



# IXL Skill Alignment

Algebra 1 alignment for Transition to Algebra



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# Unit 1

## Language of Algebra

Textbook section	IXL skills
<b>Lesson 1:</b> Exploring Number Tricks	
<b>Lesson 2:</b> Creating Number Tricks	1. Add and subtract integers: input/output tables <small>FLP</small>
<b>Lesson 3:</b> Balancing Mobile Puzzles	1. Which $x$ satisfies an equation? <small>VG8</small> 2. Evaluate one-variable expressions <small>V77</small>
<b>Lesson 4:</b> Describing Tricks and Puzzles	1. Write variable expressions: one operation <small>PEZ</small> 2. Write variable expressions: two or three operations <small>6QT</small> 3. Write variable expressions from diagrams <small>FPF</small> 4. Write variable expressions: word problems <small>MEC</small>
<b>Lesson 5:</b> Logic of Tricks and Mobiles	1. Solve one-step addition and subtraction equations with whole numbers <small>JXM</small> 2. Solve one-step multiplication and division equations with whole numbers <small>JUA</small> 3. Solve one-step equations with whole numbers <small>WLR</small>

# Unit 2

## Geography of the Number Line

Textbook section	IXL skills
<b>Lesson 1:</b> Placing Integers	<ol style="list-style-type: none"> <li>1. Understanding integers YBC</li> <li>2. Integers on number lines EZE</li> <li>3. Graph integers on horizontal and vertical number lines LFR</li> <li>4. Compare and order integers T2M</li> </ol>
<b>Lesson 2:</b> Operations with Integers	<ol style="list-style-type: none"> <li>1. Integer addition and subtraction rules YDA</li> </ol>
<b>Lesson 3:</b> Checkers and Who Am I? Puzzles	<p><b>Models</b></p> <ol style="list-style-type: none"> <li>1. Add integers using counters FTM</li> <li>2. Subtract integers using counters BGL</li> </ol> <p><b>Add and subtract integers</b></p> <ol style="list-style-type: none"> <li>3. Add integers QFU</li> <li>4. Subtract integers HEU</li> <li>5. Add and subtract three or more integers NB7</li> </ol> <p><b>Word problems</b></p> <ol style="list-style-type: none"> <li>6. Add and subtract integers: word problems XP7</li> </ol>
<b>Lesson 4:</b> Distance and Inequalities	<p><b>Solutions to inequalities</b></p> <ol style="list-style-type: none"> <li>1. Identify solutions to inequalities 5UE</li> </ol> <p><b>Graphing</b></p> <ol style="list-style-type: none"> <li>2. Graph inequalities H68</li> <li>3. Graph solutions to advanced linear inequalities 5GC</li> </ol>
<b>Lesson 5:</b> Geography of Addition and Subtraction	<ol style="list-style-type: none"> <li>1. Compare temperatures above and below zero UVD</li> </ol>
<b>Lesson 6:</b> Algebra on the Number Line	<ol style="list-style-type: none"> <li>1. Integer addition and subtraction rules YDA</li> <li>2. Apply addition and subtraction rules GDU</li> </ol>

# Unit 3

## Micro-Geography of the Number Line

Textbook section	IXL skills
<b>Lesson 1:</b> Placing Decimals	<ol style="list-style-type: none"><li>1. Compare and order decimals ANM</li><li>2. Decimal number lines BBX</li></ol>
<b>Lesson 2:</b> Operations with Decimals	<ol style="list-style-type: none"><li>1. Estimate sums and differences of decimals SJ6</li><li>2. Multiply and divide decimals by powers of ten KNH</li><li>3. Add and subtract decimals BP2</li><li>4. Add and subtract decimals: word problems RKZ</li><li>5. Add and subtract positive and negative decimals WCZ</li></ol>
<b>Lesson 3:</b> Decimal Distance	<ol style="list-style-type: none"><li>1. Maps with decimal distances WT7</li></ol>
<b>Lesson 4:</b> Placing Fractions	<ol style="list-style-type: none"><li>1. Fractions on number lines ULL</li></ol>
<b>Lesson 5:</b> Equivalent Fractions	<ol style="list-style-type: none"><li>1. Equivalent fractions KDL</li></ol>
<b>Lesson 6:</b> Ordering Fractions	<ol style="list-style-type: none"><li>1. Compare and order fractions CEY</li><li>2. Compare fractions: word problems ZLJ</li></ol>
<b>Lesson 7:</b> Fraction Distances	<ol style="list-style-type: none"><li>1. Maps with fractional distances KXP</li></ol>

# Unit 4

## Area and Multiplication

Textbook section	IXL skills
<b>Lesson 1:</b> MysteryGrid Puzzles	
<b>Lesson 2:</b> Multiplication Patterns	<ol style="list-style-type: none"> <li>1. Integer multiplication rules K7U</li> <li>2. Multiply integers DQT</li> </ol>
<b>Lesson 3:</b> Measuring Area	<ol style="list-style-type: none"> <li>1. Rectangles: relationship between perimeter and area VTX</li> <li>2. Area of rectangles and squares BE9</li> </ol>
<b>Lesson 4:</b> Area Models	
<b>Lesson 5:</b> Area Models with Algebra	<ol style="list-style-type: none"> <li>1. Factor using the distributive property PGZ</li> <li>2. Multiply using the distributive property 2HH</li> </ol>
<b>Lesson 6:</b> Signs and Terms	<p><b>Terms and coefficients</b></p> <ol style="list-style-type: none"> <li>1. Identify terms and coefficients T8K</li> </ol> <p><b>Like terms</b></p> <ol style="list-style-type: none"> <li>2. Add and subtract like terms QP7</li> </ol> <p><b>Distributive property</b></p> <ol style="list-style-type: none"> <li>3. Multiply using the distributive property U7T</li> </ol> <p><b>Model polynomials</b></p> <ol style="list-style-type: none"> <li>4. Model polynomials with algebra tiles TYV</li> </ol> <p><b>Multiply polynomials</b></p> <ol style="list-style-type: none"> <li>5. Multiply a polynomial by a monomial G2G</li> <li>6. Multiply two polynomials using algebra tiles WR5</li> </ol>
<b>Lesson 7:</b> Squares and Like Terms	<ol style="list-style-type: none"> <li>1. Multiply two binomials M7Q</li> <li>2. Multiply two binomials: special cases 9JN</li> <li>3. Multiply polynomials 58A</li> </ol>

**Lesson 8:** Equivalent Expressions

**Add and subtract linear expressions**

1. Add and subtract linear expressions QCY

**Equivalent linear expressions**

2. Identify equivalent linear expressions: word problems 7YG
  3. Identify equivalent linear expressions 62A
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# Unit 5

## Logic of Algebra

Textbook section	IXL skills
<b>Lesson 1:</b> Staying Balanced	<ol style="list-style-type: none"> <li>1. Does <math>x</math> satisfy the equation? JPC</li> <li>2. Which <math>x</math> satisfies an equation? YTT</li> </ol>
<b>Lesson 2:</b> Mobiles and Equations	<ol style="list-style-type: none"> <li>1. Model and solve equations using algebra tiles GRH</li> </ol>
<b>Lesson 3:</b> Keeping Track of Your Steps	<ol style="list-style-type: none"> <li>1. Simplify variable expressions using properties HHR</li> <li>2. Simplify variable expressions involving like terms and the distributive property ZXX</li> </ol>
<b>Lesson 4:</b> Arranging Instructions in Order	<ol style="list-style-type: none"> <li>1. Write equivalent expressions using properties QFJ</li> </ol>
<b>Lesson 5:</b> The Language and Logic of Expressions	<ol style="list-style-type: none"> <li>1. Write variable expressions D7K</li> </ol>
<b>Lesson 6:</b> Solving Equations One Chunk at a Time	<ol style="list-style-type: none"> <li>1. Solve multi-step equations 55K</li> <li>2. Solve equations involving like terms Q2B</li> <li>3. Solve two-step equations JXD</li> <li>4. Solve one-step and two-step equations: word problems HCP</li> <li>5. Solve equations with variables on both sides ZYL</li> <li>6. Solve equations: mixed review HZZ</li> <li>7. Solve equations: complete the solution PGH</li> </ol>
<b>Lesson 7:</b> Solving with Squares	<ol style="list-style-type: none"> <li>1. Solve equations using square roots NNA</li> </ol>
<b>Lesson 8:</b> Solving with Systems	<ol style="list-style-type: none"> <li>1. Solve a system of equations using substitution J8X</li> <li>2. Is <math>(x, y)</math> a solution to the system of equations? LRL</li> </ol>

# Unit 6

## Geography of the Coordinate Plane

Textbook section	IXL skills
<b>Lesson 1:</b> Plotting Data	<ol style="list-style-type: none"> <li>Coordinate plane review H6E</li> <li>Follow directions on a coordinate plane 2HR</li> </ol>
<b>Lesson 2:</b> Coordinating Data	<p><b>Interpret graphs</b></p> <ol style="list-style-type: none"> <li>Interpret graphs of proportional relationships Q96</li> <li>Interpret points on the graph of a linear function 9E8</li> </ol>
<b>Lesson 3:</b> Geometric Transformations	<p><b>Graph triangles and parallelograms</b></p> <ol style="list-style-type: none"> <li>Graph triangles and quadrilaterals UDB</li> </ol> <p><b>Translations</b></p> <ol style="list-style-type: none"> <li>Translations: graph the image XUS</li> <li>Translations: find the coordinates RUP</li> </ol>
<b>Lesson 4:</b> Transformations with Algebra	<p><b>Dilations</b></p> <ol style="list-style-type: none"> <li>Dilations: graph the image 9T4</li> <li>Dilations: find the coordinates UV9</li> </ol> <p><b>Reflections</b></p> <ol style="list-style-type: none"> <li>Reflections over the x- and y-axes: graph the image 74Z</li> <li>Reflections over the x- and y-axes: find the coordinates 5UM</li> <li>Reflections: find the coordinates KUX</li> </ol>
<b>Lesson 5:</b> Intuitive Graphing	
<b>Lesson 6:</b> Solutions and Point Testing	<ol style="list-style-type: none"> <li>Does <math>(x, y)</math> satisfy the linear function? 5BD</li> <li>Find values using function graphs QCG</li> <li>Evaluate a linear function LNV</li> </ol>
<b>Lesson 7:</b> Graphing Relationships	<ol style="list-style-type: none"> <li>Complete a table for a linear function D9B</li> <li>Complete a table and graph a linear function DC2</li> </ol>



# Unit 7

## Thinking Things Through Thoroughly

### Textbook section

### IXL skills

**Lesson 1:** What Can You Say for Sure?

1. Find the number of each type of coin ED6
2. Multi-step word problems EHX
3. Word problems: mixed review Z7P
4. Word problems with money FL6

**Lesson 2:** Asking Good Questions**Lesson 3:** Repeating and Generalizing

1. Guess-and-check word problems CPR
2. Consecutive integer problems HDF
3. Weighted averages: word problems 2TQ
4. Rate of travel: word problems 2C8

**Lesson 4:** Mapping it Out

1. Maps with decimal distances WT7
2. Maps with fractional distances KXP

**Lesson 5:** Logic Games

1. Use logical reasoning to find the order MGD

**Lesson 6:** Liars and Truth-tellers

# Unit 8

## Logic of Fractions

Textbook section	IXL skills
<b>Lesson 1:</b> Rational Relationships	<p><b>Equivalent fractions</b></p> <ol style="list-style-type: none"> <li>Equivalent fractions KDL</li> </ol> <p><b>Add and subtract fractions</b></p> <ol style="list-style-type: none"> <li>Add and subtract fractions NGL</li> <li>Add and subtract fractions: word problems ENL</li> <li>Add and subtract mixed numbers 9BE</li> <li>Add and subtract mixed numbers: word problems 6YT</li> </ol>
<b>Lesson 2:</b> Multiplying with Fractions	<ol style="list-style-type: none"> <li>Multiply fractions and whole numbers ZNQ</li> <li>Scaling whole numbers by fractions: justify your answer 9YZ</li> </ol>
<b>Lesson 3:</b> Fractions and Area Models	<ol style="list-style-type: none"> <li>Multiply two fractions using models LMX</li> <li>Multiply fractions PDK</li> <li>Multiply mixed numbers JNY</li> </ol>
<b>Lesson 4:</b> Rewriting Rational Expressions	
<b>Lesson 5:</b> Scaling to Solve	<ol style="list-style-type: none"> <li>Solve one-step multiplication and division equations with decimals, fractions, and whole numbers T53</li> </ol>
<b>Lesson 6:</b> Scaling to Add	<ol style="list-style-type: none"> <li>Inequalities with addition and subtraction of fractions and mixed numbers B8C</li> </ol>
<b>Lesson 7:</b> Proportional Reasoning	<p><b>Ratios</b></p> <ol style="list-style-type: none"> <li>Understanding ratios X45</li> <li>Identify equivalent ratios ZVD</li> <li>Write an equivalent ratio MQS</li> <li>Equivalent ratios: word problems RX2</li> </ol> <p><b>Proportions</b></p> <ol style="list-style-type: none"> <li>Solve proportions: word problems 5XV</li> <li>Do the ratios form a proportion? QBJ</li> </ol>

7. Do the ratios form a proportion: word problems JHP
8. Solve proportions BNY

**Unit rates**

9. Unit rates 59J

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**Lesson 8: Fractions and Graphs (Rates of Change)****Constant of proportionality**

1. Find the constant of proportionality from a table ZCK
2. Find the constant of proportionality from a graph YMH

**Proportional relationships**

3. Write equations for proportional relationships from graphs G7N
  4. Graph proportional relationships and find the slope MQD
  5. Interpret graphs of proportional relationships Q96
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# Unit 9

## Points, Slopes, and Lines

Textbook section	IXL skills
<b>Lesson 1:</b> Comparing Points	1. Distance between two points RUZ
<b>Lesson 2:</b> Distance	1. Pythagorean theorem: find the length of the hypotenuse 7ZL 2. Distance between two points AYD 3. Estimate square roots AU2
<b>Lesson 3:</b> Slope	1. Find the constant of variation 9TD 2. Find the slope of a graph E7D
<b>Lesson 4:</b> Slopes and Lines	1. Find the slope from two points MD5 2. Graph a line using slope FSV
<b>Lesson 5:</b> Collinearity	
<b>Lesson 6:</b> Generalizing the Equation of a Line	1. Find a missing coordinate using slope 5C7
<b>Lesson 7:</b> Linear Equations and Graphs	1. Write an equation from a graph using a table MXS

# Unit 10

## Area Model Factoring

Textbook section	IXL skills
<b>Lesson 1:</b> Division Undoes Multiplication	1. Factors of linear expressions EGA
<b>Lesson 2:</b> Area Model Inside Out	
<b>Lesson 3:</b> Factoring	1. GCF of monomials ZZU 2. Factor out a monomial JZL 3. Factor quadratics using algebra tiles Y6U
<b>Lesson 4:</b> Products, Sums, and Signs	1. Factor quadratics with leading coefficient 1 S9P
<b>Lesson 5:</b> Zero Product Property	1. Solve a quadratic equation using the zero product property TNM
<b>Lesson 6:</b> Solve by Factoring	1. Solve a quadratic equation by factoring CSS

# Unit 11

## Exponents

Textbook section	IXL skills
<b>Lesson 1:</b> Multiplication World	
<b>Lesson 2:</b> Exponents	<ol style="list-style-type: none"> <li>1. Understanding exponents VFV</li> <li>2. Evaluate exponents EYR</li> </ol>
<b>Lesson 3:</b> Extending Exponents	<ol style="list-style-type: none"> <li>1. Understanding negative exponents YBB</li> <li>2. Evaluate negative exponents WGS</li> </ol>
<b>Lesson 4:</b> Equivalent Expressions	<ol style="list-style-type: none"> <li>1. Multiplication with exponents HQD</li> <li>2. Division with exponents 9SS</li> <li>3. Multiplication and division with exponents HPK</li> </ol>
<b>Lesson 5:</b> Area Models	<ol style="list-style-type: none"> <li>1. Multiply a polynomial by a monomial G2G</li> <li>2. Multiply two polynomials using algebra tiles WR5</li> <li>3. Multiply two binomials M7Q</li> </ol>
<b>Lesson 6:</b> Simplifying Expressions	<p><b>Simplify fractions</b></p> <ol style="list-style-type: none"> <li>1. Write fractions in lowest terms TZ6</li> </ol> <p><b>Monomials</b></p> <ol style="list-style-type: none"> <li>2. Multiply monomials 52N</li> <li>3. Divide monomials B48</li> <li>4. Multiply and divide monomials 48P</li> </ol>
<b>Lesson 7:</b> Fractions in Exponents	<ol style="list-style-type: none"> <li>1. Evaluate integers raised to rational exponents PQH</li> </ol>

# Unit 12

## Algebraic Habits of Mind

Textbook section	IXL skills
<b>Lesson 1:</b> Language and Logic of Algebra	<ol style="list-style-type: none"> <li>1. Write variable expressions: one operation PEZ</li> <li>2. Write variable expressions: two or three operations 6QT</li> <li>3. Write variable expressions: word problems MEC</li> </ol>
<b>Lesson 2:</b> Reasoning about Points on a Line	<p><b>Fractions</b></p> <ol style="list-style-type: none"> <li>1. Fractions on number lines ULL</li> <li>2. Compare and order fractions CEY</li> </ol> <p><b>Decimals</b></p> <ol style="list-style-type: none"> <li>3. Decimal number lines BBX</li> <li>4. Compare and order decimals ANM</li> </ol>
<b>Lesson 3:</b> Multiplying and Un-multiplying	<p><b>Multiply polynomials</b></p> <ol style="list-style-type: none"> <li>1. Multiply a polynomial by a monomial G2G</li> <li>2. Multiply two polynomials using algebra tiles WR5</li> <li>3. Multiply two binomials M7Q</li> </ol> <p><b>Factoring</b></p> <ol style="list-style-type: none"> <li>4. Factor out a monomial JZL</li> <li>5. Factor quadratics with leading coefficient 1 S9P</li> </ol>
<b>Lesson 4:</b> Reasoning about Points and Lines on a Plane	<ol style="list-style-type: none"> <li>1. Find the distance between two points ZBP</li> <li>2. Complete a table and graph a linear function DC2</li> <li>3. Graph a line using slope FSV</li> </ol>
<b>Lesson 5:</b> Solving Strategically	<ol style="list-style-type: none"> <li>1. Solve a quadratic equation using the zero product property TNM</li> <li>2. Identify equivalent equations XNQ</li> <li>3. Solve linear equations: mixed review DN6</li> </ol>