# Standards Correlations

Each lesson in this *Integrated Pathway: Mathematics I* program was written specifically to address the Common Core State Standards. Each lesson lists the standards covered in all the sub-lessons, and each sub-lesson lists the standards addressed in that particular section. In this section, you'll find a comprehensive list mapping the sub-lessons to the CCSS.

## Guide to Common Core State Standards Annotation

As you use this program, you will come across a symbol included with the Common Core standards for some of the lessons and activities. These symbols are explained below.

**Symbol: ⋆**

**Denotes: Modeling Standards**

Modeling is best interpreted not as a collection of isolated topics but rather in relation to other standards. Making mathematical models is a Standard for Mathematical Practice, and specific modeling standards appear throughout the high school standards indicated by a star symbol (⋆).

From http://www.walch.com/CCSS/00003

**Symbol: (+)**

**Denotes: College and Career Readiness Standards**

Advanced mathematics standards that are required in higher-level courses such as advanced statistics may also be included in lower-level courses. These additional standards are denoted by (+). According to the Common Core State Standards Initiative, "the evidence concerning college and career readiness shows clearly that the knowledge, skills, and practices important for readiness include a great deal of mathematics prior to the boundary defined by (+) symbols in these standards. Indeed, some of the highest priority content for college and career readiness comes from Grades 6–8."

From http://www.walch.com/CCSS/00004

**Connections to Future Courses**

This section provides a map between topics introduced in each unit of this course and subsequent courses where each topic is revisited and built upon.

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## CCSS INTEGRATED PATHWAY: MATHEMATICS I STANDARDS CORRELATIONS

| Unit 1: Relationships Between Quantities | | | |
|---|---|---|---|
| **Lesson** | **Sub-lesson number** | **Title** | **Standard(s)** |
| **Lesson 1** | **Interpreting Structure in Expressions** | | |
| | 1.1.1 | Identifying Terms, Factors, and Coefficients | A–SSE.1a★ |
| | 1.1.2 | Interpreting Linear and Exponential Expressions | A–SSE.1b★ |
| **Lesson 2** | **Creating Equations and Inequalities in One Variable** | | |
| | 1.2.1 | Creating Linear Equations in One Variable | A–CED.1★<br>N–Q.2★<br>N–Q.3★ |
| | 1.2.2 | Creating Linear Inequalities in One Variable | A–CED.1★ |
| | 1.2.3 | Creating Exponential Equations | A–CED.1★ |
| **Lesson 3** | **Creating and Graphing Equations in Two Variables** | | |
| | 1.3.1 | Creating and Graphing Linear Equations in Two Variables | A–CED.2★<br>N–Q.1★ |
| | 1.3.2 | Creating and Graphing Exponential Equations | A–CED.2★<br>N–Q.1★ |
| **Lesson 4** | **Representing Constraints** | | |
| | 1.4.1 | Representing Constraints | A–CED.3★ |
| **Lesson 5** | **Rearranging Formulas** | | |
| | 1.5.1 | Rearranging Formulas | A–CED.4★ |

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## CCSS INTEGRATED PATHWAY: MATHEMATICS I STANDARDS CORRELATIONS

| Unit 2: Linear and Exponential Relationships | | | |
|---|---|---|---|
| **Lesson** | **Sub-lesson number** | **Title** | **Standard(s)** |
| **Lesson 1** | **Graphs As Solution Sets and Function Notation** | | |
| | 2.1.1 | Graphing the Set of All Solutions | A–REI.10 |
| | 2.1.2 | Intersecting Graphs | A–REI.11★ |
| | 2.1.3 | Domain and Range | F–IF.1 |
| | 2.1.4 | Function Notation and Evaluating Functions | F–IF.2 |
| **Lesson 2** | **Solving Linear Inequalities in Two Variables and Systems of Inequalities** | | |
| | 2.2.1 | Solving Linear Inequalities in Two Variables | A–REI.12 |
| | 2.2.2 | Solving Systems of Linear Inequalities | A–REI.12 |
| **Lesson 3** | **Sequences As Functions** | | |
| | 2.3.1 | Sequences As Functions | F–IF.3 |
| **Lesson 4** | **Interpreting Graphs of Functions** | | |
| | 2.4.1 | Identifying Key Features of Linear and Exponential Graphs | F–IF.4★<br>F–IF.5★ |
| | 2.4.2 | Average Rate of Change | F–IF.6★<br>F–LE.1a★ |
| | 2.4.3 | Recognizing Average Rate of Change | F–IF.6★<br>F–LE.1b★<br>F–LE.1c★ |
| **Lesson 5** | **Analyzing Linear and Exponential Functions** | | |
| | 2.5.1 | Graphing Linear Functions | F–IF.7a★ |
| | 2.5.2 | Graphing Exponential Functions | F–IF.7e★ |

| Lesson | Sub-lesson number | Title | Standard(s) |
|---|---|---|---|
| **Lesson 6** | **Comparing Functions** | | |
| | 2.6.1 | Comparing Linear Functions | F–IF.9 |
| | 2.6.2 | Comparing Exponential Functions | F–IF.9 |
| | 2.6.3 | Comparing Linear to Exponential Functions | F–LE.3★ |
| **Lesson 7** | **Building Functions** | | |
| | 2.7.1 | Building Functions from Context | F–BF.1a★ |
| | 2.7.2 | Constructing Functions from Graphs and Tables | F–LE.2★ |
| **Lesson 8** | **Operating on Functions and Transformations** | | |
| | 2.8.1 | Operating on Functions | F–BF.1b★ |
| | 2.8.2 | Transformations of Linear and Exponential Functions | F–BF.3 |
| **Lesson 9** | **Arithmetic and Geometric Sequences** | | |
| | 2.9.1 | Arithmetic Sequences | F–BF.2★ |
| | 2.9.2 | Geometric Sequences | F–BF.2★ |
| **Lesson 10** | **Interpreting Parameters** | | |
| | 2.10.1 | Interpreting Parameters | F–LE.5★ |

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## CCSS INTEGRATED PATHWAY: MATHEMATICS I STANDARDS CORRELATIONS

| Unit 3: Reasoning with Equations | | | |
|---|---|---|---|
| **Lesson** | **Sub-lesson number** | **Title** | **Standard(s)** |
| **Lesson 1** | **Solving Equations and Inequalities** | | |
| | 3.1.1 | Properties of Equality | A–REI.1 |
| | 3.1.2 | Solving Linear Equations | A–REI.3 |
| | 3.1.3 | Solving Linear Inequalities | A–REI.3 |
| | 3.1.4 | Solving Exponential Equations | A–REI.1 |
| **Lesson 2** | **Solving Systems of Equations** | | |
| | 3.2.1 | Solving Systems of Linear Equations by Substitution and Elimination | A–REI.5<br>A–REI.6 |
| | 3.2.2 | Solving Systems of Linear Equations by Graphing | A–REI.6 |

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## CCSS INTEGRATED PATHWAY: MATHEMATICS I STANDARDS CORRELATIONS

| Unit 4: Descriptive Statistics | | | |
|---|---|---|---|
| **Lesson** | **Sub-lesson number** | **Title** | **Standard(s)** |
| **Lesson 1** | **Working with a Single Measurement Variable** | | |
| | 4.1.1 | Representing Data Sets | S–ID.1★ |
| | 4.1.2 | Comparing Data Sets | S–ID.2★ |
| | 4.1.3 | Interpreting Data Sets | S–ID.3★ |
| **Lesson 2** | **Working with Two Categorical and Quantitative Variables** | | |
| | 4.2.1 | Summarizing Data Using Two-Way Frequency Tables | S–ID.5★ |
| | 4.2.2 | Solving Problems Given Functions Fitted to Data | S–ID.6a★ |
| | 4.2.3 | Analyzing Residuals | S–ID.6b★ |
| | 4.2.4 | Fitting Linear Functions to Data | S–ID.6c★ |
| **Lesson 3** | **Interpreting Linear Models** | | |
| | 4.3.1 | Interpreting Slope and *y*-intercept | S–ID.7★ |
| | 4.3.2 | Calculating and Interpreting the Correlation Coefficient | S–ID.8★ |
| | 4.3.3 | Distinguishing Between Correlation and Causation | S–ID.9★ |

## CCSS INTEGRATED PATHWAY: MATHEMATICS I STANDARDS CORRELATIONS

| Unit 5: Congruence, Proof, and Constructions | | | |
|---|---|---|---|
| **Lesson** | **Sub-lesson number** | **Title** | **Standard(s)** |
| **Lesson 1** | **Introducing Transformations** | | |
| | 5.1.1 | Defining Terms | G–CO.1 |
| | 5.1.2 | Transformations As Functions | G–CO.2 |
| | 5.1.3 | Applying Lines of Symmetry | G–CO.3 |
| **Lesson 2** | **Defining and Applying Rotations, Reflections, and Translations** | | |
| | 5.2.1 | Defining Rotations, Reflections, and Translations | G–CO.4 |
| | 5.2.2 | Applying Rotations, Reflections, and Translations | G–CO.5 |
| **Lesson 3** | **Constructing Lines, Segments, and Angles** | | |
| | 5.3.1 | Copying Segments and Angles | G–CO.12 |
| | 5.3.2 | Bisecting Segments and Angles | G–CO.12 |
| | 5.3.3 | Constructing Perpendicular and Parallel Lines | G–CO.12 |
| **Lesson 4** | **Constructing Polygons** | | |
| | 5.4.1 | Constructing Equilateral Triangles Inscribed in Circles | G–CO.13 |
| | 5.4.2 | Constructing Squares Inscribed in Circles | G–CO.13 |
| | 5.4.3 | Constructing Regular Hexagons Inscribed in Circles | G–CO.13 |
| **Lesson 5** | **Exploring Congruence** | | |
| | 5.5.1 | Describing Rigid Motions and Predicting the Effects | G–CO.6 |
| | 5.5.2 | Defining Congruence in Terms of Rigid Motions | G–CO.6 |
| **Lesson 6** | **Congruent Triangles** | | |
| | 5.6.1 | Triangle Congruency | G–CO.7 |
| | 5.6.2 | Explaining ASA, SAS, and SSS | G–CO.8 |

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## CCSS INTEGRATED PATHWAY: MATHEMATICS I STANDARDS CORRELATIONS

| Unit 6: Connecting Algebra and Geometry Through Coordinates | | | |
|---|---|---|---|
| **Lesson** | **Sub-lesson number** | **Title** | **Standard(s)** |
| **Lesson 1** | **Slope and Distance** | | |
| | 6.1.1 | Using Coordinates to Prove Geometric Theorems with Slope and Distance | G–GPE.4<br>G–GPE.5 |
| | 6.1.2 | Working with Parallel and Perpendicular Lines | G–GPE.5 |
| **Lesson 2** | **Lines and Line Segments** | | |
| | 6.2.1 | Calculating Perimeter and Area | G–GPE.7★ |

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## TOPICS FROM FUTURE COURSES: CCSS INTEGRATED PATHWAY MATHEMATICS I

| Math I | Topic introduced | Course/unit where addressed | How addressed |
|---|---|---|---|
| **Unit 1** | Identifying and interpreting the effects of terms, factors, and coefficients of linear, exponential, and quadratic expressions | Math II Unit 3 | includes more complex quadratic expressions and introduces the standard form of a quadratic expression |
| | | Math III Units 1 and 2A | extended to include higher-order polynomials |
| | | Math III Unit 2B | extended to rational expressions |
| | Creating and graphing with linear and simple exponential equations | Math II Unit 2 | creating and graphing functions by using quadratic, square root, cube root, absolute value, step, and piecewise functions |
| | | Math II Unit 3 | extended to quadratic and rational functions and to graphing higher-order polynomial functions |
| | | Math III Unit 2A | extended to rational and radical functions |
| | | Math III Unit 2B | introduces students to graphing logarithmic and periodic functions |
| | | Math III Unit 4A | addressed using more complex exponential equations |
| | | Math III Unit 4B | extended to applying the creating and graphing principles |
| | Constraints in terms of linear relationships | Math II Unit 3, Math III Unit 4B | addressed using linear, exponential, quadratic, and logarithmic models |
| | Rearranging linear formulas | Math II Unit 3 | extended to rearranging quadratic expressions |
| | | Math III Unit 4B | extended to rearranging all function families |

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## TOPICS FROM FUTURE COURSES: CCSS INTEGRATED PATHWAY MATHEMATICS I

| Math I | Topic introduced | Course/unit where addressed | How addressed |
|---|---|---|---|
| **Unit 2** | Function notation (concepts regarding domain, range, intersecting functions, and graphing solution sets) | Math II Unit 2 | extended to describing transformations of functions |
| | | Math III Unit 4B | includes combinations of functions |
| | Linear inequalities | Math II Unit 3 | extended to quadratic inequalities and rational inequalities |
| | | Math III Unit 4B | extended to linear, exponential, quadratic, and logarithmic functions |
| | Sequences | Math III Unit 2A | applied to more complex sequences and series |
| | Analyzing the features of graphs of linear functions | Math II Unit 2 | extended to exponential and quadratic functions |
| | | Math III Unit 2A | applied to polynomial functions |
| | | Math III Unit 2B | extended to periodic functions |
| | | Math III Unit 4A | expanded to logarithmic functions |
| | Domain | Math IV | restricts the domain of trigonometric functions in order to find the inverses of these functions |

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## TOPICS FROM FUTURE COURSES: CCSS INTEGRATED PATHWAY MATHEMATICS I

| Math I | Topic introduced | Course/unit where addressed | How addressed |
|---|---|---|---|
| **Unit 3** | Reasoning with equations (linear equations) | Math II Unit 3 | extended to quadratic functions |
| | | Math III Unit 2B | extended to rational and radical functions |
| | Systems of equations (linear-linear) | Math II Unit 3 | includes linear-quadratic systems |
| | | Math III Unit 2A | extended to linear-polynomial, polynomial-polynomial, and absolute value-polynomial systems |
| | | Math III Unit 2B | extended to linear-rational and linear-radical systems |
| | | Math IV | includes systems with vectors and matrices |

## TOPICS FROM FUTURE COURSES: CCSS INTEGRATED PATHWAY MATHEMATICS I

| Math I | Topic introduced | Course/unit where addressed | How addressed |
|---|---|---|---|
| **Unit 4** | Descriptive statistics | Math III Unit 1 | extended to using statistics to draw conclusions |

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## TOPICS FROM FUTURE COURSES: CCSS INTEGRATED PATHWAY MATHEMATICS I

| Math I | Topic introduced | Course/unit where addressed | How addressed |
|---|---|---|---|
| **Unit 5** | Transformations and connections between functions and geometric transformations; congruence | Math II Unit 5 | includes similarity transformations |
| | | Math II Unit 6 | extended to coordinate geometry and proofs |
| | Perimeter and area | Math II Unit 6 | extended to area and volume |
| | | Math III Unit 4B | includes density and cross sections of three-dimensional objects |
| | Geometric figures (points, lines, and planes) | Math II Unit 5 | extended to parallel lines cut by a transversal and other relationships between angle pairs, other special triangles, and parallelograms |
| | | Math II Unit 6 | includes circles and special segments |
| | | Math III Unit 4B | extended to three-dimensional objects in modeling and design |

## TOPICS FROM FUTURE COURSES: CCSS INTEGRATED PATHWAY MATHEMATICS I

| Math I | Topic introduced | Course/unit where addressed | How addressed |
|---|---|---|---|
| **Unit 6** | Connecting algebra and geometry | Math II Unit 2 | extended to transformations of quadratic functions |
| | | Math III Unit 3 | extended to proofs of the laws of sines and cosines |
| | | Math III Units 3 and 4A | includes transformations of families of functions, evaluating trigonometric functions, and graphing trigonometric functions |