

PROGRAM OVERVIEW

Standards Correlations

Each lesson in the *CCSS Algebra II* 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. 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.

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Topic	Lesson number	Title	Standard(s)
Unit 1A: Polynomial Relationships			
Topic A	Polynomial Structures and Operating with Polynomials		
	1A.1	Structures of Expressions	A.SSE.A.1a★
	1A.2	Adding and Subtracting Polynomials	A.APR.A.1
	1A.3	Multiplying Polynomials	A.APR.A.1
Topic B	Operating with Complex Numbers		
	1A.4	Defining Complex Numbers, i , and i^2	N.CN.A.1
	1A.5	Adding and Subtracting Complex Numbers	N.CN.A.2
	1A.6	Multiplying Complex Numbers	N.CN.A.2
Topic C	Proving Identities		
	1A.7	Polynomial Identities	A.SSE.A.1b★ A.SSE.A.2 A.APR.C.4
	1A.8	Complex Polynomial Identities	N.CN.C.8 (+) A.SSE.A.1b★ A.SSE.A.2 A.APR.C.4
	1A.9	The Binomial Theorem	A.SSE.A.1a★ A.SSE.A.1b★ A.SSE.A.2 A.APR.C.4 A.APR.C.5 (+)
Topic D	Graphing Polynomial Functions		
	1A.10	Describing End Behavior and Turns	F.IF.C.7c★
	1A.11	The Remainder Theorem	A.APR.B.2
	1A.12	Finding Zeros	A.APR.B.3 N.CN.C.9 (+) F.IF.C.7c★
	1A.13	Solving Quadratic Equations with Complex Solutions	N.CN.C.7 N.CN.C.9 (+)
	1A.14	The Rational Root Theorem	A.APR.B.3
Topic E	Solving Systems of Equations with Polynomials		
	1A.15	Solving Systems of Equations Graphically	A.REI.D.11★

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Topic	Lesson number	Title	Standard(s)
Topic F	Geometric Series		
	1A.18	Geometric Sequences	A.SSE.B.4★
	1A.19	Sum of a Finite Geometric Series	A.SSE.B.4★
	1A.20	Sum of an Infinite Geometric Series	A.SSE.B.4★
Unit 1B: Rational and Radical Relationships			
Topic A	Operating with Rational Expressions		
	1B.1	Structures of Rational Expressions	A.SSE.A.1a★ A.SSE.A.1b★ A.SSE.A.2
	1B.2	Adding and Subtracting Rational Expressions	A.APR.D.7 (+) A.SSE.A.2
	1B.3	Multiplying Rational Expressions	A.APR.D.7 (+) A.SSE.A.2
	1B.4	Dividing Rational Expressions	A.APR.D.6 A.APR.D.7 (+) A.SSE.A.2
Topic B	Solving Rational and Radical Equations		
	1B.5	Solving Rational Equations	A.REI.A.2
	1B.6	Solving Radical Equations	A.REI.A.2
	1B.7	Solving Systems of Equations	A.REI.D.11★
Unit 2: Trigonometric Functions			
Topic A	Radians and the Unit Circle		
	2.1	Radians	F.TF.A.1 F.TF.A.2
	2.2	The Unit Circle	F.TF.A.2
	2.3	Special Angles in the Unit Circle	F.TF.A.2
	2.4	Evaluating Trigonometric Functions	F.TF.A.2
	2.5	Proving a Pythagorean Identity	F.TF.C.8
Topic B	Graphs of Trigonometric Functions		
	2.6	Periodic Phenomena and Amplitude, Frequency, and Midline	F.TF.B.5★
	2.7	Using Trigonometric Functions to Model Periodic Phenomena	F.TF.B.5★

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Unit 3A: Mathematical Modeling of Inverse, Logarithmic, and Trigonometric Functions			
Topic A	Inverses of Functions		
	3A.1	Determining Inverses of Quadratic Functions	F.BF.B.4a
	3A.2	Determining Inverses of Other Functions	F.BF.B.4a
Topic B	Modeling Logarithmic Functions		
	3A.3	Logarithmic Functions as Inverses	F.BF.B.4a F.LE.A.4★
	3A.4	Common Logarithms	F.IF.C.8 F.LE.A.4★
	3A.5	Natural Logarithms	F.IF.C.8 F.LE.A.4★
	3A.6	Graphing Logarithmic Functions	F.IF.C.7e★
	3A.7	Interpreting Logarithmic Models	F.IF.B.4★ F.IF.B.5★ F.IF.B.6★
Topic C	Modeling Trigonometric Functions		
	3A.8	Graphing the Sine Function	F.IF.C.7e★
	3A.9	Graphing the Cosine Function	F.IF.C.7e★
Unit 3B: Mathematical Modeling and Choosing a Model			
Topic A	Creating Equations		
	3B.1	Creating Equations in One Variable	A.CED.A.1★
	3B.2	Representing and Interpreting Constraints	A.CED.A.3★
	3B.3	Rearranging Formulas	A.CED.A.4★
Topic B	Transforming a Model and Combining Functions		
	3B.4	Transformations of Parent Graphs	F.BF.B.3
	3B.5	Recognizing Odd and Even Functions	F.BF.B.3
	3B.6	Combining Functions	F.BF.A.1b★

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Topic C	Comparing Properties Within and Between Functions		
	3B.7	Reading and Identifying Key Features of Real-World Situation Graphs	F.IF.B.4★ F.IF.B.5★ F.IF.B.6★
	3B.8	Calculating Average Rates of Change	F.IF.B.6★
	3B.9	Comparing Functions	F.IF.B.6★ F.IF.C.9
Topic D	Choosing a Model		
	3B.12	Linear, Exponential, and Quadratic Functions	A.CED.A.2★ F.IF.B.4★ F.IF.B.5★ F.BF.B.3
	3B.13	Piecewise, Step, and Absolute Value Functions	F.IF.B.4★ F.IF.B.5★ F.IF.C.7b★ F.BF.B.3
	3B.14	Square Root and Cube Root Functions	F.IF.B.4★ F.IF.B.5★ F.IF.C.7b★ F.BF.B.3
Unit 4: Inferences and Conclusions from Data			
Topic A	Using the Normal Curve		
	4.1	Normal Distributions and the 68–95–99.7 Rule	S.ID.A.4★
	4.2	Standard Normal Calculations	S.ID.A.4★
	4.3	Assessing Normality	S.ID.A.4★
Topic B	Populations Versus Random Samples and Random Sampling		
	4.4	Differences Between Populations and Samples	S.IC.A.1★
	4.5	Simple Random Sampling	S.IC.A.2★
	4.6	Other Methods of Random Sampling	S.IC.A.2★
Topic C	Surveys, Experiments, and Observational Studies		
	4.7	Identifying Surveys, Experiments, and Observational Studies	S.IC.B.3★
	4.8	Designing Surveys, Experiments, and Observational Studies	S.IC.B.3★

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Topic D	Estimating Sample Proportions and Sample Means		
	4.9	Estimating Sample Proportions	S.IC.B.4★
	4.10	The Binomial Distribution	S.IC.B.4★
	4.11	Estimating Sample Means	S.IC.B.4★
	4.12	Estimating with Confidence	S.IC.B.4★
Topic E	Comparing Treatments and Reading Reports		
	4.13	Evaluating Treatments	S.IC.B.5★
	4.14	Designing and Simulating Treatments	S.IC.B.5★
	4.15	Reading Reports	S.IC.B.6★
Topic F	Making and Analyzing Decisions		
	4.16	Making Decisions	S.MD.B.6★ (+)
	4.17	Analyzing Decisions	S.MD.B.7★ (+)