

Math Planned Course: College Prep Algebra II – Grades 9-12

Unit: **Algebra 1 Skills Review**

Content Standard: **Develop and use computation concepts, solve equations.**

State Curriculum Standard:

2.1.11A Use operations such as opposite, reciprocal, absolute value, raising to a power, finding roots, and logarithms.

2.2.11B Use estimation to solve problems for which exact answer is not needed.

2.4.11E Demonstrate mathematical solutions to problems in the physical sciences.

2.5.11A Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems.

2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, graphing, and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas, and results.

2.5.11C Present mathematical procedures and results clearly, systematically, succinctly, and correctly.

ISTE Standards:

1 Basic Operations and Concepts

2. Communication and Collaboration

3. Research and Information Fluency

4. Critical Thinking, Problem Solving, and Decision Making

5. Digital Citizenship

PSSA Anchors:

M11.A.2.1.1 Solve problems using operations with rational numbers including rates and percent.

M11.A.1.2.1 Find the Greatest Common Factor (GCF) for sets of monomials and/or factor polynomial expressions using the greatest common monomial factor.

M11.A.2.1.1 Solve problems using operations with rational numbers including rates and percents.

M11.A.2.1.2 Solve problems using direct and inverse proportions.

M11.A.2.1.3 Identify and/or use proportional relationships in problem solving settings.

M11.A.2.2.1 Simplify/evaluate expressions involving positive and negative exponents, roots and/or absolute value.

M11.A.2.2.2 Simplify/evaluate expressions involving multiplying with exponents, powers of powers, and powers of products.

M11.A.3.1.1 Simplify expressions using the order of operations to solve problems.

M11.D.1.1.1 Analyze a set of data for the existence of a pattern and represent the pattern algebraically and/or graphically.

M11.D.1.1.2 Determine if a relation is a function given a set of points or a graph.

M11.D.1.1.3 Identify the domain, range or inverse of a relation.

Pacing Guide: Traditional: 5 days including assessment

BLOCK: 3 days including assessment

Math Planned Course: College Prep Algebra II – Grades 9-12

Course Content	Student Performance	Resources	Assessments
<p>A. Properties of Real Numbers</p> <p>B. Algebraic Expressions</p> <p>C. Solving Equations and Inequalities</p> <p>D. Absolute Value</p> <p>E. PEMDAS</p> <p>F. Spiral Review</p> <ul style="list-style-type: none"> • Square roots • Surface area • Change in dimensions • Central tendency and outliers 	<ul style="list-style-type: none"> • Simplify and evaluate expressions • Solve one step equations • Calculate sums, differences, products and quotients • Simplify absolute value 	<ul style="list-style-type: none"> • <u>Algebra 2</u> (Prentice Hall, 2007) • Prentice Hall teacher resources • Software • Teacher-provided materials • Bell ringers • PSSA math materials • CPS • Measuring Up & Coach 11 • Study Island • Spiral review and project binder • Appendix 	<ul style="list-style-type: none"> • Tests/quizzes • Observation • Homework • Teacher developed Spiral Review of Algebra 1 topics • PSSA practice problems <p><u>Remediation</u></p> <ul style="list-style-type: none"> • Software • Tutoring <p><u>Enrichment</u></p> <ul style="list-style-type: none"> • Challenge problems • Supplemental worksheets • Student projects/research

Math Planned Course: College Prep Algebra II – Grades 9-12

Unit: **Models, Functions and Linear Equations**

Content Standard: **Organize and graph data; analyze functions and equations.**

State Curriculum Standard:

2.2.11C Construct and apply mathematical models, including lines and curves of best fit, to estimate values of related quantities.

2.2.11F Demonstrate skills for using computer spreadsheets and scientific and graphing calculators.

2.4.11E Demonstrate mathematical solutions to problems in the physical sciences.

2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, graphing, and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas, and results.

2.5.11C Present mathematical procedures and results clearly, systematically, succinctly and correctly.

2.6.11C Determine regression equation of best fit (linear, quadratic, and exponential).

2.8.11M Given a set of data points, write an equation for a line of best fit.

ISTE Standard:

1 Basic operations and Concepts

3 Technology Productivity tools

6 Technology problem solving and decision making tools

PSSA Anchors:

M11.D.1.1.1 Analyze a set of data for the existence of a pattern and represent the pattern algebraically and/or graphically.

M11.D.2.1.1 Solve compound inequalities and/or graph their solution sets on a number line.

M11.D.2.1.2 Identify or graph functions, linear equations or linear inequalities on a coordinate plane.

M11.D.2.1.3 Write, solve and/or apply a linear equation.

M11.D.3.1.1 Identify, describe, and/or use constant or varying rates of change.

M11.D.3.2.2 Given the graph of a line, 2 points on the line, or the slope and a point on a line, write or identify the linear equation in point-slope, standard, and/or slope-intercept form.

M11.D.3.2.3 Compute the slope and/or y-intercept represented by a linear equation or graph.

Pacing Guide: **Traditional 10 days**

Block: 5 days

Math Planned Course: College Prep Algebra II – Grades 9-12

Course Content	Student Performance	Resources	Assessments
A. Coordinate Plane B. Vertical and Horizontal Translations C. Linear Equations and Inequalities D. Direct Variation E. Absolute Value Functions Spiral Review F. Scientific Notation G. Volume H. Properties of Quadrilaterals	<ul style="list-style-type: none"> Analyze vertical and horizontal translations of functions Graph linear equations and inequalities Write the equation of lines Write lines of best fit Graph Absolute Value equations 	<ul style="list-style-type: none"> <u>Algebra 2</u> (Prentice Hall, 2007) Prentice Hall teacher resources Graphing calculators Software Teacher-provided materials PSSA math materials Graph paper Bell ringers PSSA math materials CPS Measuring Up & Coach 11 Study Island Spiral review and project binder Appendix 	<ul style="list-style-type: none"> Tests/quizzes Observation Homework Projects Journals PSSA practice problems <p><u>Remediation</u></p> <ul style="list-style-type: none"> Software Tutoring <p><u>Enrichment</u></p> <ul style="list-style-type: none"> Challenge problems Supplemental worksheets Student projects/research Internet Spreadsheet project

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Unit: Linear Systems

Content Standard: **Solve and graph systems of linear equations and inequalities.**

State Curriculum Standard:

- 2.1.11A Use operations such as opposite, reciprocal, absolute value, raising to a power, finding routes, and logarithms.**
- 2.2.11F Demonstrate skills for using computer spreadsheets and scientific and graphing calculators.**
- 2.4.11C Determine the validity of an argument.**
- 2.5.11A Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems.**
- 2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, graphing and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas and results.**
- 2.5.11C Present mathematical procedures and results clearly, systematically, succinctly, and correctly.**
- 2.6.11D Make predictions using interpolation, extrapolation, regression, and estimation using technology.**
- 2.8.11D Formulate expressions, equations, inequalities, systems of equations, systems of inequalities, and matrices to model routine and non-routine problem situations.**
- 2.8.11G Analyze and explain systems of equations, inequalities, and matrices.**
- 2.8.11H Select and use appropriate strategy to solve systems of equations and inequalities using graphing calculators, symbol manipulators, spreadsheets, and other software.**
- 2.8.11K Select, justify, and apply an appropriate technique to graph a linear function in two variables, including slope-intercept, x & y intercepts, graphing by transformations, and the use of a graphing calculator.**
- 2.8.11Q Represent functional relationships in tables, charts, and graphs.**
- 2.11.11B Interpret maximum and minimum values in problem situations.**

ISTE Standard:

- 1 Basic operations and Concepts**
- 3 Technology Productivity tools**
- 6 Technology problem solving and decision making tools**

PSSA Anchor:

- M11.D.2.1.2 Identify or graph functions, linear equations or linear inequalities on a coordinate plane.**
- M11.D.2.1.3 Write, solve and/or apply a linear equation.**
- M11.D.2.1.4 Write and/or solve systems of equations using graphing, substitution and/or elimination.**

Pacing Guide: Traditional: 12- 15 days

Block: 7-10 days

Math Planned Course: College Prep Algebra II – Grades 9-12

Course Content	Student Performance	Resources	Assessments
A. Systems of Two Linear Equations <ul style="list-style-type: none"> Graphing Substitution Elimination 	<ul style="list-style-type: none"> Solve a system of linear equations by: <ul style="list-style-type: none"> Graphing Substitution Elimination 	<ul style="list-style-type: none"> <u>Algebra 2</u> (Prentice Hall, 2007) Prentice Hall teacher resources 	<ul style="list-style-type: none"> Tests/quizzes Observation Homework
B. Systems of Linear Inequalities	<ul style="list-style-type: none"> Solve a system of linear inequalities by graphing 	<ul style="list-style-type: none"> Graphing calculators 	<ul style="list-style-type: none"> Projects
C. Linear Programming	<ul style="list-style-type: none"> Identify restrictions on the variables 	<ul style="list-style-type: none"> Software Teacher-provided materials 	<ul style="list-style-type: none"> Journals Presentations
D. Graphs in Three Dimensions	<ul style="list-style-type: none"> Write a system of equations from a word problem Find the objective function 	<ul style="list-style-type: none"> PSSA math materials Graph paper 	
E. Systems of Equations In Three Variables	<ul style="list-style-type: none"> Identify vertices of the graph Calculate maximum/minimum values of the objective function 	<ul style="list-style-type: none"> Bell ringers PSSA math materials 	<u>Remediation</u> <ul style="list-style-type: none"> Software Tutoring
F. Spiral Review <ul style="list-style-type: none"> Square roots Perimeter, area, volume Congruent and similar polygons 	<ul style="list-style-type: none"> Solve linear programming problems Plot points in three dimensions Graph equations in three dimensions using intercepts Solve a system of equations in three variables using elimination Solve a system of equations using inverse matrices Solve 2x2 and 3x3 systems using Cramer's Rule and 	<ul style="list-style-type: none"> CPS Measuring Up & Coach 11 Study Island Spiral review and project binder Appendix 	<u>Enrichment</u> <ul style="list-style-type: none"> Challenge problems Supplemental worksheets Student projects/research Internet Real-world linear programming problems (project)

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	graphing calculators		
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Unit: **Matrices**

Content Standard: **Add, subtract, and multiply matrices; define and use inverse matrices.**

State Curriculum Standard:

- 2.5.11A Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems.**
- 2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, graphing, and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, and ideas and results.**
- 2.5.11C Present mathematical procedures and results clearly, systematically, succinctly, and correctly.**
- 2.8.11G Analyze and explain systems of equations, systems of inequalities, and matrices.**
- 2.8.11I Use matrices to organize and manipulate data, including matrix addition, subtraction, multiplication, and scalar multiplication.**

ISTE Standard:

- 1 Basic operations and Concepts**
- 3 Technology Productivity tools**
- 6 Technology problem solving and decision making tools**

PSSA Anchor:

- M11.A.1.1 Represent and/or use numbers in equivalent forms (e.g., integers, fractions, decimals, percents, square roots, exponents and scientific notation).**
- M11.A.1.1.1 Find the square root of an integer using either a calculator or estimation (integer may or may not be a perfect square – answer may be a range of values)**
- M11.A.2.1.1 Solve problems using operations with rational numbers including rates and percents.**
- M11.D.2.1 Represent and/or analyze mathematical situations using numbers, symbols, words, tables and/or graphs.**
- M11.D.2.1.4 Write and/or solve systems of equations using graphing, substitution and/or elimination.**

Pacing Guide: **Traditional 10 days**

Block: 5 days

Math Planned Course: College Prep Algebra II – Grades 9-12

Course Content	Student Performance	Resources	Assessments
<p>A. Organize Data Into Matrices</p> <p>B. Matrix Operations</p> <ul style="list-style-type: none"> Addition Subtraction Multiplication Scalar Multiplication <p>C. Determinants</p> <p>D. Inverse and Identity Matrices</p> <p>E. Cramer's Rule</p> <p>F. Spiral Review</p> <ul style="list-style-type: none"> Proportions Pythagorean Theorem 	<ul style="list-style-type: none"> Create matrices from given data Name the dimensions of a given matrix Solve for a variable in equal matrices Calculate the sum, difference and product of two or more matrices Calculate the product of a scalar and a matrix Calculate the determinant of a 2x2 and 3x3 by hand and with graphing calculator Define an identity matrix Calculate the inverse of a 2x2 matrix Use inverse matrices to solve matrix equations 	<ul style="list-style-type: none"> <u>Algebra 2</u> (Prentice Hall, 2007) Prentice Hall teacher resources Graphing calculators Software Teacher-provided materials PSSA math materials Graph paper Bell ringers PSSA math materials CPS Measuring Up & Coach 11 Study Island Spiral review and project binder Appendix 	<ul style="list-style-type: none"> Tests/quizzes Observation Homework Projects Journals PSSA practice problems <p><u>Remediation</u></p> <ul style="list-style-type: none"> Software Tutoring <p><u>Enrichment</u></p> <ul style="list-style-type: none"> Internet Spreadsheet project

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Unit: Quadratic Equations and Functions

Content Standard: **Examine quadratic equations and parabolas. Solve quadratic equations.**

State Curriculum Standard:

- 2.1.11A Use operations such as opposite, reciprocal absolute value, raising to a power, finding roots, and logarithms.**
- 2.2.11F Demonstrate skills for using computer spreadsheets and scientific and graphing calculators.**
- 2.3.11A Select and use appropriate units and tools to measure to the degree of accuracy required in particular measurement situations.**
- 2.4.11C Determine the validity of an argument.**
- 2.4.11E Demonstrate mathematical solutions to problems in the physical sciences.**
- 2.5.11A Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems.**
- 2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, graphing, and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas and results.**
- 2.5.11C Present mathematical procedures and results clearly, systematically, succinctly, and correctly.**
- 2.8.11A Analyze a given set of data for the existence of a pattern and represent the pattern algebraically and graphically.**
- 2.8.11D Formulate expressions, equations, inequalities, systems of equations, systems of inequalities, and matrices to model routine and non-routine problem situations.**
- 2.8.11K Select, justify, and apply an appropriate technique to graph a linear function in two variables, including slope-intercept, x & y intercepts, graphing by transformations, and the use of a graphing calculator.**
- 2.8.11N Solve linear, quadratic, and exponential equations both symbolically and graphically.**
- 2.8.11Q Represent functional relationships in tables, charts, and graphs.**
- 2.8.11R Create and interpret functional model.**
- 2.11.11B Interpret maximum and minimum values in problem situations.**

ISTE Standard:

1 Basic operation and concept

3 Technology productivity tools

6 Technology problem solving and decision making tools

PSSA Anchors:

- M11.A.1.1.1 Find the square root of an integer to the nearest tenth using either a calculator or estimation.**
- M11.A.1.2.1 Find the Greatest Common Factor (GCF) and/or the Least Common Multiple (LCM) for sets of monomials.**
- M11.A.2.2.1 Simplify/evaluate expressions involving positive and negative exponents, roots and/or absolute value (may contain all types of real numbers - exponents should not exceed power of 10).**
- M11.A.2.2.2 Simplify/evaluate expressions involving multiplying with exponents (e.g. $x^6 \cdot x^7 = x^{13}$), powers of powers (e.g., $(x^6)^7 = x^{42}$) and powers of products $(2x^2)^3 = 8x^6$ (positive exponents only).**
- M11.D.2.1 Represent and/or analyze mathematical situations using numbers, symbols, words, tables and/or graphs.**
- M11.D.2.1.5 Solve quadratic equations using factoring.**
- M11.D.2.2.2 Factor algebraic expressions, including difference of squares and trinomials.**
- M11.D.4.1 Interpret and/or use linear, quadratic and/or exponential functions and their equations, graphs or tables.**

Pacing Guide:

Traditional: 25-30 days

Block: 12-18 days

Math Planned Course: College Prep Algebra II – Grades 9-12

Course Content	Student Performance	Resources	Assessments
A. Modeling Data With Quadratic Functions B. Properties of Parabolas C. Transforming Parabolas D. Factoring Quadratic Expressions E. Quadratic Equations F. Complex Numbers G. Completing the Square H. Quadratic Formula I. Spiral Review <ul style="list-style-type: none"> Proportions Change in Dimension 	<ul style="list-style-type: none"> Recognize quadratic functions and parabolas Identify whether data is linear or quadratic Identify vertex and axis of symmetry Find maximum or minimum value of a quadratic function Graph a parabola in vertex form Write the equation of a parabola in vertex form Write the equation of a parabola in standard form Re-examine the factoring methods learned in Algebra I Solve quadratic equations by factoring, finding square roots, and graphing Identify complex numbers Add, subtract, multiply complex numbers Solve quadratic equations by completing the square Calculate the discriminant Determine the types of solutions using the discriminant Solve quadratic equations using the quadratic formula 	<ul style="list-style-type: none"> <u>Algebra 2</u> (Prentice Hall, 2007) Prentice Hall teacher resources Graphing calculators Software Teacher-provided materials PSSA math materials Graph paper Bell ringers PSSA math materials CPS Measuring Up & Coach 11 Study Island Spiral review and project binder Appendix 	<ul style="list-style-type: none"> Tests/quizzes Observation Homework Projects Journals PSSA practice problems <u>Remediation</u> <ul style="list-style-type: none"> Software Tutoring <u>Enrichment</u> <ul style="list-style-type: none"> Internet Projects Challenge problems Supplemental worksheets Student projects/research

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Unit: **Polynomials and Polynomial Functions**

Content Standard: **Solve polynomial equations and divide polynomials.**

State Curriculum Standard:

2.2.11F Demonstrate skills for using computer spreadsheets and scientific and graphing calculators.

2.4.11C Determine the validity of an argument.

2.5.11A Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems.

2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, graphing, and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas, and results.

2.5.11C Present mathematical procedures and results clearly, systematically, succinctly, and correctly.

2.8.11A Analyze a given set of data for the existence of a pattern and represent the pattern algebraically and graphically.

2.8.11Q Represent functional relationships in tables, charts, and graphs.

ISTE Standard:

1 Basic operations and concepts

3 Technology productivity tools

6 Technology problem solving and decision making tools

PSSA Anchors:

M11.D.1.1.2 Determine if a relation is a function given a set of points or a graph.

M11.D.2.1.5 Solve quadratic equations using factoring.

M11.D.2.2 Simplify expressions involving polynomials.

M11.D.2.2.1 Add, subtract, and/or multiply polynomial expressions.

M11.D.2.2.2 Factor algebraic expressions, including difference of squares and trinomials.

M11.D.2.2.3 Simplify algebraic fractions.

M11.D.4.1 Interpret and/or use linear, quadratic and/or exponential functions and their equations, graphs or tables.

Pacing Guide:

Traditional 7-10

Block 4-6

Math Planned Course: College Prep Algebra II – Grades 9-12

Course Content	Student Performance	Resources	Assessments
A. Solving Polynomial Equations	<ul style="list-style-type: none"> Solve polynomial equations by factoring and graphing Add and subtract 	<ul style="list-style-type: none"> <u>Algebra 2</u> (Prentice Hall, 2007) Prentice Hall teacher resources Graphing calculators Software Teacher-provided materials PSSA math materials Bell ringers PSSA math materials CPS Measuring Up & Coach 11 Study Island Spiral review and project binder Appendix 	<ul style="list-style-type: none"> Tests/quizzes Observation Homework Projects Journals PSSA practice problems <p><u>Remediation</u></p> <ul style="list-style-type: none"> Software Tutoring <p><u>Enrichment</u></p> <ul style="list-style-type: none"> Internet Projects Challenge problems Supplemental worksheets Student projects/research
B. Operations with Polynomials	<ul style="list-style-type: none"> Divide polynomials using long division Divide polynomials using synthetic division 		

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Unit: **Rational Functions**

Content Standard: **Analyze and apply rational equations and expressions.**

State Curriculum Standard:

2.4.11B Construct valid arguments from stated facts.

2.5.11A Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems.

2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, graphing, and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas, and results.

2.5.11C Present mathematical procedures and results clearly, systematically, succinctly, and correctly.

ISTE Standards:

1 Basic operations and concepts

3 Technology productivity tools

6 Technology problem solving and decision making tools

PSSA Anchors:

M11.A.2.2.1 Simplify/evaluate expressions involving positive and negative exponents, roots and/or absolute value.

M11.D.1.1.3 Identify the domain, range or inverse of a relation.

M11.D.2.2.2 Factor algebraic expressions, including difference of squares and trinomials.

Pacing Guide:

Traditional: 7-10 days

Block: 6 days

Math Planned Course: College Prep Algebra II – Grades 9-12

Course Content	Student Performance	Resources	Assessments
A. Rational Expressions	<ul style="list-style-type: none"> Simplify rational expressions by factoring Multiply and divide rational expressions Calculate the sum and difference of rational expressions with like and unlike denominators 	<ul style="list-style-type: none"> <u>Algebra 2</u> (Prentice Hall, 2007) Prentice Hall teacher resources Graphing calculators Software Teacher-provided materials PSSA math materials Bell ringers PSSA math materials CPS Measuring Up & Coach 11 Study Island Spiral review and project binder 	<ul style="list-style-type: none"> Tests/quizzes Observation Homework Projects Journals PSSA practice problems <p><u>Remediation</u></p> <ul style="list-style-type: none"> Software Tutoring <p><u>Enrichment</u></p> <ul style="list-style-type: none"> Internet Projects Challenge problems Supplemental worksheets Student projects/research
B. Rational Equations	<ul style="list-style-type: none"> Solve rational equations using cross-products and least common denominators 		

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Unit: **Rational Exponents and Radical Functions**

Content Standard: **Simplify radicals and solve radical equations.**

State Curriculum Standard:

2.4.11B Construct valid arguments from stated facts.

2.5.11A Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems.

2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, graphing, and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas, and results.

2.5.11C Present mathematical procedures and results clearly, systematically, succinctly, and correctly.

ISTE Standards:

1 Basic operations and concepts

3 Technology productivity tools

6 Technology problem solving and decision making tools

PSSA Anchors:

M11.A.2.2.1 Simplify/evaluate expressions involving positive and negative exponents, roots and/or absolute value.

M11.A.2.1.2 Solve problems using direct and inverse proportions.

M11.D.1.1.3 Identify the domain, range or inverse of a relation.

M11.D.2.1.2 Identify or graph functions, linear equations or linear inequalities on a coordinate plane.

Pacing Guide:

Traditional: 8 days

Block: 4 days

Math Planned Course: College Prep Algebra II – Grades 9-12

Course Content	Student Performance	Resources	Assessments
A. Rational Exponents B. Inverse Functions C. Radical Equations	<ul style="list-style-type: none"> Evaluate rational powers Find and graph inverse functions Solve radical equations by squaring 	<ul style="list-style-type: none"> <u>Algebra 2</u> (Prentice Hall, 2007) Prentice Hall teacher resources Graphing calculators Software Teacher-provided materials PSSA math materials Bell ringers PSSA math materials CPS Measuring Up & Coach 11 Study Island Spiral review and project binder 	<ul style="list-style-type: none"> Tests/quizzes Observation Homework Projects Journals PSSA practice problems <p><u>Remediation</u></p> <ul style="list-style-type: none"> Software Tutoring <p><u>Enrichment</u></p> <ul style="list-style-type: none"> Internet Projects Challenge problems Supplemental worksheets Student projects/research

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Unit: **Probability and Statistics (Spiral Review)**

Content Standard: **Calculate probabilities of events; analyze and interpret data.**

State Curriculum Standard:

- 2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, graphing, and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas and results.**
- 2.5.11C Present mathematical procedures and results clearly, systematically, succinctly, and correctly.**
- 2.5.11D Conclude a solution process with a summary of results and evaluate the degree to which the results obtained represent an acceptable response to the initial problem and why the reasoning is valid.**
- 2.6.11A Design and conduct an experiment using random sampling, describe the data as an example of a distribution using statistical measures of center and spread, and organize and represent the results with graphs. (Use Standard Deviation)**
- 2.7.11E Solve problems involving independent simple and compound events.**

PSSA Anchors:

- M11.A.3.1 Apply the order of operations in computation and in problem-solving situations.**
- M11.A.3.2 Use estimation strategies in problem-solving situations.**
- M11.A.2.1.1 Solve problems using operations with rational numbers including rates and percents.**
- M11.A.2.2 Use exponents, roots and/or absolute value to solve problems.**
- M11.E.1.1.1 Create and/or use appropriate graphical representations of data, including box-and-whisker plots, stem-and-leaf plots, scatter plots, line/double line, bar/double bar and circle graphs.**
- M11.E.1.1.2 Answer questions based on displayed data .**
- M11.E.2.1.1 Calculate or select the appropriate measure of central tendency of a set of data given or represented on a table, line plot, or stem-and-leaf plot.**
- M11.E.2.1.2 Calculate and/or interpret the range, quartiles and interquartile range of sets of data.**
- M11.E.2.1.3 Describe how outliers affect measures of central tendency.**
- M11.E.3.1.2 Find, convert and/or compare the probability and/or odds of a simple event.**
- M11.E.4.1.2 Use probability to predict outcomes.**

ISTE Standard:

- 1 Basic operations and Concepts**
- 3 Technology Productivity tools**
- 6 Technology problem solving and decision making tools**

Pacing Guide: **Traditional 12 days**

Block: 7 days

Math Planned Course: College Prep Algebra II – Grades 9-12

Course Content	Student Performance	Resources	Assessments
<p>A. Probability</p> <p>B. Analyzing Data</p> <p>C. Standard Deviation</p>	<ul style="list-style-type: none"> Identify independent and mutually exclusive events Calculate the probabilities of multiple events Calculate the mean, median, and mode of a set of data Draw and interpret box and whisker plots Calculate the standard deviation of a set of data Assess the value of standard deviation in real-world problems 	<ul style="list-style-type: none"> <u>Algebra 2</u> (Prentice Hall, 2007) Prentice Hall teacher resources Graphing calculators Software Teacher-provided materials PSSA math materials Bell ringers PSSA math materials CPS Measuring Up & Coach 11 Study Island Spiral review and project binder 	<ul style="list-style-type: none"> Tests/quizzes Observation Homework Projects Journals PSSA practice problems <p><u>Remediation</u></p> <ul style="list-style-type: none"> Software Tutoring <p><u>Enrichment</u></p> <ul style="list-style-type: none"> Internet Projects Challenge problems Supplemental worksheets Student projects/research

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