



IXL Skill Alignment

8th grade alignment for Illustrative Mathematics



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Unit 1

Rigid Transformations and Congruence

Rigid Transformations

Textbook section	IXL skills
Lesson 1: Moving in the Plane	1. Describe how a figure moves WER
Lesson 2: Naming the Moves	1. Identify reflections, rotations, and translations UYL
Lesson 3: Grid Moves	1. Translations: graph the image XUS 2. Reflections: graph the image NBM 3. Rotations: graph the image AC9 <i>Also consider</i> <ul style="list-style-type: none"> Reflections over the x- and y-axes: graph the image 74Z
Lesson 4: Making the Moves	1. Describe a sequence of transformations XPK <i>Also consider</i> <ul style="list-style-type: none"> Sequences of congruence transformations: graph the image C53
Lesson 5: Coordinate Moves	1. Translations: find the coordinates RUP 2. Reflections over the x- and y-axes: find the coordinates 5UM 3. Rotations: find the coordinates HHS <i>Also consider</i> <ul style="list-style-type: none"> Reflections: find the coordinates KUX
Lesson 6: Describing Transformations	<ul style="list-style-type: none"> <i>Coming soon:</i> Describe transformations <i>Also consider</i> <ul style="list-style-type: none"> Translations: write the rule 6XB

Properties of Rigid Transformations

Textbook section	IXL skills
Lesson 7: No Bending or Stretching	
Lesson 8: Rotation Patterns	
Lesson 9: Moves in Parallel	
Lesson 10: Composing Figures	

Congruence

Textbook section	IXL skills
Lesson 11: What is the Same?	
Lesson 12: Congruent Polygons	1. Identify congruent figures 96U
Lesson 13: Congruence	1. Congruence statements and corresponding parts JSW <i>Also consider</i> <ul style="list-style-type: none"> Side lengths and angle measures of congruent figures DSQ

Angles in a Triangle

Textbook section	IXL skills
Lesson 14: Alternate Interior Angles	1. Find measures of complementary, supplementary, vertical, and adjacent angles W2C 2. Transversals of parallel lines: find angle measures 7GD <i>Also consider</i> <ul style="list-style-type: none"> Identify complementary, supplementary, vertical, adjacent, and congruent angles HGV
Lesson 15: Adding the Angles in a Triangle	1. Classify triangles given two angles VEN

Lesson 16: Parallel Lines and the Angles in a Triangle

1. Find missing angles in triangles JFJ

Let's Put It to Work

Textbook section

IXL skills

Lesson 17: Rotate and Tessellate

1. Rotational symmetry 7AW
2. Rotational symmetry: degrees of rotation QL7

Unit 2

Dilations, Similarity, and Introducing Slope

Dilations

Textbook section	IXL skills
Lesson 1: Projecting and Scaling	<ul style="list-style-type: none"> <i>Coming soon:</i> Identify scaled copies <i>Coming soon:</i> Scaled polygons <i>Coming soon:</i> Draw a scaled copy of a polygon
Lesson 2: Circular Grid	<ul style="list-style-type: none"> <i>Coming soon:</i> Size of the scale factor: justify your answer
Lesson 3: Dilations with no Grid	
Lesson 4: Dilations on a Square Grid	1. Dilations: graph the image 9T4
Lesson 5: More Dilations	1. Dilations: find the coordinates UV9 <i>Also consider</i> <ul style="list-style-type: none"> Dilations: scale factor and classification 8NK

Similarity

Textbook section	IXL skills
Lesson 6: Similarity	<ul style="list-style-type: none"> <i>Coming soon:</i> Properties of similarity transformations <i>Coming soon:</i> Describe a sequence of similarity transformations
Lesson 7: Similar Polygons	1. Identify similar quadrilaterals 6FF
Lesson 8: Similar Triangles	1. Identify similar triangles 6PD <ul style="list-style-type: none"> <i>Coming soon:</i> Angle-angle criterion for similarity of triangles
Lesson 9: Side Length Quotients in Similar Triangles	1. Side lengths and angle measures of similar triangles XED

Also consider

- Side lengths and angle measures of similar figures 79Y

Slope

Textbook section	IXL skills
Lesson 10: Meet Slope	<ol style="list-style-type: none">1. Find the slope of a graph D7M2. Graph a line using a positive slope 8PU <ul style="list-style-type: none">• <i>Coming soon:</i> Relate similar triangles to slope
Lesson 11: Writing Equations for Lines	
Lesson 12: Using Equations for Lines	<ol style="list-style-type: none">1. Does (x, y) satisfy an equation? N2Y

Let's Put It to Work

Textbook section	IXL skills
Lesson 13: The Shadow Knows	<ol style="list-style-type: none">1. Similar triangles and indirect measurement 88W
Checkpoint opportunity	<ol style="list-style-type: none">1. Checkpoint: Congruence transformations CCR2. Checkpoint: Transformations on the coordinate plane WPB3. Checkpoint: Similarity transformations DYW

Unit 3

Linear Relationships

Proportional Relationships

Textbook section	IXL skills
Lesson 1: Understanding Proportional Relationships	<ol style="list-style-type: none"> Graph proportional relationships F6E Interpret graphs of proportional relationships Q96
Lesson 2: Graphs of Proportional Relationships	<ol style="list-style-type: none"> Graph proportional relationships using slope P92
Lesson 3: Representing Proportional Relationships	<ol style="list-style-type: none"> Proportional relationships: complete a table and make a graph 27Q Find the constant of proportionality from tables and graphs G9B Write equations for proportional relationships from tables and graphs VXM
Lesson 4: Comparing Proportional Relationships	<ul style="list-style-type: none"> <i>Coming soon:</i> Compare proportional relationships represented in different ways

Representing Linear Relationships

Textbook section	IXL skills
Lesson 5: Introduction to Linear Relationships	<ol style="list-style-type: none"> Constant rate of change ZPF <p><i>Also consider</i></p> <ul style="list-style-type: none"> Identify proportional relationships by graphing RXD Identify proportional relationships from graphs and equations 45N Identify proportional relationships from tables H8N
Lesson 6: More Linear Relationships	<ul style="list-style-type: none"> <i>Coming soon:</i> Interpret the positive rate of change and initial value of a linear function
Lesson 7: Representations of Linear Relationships	<ol style="list-style-type: none"> Write a linear equation from a graph RRQ Graph a line from an equation HZV

Lesson 8: Translating to $y = mx + b$

1. Slope-intercept form: find the slope and y-intercept U55
2. Use an equation to complete a table and a graph KY9
3. Write linear functions: word problems YK6

Finding Slopes**Textbook section****IXL skills****Lesson 9:** Slopes Don't Have to be Positive

1. Find the slope of a graph II KTT
 - *Coming soon:* Interpret the rate of change and initial value of a linear function

Lesson 10: Calculating Slope

1. Find the slope from two points ZAC
2. Graph a line using slope DPN

Also consider

- Find a missing coordinate using slope R5P

Lesson 11: Equations of All Kinds of Lines

1. Horizontal and vertical lines EJ5
2. Graph a line from an equation in slope-intercept form W5E
3. Write a linear equation from a slope and y-intercept WHP

Linear Equations**Textbook section****IXL skills****Lesson 12:** Solutions to Linear Equations

1. Does (x, y) satisfy the linear function? 5BD
2. Graph a line from an equation in standard form 7MZ
 - *Coming soon:* Understand that the graph of an equation shows all its solutions

Also consider

- Write a linear equation from a slope and a point VKP
- Write a linear equation from two points 2R9

Lesson 13: More Solutions to Linear Equations

1. Evaluate a linear function: word problems DA6
2. Standard form: find x- and y-intercepts MDQ

Also consider

- Convert a linear equation in standard form to slope-intercept form NKM

Let's Put It to Work**Textbook section****IXL skills****Lesson 14:** Using Linear Relations to Solve Problems

- *Coming soon:* Linear relationships in standard form: word problems

Checkpoint opportunity

1. Checkpoint: Proportional relationships 58H
2. Checkpoint: Slope and linear equations S7V

Unit 4

Linear Equations and Linear Systems

Puzzle Problems

Textbook section	IXL skills
Lesson 1: Number Puzzles	1. Age puzzles 99K

Linear Equations in One Variable

Textbook section	IXL skills
Lesson 2: Keeping the Equation Balanced	1. Model and solve equations using algebra tiles D45
Lesson 3: Balanced Moves	1. Solve equations with variables on both sides: complete the solution I 4N6 2. Identify equivalent equations J48 <i>Also consider</i> <ul style="list-style-type: none"> Which x satisfies an equation? BVQ
Lesson 4: More Balanced Moves	1. Solve equations with variables on both sides ZYL 2. Solve equations with the distributive property 8RP <ul style="list-style-type: none"> <i>Coming soon:</i> Solve equations with variables on both sides: fractional coefficients
Lesson 5: Solving Any Linear Equation	1. Solve multi-step equations 55K 2. Solve equations with variables on both sides: complete the solution II XYR <ul style="list-style-type: none"> <i>Coming soon:</i> Solve multi-step equations with fractional coefficients
Lesson 6: Strategic Solving	1. Solve equations: mixed review 5LK
Lesson 7: All, Some, or No Solutions	1. Create equations with no solutions or infinitely many solutions 7TY
Lesson 8: How Many Solutions?	1. Find the number of solutions XDE

Lesson 9: When Are They the Same?

- *Coming soon:* Solving equations with variables on both sides: word problems

Systems of Linear Equations

Textbook section	IXL skills
Lesson 10: On or Off the Line?	1. Is (x, y) a solution to the system of equations? N46
Lesson 11: On Both of the Lines	1. Solve a system of equations by graphing C8X
Lesson 12: Systems of Equations	1. Solve a system of equations by graphing: word problems W9J 2. Find the number of solutions to a system of equations by graphing 5XB
Lesson 13: Solving Systems of Equations	1. Solve a system of equations in slope-intercept form 9Z8
Lesson 14: Solving More Systems	1. Solve a system of equations using substitution 36Y
Lesson 15: Writing Systems of Equations	1. Find the number of solutions to a system of equations UYM

Let's Put It to Work

Textbook section	IXL skills
Lesson 16: Solving Problems with Systems of Equations	1. Solve a system of equations using substitution: word problems 9M8
Checkpoint opportunity	<p>Unit 4</p> <p>1. Checkpoint: Solve linear equations BBZ</p> <p>2. Checkpoint: Systems of equations MFL</p> <p>Units 1-4</p> <p>3. Checkpoint: Triangles and transversals EPV</p>

Unit 5

Functions and Volume

Inputs and Outputs

Textbook section	IXL skills
Lesson 1: Inputs and Outputs	<ol style="list-style-type: none"> 1. Complete an input/output table KGU 2. Input/output tables: find the rule 72L
Lesson 2: Introduction to Functions	<ol style="list-style-type: none"> 1. Identify functions: tables ACC

Representing and Interpreting Functions

Textbook section	IXL skills
Lesson 3: Equations for Functions	<ol style="list-style-type: none"> 1. Complete an input/output table using an equation SAV 2. Find the rule: word problems Y5H 3. Identify independent and dependent variables FSF <p><i>Also consider</i></p> <ul style="list-style-type: none"> • Complete a table for a linear function D9B • Write a linear function from a table UYY
Lesson 4: Tables, Equations, and Graphs of Functions	<ol style="list-style-type: none"> 1. Interpret points on the graph of a linear function 9E8 2. Identify independent and dependent variables in tables and graphs ZJK 3. Identify functions: graphs AEB <p><i>Also consider</i></p> <ul style="list-style-type: none"> • Identify functions ELJ • Complete a table and graph a linear function DC2 • Find values using function graphs 7N2 • Complete a table for a function graph 7EK

Lesson 5: More Graphs of Functions

- *Coming soon:* Determine where a function is increasing, decreasing, or constant
- *Coming soon:* Describe the graph of the function

Lesson 6: Even More Graphs of Functions

- *Coming soon:* Sketch a graph given a description of a function

Lesson 7: Connecting Representations of Functions

1. Compare linear functions: tables, graphs, and equations N7D

Linear Functions and Rates of Change

Textbook section	IXL skills
Lesson 8: Linear Functions	1. Compare linear functions: graphs and equations BQQ
Lesson 9: Linear Models	1. Identify linear and nonlinear functions: tables and graphs 7RG
Lesson 10: Piecewise Linear Functions	1. Rate of change: graphs 66M

Cylinders and Cones

Textbook section	IXL skills
Lesson 11: Filling Containers	
Lesson 12: How Much Will Fit?	1. Bases of three-dimensional figures 2KT <i>Also consider</i> • Volume of cubes and prisms LWB
Lesson 13: The Volume of a Cylinder	1. Volume of cylinders 8MB <i>Also consider</i> • Area and circumference of circles CHV
Lesson 14: Finding Cylinder Dimensions	1. Volume of cylinders: find the missing dimension XDD
Lesson 15: The Volume of a Cone	1. Volume of cones RAU

Lesson 16: Finding Cone Dimensions

1. Volume of cones: find the missing dimension AFV

Dimensions and Spheres

Textbook section	IXL skills
Lesson 17: Scaling One Dimension (optional)	
Lesson 18: Scaling Two Dimensions (optional)	1. Volume: changes in scale I 2LF
Lesson 19: Estimating a Hemisphere	
Lesson 20: The Volume of a Sphere	1. Volume of spheres QX7
Lesson 21: Cylinders, Cones, and Spheres	<ul style="list-style-type: none"> • <i>Coming soon:</i> Volume of cylinders, cones, and spheres: word problems

Let's Put It to Work

Textbook section	IXL skills
Lesson 22: Volume As a Function of... (optional)	1. Volume: changes in scale II 76X
Checkpoint opportunity	<ol style="list-style-type: none"> 1. Checkpoint: Understand functions 6NP 2. Checkpoint: Compare functions XQJ 3. Checkpoint: Linear and nonlinear functions JKA 4. Checkpoint: Construct and interpret linear functions 3K7 5. Checkpoint: Sketch and describe graphs K7A 6. Checkpoint: Volume 9GB

Unit 6

Associations in Data

Does This Predict That?

Textbook section	IXL skills
Lesson 1: Organizing Data	
Lesson 2: Plotting Data	1. Create scatter plots AVL

Associations in Numerical Data

Textbook section	IXL skills
Lesson 3: What a Point in a Scatter Plot Means	1. Interpret scatter plots 66P
Lesson 4: Fitting a Line to Data	1. Make predictions with scatter plots CM7 2. Outliers in scatter plots RP8
Lesson 5: Describing Trends in Scatter Plots	1. Identify trends with scatter plots GZE • <i>Coming soon:</i> Identify lines of best fit
Lesson 6: The Slope of a Fitted Line	• <i>Coming soon:</i> Interpret linear models
Lesson 7: Observing More Patterns in Scatter Plots	• <i>Coming soon:</i> Describe patterns in scatter plots
Lesson 8: Analyzing Bivariate Data	1. Scatter plots: line of best fit ZQ6

Associations in Categorical Data

Textbook section	IXL skills
Lesson 9: Looking for Associations	1. Two-way tables and bar graphs 5TB • <i>Coming soon:</i> Create and interpret two-way frequency tables
Lesson 10: Using Data Displays to Find Associations	• <i>Coming soon:</i> Associations in bivariate data

Also consider

- Find probabilities using two-way frequency tables [CRV](#)

Let's Put It to Work**Textbook section****IXL skills****Lesson 11:** Gone in 30 Seconds (optional)**Checkpoint opportunity**

1. Checkpoint: Scatter plots [DDR](#)
2. Checkpoint: Lines of best fit [DEH](#)
3. Checkpoint: Linear models: interpret and solve [9YQ](#)
4. Checkpoint: Two-way frequency tables [HJG](#)

Unit 7

Exponents and Scientific Notation

Exponent Review

Textbook section	IXL skills
Lesson 1: Exponent Review	<ol style="list-style-type: none"> 1. Write multiplication expressions using exponents BNN 2. Evaluate exponents 7RP

Exponent Rules

Textbook section	IXL skills
Lesson 2: Multiplying Powers of Ten	
Lesson 3: Powers of Powers of 10	
Lesson 4: Dividing Powers of 10	
Lesson 5: Negative Exponents with Powers of 10	<ol style="list-style-type: none"> 1. Evaluate negative and zero exponents B79 2. Powers of ten with negative exponents SKD
Lesson 6: What about Other Bases?	<ol style="list-style-type: none"> 1. Multiplication with exponents JWD 2. Division with exponents XR8 3. Power rule P79 <p><i>Also consider</i></p> <ul style="list-style-type: none"> • Exponents with negative bases ZQC • Understanding negative exponents YBB
Lesson 7: Practice with Rational Bases	<ol style="list-style-type: none"> 1. Exponent rules: review LS9
Lesson 8: Combining Bases	<ol style="list-style-type: none"> 1. Identify equivalent expressions involving exponents I VLM 2. Identify equivalent expressions involving exponents II QDM

Also consider

- Evaluate expressions using properties of exponents UTY

Scientific Notation

Textbook section	IXL skills
Lesson 9: Describing Large and Small Numbers Using Powers of 10	1. Multiply a whole number by a power of ten: with exponents YBL
Lesson 10: Representing Large Numbers on the Number Line	1. Compare large numbers WEZ
Lesson 11: Representing Small Numbers on the Number Line	1. Compare small numbers KDR
Lesson 12: Applications of Arithmetic with Powers of 10	<ul style="list-style-type: none"> <i>Coming soon:</i> Estimate very large or very small quantities
Lesson 13: Definition of Scientific Notation	1. Convert between standard and scientific notation H8A
Lesson 14: Multiplying, Dividing, and Estimating with Scientific Notation	<ol style="list-style-type: none"> Compare numbers written in scientific notation RHT Multiply numbers written in scientific notation YZU Divide numbers written in scientific notation SGT
Lesson 15: Adding and Subtracting with Scientific Notation	1. Add and subtract numbers written in scientific notation HUR
	<i>Also consider</i> <ul style="list-style-type: none"> Scientific notation on calculators 62V

Let's Put It to Work

Textbook section	IXL skills
Lesson 16: Is a Smartphone Smart Enough to Go to the Moon?	



Checkpoint opportunity

1. Checkpoint: Integer exponents GEJ
 2. Checkpoint: Scientific notation D2U
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Unit 8

Pythagorean Theorem and Irrational Numbers

Side Lengths and Areas of Squares

Textbook section	IXL skills
Lesson 1: The Areas of Squares and Their Side Lengths	1. Area of squares and triangles: review V6R
Lesson 2: Side Lengths and Areas	1. Relationship between squares and square roots 8W2
Lesson 3: Rational and Irrational Numbers	1. Identify rational and irrational numbers NV6
Lesson 4: Square Roots on the Number Line	1. Square roots of perfect squares 9RS <ul style="list-style-type: none"> • <i>Coming soon:</i> Irrational numbers: approximate location on number lines
Lesson 5: Reasoning About Square Roots	1. Estimate positive square roots XWJ 2. Solve equations using square roots NNA <i>Also consider</i> <ul style="list-style-type: none"> • Positive and negative square roots 8TF

The Pythagorean Theorem

Textbook section	IXL skills
Lesson 6: Finding Side Lengths of Triangles	
Lesson 7: A Proof of the Pythagorean Theorem	<ul style="list-style-type: none"> • <i>Coming soon:</i> Proof of the Pythagorean theorem
Lesson 8: Finding Unknown Side Lengths	1. Pythagorean theorem: find the length of the hypotenuse 7ZL 2. Pythagorean theorem: find the missing leg length Y9C 3. Pythagorean theorem: find the missing leg or hypotenuse length MTM
Lesson 9: The Converse	1. Converse of the Pythagorean theorem: is it a right triangle? EQZ

Lesson 10: Applications of the Pythagorean Theorem

1. Pythagorean theorem: word problems 87U

Also consider

- Pythagorean theorem: find the perimeter VGE

Lesson 11: Finding Distances in the Coordinate Plane

1. Find the distance between two points ZBP

Side Lengths and Volumes of Cubes

Textbook section

IXL skills

Lesson 12: Edge Lengths and Volumes

1. Volume of cubes 7L4
2. Cube roots of positive perfect cubes RYG

Lesson 13: Cube Roots

1. Cube roots of positive and negative perfect cubes J7K
2. Solve equations using cube roots TQ5
3. Estimate cube roots RLC

Decimal Representation of Rational and Irrational Numbers

Textbook section

IXL skills

Lesson 14: Decimal Representations of Rational Numbers

1. Convert between decimals and fractions or mixed numbers URX

Lesson 15: Infinite Decimal Expansions

1. Write a repeating decimal as a fraction WD6

Let's Put It to Work

Textbook section

IXL skills

Lesson 16: When is the Same Size Not the Same Size?

Checkpoint opportunity

1. Checkpoint: Rational and irrational numbers SNE
2. Checkpoint: Approximate irrational numbers JHR
3. Checkpoint: Square and cube roots UF5

4. Checkpoint: Pythagorean theorem and its converse 6GQ
 5. Checkpoint: Applications of the Pythagorean theorem QWT
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