*Pre-Unit CP Only Pre-Algebra 2 Skills from Algebra 1

Content Area: **Mathematics**
Course(s): **Algebra 2 CP**
Time Period: **Marking Period 1**
Length: **2 Blocks**
Status: **Published**

Transfer Skills

In this pre-unit students will spend time recalling Algebra 1 skills that will help them through the course.

Instructional Notes

- This will give the teacher a good idea of how to move forward in following units.
- Honors should move forward with Unit 1 after quick review of Summer Assignment.
- The use of a graphing calculator is encouraged for students to check their work when graphing equations.

BLUE = 9/10 Only**

RED = 9/10 & 11/12

Enduring Understandings

There are several strategies to solve linear equations.

Simplifying radicals allows us to take a complex situation and make it simple.

A graph offers more than just plotted points.

Essential Questions

What are the correct steps in solving a multiple step equations?

How do we describe key values from a graph by only using a graphing calculator?

Why does simplifying radicals help to solve problems?

Content

Vocabulary:

- Perfect Square
- Radicals
- Polynomials
- Key Characteristics of Quadratic and Linear Functions
- Linear Equations
- Solutions
- Slope/Average Rate of Change

Skills

- Simplify radicals when given perfect squares and non-perfect squares.
- Solve multi step equations (adding, subtracting, multiplying, dividing, distributing)
- Factor basic polynomials
- Use the graphing calculator to determine key values, and describe graphs of quadratics and linear functions.
- Calculate Average rate of change
- Graph linear equations using concepts of slope and y-intercepts.
- Solve systems of linear equations using substitution, elimination and graphing.

Possible Pre-Unit Map

2-3 Blocks ONLY

1st Day: Simplify Radicals, Solving multi-step equations, calculating slope

2nd Day: Factor Binomials using a GCF, Difference of perfect squares, quadratic trinomials

3rd Day: Solve systems of linear equations using substitution, elimination AND Graphing

Resources

NJGPA Practice Test

https://nj.mypearsonsupport.com/practice-tests/njgpa-math/

NJSLA Practice Test*

https://nj/mypearsonsupport.com/practice-tests/math/

NJDOE Model Curriculum

www.state.nj.us/education/modelcurriculum/math/

Teacher Resources by Standard

www.illustrativemathematics.org

illuminations.nctm.org/

www.pbslearningmedia.org/

Online Teaching Websites

www.khanacademy.org

www.youtube.com/user/bullcleo1

Assessments

Quiz

Formative: Other Evidence: Other: Quiz

Unit Topics

Standards

NJSLS 2016

Algebra

Creating Equations

A -CED A. Create equations that describe numbers or relationships

1. Create equations and inequalities in one variable and use them to solve problems. Include equations arising

from linear and quadratic functions, and simple rational and exponential functions.

Reasoning with Equations and Inequalities

A -REI B. Solve equations and inequalities in one variable

3. Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

Seeing Structure in Expressions

A-SSE B. Write expressions in equivalent forms to solve problems

3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

a. Factor a quadratic expression to reveal the zeros of the function it defines.

Functions

Building Functions

F-BF B. Interpret functions that arise in applications in terms of the context

4. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.

5. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.

6. Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.

Mathematical Practice

1 Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course

if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.A-SSE	Seeing Structure in Expressions
	Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.
MA.A-SSE.B	Write expressions in equivalent forms to solve problems
MA.A-SSE.B.3	Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
MA.A-SSE.B.3a	Factor a quadratic expression to reveal the zeros of the function it defines.
MA.A-CED	Creating Equations
MA.A-CED.A	Create equations that describe numbers or relationships
MA.A-CED.A.1	Create equations and inequalities in one variable and use them to solve problems.
MA.A-REI	Reasoning with Equations and Inequalities
MA.A-REI.B	Solve equations and inequalities in one variable
MA.A-REI.B.3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
MA.A-REI.C.6	Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.
MA.A-REI.D	Represent and solve equations and inequalities graphically