

Standards Correlations

Common Core State Standards Problem-Based Tasks for Mathematics II is correlated to the Common Core State Standards for high school mathematics. The table that follows lists each task's targeted Common Core State Standard(s), focus, title, and starting page number. The materials are organized in the order in which the standards are listed in the mathematics CCSS, and are grouped by high school conceptual category. Stars (*) indicate modeling standards. To access the full text of the Common Core State Standards for high school mathematics, view the PDF found at <http://www.walch.com/CCSS/00001>.

CCSS addressed	Task focus	Task title	Page number
Number and Quantity: The Real Number System			
N–RN.1 N–RN.2	Defining, Rewriting, and Evaluating Rational Exponents	Population Growth	1
N–RN.2 N–RN.3	Rational and Irrational Numbers and Their Properties	Estimating Depreciation	4
Number and Quantity: The Complex Number System			
N–CN.1	Defining Complex Numbers, i , and i^2	Representing Impedance	8
N–CN.2	Adding and Subtracting Complex Numbers	Elements in Series in a Circuit	11
N–CN.2	Multiplying Complex Numbers	Elements in Parallel in a Circuit	14
N–CN.7 N–CN.9 (+)	Solving Quadratic Equations with Complex Solutions	All Roads Lead to the Same Destination	17
N–CN.8 (+)	Extending Polynomial Identities to Include Complex Numbers	Making a Complex Expression Simple	22
Algebra: Seeing Structure in Expressions			
A–SSE.1a*	Identifying Terms, Factors, and Coefficients	Deck the Deck	27
A–SSE.1b*	Interpreting Complicated Expressions	Puppy Pen	30
A–CED.2* A–SSE.3a*	Creating and Graphing Equations Using Standard Form	Parabolic Party Streamers	34

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A–CED.2* A–SSE.3b*	Creating and Graphing Equations Using Vertex Form	Rocket Heights	41
A–SSE.3c*	Writing Exponential Expressions in Equivalent Forms	Options of Interest	45
Algebra: Arithmetic with Polynomials and Rational Expressions			
A–APR.1	Adding and Subtracting Polynomials	Cabin Perimeter	49
A–APR.1	Multiplying Polynomials	Architectural Area	52
Algebra: Creating Equations			
A–CED.1*	Creating Rational Equations	Golden Rectangles and the Golden Ratio	55
A–CED.1*	Creating Rational Inequalities	Capping Costs	59
A–CED.2*	Graphing Rational Equations	Lacrosse Stats	63
A–CED.4*	Rearranging Formulas	Selecting a Cylinder Size	68
Algebra: Reasoning with Equations and Inequalities			
A–CED.1* A–REI.4b	Taking the Square Root of Both Sides	Time to Splash	72
A–SSE.2 A–CED.1* A–REI.4b	Factoring	On the Shelf	75
A–SSE.2 A–CED.1* A–REI.4a A–REI.4b	Completing the Square	Curve Ball	79
A–CED.1* A–REI.4a A–REI.4b	Applying the Quadratic Formula	Divine Proportion	83

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A-REI.7	Solving Systems Graphically	Constant Acceleration and Constant Speed	90
A-REI.7	Solving Systems Algebraically	The Business of Bicycles	93
Functions: Interpreting Functions			
F-IF.4★	Interpreting Key Features of Quadratic Functions	One-on-One Basketball	97
F-IF.5★	Identifying the Domain of a Quadratic Function	Window Washers	101
F-IF.6★	Identifying the Average Rate of Change	Is the Maximum High Enough?	105
F-IF.7a★	Graphing Quadratic Functions	How High Can a Frog Jump?	108
F-IF.7a★ F-IF.8a	Interpreting Various Forms of Quadratic Functions	Is the Glider Safe?	112
F-IF.7b★	Square Root and Cube Root Functions	Auto Acceleration	116
F-IF.7b★	Absolute Value and Step Functions	Bike Rentals	122
F-IF.7b★	Piecewise Functions	Stop and Go	128
F-IF.8b	Analyzing Exponential Functions	Which Car Is a Better Buy?	134
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F-BF.1b★	Operating on Functions	Pushing Envelopes	142
F-BF.3	Replacing $f(x)$ with $f(x) + k$ and $f(x + k)$	The Catch	146
F-BF.3	Replacing $f(x)$ with $k \cdot f(x)$ and $f(k \cdot x)$	Fewer Parabolas, Please	150
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Functions: Trigonometric Functions			
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G-CO.9	Proving the Vertical Angles Theorem	Cutting Kitchen Tiles	168
G-CO.9	Proving Theorems About Angles in Parallel Lines Cut by a Transversal	Retinal Refraction	173
G-CO.10	Proving the Interior Angle Sum Theorem	Sensing Distance	177
G-CO.10	Proving Theorems About Isosceles Triangles	Calibrating Consoles	181
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Geometry: Circles			
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