IXL Skill Alignment

Pre-algebra alignment for Miami-Dade County Public Schools

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Topic 1

The Real Number System

Florida Math Course 3: Chapter 1: Real Numbers

Standard	IXL skills
Lesson 1: Rational Numbers	1. Convert between repeating decimals and fractions WD6 2. Convert between decimals and fractions or mixed numbers 2RC *Also consider* • Multi-step word problems EHX
Lesson 2: Powers and Exponents	1. Understanding exponents VFV 2. Evaluate exponents 26M 3. Evaluate multi-variable expressions with exponents RM8 *Also consider* • Evaluate numerical expressions involving integers Y6W • Evaluate numerical expressions involving rational numbers 5E3
Lesson 3: Multiply and Divide Monomials	1. Multiplication with exponents UCX 2. Division with exponents SZS 3. Multiplication and division with exponents L2J
Lesson 4: Powers of Monomials	1. Power rule with exponents 7V9
Lesson 5: Negative Exponents	1. Understanding negative exponents 7ZJ 2. Exponent rules: review LS9 *Also consider* • Evaluate negative and zero exponents 5MA • Evaluate expressions using properties of exponents UTY • Identify equivalent expressions involving exponents I VLM

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- Identify equivalent expressions involving exponents II QDM

Lesson 6: Scientific Notation

1. Convert between standard and scientific notation H8A
2. Compare numbers written in scientific notation RHT

Lesson 7: Compute with Scientific Notation

1. Add and subtract numbers written in scientific notation HUR
2. Multiply numbers written in scientific notation YZU
3. Divide numbers written in scientific notation SGT

Also consider

- Scientific notation on calculators 62V

Lesson 8: Roots

1. Positive and negative square roots ME5
2. Solve equations using square roots NNA
3. Cube roots of positive and negative perfect cubes J7K
4. Solve equations using cube roots TQ5

Also consider

- Relationship between squares and square roots 8W2
- Square roots of perfect squares 9RS
- Cube roots of positive perfect cubes RYG

Lesson 9: Estimate Roots

1. Estimate positive square roots XWJ
2. Estimate cube roots RLC

Also consider

- Irrational numbers on number lines 83E
- Estimate positive and negative square roots 96T

Lesson 10: Compare Real Numbers

1. Identify rational and irrational numbers NV6
2. Classify numbers VR7

Also consider

- Identify rational and irrational square roots UGE
- Compare rational numbers MUK

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- Put rational numbers in order QP5

Checkpoint opportunity

1. Checkpoint: Integer exponents GEJ
2. Checkpoint: Scientific notation D2U
3. Checkpoint: Square and cube roots UF5
4. Checkpoint: Rational and irrational numbers SNE
5. Checkpoint: Approximate irrational numbers JHR

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Topic 2

Equations in One Variable

Florida Math Course 3: Chapter 2: Equations in One Variable

Standard	IXL skills
Lesson 1: Solve Equations with Rational Coefficients	1. Reciprocals and multiplicative inverses 8MF 2. Solve one-step equations with decimals and fractions N6B *Also consider* • Which x satisfies an equation? BVQ
Lesson 2: Solve Two-Step Equations	1. Solve two-step equations JXD *Also consider* • Model and solve equations using algebra tiles D45 • Properties of equality 7WL • Solve two-step equations: complete the solution GK7
Lesson 3: Write Two-Step Equations	1. Write an equation from words F6R 2. Solve one-step and two-step equations: word problems HCP *Also consider* • Write and solve equations that represent diagrams G6N
Lesson 4: Solve Equations with Variables on Each Side	1. Solve equations with variables on both sides ZYL 2. Solve equations with variables on both sides: fractional coefficients UEM 3. Solve equations with variables on both sides: word problems BRX *Also consider* • Solve equations involving like terms Q2B

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Lesson 5: Solve Multi-Step Equations

1. Solve multi-step equations 55K
2. Solve multi-step equations with fractional coefficients 2AZ
3. Find the number of solutions XDE

Also consider

- Solve equations with the distributive property 8RP
- Solve equations: mixed review HZZ
- Solve multi-step equations: complete the solution PGH
- Create equations with no solutions or infinitely many solutions 7TY

Checkpoint opportunity

1. Checkpoint: Solve linear equations BBZ

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Topic 3

Equations in Two Variables

Florida Math Course 3: Chapter 3: Equations in Two Variables

Standard	IXL skills
Lesson 1: Constant Rate of Change	1. Find the constant of proportionality from tables and graphs G9B 2. Identify proportional relationships in tables and graphs 6KW 3. Constant rate of change ZPF *Also consider* • Identify proportional relationships by graphing RXD • Identify proportional relationships from graphs and equations 45N
Lesson 2: Slope	1. Find the slope of a graph D7M 2. Find the slope from two points ZAC *Also consider* • Graph a line using slope FSV • Find a missing coordinate using slope R5P
Lesson 3: Equations in $y = mx$ Form	1. Graph proportional relationships and find the slope MQD 2. Find the constant of variation XXT 3. Identify direct variation MWB 4. Write and solve direct variation equations ZHK • *Coming soon:* Compare proportional relationships represented in different ways *Also consider* • Write direct variation equations GXD • Write equations for proportional relationships from tables S69 • Write equations for proportional relationships from graphs G7N

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- Write and solve equations for proportional relationships HPM

Lesson 4: Slope-Intercept Form

1. Slope-intercept form: find the slope and y-intercept U55
2. Graph a line from an equation in slope-intercept form W5E
3. Write a linear equation from a slope and y-intercept WHP
4. Write a linear equation from a graph WHM

Lesson 5: Graph a Line Using Intercepts

1. Find x- and y-intercepts MDQ
2. Graph a line from an equation in standard form 7MZ

Lesson 6: Write Linear Equations

1. Write a linear equation from a slope and a point VKP
2. Write a linear equation from two points 2R9
3. Point-slope form: write an equation KL6

Also consider

- Convert a linear equation to slope-intercept form 62G
- Graph a line from an equation in point-slope form RZZ

Lesson 7: Solve Systems of Equations by Graphing

1. Solve a system of equations by graphing C8X
2. Solve a system of equations by graphing: word problems W9J
3. Find the number of solutions to a system of equations by graphing AGZ

Also consider

- Find the number of solutions to a system of equations UYM

Lesson 8: Solve Systems of Equations Algebraically

1. Solve a system of equations using substitution 36Y
2. Solve a system of equations using substitution: word problems 9M8

Also consider

- Is (x, y) a solution to the system of equations? N46

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- Solve a system of equations using elimination ZQV
- Solve a system of equations using elimination: word problems Z97
- Solve a system of equations using any method AM5
- Solve a system of equations using any method: word problems VHE

Checkpoint opportunity

1. Checkpoint: Proportional relationships 58H
2. Checkpoint: Systems of equations MFL

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Topic 4

Relations and Functions

Florida Math Course 3: Chapter 4: Functions

Standard	IXL skills
Lesson 1: Representing Relationships	1. Use an equation to complete a table and a graph KY9 2. Write a linear equation from a table or a graph FW2 3. Write linear functions: word problems YK6 4. Evaluate a linear function: word problems DA6
Lesson 2: Relations	1. Domain and range of functions JZD *Also consider* • Find values using function graphs 7N2 • Complete a table for a function graph 7EK
Lesson 3: Functions	1. Identify functions from ordered pairs, arrow diagrams, and tables GCT 2. Identify independent and dependent variables FSF 3. Evaluate a linear function 2RT 4. Complete a function table: linear functions 3P9 *Also consider* • Identify functions: graphs AEB • Does (x, y) satisfy the linear function? 5BD
Lesson 4: Linear Functions	1. Complete a table and graph a linear function DC2 2. Interpret points on the graph of a linear function 9E8 *Also consider* • Interpret graphs of proportional relationships Q96

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Lesson 5: Compare Properties of Functions

1. Compare linear functions: tables, graphs, and equations N7D
- *Coming soon:* Compare linear functions: word problems

Also consider
- Compare linear functions: graphs and equations BQQ

Lesson 6: Construct Functions

1. Interpret the slope and y-intercept of a linear function H5B

Also consider
- Write a linear function from a table UYY

Lesson 7: Linear and Nonlinear Functions

1. Identify linear and nonlinear functions: graphs and equations XB8
2. Identify linear and nonlinear functions: tables GV6

Lesson 8: Quadratic Functions

1. Complete a function table: quadratic functions VN8
2. Graph quadratic functions 87A

Lesson 9: Qualitative Graphs

1. Identify graphs: word problems HWC

Checkpoint opportunity

Topic 4
1. Checkpoint: Understand functions 6NP
2. Checkpoint: Compare functions XQJ
3. Checkpoint: Linear and nonlinear functions JKA
4. Checkpoint: Sketch and describe graphs K7A

Topics 3-4
5. Checkpoint: Construct and interpret linear functions 3K7

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Topic 5

Angle Relationships and Pythagorean Theorem

Florida Math Course 3: Chapter 5: Triangles and the Pythagorean Theorem

Standard	IXL skills
Lesson 1: Lines	1. Transversals of parallel lines: name angle pairs ZLF 2. Transversals of parallel lines: find angle measures V99 3. Transversals of parallel lines: solve for x MWL *Also consider* • Identify complementary, supplementary, vertical, adjacent, and congruent angles HGV • Find measures of complementary, supplementary, vertical, and adjacent angles R2B • Identify alternate interior and alternate exterior angles 8EM
Lesson 2: Geometric Proof	1. Proofs involving parallel lines W59
Lesson 3: Angles of Triangles	1. Find missing angles in triangles JFJ 2. Find missing angles in triangles using ratios 59G 3. Triangle Angle-Sum Theorem 6Q6 4. Exterior Angle Theorem FMP
Lesson 4: Polygons and Angles	1. Interior angles of polygons JBP 2. Exterior angles of polygons KKV *Also consider* • Find missing angles in quadrilaterals I N2R • Find missing angles in quadrilaterals II ZHN
Lesson 5: The Pythagorean Theorem	1. Pythagorean theorem: find the missing leg or hypotenuse length MTM 2. Converse of the Pythagorean theorem: is it a right triangle? EQZ

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	Also consider • Pythagorean theorem: find the length of the hypotenuse 7ZL • Pythagorean theorem: find the missing leg length Y9C • Triangle inequality 2N5
Lesson 6: Use the Pythagorean Theorem	1. Pythagorean theorem: word problems 87U *Also consider* • Pythagorean theorem: find the perimeter VGE
Lesson 7: Distance on the Coordinate Plane	1. Find the distance between two points ZBP 2. Distance formula HBA *Also consider* • Distance formula: find the perimeter 64S
Checkpoint opportunity	1. Checkpoint: Pythagorean theorem and its converse 6GQ 2. Checkpoint: Applications of the Pythagorean theorem QWT

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Topic 6

Transformations

Florida Math Course 3: Chapter 6: Transformations

Standard	IXL skills
Lesson 1: Translations	1. Translations: graph the image XUS 2. Translations: find the coordinates RUP 3. Translations: write the rule 6XB
Lesson 2: Reflections	1. Reflections over the x- and y-axes: graph the image 74Z 2. Reflections over the x- and y-axes: find the coordinates 5UM *Also consider* • Reflections: graph the image NBM • Reflections: find the coordinates KUX
Lesson 3: Rotations	1. Identify reflections, rotations, and translations UYL 2. Rotations: graph the image AC9 3. Rotations: find the coordinates HHS *Also consider* • Reflections and rotations: write the rule 2F8 • Rotational symmetry 7AW • Describe transformations VAY • Rotational symmetry: amount of rotation FJK
Lesson 4: Dilations	1. Dilations: graph the image 9T4 2. Dilations: find the coordinates UV9 *Also consider* • Dilations: find the scale factor 8NK
Checkpoint opportunity	1. Checkpoint: Transformations on the coordinate plane WPB

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Topic 7

Congruence and Similarity

Florida Math Course 3: Chapter 7: Congruence and Similarity

Standard	IXL skills
Lesson 1: Congruence and Transformations	1. Describe transformations VAY 2. Describe a sequence of transformations XPK 3. Sequences of congruence transformations: graph the image C53
Lesson 2: Congruence	1. Congruence statements and corresponding parts LPP 2. Side lengths and angle measures of congruent figures DSQ *Also consider* • Congruent triangles: SSS, SAS, and ASA LWT
Lesson 3: Similarity and Transformations	
Lesson 4: Properties of Similar Polygons	1. Similar figures PWN 2. Side lengths and angle measures of similar figures 79Y
Lesson 5: Similar Triangles and Indirect Measurement	1. Similarity statements KZR 2. Angle-angle criterion for similar triangles TYZ 3. Similar triangles and indirect measurement 88W
Lesson 6: Slope and Similar Triangles	
Lesson 7: Area and Perimeter of Similar Figures	1. Area and perimeter of similar figures JSK
Checkpoint opportunity	**Topic 7** 1. Checkpoint: Congruence transformations CCR 2. Checkpoint: Similarity transformations DYW **Topics 3-7** 3. Checkpoint: Triangles and transversals EPV 4. Checkpoint: Slope and linear equations S7V

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Topic 8

Volume

Florida Math Course 3: Chapter 8: Volume and Surface Area

Standard	IXL skills
Lesson 1: Volume of Cylinders	1. Volume of cylinders 8MB *Also consider* • Volume of cylinders: find the missing dimension XDD
Lesson 2: Volume of Cones	1. Volume of cones YYR
Lesson 3: Volume of Spheres	1. Volume of spheres QX7
Lesson 6: Changes in Dimensions	1. Volume of similar solids BDQ
Checkpoint opportunity	1. Checkpoint: Volume 9GB

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Topic 9

Bivariate Data

Florida Math Course 3: Chapter 9: Scatter Plots and Data Analysis

Standard	IXL skills
Lesson 1: Scatter Plots	1. Create scatter plots AVL 2. Identify trends with scatter plots GZE 3. Outliers in scatter plots RP8 4. Predictions and trends in scatter plots 3Z8 *Also consider* • Interpret scatter plots 66P • Create line graphs ERM
Lesson 2: Lines of Best Fit	1. Write equations for lines of best fit ZQ6 • *Coming soon:* Interpret lines of best fit: word problems *Also consider* • Identify lines of best fit BG7
Lesson 3: Two-Way Tables	
Lesson 4: Descriptive Statistics	1. Calculate mean, median, mode, and range HDX 2. Calculate quartiles and interquartile range 9RU 3. Choose the correct box plot X8K *Also consider* • Box plots YVZ • Interpret charts and graphs to find mean, median, mode, and range CND • Mean, median, mode, and range: find the missing number Q77 • Changes in mean, median, mode, and range 2EG
Lesson 5: Measures of Variation	1. Calculate mean absolute deviation 2H2 2. Interpret mean and mean absolute deviation WJW

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Lesson 6: Analyze Data Distributions

1. Describe distributions in line plots 63T

Also consider

- Identify an outlier G95
- Identify an outlier and describe the effect of removing it QZS

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

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Topic 10

FSA Standards Review

Standard	IXL skills
FSA Standards Review	**Review skills from previous topics. Or, use the IXL Real-Time Diagnostic to receive a personalized action plan for each student.**

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Topic 11

Investigations in Expressions, Equations, and Functions

Standard	IXL skills
A: Solving Linear Equations in One Variable	1. Solve equations: mixed review HZZ 2. Solve multi-step equations: complete the solution PGH
B: Determining Number of Solutions	1. Find the number of solutions XDE 2. Create equations with no solutions or infinitely many solutions 7TY
C: Linear Functions	**Graph linear functions** 1. Graph a line from an equation in slope-intercept form W5E 2. Graph a line from an equation in standard form 7MZ **Write linear functions** 3. Write a linear equation from a table or a graph FW2 4. Write linear functions: word problems YK6 **Applications of linear functions** 5. Interpret the slope and y-intercept of a linear function H5B • *Coming soon:* Compare linear functions: word problems **Nonlinear functions** 6. Identify linear and nonlinear functions: tables and graphs 7RG 7. Identify graphs: word problems HWC
D: Systems of Equations	1. Find the number of solutions to a system of equations UYM 2. Classify a system of equations by graphing UBP 3. Classify a system of equations WRL 4. Solve a system of equations using any method AM5

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5. Solve a system of equations using any method: word problems VHE

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