# Standards Correlations

Each lesson in the *CCSS Algebra I* program was written specifically to address the Common Core State Standards. Each lesson lists the standards covered in all the lessons, and each lesson lists the standards addressed in that particular section. In this section, you'll find a comprehensive list mapping the 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. The description of the star symbol is found below, taken verbatim from the Common Core State Standards Initiative website, at www.corestandards.org.

**Symbol: ⋆**

**Denotes: Modeling Standards**

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important "processes and proficiencies" with longstanding importance in mathematics education. Specific modeling standards appear throughout the high school standards indicated by a star symbol (⋆).

From http://www.walch.com/CCSS/00006

**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.

| Lesson | Lesson number | Title | Standard(s) |
|---|---|---|---|
| **Unit 1: Relationships Between Quantities and Reasoning with Equations** | | | |
| **Topic A** | **Interpreting Structure in Expressions** | | |
| | 1.1 | Identifying Terms, Factors, and Coefficients | A.SSE.A.1a★ |
| | 1.2 | Interpreting Linear and Exponential Expressions | A.SSE.A.1b★ |
| **Topic B** | **Creating Equations and Inequalities in One Variable** | | |
| | 1.3 | Creating Linear Equations in One Variable | A.CED.A.1★<br>N.Q.A.2★<br>N.Q.A.3★ |
| | 1.4 | Creating Linear Inequalities in One Variable | A.CED.A.1★ |
| | 1.5 | Creating Exponential Equations | A.CED.A.1★ |
| **Topic C** | **Creating and Graphing Equations in Two Variables** | | |
| | 1.6 | Creating and Graphing Linear Equations in Two Variables | A.CED.A.2★<br>N.Q.A.1★ |
| | 1.7 | Creating and Graphing Exponential Equations | A.CED.A.2★<br>N.Q.A.1★ |
| **Topic D** | **Rearranging Formulas** | | |
| | 1.8 | Rearranging Formulas | A.CED.A.4★ |
| **Topic E** | **Solving Equations and Inequalities** | | |
| | 1.9 | Properties of Equality | A.REI.A.1 |
| | 1.10 | Solving Linear Equations | A.REI.B.3 |
| | 1.11 | Solving Linear Inequalities | A.REI.B.3 |
| | **Representing Constraints** | | |
| **Topic F** | 1.12 | Representing Constraints | A.CED.A.3★ |
| **Unit 2: Linear and Exponential Relationships** | | | |
| **Topic A** | **Working with Rational Exponents** | | |
| | 2.1 | Working with Rational Exponents | N.RN.A.1<br>N.RN.A.2 |
| **Topic B** | **Graphs As Solution Sets and Function Notation** | | |
| | 2.2 | Graphing the Set of All Solutions | A.REI.D.10 |
| | 2.3 | Intersecting Graphs | A.REI.D.11★ |
| | 2.4 | Domain and Range | F.IF.A.1 |
| | 2.5 | Function Notation and Evaluating Functions | F.IF.A.2 |

| Lesson | Lesson number | Title | Standard(s) |
|---|---|---|---|
| **Topic C** | **Solving Systems of Linear Equations** | | |
| | 2.6 | Solving Systems of Linear Equations by Substitution and Elimination | A.REI.C.5<br>A.REI.C.6 |
| | 2.7 | Solving Systems of Linear Equations by Graphing | A.REI.C.6 |
| **Topic D** | **Solving Linear Inequalities in Two Variables and Systems of Inequalities** | | |
| | 2.8 | Solving Linear Inequalities in Two Variables | A.REI.D.12 |
| | 2.9 | Solving Systems of Linear Inequalities | A.REI.D.12 |
| **Topic E** | **Sequences As Functions** | | |
| | 2.10 | Sequences As Functions | F.IF.A.3 |
| **Topic F** | **Interpreting Graphs of Functions** | | |
| | 2.11 | Identifying Key Features of Linear and Exponential Graphs | F.IF.B.4★<br>F.IF.B.5★ |
| | 2.12 | Average Rate of Change | F.IF.B.6★<br>F.LE.A.1a★ |
| | 2.13 | Recognizing Average Rate of Change | F.IF.B.6★<br>F.LE.A.1b★<br>F.LE.A.1c★ |
| **Topic G** | **Analyzing Linear and Exponential Functions** | | |
| | 2.14 | Graphing Linear Functions | F.IF.C.7a★ |
| | 2.15 | Graphing Exponential Functions | F.IF.C.7e★ |
| **Topic H** | **Comparing Functions** | | |
| | 2.16 | Comparing Linear Functions | F.IF.C.9 |
| | 2.17 | Comparing Exponential Functions | F.IF.C.9 |
| | 2.18 | Comparing Linear to Exponential Functions | F.LE.A.3★ |
| **Topic I** | **Building Functions** | | |
| | 2.19 | Building Functions from Context | F.BF.Aa★ |
| | 2.20 | Constructing Functions from Graphs and Tables | F.LE.A.2★ |
| **Topic J** | **Operating on Functions and Transformations** | | |
| | 2.21 | Operating on Functions | F.BF.A.1b★ |
| | 2.22 | Transformations of Linear and Exponential Functions | F.BF.B.3 |
| **Topic K** | **Arithmetic and Geometric Sequences** | | |
| | 2.23 | Arithmetic Sequences | F.BF.A.2★ |
| | 2.24 | Geometric Sequences | F.BF.A.2★ |
| **Topic L** | **Interpreting Parameters** | | |
| | 2.25 | Interpreting Parameters | F.LE.B.5★ |

| Unit 3: Descriptive Statistics | | | |
|---|---|---|---|
| **Lesson** | **Lesson number** | **Title** | **Standard(s)** |
| **Topic A** | **Working with a Single Measurement Variable** | | |
| | 3.1 | Representing Data Sets | S.ID.A.1★ |
| | 3.2 | Comparing Data Sets | S.ID.A.2★ |
| | 3.3 | Interpreting Data Sets | S.ID.A.3★ |
| **Topic B** | **Working with Two Categorical and Quantitative Variables** | | |
| | 3.4 | Summarizing Data Using Two-Way Frequency Tables | S.ID.B.5★ |
| | 3.5 | Solving Problems Given Functions Fitted to Data | S.ID.B.6a★ |
| | 3.6 | Analyzing Residuals | S.ID.B.6b★ |
| | 3.7 | Fitting Linear Functions to Data | S.ID.B.6c★ |
| **Topic C** | **Interpreting Linear Models** | | |
| | 3.8 | Interpreting Slope and *y*-intercept | S.ID.C.7★ |
| | 3.9 | Calculating and Interpreting the Correlation Coefficient | S.ID.C.8★ |
| | 3.10 | Distinguishing Between Correlation and Causation | S.ID.C.9★ |
| **Unit 4: Expressions and Equations** | | | |
| **Lesson** | **Lesson number** | **Title** | **Standard(s)** |
| **Topic A** | **Interpreting Structure in Expressions** | | |
| | 4.1 | Interpreting Parts of an Expression | A.SSE.A.1a★ |
| | 4.2 | Interpreting Quadratic and Exponential Expressions | A.SSE.A.1b★ |
| **Topic B** | **Operating with Polynomials** | | |
| | 4.3 | Adding and Subtracting Polynomials | A.APR.A.1 |
| | 4.4 | Multiplying Polynomials | A.APR.A.1 |
| **Topic C** | **Writing Exponential Expressions in Equivalent Forms** | | |
| | 4.5 | Writing Exponential Expressions in Equivalent Forms | A.SSE.B.3c★ |

| | | | |
|---|---|---|---|
| **Topic D** | **Creating and Solving Quadratic Equations in One Variable** | | |
| | 4.6 | Taking the Square Root of Both Sides | A.CED.A.1★<br>A.REI.B.4b |
| | 4.7 | Factoring Expressions by the Greatest Common Factor | A.SSE.A.2 |
| | 4.8 | Factoring Expressions with $a = 1$ | A.SSE.A.2 |
| | 4.9 | Factoring Expressions with $a > 1$ | A.SSE.A.2 |
| | 4.10 | Solving Quadratic Equations by Factoring | A.SSE.A.2<br>A.CED.A.1★<br>A.REI.B.4b |
| | 4.11 | Completing the Square | A.SSE.A.2<br>A.CED.A.1★<br>A.REI.B.4a<br>A.REI.B.4b |
| | 4.12 | Applying the Quadratic Formula | A.CED.A.1★<br>A.REI.B.4a<br>A.REI.B.4b |
| | 4.13 | Solving Quadratic Inequalities | A.SSE.A.2<br>A.CED.A.1★<br>A.REI.B.4b |
| **Topic E** | **Creating Quadratic Equations in Two or More Variables** | | |
| | 4.14 | Creating and Graphing Equations Using Standard Form | A.CED.A.2★<br>A.SSE.B.3a★ |
| | 4.15 | Creating and Graphing Equations Using the *x*-intercepts | A.CED.A.2★<br>A.SSE.B.3a★ |
| | 4.16 | Creating and Graphing Equations Using Vertex Form | A.CED.A.2★<br>A.SSE.B.3b★ |
| | 4.17 | Rearranging Formulas Involving Quadratics | A.CED.A.4★ |
| **Topic F** | **Solving Systems of Linear and Quadratic Equations** | | |
| | 4.18 | Solving Systems Graphically | A.REI.C.7 |
| | 4.19 | Solving Systems Algebraically | A.REI.C.7 |

| Unit 5: Quadratic Functions and Modeling | | | |
|---|---|---|---|
| **Lesson** | **Lesson number** | **Title** | **Standard(s)** |
| **Topic A** | **Working with the Number System** | | |
| | 5.1 | Rational and Irrational Numbers and Their Properties | N.RN.A.2<br>N.RN.B.3 |
| **Topic B** | **Interpreting Quadratic Functions** | | |
| | 5.2 | Interpreting Key Features of Quadratic Functions | F.IF.B.4★<br>F.IF.C.7a★ |
| | 5.3 | Identifying the Domain of a Quadratic Function | F.IF.B.5★ |
| | 5.4 | Identifying the Average Rate of Change | F.IF.B.6★ |
| **Topic C** | **Analyzing Quadratic Functions** | | |
| | 5.5 | Graphing Quadratic Functions | F.IF.C.7a★ |
| | 5.6 | Interpeting Various Forms of Quadratic Functions | F.IF.C.7a★<br>F.IF.C.8a |
| **Topic D** | **Building Functions** | | |
| | 5.7 | Building Quadratic Functions from Context | F.BF.A.1a★ |
| | 5.8 | Function Operations | F.BF.A.1b★ |
| **Topic E** | **Transforming Functions** | | |
| | 5.9 | Replacing $f(x)$ with $f(x) + k$ and $f(x + k)$ | F.BF.B.3 |
| | 5.10 | Replacing $f(x)$ with $k \bullet f(x)$ and $f(k \bullet x)$ | F.BF.B.3 |
| **Topic F** | **Graphing Other Functions** | | |
| | 5.11 | Square Root and Cube Root Functions | F.IF.C.7b★ |
| | 5.12 | Absolute Value and Step Functions | F.IF.C.7b★ |
| | 5.13 | Piecewise Functions | F.IF.C.7b★ |
| **Topic G** | **Analyzing and Comparing Functions** | | |
| | 5.14 | Analyzing Exponential Functions | F.IF.C.8b |
| | 5.15 | Comparing Properties of Functions Given in Different Forms | F.IF.C.9<br>F.LE.A.3★ |
| **Topic H** | **Finding Inverse Functions** | | |
| | 5.16 | Finding Inverse Functions | F.BF.B.4a |