrational numbers 3S8

Radical expressions

3. Simplify radical expressions ZFF
4. Multiply radical expressions HMX
5. Add and subtract radical expressions DLV

Also consider

- Cube roots RNT

5.5: Real Numbers and Their Properties; Clock Addition

1. Classify numbers RB8

5.6: Exponents and Scientific Notation**Properties of exponents**

1. Negative exponents SCM
2. Division with exponents 9SS
3. Multiplication and division with exponents HPK
4. Power rule RWY
5. Evaluate expressions using properties of exponents LRR

Compare and convert

6. Convert between standard and scientific notation 7DX

Operations

7. Add and subtract numbers written in scientific notation VJL
8. Multiply numbers written in scientific notation TPB
9. Divide numbers written in scientific notation PY5

Also consider

- Compare numbers written in scientific notation V8N

5.7: Arithmetic and Geometric Sequences

1. Identify arithmetic and geometric sequences X76
 2. Arithmetic sequences ALG
 3. Geometric sequences HLJ
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Chapter 6

Algebra: Equations and Inequalities

Textbook section

6.1: Algebraic Expressions and Formulas

6.2: Linear Equations in One Variable and Proportions

IXL skills

Properties

1. Properties of addition and multiplication TQS
2. Distributive property BHL
3. Properties of equality H8Q

Evaluate expressions

4. Evaluate variable expressions involving integers AZT

Simplify expressions

5. Simplify variable expressions using properties HHR
6. Simplify variable expressions involving like terms and the distributive property ZXX

Linear equations

1. Write variable equations YVW
2. Solve one-step linear equations TXJ
3. Solve two-step linear equations QAK
4. Solve advanced linear equations 28N
5. Solve equations with variables on both sides 7S7
6. Solve equations: complete the solution EVP
7. Solve linear equations: mixed review DN6

Solutions to equations

8. Find the number of solutions KBP
9. Create equations with no solutions or infinitely many solutions PUK

Proportions

10. Solve proportions 2ZL
11. Solve proportions: word problems 8ES
12. Estimate population size using proportions GCS

6.3: Applications of Linear Equations

1. Solve linear equations: word problems UFG
2. Write variable expressions D7K
3. Rearrange multi-variable equations WSJ

Also consider

- Consecutive integer problems HDF

6.4: Linear Inequalities in One Variable

Introduction to inequalities

1. Graph inequalities H68
2. Write inequalities from graphs SEK
3. Identify solutions to inequalities 5UE

One-step inequalities

4. Solve one-step linear inequalities: addition and subtraction RZV
5. Solve one-step linear inequalities: multiplication and division BRJ
6. Solve one-step linear inequalities EEX
7. Graph solutions to one-step linear inequalities E2Z

Two-step inequalities

8. Solve two-step linear inequalities NPZ
9. Graph solutions to two-step linear inequalities XVM

Advanced inequalities

10. Solve advanced linear inequalities 9K8
11. Graph solutions to advanced linear inequalities 5GC

6.5: Quadratic Equations

Multiply binomials

1. Multiply two binomials M7Q

Factor quadratics

2. Factor quadratics with leading coefficient 1 S9P
3. Factor quadratics using algebra tiles Y6U

Quadratic equations

4. Solve a quadratic equation using the zero product property TNM
5. Solve a quadratic equation by factoring CSS



6. Solve a quadratic equation using the quadratic formula XCF

Chapter 7

Algebra: Graphs, Functions, and Linear Systems

Textbook section

IXL skills

7.1: Graphing and Functions

Coordinate plane

1. Coordinate plane review H6E

Functions

2. Evaluate a function R96
3. Complete a function table from an equation Z73
4. Complete a table and graph a linear function JFG
5. Identify functions VLL
6. Identify functions: vertical line test HLX

Real-world problems

7. Interpret the graph of a function: word problems STU
8. Interpret functions using everyday language U98

7.2: Linear Functions and Their Graphs

Standard form

1. Standard form: find x- and y-intercepts 8SN
2. Standard form: graph an equation U6U

Slope

3. Find the slope of a graph E7D
4. Find the slope from two points MD5
5. Find a missing coordinate using slope 5C7

Slope-intercept form

6. Slope-intercept form: find the slope and y-intercept R5T
7. Slope-intercept form: graph an equation UWB
8. Linear equations: solve for y T5F

Horizontal and vertical lines

9. Graph a horizontal or vertical line BTK

Also consider

- Compare linear functions: graphs and equations EA8
- Compare linear functions: tables, graphs, and equations GD7

7.3: Systems of Linear Equations in Two Variables**Solutions**

1. Is (x, y) a solution to the system of equations? LRL
2. Find the number of solutions to a system of equations by graphing HJW
3. Find the number of solutions to a system of equations ACN

Graphing

4. Solve a system of equations by graphing TSS
5. Solve a system of equations by graphing: word problems BVB

Classify systems

6. Classify a system of equations by graphing T2D
7. Classify a system of equations LTA

Substitution

8. Solve a system of equations using substitution 8P9
9. Solve a system of equations using substitution: word problems US9

Elimination

10. Solve a system of equations using elimination A48
11. Solve a system of equations using elimination: word problems NHR

7.4: Linear Inequalities in Two Variables

1. Does (x, y) satisfy the inequality? N9L
2. Linear inequalities: solve for y UYU
3. Graph a two-variable linear inequality HHP
4. Linear inequalities: word problems ZAY

7.5: Linear Programming

1. Is (x, y) a solution to the system of inequalities? VFC
2. Solve systems of linear inequalities by graphing SGH

3. Find the vertices of a solution set FRG
4. Linear programming AY7

7.6: Modeling Data: Exponential, Logarithmic, and Quadratic Functions

Exponential and logarithmic functions

1. Match exponential functions and graphs 72J
2. Exponential growth and decay: word problems UKG

Quadratic functions

3. Characteristics of quadratic functions: equations YJZ
4. Graph quadratic functions in standard form HMW

Also consider

- Match quadratic functions and graphs AU8
- Identify linear, quadratic, and exponential functions from graphs DHB
- Identify linear, quadratic, and exponential functions from tables SP5
- Convert between exponential and logarithmic form: rational bases TPA

Chapter 8

Personal Finance

Textbook section

IXL skills

8.1: Percent, Sales Tax, and Discounts

Convert percents, fractions and decimals

1. Convert between percents, fractions, and decimals UWL

Percent equations

2. Solve percent equations 39N
3. Percent word problems BLW

Percent of change

4. Percent of change GRG
5. Percent of change: word problems 59V
6. Percent of change: find the original amount word problems 7UW

Tax, discount, and more

7. Percent of a number: tax, discount, and more SKZ
8. Find the percent: tax, discount, and more VQX

8.2: Income Tax

8.3: Simple Interest

1. Simple interest Q8G

8.4: Compound Interest

1. Compound interest: word problems QSF
2. Continuously compounded interest QZG

8.5: Annuities, Methods of Saving, and Investments

8.6: Cars

8.7: The Cost of Home Ownership

8.8: Credit Cards

Chapter 9

Measurement

| Textbook section | IXL skills |
|---|--|
| 9.1: Measuring Length; The Metric System | <ol style="list-style-type: none">1. Convert rates and measurements: customary units TXC2. Convert rates and measurements: metric units 6W23. Convert between customary and metric systems KQ9 |
| 9.2: Measuring Area and Volume | <ol style="list-style-type: none">1. Area LLC2. Volume BK9 <p><i>Also consider</i></p> <ul style="list-style-type: none">• Minimum and maximum area and volume 4V9 |
| 9.3: Measuring Weight and Temperature | <ol style="list-style-type: none">1. Convert between Celsius and Fahrenheit FJR |

Chapter 10

Geometry

Textbook section

10.1: Points, Lines, Planes, and Angles

IXL skills

Angles

1. Find measures of complementary, supplementary, vertical, and adjacent angles
VZU
2. Angle measures BCQ

Transversals

3. Transversals: name angle pairs V85
4. Transversals of parallel lines: find angle measures WB9

Also consider

- Lines, line segments, and rays XFC
- Angle vocabulary 9U2

10.2: Triangles

Classify triangles

1. Classify triangles TNN

Angles in triangles

2. Triangle Angle-Sum Theorem UBU
3. Exterior Angle Theorem TGK
4. Exterior Angle Inequality YQA

Similarity

5. Similar triangles and indirect measurement JWK
6. Similarity rules for triangles XJQ

Pythagorean theorem

7. Pythagorean theorem F55

Also consider

- SSS and SAS Theorems 48Q
- Proving triangles congruent by SSS and SAS VVZ

10.3: Polygons, Perimeter, and Tessellations**Polygons**

1. Polygon vocabulary KHQ
2. Interior angles of polygons SZF

Quadrilaterals

3. Classify quadrilaterals I 86L
4. Classify quadrilaterals II MVK

Perimeter

5. Perimeter MGB

10.4: Area and Circumference**Area**

1. Area of rectangles and squares SUA
2. Area of parallelograms and triangles JTR
3. Area of trapezoids MP6
4. Area and circumference of circles ZDX

Compound figures

5. Area of compound figures KHG

10.5: Volume and Surface Area**Volume**

1. Volume of prisms and cylinders N5F
2. Volume of pyramids and cones 7J3
3. Volume of spheres 62N

Surface area

4. Surface area of prisms and cylinders SWV
5. Surface area of pyramids and cones 8WX
6. Surface area of spheres TGF

Also consider

- Similar solids: find the missing length UT7
- Surface area and volume of similar solids N9X
- Surface area and volume: changes in scale T9H

10.6: Right Triangle Trigonometry**Trigonometric ratios**

1. Trigonometric ratios: sin, cos, and tan NH8
2. Find trigonometric ratios using a calculator 6Q3

Inverse trigonometric functions

3. Inverses of trigonometric functions VE7

Find missing sides and angles

4. Trigonometric ratios: find a side length 65V

5. Trigonometric ratios: find an angle measure RSS

6. Solve a right triangle UVM

10.7: Beyond Euclidean Geometry

Chapter 11

Counting Methods and Probability Theory

| Textbook section | IXL skills |
|---|--|
| 11.1: The Fundamental Counting Principle | 1. Counting principle GTX |
| 11.2: Permutations | 1. Permutations SFZ 2. Factorials VBE |
| 11.3: Combinations | 1. Permutation and combination notation 7TT |
| 11.4: Fundamentals of Probability | 1. Theoretical probability 2MS 2. Experimental probability LQV |
| 11.5: Probability with the Fundamental Counting Principle, Permutations and Combinations | 1. Find probabilities using combinations and permutations C56 |
| 11.6: Events Involving <i>Not</i> and <i>Or</i> , Odds | 1. Probability of opposite, mutually exclusive, and overlapping events SPS |
| 11.7: Events Involving <i>And</i> ; Conditional Probability | 1. Find conditional probabilities using two-way frequency tables BZZ 2. Identify independent and dependent events 5A7 3. Probability of independent and dependent events WRJ |
| 11.8: Expected Value | 1. Expected values for a game of chance F2J |

Chapter 12

Statistics

| Textbook section | IXL skills |
|---|--|
| 12.1: Sampling, Frequency, Distributions, and Graphs | <p>Sampling</p> <ol style="list-style-type: none"> 1. Identify representative, random, and biased samples 55S <p>Histograms</p> <ol style="list-style-type: none"> 2. Interpret histograms 2QR 3. Create histograms WZU <p>Stem-and-leaf plots</p> <ol style="list-style-type: none"> 4. Create stem-and-leaf plots G53 5. Interpret stem-and-leaf plots EBJ |
| 12.2: Measures of Central Tendency | <ol style="list-style-type: none"> 1. Mean, median, mode, and range MHB |
| 12.3: Measures of Dispersion | <ol style="list-style-type: none"> 1. Standard deviation WA2 |
| 12.4: The Normal Distribution | <ol style="list-style-type: none"> 1. Find probabilities using the normal distribution I QA9 2. Find probabilities using the normal distribution II 6M9 3. Find z-values PAJ |
| 12.5: Problem Solving with the Normal Distribution | <ol style="list-style-type: none"> 1. Find values of normal variables 9B3 |
| 12.6: Scatter Plots, Correlation, and Regression Lines | <p>Scatter plots</p> <ol style="list-style-type: none"> 1. Interpret a scatter plot 8BS 2. Outliers in scatter plots EG5 3. Create scatter plots HZJ <p>Correlation coefficients</p> <ol style="list-style-type: none"> 4. Match correlation coefficients to scatter plots FQ7 5. Calculate correlation coefficients E8T |

Lines of best fit

6. Scatter plots: line of best fit Y2S
 7. Find the equation of a regression line WJC
 8. Interpret regression lines SEQ
 9. Analyze a regression line of a data set 8D8
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Chapter 13

Voting and Apportionment

| Textbook section | IXL skills |
|---|------------|
| 13.1: Voting Methods | |
| 13.2: Flaws of Voting Methods | |
| 13.3: Apportionment Methods | |
| 13.4: Flaws of Apportionment Methods | |

Chapter 14

Graph Theory

| Textbook section | IXL skills |
|---|------------|
| 14.1: Graphs, Paths, and Circuits | |
| 14.2: Euler Paths and Euler Circuits | |
| 14.3: Hamilton Paths and Hamilton Circuits | |
| 14.4: Trees | |