EVERGREEN COMMUNITY CHARTER SCHOOL CURRICULUM

MATH

Course: Algebra II

Grade: 9, 11

Make sense of problems and persevere in solving them.	Attend to precision.
Reason abstractly and quantitatively.	Use appropriate tools strategically.
Construct viable arguments and critique the reasoning of others.	Model with mathematics.

PA Core Standards	Materials	Methods/Assessment
2.1 Numbers and Operations • CC.2.1.F.1-7 2.2 Algebraic Concepts • CC.2.2.C.1-9 • CC.2.2.D.1-10 2.3 Geometry • CC.2.3.A.1-14 2.4 Measurement, Data, and Probability • CC.2.4.B.1-7	**Materials:** Algebra 2, Prentice Hall 2004 and supplementary workbooks **Resources:** • PDE SAS portal: http://www.pdesas.org • Teacher generated/differentiated instruction resources and activities • http://www.khanacademy.org/ • Calculators • Math Counts activities • Pearson Success.net **Differentiation:** **Enrichment** • Leveled tests and quizzes • Self-paced **Remediation** • One on one • Quiz & test corrections • Accommodations • Adapted assignments • Extra time • Math Support • Notecard permitted for quizzes and tests	**Methods:** • Lecture • Demonstration • Note-taking • Discussion • Practice **Assessment:** • Observation • Participation • Notes/Portfolios • Homework • Question & Answer • Quizzes • Tests • Think-Pair-Share • Whiteboards • At the bell activities • Math Counts activities • Constructed Response Tasks

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Assessment Anchors	Materials/Unit	Methods/Assessment
CC.2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers. A2.1.1.1.1-2 A2.1.1.2.1-2 CC.2.1.HS.F.1 Apply and extend the properties of exponents to solve problems with rational exponents. CC.2.2.HS.D.2 Write expressions in equivalent forms to solve problems. A2.1.2.1.1-4 CC.2.1.HS.F.7 Apply concepts of complex numbers in polynomial identities and quadratic equations to solve problems. CC.2.2.HS.C.1 Use the concept and notation of functions to interpret and apply them in terms of their context. CC.2.2.HS.C.2 Graph and analyze functions, and use their properties to make connections between the different representations. CC.2.2.HS.C.3 Write functions or sequences that model relationships between two quantities. CC.2.2.HS.C.5 Construct and compare linear, quadratic, and exponential models to solve problems. CC.2.2.HS.C.6 Interpret functions in terms of the situations they model. CC.2.3.HS.A.10 Translate between the geometric description and the equation for a conic section. CC.2.4.HS.B.2 Summarize, represent, and interpret data on two categorical and quantitative variables.	**Materials:** Algebra 2, Prentice Hall 2004 and supplementary workbooks Pdesas.org **Chapter 1 – Tools of Algebra** **Chapter 2 – Functions, Equations, and Graphs** **Chapter 3 – Linear Systems**	**Methods:** • Lecture • Demonstration • Note-taking • Discussion • Practice **Assessment:** • Observation • Participation • Notes/Portfolios • Homework • Question & Answer • Quizzes • Tests • Think-Pair-Share • Whiteboards • At the bell activities • Math Counts activities • Constructed Response Tasks

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Assessment Anchors	Materials/Unit	Methods/Assessment
CC.2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. CC.2.1.HS.F6 Extend the knowledge of arithmetic operations and apply to complex numbers. CC.2.1.HS.F7 Apply concepts of complex numbers in polynomial identities and quadratic equations to solve problems. CC.2.1.HS.C.5 Construct and compare linear, quadratic and exponential models to solve problems. CC.2.1.HS.C.2 Graph and analyze functions and use their properties to make connections between the different representations. CC.2.1.HS.D.1 Interpret the structure of expressions to represent a quantity in terms of its context.1 CC.2.1.HS.D.2 Write expressions in equivalent forms to solve problems. CC.2.1.HS.D.3 Extend the knowledge of arithmetic operations and apply to polynomials. CC.2.1.HS.D.4 Understand the relationship between zeros and factors of polynomials to make generalizations about functions and their graphs. CC.2.1.HS.D.9 Use reasoning to solve equations and justify the solution method. CC.2.1.HS.C.1 Use the concept and notation of functions to interpret and apply them in terms of their context. CC.2.1.HS.C.3 Write functions or sequences that model relationships between two quantities. CC.2.1.HS.C.4 Interpret the effects transformations have on functions and find the inverses of functions. CC.2.1.HS.C.6 Interpret functions in terms of the situation they model. CC.2.1.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships. CC.2.1.HS.C.8 Apply inverse operations to solve equations or formulas for a given variable. A.2.1.1.1	**Materials:** Algebra 2, Prentice Hall 2004 and supplementary workbooks Pdesas.org **Chapter 4 – Matrices** **Chapter 5 – Quadratic Equations and Functions** **Chapter 6 – Polynomials and Polynomial Functions**	**Methods:** • Lecture • Demonstration • Note-taking • Discussion • Practice **Assessment:** • Observation • Participation • Notes/Portfolios • Homework • Question & Answer • Quizzes • Tests • Think-Pair-Share • Whiteboards • At the bell activities • Math Counts activities • Constructed Response Tasks

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A.2.1.1.2		
A.2.1.2.2.		
A.2.1.3.1		
A.2.1.3.2		
A.2.2.1.1		
A.2.2.2.1		
A.2.2.2.2		

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Assessment Anchors	Materials/Unit	Methods/Assessment
CC.2.1.HS.F.1 Apply and extend the properties of exponents to solve problems with rational expressions. CC.2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. CC.2.1.HS.C.2 Graph and analyze functions and use their properties to make connections between the different representations. CC.2.1.HS.D.1 Interpret the structure of expressions to represent a quantity in terms of its context. CC.2.1.HS.D.2 Write expressions in equivalent forms to solve problems. CC.2.1.HS.D.3 Extend the knowledge of arithmetic operations and apply to polynomials. CC.2.1.HS.D.4 Understand the relationship between zeros and factors of polynomials to make generalizations about functions and their graphs. CC.2.1.HS.D.9 Use reasoning to solve equations and justify the solution method. CC.2.1.HS.C.1 Use the concept and notation of functions to interpret and apply them in terms of their context. CC.2.1.HS.C.3 Write functions or sequences that model relationships between two quantities. CC.2.1.HS.C.4 Interpret the effects transformations have on functions and find the inverses of functions CC.2.1.HS.C.6 Interpret functions in terms of the situation they model. CC.2.1.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships. CC.2.1.HS.C.8 Apply inverse operations to solve equations or formulas for a given variable. A.2.1.2.1 A.2.1.2.2 A.2.2.1.1 A.2.2.2.2	**Materials:** Algebra 2, Prentice Hall 2004 and supplementary workbooks Pdesas.org **Chapter 7 – Radical Functions and Rational Exponents** **Chapter 8 – Exponential and Logarithmic Functions**	**Methods:** • Lecture • Demonstration • Note-taking • Discussion • Practice **Assessment:** • Observation • Participation • Notes/Portfolios • Homework • Question & Answer • Quizzes • Tests • Think-Pair-Share • Whiteboards • At the bell activities • Math Counts activities • Constructed Response Tasks

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Assessment Anchors	Materials/Unit	Methods/Assessment
CC.2.2.HS.C.2 Graph and analyze functions, and use their properties to make connections between the different representations. CC.2.2.HS.C.3 Write functions or sequences that model relationships between two quantities. CC.2.2.HS.C.4 Interpret the effects transformations have on functions, and find the inverses of functions. CC.2.2.HS.C.5 Construct and compare linear, quadratic, and exponential models to solve problems. CC.2.2.HS.C.6 Interpret functions in terms of the situations they model. CC.2.2.HS.D.5 Use polynomial identities to solve problems. CC.2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms. CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships. CC.2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable. CC.2.2.HS.D.9 Use reasoning to solve equations, and justify the solution method. CC.2.2.HS.D.10 Represent, solve and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically A2.1.3.1.1 A2.1.3.1.2 A2.1.3.1.3 A2.1.3.1.4	**Materials:** Algebra 2, Prentice Hall 2004 and supplementary workbooks Pdesas.org **Chapter 9 – Rational Functions** **Chapter 10 – Quadratic Relations**	**Methods:** • Lecture • Demonstration • Note-taking • Discussion • Practice **Assessment:** • Observation • Participation • Notes/Portfolios • Homework • Question & Answer • Quizzes • Tests • Think-Pair-Share • Whiteboards • At the bell activities • Math Counts activities • Constructed Response Tasks

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Assessment Anchors	Materials/Unit	Methods/Assessment
CC.2.1.HS.B.1 Summarize, represent, and interpret data on a single count or measurement variable. CC.2.1.HS.F.3 Apply quantitative reasoning to choose and Interpret units and scales in formulas, graphs and data displays. CC.2.1.HS.B.2 Summarize, represent, and interpret data on two categorical and quantitative variables. CC.2.1.HS.B.4 Recognize and evaluate random processes underlying statistical experiments. CC.2.1.HS.B.5 Make inferences and justify conclusions based on sample surveys, experiments, and observational studies. CC.2.1.HS.B.6 Use the concepts of independence and conditional probability to interpret data. CC.2.1.HS.B.7 Apply the rules of probability to compute probabilities of compound events in a uniform probability model. CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. CC.2.1.HS.B3 Analyze linear models to make interpretations based on the data. A.2.2.1.1 A.2.2.3.2 CC.2.4.HS.B.2 Summarize, represent, and interpret data on two categorical and quantitative variables. CC.2.4.HS.B.3 Analyze linear models to make interpretations based on the data. CC.2.4.HS.B.4 Recognize and evaluate random processes underlying statistical experiments. CC.2.4.HS.B.5 Make inferences and justify conclusions based on sample surveys, experiments, and observational studies. CC.2.4.HS.B.6 Use the concepts of independence and conditional probability to interpret data. CC.2.4.HS.B.7 Apply the rules of probability to compute probabilities of compound events in a uniform probability model.	**Materials:** Algebra 2, Prentice Hall 2004 and supplementary workbooks Pdesas.org **Chapter 11 – Sequences and Series** **Chapter 12 – Probability and Statistics**	**Methods:** • Lecture • Demonstration • Note-taking • Discussion • Practice **Assessment:** • Observation • Participation • Notes/Portfolios • Homework • Question & Answer • Quizzes • Tests • Think-Pair-Share • Whiteboards • At the bell activities • Math Counts activities • Constructed Response Tasks

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A.2.2.3.1

A.2.2.3.2