Unit Title: "Choosing a Phone Plan: Writing and Solving Equations"

Course: Algebra I (High School)

Subject Area: Mathematics

Time Frame: 14 days

Standards

Algebra I Standards	**Sunshine State Standards Benchmarks**	**NCEE New Standards**
The student will: 1.4 Use appropriate mathematical symbols to translate word phrases into variable expressions and word sentences into equations or inequalities. 4.1 Solve equations using the addition property of equality or subtraction property of equality. 4.2 Solve equations using the multiplication property of equality or division property of equality. 4.3 Solve first degree literal equations or formulas for a specified variables.	MA.A.1.4.1 The student will associate verbal names, written word names, and standard numerals with integers, rational numbers, irrational numbers, real numbers, *and complex numbers.* MA.D.1.4.2 The student will determine the impact when changing parameters of given functions.. MA.D.2.4.1 The student will represent real-world problem situations using finite graphs, matrices, sequences, *series, and recursive relations..*	The student: M7a Uses mathematical language and representations with appropriate accuracy, including numerical tables and equations, simple algebraic equations and formulas, charts, graphs, and diagrams. M3a Discovers, describes, and generalizes patterns, including linear, exponential, and simple quadratic relationships, i.e., those of the form $f(n) = n^2$ or $f(n) = cn^2$, for constant c, including $A = \pi r^2$, and represents them with variables and expressions. M3b Represents relationships with tables, graphs in the coordinate plane, and verbal or symbolic rules. M3c Analyzes tables, graphs, and rules to determine functional relationships. M3d Finds solutions for unknown quantities in linear equations and in simple equations and inequalities. M6g Reads and organizes data on charts

Algebra I Standards	Sunshine State Standards Benchmarks	NCEE New Standards
		and graphs, including scatter plots, bar, line, and circle graphs, and Venn diagrams; calculates mean and median.

Desired Results

Enduring Understanding	Essential Questions	Knowledge and Skills
Students will understand: • Learning algebra is more than developing proficiency in working with symbolic expressions. The focus must include functions and an emphasis placed on non-symbolic representations such as graphs and tables.	• How can an equation express a relationship we see in the everyday world? • What does it mean to solve an equation? • What tools can be used to solve equations? • What properties of real numbers are useful to help confirm that two or more expression are equivalent? • How can the distributive property be applied to solve problems? • How can the commutative property be applied to solve problems? • What properties of real numbers are needed to solve linear equations?	Students will know • Key terms (e.g., algebraic expression, commutative property of addition, commutative property of multiplication, distributive property, equivalent expressions, expanded form, factored form, function). Students will be able to • Use appropriate mathematical symbols to translate word phrases into variable expressions and word sentences into equations or inequalities. • Solve equations using the addition property of equality or subtraction property of equality. • Solve equations using the multiplication property of equality or division property of equality. • Solve first degree literal equations or formulas for a specified variable.

Acceptable Evidence

Performance Tasks	Quizzes, Test, and Work Samples	Observations and Dialogues
• **Guess and Check Tables** Students move from Guess and Check tables to writing equations.	Check-Up 1 Quiz A Check-Up 2 Quiz B Unit Test	Teacher observations of students during work on performance tasks. Accountable talk during work on performance tasks.

Performance Tasks	Quizzes, Test, and Work Samples	Observations and Dialogues
• **Cups and Tiles** Students use cups and tiles as a physical representation of the steps needed in finding solutions to equations. • **Working Backwards** Students are asked to write the steps to following wrapping a gift for a friend. They are then asked for the steps needed in "unwrapping" the package. Students solve equations by "undoing" what has been done to the variable to find the "original number."	Unit Project – Choosing a Phone Plan	