

Alignment Between the Indiana REPA Educator Standards for Mathematics and state and national student and teacher standards for Mathematics

The alignment notations below indicate the content included in state and national standards that is addressed, in whole or in part, by each of the REPA Educator Standards for Mathematics.

Standard 1: Number and Quantity Mathematics teachers have a broad and comprehensive understanding of number systems, number representations, number operations, and number theory.	
Indiana Academic Standards for Mathematics (2014)	Quantitative Reasoning: Numeracy: QR.N.1-QR.N.7 Quantitative Reasoning: Ratio and Proportional Reasoning: QR.RP.1-QR.RP.4 Algebra 1: Real Numbers and Expressions: AI.RNE.1-AI.RNE.4, Algebra 2: Complex Numbers and Expressions: AII.CNE.1-AII.CNE.2 Finite Math: Matrices: FM.MA.1-FM.MA.3 Pre-Calculus: Polar Coordinates and Complex Numbers: PC.PCN.1-PC.PCN.3 Trigonometry: Vectors: TR.V.2
Indiana Academic Standards: Content Area Literacy: Science/Technical Subjects (2014)	LST3: Structural Elements and Organization (Reading): 9-10.LST.3.1, 11-12.LST.3.1
NCTM CAEP Standards – Secondary (Initial Preparation) (2012)	Standard 1: Content Knowledge: Number Standard 2: Mathematical Practices: 2a-2f
Standard 2: Algebra Mathematics teachers have a broad and comprehensive understanding of the structure of mathematical expressions, the application of algebraic techniques, and the use of equations and inequalities to model and solve problems.	
Indiana Academic Standards for Mathematics (2014)	Quantitative Reasoning: Ratio and Proportional Reasoning: QR.RP.5, QR.RP.6 Quantitative Reasoning: Modeling: QR.M.2-QR.M.4 Algebra 1: Real Numbers and Expressions: AI.RNE.4-AI.RNE.5-AI.RNE.7 Algebra 1: Functions: AI.F.4 Algebra 1: Linear Equations, Inequalities, and Functions: AI.L.1-AI.L.11 Algebra 1: Systems of Equations and Inequalities: AI.SEI.1-AI.SEI.4 Algebra 1: Quadratic and Exponential Equations and Functions: AI.QE.3, AI.QE.4, AI.QE.6, AI.QE.7 Algebra 2: Complex Numbers and Expressions: AII.CNE.2-AII.CNE.5 Algebra 2: Systems of Equations: AII.SE.1-AII.SE.3 Algebra 2: Quadratic Equations and Functions: AII.Q.1-AII.Q.3 Algebra 2: Exponential and Logarithmic Equations and Functions: AII.EL.2, AII.EL.4, AII.EL.6, AII.EL.7 Algebra 2: Polynomial, Rational, and Other Equations and Functions: AII.PR.1-AII.PR.3 Trigonometry: Periodic Functions: TR.PF.4 Trigonometry: Vectors: TR.V.1-TR.V.3 Finite Math: Matrices: FM.MA.4-FM.MA.6 Pre-Calculus: Quadratic, Polynomial, and Rational Equations and Functions: PC.QPR.1, PC.QPR.2, PC.QPR.3 Pre-Calculus: Exponential and Logarithmic Functions and Equations: PC.EL.1, PC.EL.2, PC.EL.3

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Indiana Academic Standards: Content Area Literacy: Science/Technical Subjects (2014)	LST3: Structural Elements and Organization (Reading): 9-10.LST.3.1, 11-12.LST.3.1 LST4: Synthesis and Connection of Ideas (Reading): 9-10.LST.4.1
NCTM CAEP Standards – Secondary (Initial Preparation) (2012)	Standard 1: Content Knowledge: Algebra, Trigonometry Standard 2: Mathematical Practices: 2a-2f
Standard 3: Functions	
Mathematics teachers have a broad and comprehensive understanding of the characteristics of functions and relations and of the properties, behaviors, and applications of linear and nonlinear functions and their multiple representations (graphs, equations, tables, and concrete models).	
Indiana Academic Standards for Mathematics (2014)	Algebra 1: Functions: AI.F.1-AI.F.4 Algebra 1: Linear Equations, Inequalities, and Functions: AI.L.4, AI.L.5 Algebra 1: Systems of Equations and Inequalities: AI.SEI.3, AI.SEI.4 Algebra 1: Quadratic and Exponential Equations and Functions: AI.QE.1-AI.QE.3, AI.QE.5-AI.QE.7 Algebra 2: Functions: AII.F.1- AII.F.5 Algebra 2: Quadratic Equations and Functions: AII.Q.1 Algebra 2: Exponential and Logarithmic Equations and Functions: AII.EL.2, AII.EL.3, AII. EL.5, AII.EL.7 Algebra 2: Polynomial, Rational, and Other Equations and Functions: AII.PR.2, AII.PR.3 Trigonometry: Conics: TR.CO.1 Trigonometry: Unit Circle: TR.UC.1-TR.UC.3 Trigonometry: Geometry: TR.G.3 Trigonometry: Periodic Functions: TR.PF.1-TR.PF.3, TR.PF.5, TR.PF.6, TR.PF.7 Trigonometry: Polar Coordinates: TR.PC.1-TR.PC.2 Pre-Calculus: Polar Coordinates and Complex Numbers: PC.PCN.3 Pre-Calculus: Functions: PC.F.1, PC.F.6 Pre-Calculus: Exponential and Logarithmic Functions and Equations: PC.EL.3 Pre-Calculus: Functions: PC.F.1, PC.F.4-PC.F.6 Pre-Calculus: Quadratic, Polynomial, and Rational Equations and Functions: PC.QPR.2, Pre-Calculus: Exponential and Logarithmic Functions and Equations: PC.EL.3 Pre-Calculus: Parametric Equations: PC.PE.1-PC.PE.2
Indiana Academic Standards: Content Area Literacy: Science/Technical Subjects (2014)	
NCTM CAEP Standards – Secondary (Initial Preparation) (2012)	Standard 1: Content Knowledge: Algebra, Trigonometry Standard 2: Mathematical Practices: 2a-2f
Standard 4: Measurement and Geometry	
Mathematics teachers have a broad and comprehensive understanding of the principles and procedures of measurement, Euclidean plane geometry and its applications, Euclidean coordinate geometry and its applications, and the role of reasoning and proof in geometry.	
Indiana Academic Standards for Mathematics (2014)	Quantitative Reasoning: Numeracy: QR.N.6, QR.N.7 Quantitative Reasoning: Ratio and Proportional Reasoning: QR.RP.5-QR.PR.6

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	<p>Quantitative Reasoning: Modeling: QR.M.5 Trigonometry: Conics: TR.CO.2-TR.CO.6 Trigonometry: Geometry: TR.G.1, TR.G.2, TR.G.4-TR.G.6 Geometry: Logic and Proofs: G.LP.1-G.LP.4 Geometry: Points, Lines, Angles, and Planes: G.PL.1-G.PL.5 Geometry: Triangles: G.T.1-G.T.11 Geometry: Quadrilaterals and Other Polygons: G.QP.1-G.QP.5 Geometry: Circles: G.CI.1-G.CI.7 Geometry: Transformations: G.TR.1-G.TR.2 Geometry: Three-dimensional Solids: G.TS.1-G.TS.9</p>
<p>Indiana Academic Standards: Content Area Literacy: Science/Technical Subjects (2014)</p>	<p>LST4: Synthesis and Connection of Ideas (Reading): 9-10.LST.4.1-4.2, 11-12.LST.4.2 LST5: Writing Genres (Writing): 9-10.LST.5.1, 11-12.LST.5.1</p>
<p>NCTM CAEP Standards – Secondary (Initial Preparation) (2012)</p>	<p>Standard 1: Content Knowledge: Algebra, Geometry Standard 2: Mathematical Practices: 2a-2f</p>
<p>Standard 5: Statistics and Probability</p> <p>Mathematics teachers have a broad and comprehensive understanding of the collection, presentation, and interpretation and misinterpretations of data, and of the fundamental principles of probability.</p>	
<p>Indiana Academic Standards for Mathematics (2014)</p>	<p>Quantitative Reasoning: Modeling: QR.M.1, QR.M.3 Quantitative Reasoning: Probabilistic Reasoning to Assess Risk: QR.P.3, QR.P.4 Quantitative Reasoning: Statistics: QR.S.1 QR.S.9 Algebra 1: Data Analysis and Statistics: AI.DS.1-AI.DS.6 Algebra 2: Data Analysis, Statistics and Probability: AII.DSP.1-AII.DSP.6 Probability & Statistics: Data Analysis: PS.DA.1-PS.DA.12 Probability & Statistics: Experimental Design: PS.ED.1, PS.ED.3-PS.ED.5, PS.ED.7-PS.ED.9 Probability & Statistics: Probability: PS.P.1-PS.P.8 Finite Math: Probability: FM.P.2-FM.6, FM.P.8-10 Pre-Calculus: Functions: PC.F.2 Pre-Calculus: Exponential and Logarithmic Functions and Equations: PC.EI.4</p>
<p>Indiana Academic Standards: Content Area Literacy: Science/Technical Subjects (2014)</p>	<p>LST4: Synthesis and Connection of Ideas (Reading): 9-10.LST.4.2-4.3, 11-12.LST.4.1-4.3 LST7: The Research Process (Writing): 9-10.LST.7.1, 11-12.LST.7.1</p>
<p>NCTM CAEP Standards – Secondary (Initial Preparation) (2012)</p>	<p>Standard 1: Content Knowledge: Statistics, Probability Standard 2: Mathematical Practices: 2a-2f</p>
<p>Standard 6: Calculus</p> <p>Mathematics teachers have a broad and comprehensive understanding of the principles, techniques, and applications of differential and integral calculus.</p>	
<p>Indiana Academic Standards for Mathematics (2014)</p>	<p>Pre-Calculus: Functions: PC.F.1, PC.F.7, PC.F.10 Pre-Calculus: Quadratic, Polynomial, and Rational Equations and Functions: PC.QPR.2, PC.QPR.4 Calculus: Limits and Continuity: C.LC.1-C.LC.12 Calculus: Differentiation: C.D.1-C.D.11 Calculus: Application of Derivatives: C.AD.1-C.AD.12</p>

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	Calculus: Integrals: C.I.1-C.I.8 Calculus: Applications of Integrals: C.AI.1-C.AI.7
Indiana Academic Standards: Content Area Literacy: Science/Technical Subjects (2014)	
NCTM CAEP Standards – Secondary (Initial Preparation) (2012)	Standard 1: Content Knowledge: Calculus Standard 2: Mathematical Practices: 2a-2f
<u>Standard 7: Discrete Mathematics</u>	
Mathematics teachers have a broad and comprehensive understanding of the principles, techniques, and applications of discrete mathematics.	
Indiana Academic Standards for Mathematics (2014)	Quantitative Reasoning: Modeling: QR.M.6 Quantitative Reasoning: Probabilistic Reasoning to Assess Risk: QR.P.1, QR.P.2 Algebra 2: Complex Numbers and Expressions: AII.CNE.6 Algebra 2: Exponential and Logarithmic Equations and Functions: AII.EL.1 Algebra 2: Data Analysis, Statistics and Probability: AII.DSP.6 Probability & Statistics: Experimental Design: PS.ED.2, PS.ED.6 Probability & Statistics: Probability: PS.P.3, PS.P.9, PS.P.10 Finite Math: Sets: FM.S.1-FM.S.2 Finite Math: Networks: FM.N.1-FM.N.6 Finite Math: Optimization: FM.O.1-FM.O.3 Finite Math: Probability: FM.P.4, FM.P.8 Pre-Calculus: Functions: PC.F.3, PC.F.8, PC.F.9
Indiana Academic Standards: Content Area Literacy: Science/Technical Subjects (2014)	
NCTM CAEP Standards – Secondary (Initial Preparation) (2012)	Standard 1: Content Knowledge: Discrete Mathematics, Algebra Standard 2: Mathematical Practices: 2a-2f
<u>Standard 8: Mathematics Instruction and Assessment</u>	
Mathematics teachers have a broad and comprehensive understanding of content-specific curricula, instruction, and assessment in mathematics education.	
Indiana Academic Standards for Mathematics (2014)	
Indiana Academic Standards: Content Area Literacy: Science/Technical Subjects (2014)	
NCTM CAEP Standards – Secondary (Initial Preparation) (2012)	Standard 2: Mathematical Practices: 2a-2f Standard 3: Content Pedagogy: 3a-3g