IXL Skill Alignment

Algebra 2 alignment for McGraw Hill Texas Math

Use IXL's interactive skill plan to get up-to-date skill alignments, assign skills to your students, and track progress.

www.ixl.com/math/skill-plans/mcgraw-hill-texas-math-2016-algebra-2

Chapter 0

Preparing for Advanced Algebra

Textbook section	IXL skills
Lesson 0-1: Representing Functions	1. Domain and range 78A 2. Identify functions VLL
Lesson 0-2: FOIL	1. Multiply two binomials M7Q 2. Multiply two binomials: special cases 9JN
Lesson 0-3: Factoring Polynomials	1. Factor out a monomial NMZ 2. Factor quadratics UB5 3. Factor quadratics with leading coefficient 1 S9P 4. Factor quadratics with other leading coefficients 7ED 5. Factor quadratics: special cases 56E
Lesson 0-4: Counting Techniques	1. Counting principle ZUV 2. Combinations and permutations UAB
Lesson 0-5: Adding Probabilities	1. Identify probability distributions 9QC 2. Calculate probabilities of events QRS 3. Find probabilities using two-way frequency tables HGA 4. Find probabilities using the addition rule B9L
Lesson 0-6: Multiplying Probabilities	**Independent and dependent events** 1. Identify independent events RTZ 2. Probability of independent and dependent events X5U **Conditional probability** 3. Find conditional probabilities 2M4 4. Independence and conditional probability AJC 5. Find conditional probabilities using two-way frequency tables HGC

Visit IXL's interactive skill plan at www.ixl.com/math/skill-plans/mcgraw-hill-texas-math-2016-algebra-2

Lesson 0-7: Congruent and Similar Figures	1. Similarity statements UG8 2. Identify similar figures 85X 3. Congruence statements and corresponding parts CYL
Lesson 0-8: The Pythagorean Theorem	1. Pythagorean Theorem and its converse JZF
Lesson 0-9: Measures of Center, Spread, and Position	**Measures of center and spread** 1. Mean, median, mode, and range MHB 2. Calculate quartiles and interquartile range 8H9 3. Mean absolute deviation A5C 4. Variance and standard deviation V5H **Outliers** 5. Identify an outlier TMV 6. Identify an outlier and describe the effect of removing it NRJ

Chapter 1

Equations and Inequalities

Textbook section	IXL skills
Lesson 1-1: Expressions and Formulas	1. Evaluate variable expressions involving integers T9J 2. Evaluate variable expressions involving rational numbers JDV
Lesson 1-2: Properties of Real Numbers	**Rational and irrational numbers** 1. Sort rational and irrational numbers AFH 2. Classify rational and irrational numbers D6J **Properties of real numbers** 3. Simplify variable expressions using properties PVC
Lesson 1-3: Solving Equations	**Linear equations** 1. Solve linear equations SNN 2. Solve linear equations: word problems 2BG 3. Solve linear equations: complete the solution N83 **Multi-variable equations** 4. Rearrange multi-variable equations LZD
Lesson 1-4: Solving Absolute Value Equations	1. Solve absolute value equations 2JZ 2. Graph solutions to absolute value equations 39B 3. Write absolute value equations from graphs A73
Lesson 1-5: Solving Inequalities	1. Graph inequalities RK5 2. Write inequalities from graphs NKA 3. Solve linear inequalities 98Z 4. Graph solutions to linear inequalities 2H4
Lesson 1-6: Solving Compound and Absolute Value Inequalities	1. Solve absolute value inequalities UKU 2. Graph solutions to absolute value inequalities G85

Chapter 2

Linear Relations and Functions

Textbook section	IXL skills
Lesson 2-1: Relations and Functions	1. Identify functions LBJ 2. Evaluate functions PS2
Lesson 2-2: Linear Relations and Functions	**Identify linear functions** 1. Identify linear functions from graphs and equations VMQ **Standard form** 2. Standard form: find x- and y-intercepts 8SN 3. Standard form: graph a line from an equation U6U
Lesson 2-3: Rate of Change and Slope	1. Find the slope of a linear function W67
Lesson 2-4: Writing Linear Equations	**Linear functions** 1. Graph a linear function LSG 2. Write the equation of a linear function PBE **Direct variation** 3. Write and solve direct variation equations 69A
Lesson 2-5: Scatter Plots and Lines of Regression	1. Find the equation of a regression line D9Y 2. Interpret regression lines UWX 3. Analyze a regression line of a data set 6CM
Lesson 2-6: Special Functions	1. Find values using function graphs FS8 2. Complete a table for a function graph W5Z 3. Graph an absolute value function 23W
Lesson 2-7: Parent Functions and Transformations	**Absolute value functions** 1. Transformations of absolute value functions FYJ **Linear, quadratic, and absolute value functions** 2. Function transformation rules R7X 3. Translations of functions F6J

Visit IXL's interactive skill plan at www.ixl.com/math/skill-plans/mcgraw-hill-texas-math-2016-algebra-2

4. Reflections of functions PHV
5. Dilations of functions NNY
6. Transformations of functions RSN
7. Describe function transformations KT8

Lesson 2-8: Graphing Linear and Absolute Value Inequalities

1. Graph a two-variable linear inequality RWU
2. Graph solutions to two-variable absolute value inequalities QYX
3. Write two-variable linear inequalities: word problems LLV

Chapter 3

Systems of Equations and Inequalities

Textbook section	IXL skills
Lesson 3-1: Solving Systems of Equations	**Solutions to systems of equations** 1. Is (x, y) a solution to the system of equations? NJP 2. Find the number of solutions to a system of equations P5A **Classify systems** 3. Classify a system of equations A66 **Solve by graphing** 4. Solve a system of equations by graphing M69 5. Solve a system of equations by graphing: word problems T86 **Solve using substitution** 6. Solve a system of equations using substitution BW5 7. Solve a system of equations using substitution: word problems DKW **Solve using elimination** 8. Solve a system of equations using elimination 2CN 9. Solve a system of equations using elimination: word problems ARY **Solve using any method** 10. Solve a system of equations using any method FT6 11. Solve a system of equations using any method: word problems ELG
Lesson 3-2: Solving Systems of Inequalities by Graphing	1. Is (x, y) a solution to the system of inequalities? RFY 2. Solve systems of linear inequalities by graphing U5D

Lesson 3-3: Optimization with Linear Programming

1. Find the vertices of a solution set for a system of linear inequalities FRG
2. Linear programming AY7

Lesson 3-4: Systems of Equations in Three Variables

1. Solve a system of equations in three variables using substitution X8H
2. Solve a system of equations in three variables using elimination 9S5
3. Determine the number of solutions to a system of equations in three variables XAX

Lesson 3-5: Operations with Matrices

Matrix vocabulary

1. Matrix vocabulary ST5

Operations

2. Add and subtract matrices QFX
3. Multiply a matrix by a scalar 72T
4. Add and subtract scalar multiples of matrices XFV

Lesson 3-6: Multiplying Matrices

Multiplication

1. Multiply two matrices T64

Mixed operations

2. Matrix operation rules XCW
3. Simplify matrix expressions GCE
4. Properties of matrices RA5

Lesson 3-7: Solving Systems of Equations Using Cramer's Rule

1. Determinant of a matrix KLQ

Lesson 3-8: Solving Systems of Equations Using Inverse Matrices

Inverse matrices

1. Is a matrix invertible? M8R
2. Inverse of a matrix ZAA
3. Identify inverse matrices VB6

Matrix equations

4. Solve matrix equations using inverses Y6B

Augmented matrices

5. Solve a system of equations using augmented matrices RCS

6. Solve a system of equations using augmented matrices: word problems QX5

Chapter 4

Quadratic Functions and Relations

Textbook section	IXL skills
Lesson 4-1: Graphing Quadratic Functions	**Characteristics of quadratic functions** 1. Characteristics of quadratic functions: graphs WMS 2. Characteristics of quadratic functions: equations L8C **Function tables** 3. Complete a function table: quadratic functions Q9X **Graphs** 4. Match quadratic functions and graphs QCE 5. Write a quadratic function from three points ED9
Lesson 4-2: Solving Quadratic Equations by Graphing	
Lesson 4-3: Solving Quadratic Equations by Factoring	1. Solve a quadratic equation using the zero product property TRU 2. Solve a quadratic equation by factoring CJC 3. Write a quadratic function from its zeros G2Q
Lesson 4-4: Complex Numbers	**Understand complex numbers** 1. Introduction to complex numbers 5VV **Operations with complex numbers** 2. Add and subtract complex numbers JVF 3. Multiply complex numbers VZ8 4. Complex conjugates 7U5 5. Divide complex numbers MBM 6. Add, subtract, multiply, and divide complex numbers CEN **Solve quadratic equations using square roots** 7. Solve a quadratic equation using square roots FG7

Visit IXL's interactive skill plan at www.ixl.com/math/skill-plans/mcgraw-hill-texas-math-2016-algebra-2

Lesson 4-5: Completing the Square	1. Complete the square 9MW 2. Solve a quadratic equation by completing the square NPH
Lesson 4-6: The Quadratic Formula and the Discriminant	1. Solve a quadratic equation using the quadratic formula YQH 2. Using the discriminant QHK
Lesson 4-7: Transformations of Quadratic Graphs	1. Transformations of quadratic functions KQL 2. Graph a quadratic function S9G
Lesson 4-8: Quadratic Inequalities	1. Graph solutions to quadratic inequalities DP9 2. Solve quadratic inequalities 56V

Chapter 5

Polynomials and Polynomial Functions

Textbook section	IXL skills
Lesson 5-1: Operations with Polynomials	1. Add and subtract polynomials 9A3 2. Multiply polynomials 8GN
Lesson 5-2: Dividing Polynomials	1. Divide polynomials using long division YN5 2. Divide polynomials using synthetic division D6D
Lesson 5-3: Polynomial Functions	1. Polynomial vocabulary DYB 2. Domain and range of polynomials Y86
Lesson 5-4: Analyzing Graphs of Polynomial Functions	1. Match polynomials and graphs XJU *Also consider* • Match cubic functions and graphs GYB
Lesson 5-5: Solving Polynomial Equations	**Factor polynomials** 1. Factor using a quadratic pattern QKF 2. Factor by grouping HVT 3. Factor sums and differences of cubes NJV 4. Factor polynomials A2W **Solve polynomial equations** 5. Solve polynomial equations ZCH
Lesson 5-6: The Remainder and Factor Theorems	1. Find the roots of factored polynomials PVM 2. Evaluate polynomials using synthetic division CHC
Lesson 5-7: Roots and Zeros	1. Fundamental Theorem of Algebra YS8 2. Descartes' Rule of Signs ZFB 3. Complex conjugate theorem 5WU 4. Write a polynomial from its roots BTU
Lesson 5-8: Rational Zero Theorem	1. Rational root theorem FCX

Chapter 6

Inverses and Radical Functions and Relations

Textbook section	IXL skills
Lesson 6-1: Operations on Functions	**Operations on functions** 1. Add and subtract functions QQD 2. Multiply functions 49K 3. Divide functions 9PH **Function composition** 4. Composition of linear functions: find a value MFV 5. Composition of linear functions: find an equation RSP 6. Composition of linear and quadratic functions: find a value P9T 7. Composition of linear and quadratic functions: find an equation EKJ
Lesson 6-2: Inverse Functions and Relations	1. Identify inverse functions 9KT 2. Graphs of inverse functions K2W 3. Find values of inverse functions from tables YLX 4. Find values of inverse functions from graphs Z5C 5. Find inverse functions and relations ZRQ
Lesson 6-3: Square Root Functions and Inequalities	1. Domain and range of radical functions HR9
Lesson 6-4: nth Roots	1. Find roots using a calculator SD5
Lesson 6-5: Operations with Radical Expressions	**Roots of rational numbers** 1. Roots of integers EUH 2. Roots of rational numbers HNE **Operations with radical expressions** 3. Multiply radical expressions PUM 4. Simplify radical expressions involving fractions CCU

Visit IXL's interactive skill plan at www.ixl.com/math/skill-plans/mcgraw-hill-texas-math-2016-algebra-2

5. Add and subtract radical expressions L46

Simplify radical expressions

6. Simplify radical expressions with variables I LQX
7. Simplify radical expressions with variables II QGZ
8. Nth roots U42
9. Simplify radical expressions using the distributive property QAX
10. Simplify radical expressions using conjugates FX7

Lesson 6-6: Rational Exponents

Evaluate rational exponents

1. Evaluate rational exponents KJX

Simplify expressions with rational exponents

2. Multiplication with rational exponents LMC
3. Division with rational exponents AN5
4. Power rule V2J
5. Simplify expressions involving rational exponents I 2VX
6. Simplify expressions involving rational exponents II U96

Lesson 6-7: Solving Radical Equations and Inequalities

1. Solve radical equations EHE

Chapter 7

Exponential and Logarithmic Functions and Relations

Textbook section	IXL skills
Lesson 7-1: Graphing Exponential Functions	1. Evaluate exponential functions LWE 2. Match exponential functions and graphs PCX
Lesson 7-2: Solving Exponential Equations and Inequalities	1. Solve exponential equations by rewriting the base YQY 2. Exponential growth and decay: word problems TYQ
Lesson 7-3: Logarithms and Logarithmic Functions	1. Domain and range of logarithmic functions GLL 2. Convert between exponential and logarithmic form: rational bases TPA
Lesson 7-4: Solving Logarithmic Equations and Inequalities	
Lesson 7-5: Properties of Logarithms	1. Identify properties of logarithms N59 2. Product property of logarithms CW9 3. Quotient property of logarithms ZNT 4. Power property of logarithms 7T3 5. Properties of logarithms: mixed review 5LL 6. Evaluate logarithms using properties RNH
Lesson 7-6: Common Logarithms	**Evaluate logarithms** 1. Evaluate logarithms GBR 2. Change of base formula J2R **Solve logarithmic equations** 3. Solve logarithmic equations I BXU 4. Solve logarithmic equations II RLX **Solve exponential equations** 5. Solve exponential equations using common logarithms 9F2

Lesson 7-7: Base e and Natural Logarithms

Convert between forms

1. Convert between natural exponential and logarithmic form 5KM
2. Convert between exponential and logarithmic form: all bases 8RK

Evaluate natural logarithms

3. Evaluate natural logarithms XG9

Solve exponential equations

4. Solve exponential equations using natural logarithms KVL
5. Continuously compounded interest: word problems 5GU

Lesson 7-8: Using Exponential and Logarithmic Functions

1. Compound interest: word problems YJW

Chapter 8

Rational Functions and Relations

Textbook section	IXL skills
Lesson 8-1: Multiplying and Dividing Rational Expressions	1. Simplify rational expressions 37N 2. Multiply and divide rational expressions MG2
Lesson 8-2: Adding and Subtracting Rational Expressions	1. Add and subtract rational expressions FEX 2. Simplify complex fractions YD8
Lesson 8-3: Graphing Reciprocal Functions	1. Rational functions: asymptotes and excluded values 7JJ
Lesson 8-4: Graphing Rational Functions	
Lesson 8-5: Variation Functions	**Classify variation** 1. Classify variation C9D **Constant of variation** 2. Find the constant of variation PXE **Write and solve variation equations** 3. Write and solve direct variation equations 69A 4. Write and solve inverse variation equations PNY 5. Write joint and combined variation equations I ZFJ 6. Write joint and combined variation equations II W2Z 7. Solve variation equations JZ9
Lesson 8-6: Solving Rational Equations and Inequalities	1. Solve rational equations CHP

Chapter 9
Conic Sections

Textbook section	IXL skills
Lesson 9-1: Midpoint and Distance Formulas	1. Midpoint formula: find the midpoint 2YG 2. Distance formula 59F
Lesson 9-2: Parabolas	**Characteristics of parabolas** 1. Identify the direction a parabola opens HHX 2. Find the vertex of a parabola 2NE 3. Find the focus or directrix of a parabola TNG 4. Find the axis of symmetry of a parabola AAY **Vertex form** 5. Write equations of parabolas in vertex form from graphs C6U 6. Write equations of parabolas in vertex form using properties EPR **General form** 7. Convert equations of parabolas from general to vertex form 39W 8. Find properties of a parabola from equations in general form B7U **Graph parabolas** 9. Graph parabolas YNJ
Lesson 9-3: Circles	**Characteristics of circles** 1. Find the center of a circle U6E 2. Find the radius or diameter of a circle 5Q2 **Standard form** 3. Write equations of circles in standard form from graphs ZLA 4. Write equations of circles in standard form using properties SHN

General form

5. Convert equations of circles from general to standard form D2H
6. Find properties of circles from equations in general form 2PA

Graph circles

7. Graph circles 2PL

Lesson 9-4: Ellipses

Characteristics of ellipses

1. Find the center, vertices, or co-vertices of an ellipse Z2U
2. Find the length of the major or minor axis of an ellipse YE2
3. Find the foci of an ellipse 86P

Standard form

4. Write equations of ellipses in standard form from graphs HRR
5. Write equations of ellipses in standard form using properties 6W9

General form

6. Convert equations of ellipses from general to standard form NWQ
7. Find properties of ellipses from equations in general form S7E

Lesson 9-5: Hyperbolas

Characteristics of hyperbolas

1. Find the center of a hyperbola MN7
2. Find the vertices of a hyperbola DCW
3. Find the length of the transverse or conjugate axes of a hyperbola BYZ
4. Find the equations for the asymptotes of a hyperbola 49W
5. Find the foci of a hyperbola GNS

Standard form

6. Write equations of hyperbolas in standard form from graphs MND
7. Write equations of hyperbolas in standard form using properties 47M

General form

8. Convert equations of hyperbolas from general to standard form PFG
9. Find properties of hyperbolas from equations in general form RME

Lesson 9-6: Identifying Conic Sections

Lesson 9-7: Solving Linear-Nonlinear Systems

1. Solve a system of linear and quadratic equations: parabolas HVZ

Also consider

- Solve a system of quadratic equations by graphing: parabolas PJQ
- Solve a nonlinear system of equations GCC

Chapter 10

Sequences and Series

Textbook section	IXL skills
Lesson 10-1: Sequences as Functions	1. Find terms of an arithmetic sequence C8R 2. Find terms of a geometric sequence BHV
Lesson 10-2: Arithmetic Sequences and Series	1. Write a formula for an arithmetic sequence H82 2. Find the sum of an arithmetic series W6A
Lesson 10-3: Geometric Sequences and Series	1. Identify arithmetic and geometric series HS9 2. Write a formula for a geometric sequence Q5V 3. Find the sum of a finite geometric series 9KQ
Lesson 10-4: Infinite Geometric Series	1. Introduction to sigma notation DHQ 2. Convergent and divergent geometric series DY8 3. Find the value of an infinite geometric series ZVH 4. Write a repeating decimal as a fraction BPU
Lesson 10-5: Recursion and Iteration	1. Classify formulas and sequences 2UZ 2. Evaluate recursive formulas for sequences QB9 3. Write a formula for a recursive sequence ZAH 4. Sequences: mixed review 2MX
Lesson 10-6: The Binomial Theorem	1. Pascal's triangle G7Y 2. Pascal's triangle and the Binomial Theorem A7M 3. Binomial Theorem I CWS 4. Binomial Theorem II NEU
Lesson 10-7: Proof by Mathematical Induction	

Chapter 11

Statistics and Probability

Textbook section	IXL skills
Lesson 11-1: Designing a Study	1. Identify biased samples CH7 2. Experiment design BKR
Lesson 11-2: Distributions of Data	1. Identify an outlier TMV
Lesson 11-3: Probability Distributions	**Discrete and continuous random variables** 1. Identify discrete and continuous random variables ETC **Probability distribution** 2. Write a discrete probability distribution RH6 3. Graph a discrete probability distribution 5KH **Statistics of random variables** 4. Expected values of random variables 3K9 5. Variance of random variables KC5 6. Standard deviation of random variables SSU
Lesson 11-4: The Binomial Distribution	1. Find probabilities using the binomial distribution ZGX
Lesson 11-5: The Normal Distribution	1. Find probabilities using the normal distribution I QA9 2. Find probabilities using the normal distribution II 6M9 3. Find z-values PAJ 4. Find values of normal variables 9B3
Lesson 11-6: Confidence Intervals and Hypothesis Testing	1. Find confidence intervals for population means JVK 2. Interpret confidence intervals for population means MNM

Visit IXL's interactive skill plan at www.ixl.com/math/skill-plans/mcgraw-hill-texas-math-2016-algebra-2

Chapter 12
Trigonometric Functions

Textbook section	IXL skills
Lesson 12-1: Trigonometric Functions in Right Triangles	**Special right triangles** 1. Special right triangles NUF **Use trigonometric ratios** 2. Trigonometric ratios: sin, cos, and tan PQJ 3. Trigonometric ratios: csc, sec, and cot P82 4. Trigonometric ratios: find a side length MHJ **Use inverses of trigonometric ratios** 5. Inverses of sin, cos, and tan: degrees FCQ 6. Trigonometric ratios: find an angle measure 84G **Solve a right triangle** 7. Solve a right triangle DPP
Lesson 12-2: Angles and Angle Measure	**Angles** 1. Graphs of angles PSG 2. Coterminal angles 7CV **Radians and angle measure** 3. Convert between radians and degrees EDC 4. Radians and arc length UA5
Lesson 12-3: Trigonometric Functions of General Angles	1. Quadrants ANN 2. Reference angles BRP 3. Sin, cos, and tan of special angles 6H8 4. Csc, sec, and cot of special angles PAE
Lesson 12-4: Law of Sines	1. Area of a triangle: sine formula LNQ 2. Area of a triangle: Law of Sines 5NP 3. Law of Sines BSY
Lesson 12-5: Law of Cosines	1. Law of Cosines ZQB 2. Solve a triangle YPP

Visit IXL's interactive skill plan at www.ixl.com/math/skill-plans/mcgraw-hill-texas-math-2016-algebra-2

Lesson 12-6: Circles and Periodic Functions	1. Find trigonometric ratios using the unit circle ZF7
Lesson 12-7: Graphing Trigonometric Functions	1. Find properties of sine and cosine functions: degrees 7JQ 2. Graph sine and cosine functions: degrees QFZ
Lesson 12-8: Translations of Trigonometric Graphs	1. Write equations of sine and cosine functions from graphs 5XN 2. Write equations of sine and cosine functions using properties CWP 3. Graph translations of sine and cosine functions 9D7
Lesson 12-9: Inverse Trigonometric Functions	1. Inverses of sin, cos, and tan: radians JVB

Chapter 13

Trigonometric Identities and Equations

Textbook section	IXL skills
Lesson 13-1: Trigonometric Identities	1. Complementary angle identities 89X 2. Find trigonometric ratios using a Pythagorean or reciprocal identity XJJ 3. Find trigonometric ratios using multiple identities F8F 4. Symmetry and periodicity of trigonometric functions YBJ
Lesson 13-2: Verifying Trigonometric Identities	
Lesson 13-3: Sum and Difference of Angles Identities	1. Trigonometric sum and difference identities A2Y
Lesson 13-4: Double-Angle and Half-Angle Identities	
Lesson 13-5: Solving Trigonometric Equations	1. Solve trigonometric equations I CQB 2. Solve trigonometric equations II SNX