# Florida Algebra 1-A, Semester A

Florida Course Code: 1200370                    Credits: 0.5

## Course Overview and Goals

Florida Algebra 1-A, Semester A, is a single-semester course designed to build and develop your subject-matter knowledge while strengthening your mathematical skills. Linear relationships are a main focus of this course. You will explore properties of operations with numbers in the real number system. You will also write expressions to represent relationships and simplify and evaluate expressions using algebraic properties. You will create and solve linear equations and inequalities. At the end of this course, you will analyze function relationships and use function notation to describe relationships between quantities.

By the end of this course, you will be able to do the following:

- ❖ Apply the properties of operations to solve problems with rational numbers.
- ❖ Determine whether a number is rational or irrational.
- ❖ Write algebraic expressions to represent real-world and mathematical relationships.
- ❖ Apply algebraic properties to write equivalent expressions.
- ❖ Write one-variable linear equations and inequalities, and use them to solve problems.
- ❖ Solve linear and absolute value equations in one variable.
- ❖ Solve and graph linear inequalities, including compound inequalities.
- ❖ Apply function notation to describe relationships between quantities, and interpret function notation to solve problems.
- ❖ Interpret and create graphs of linear relationships.

## Scope and Sequence

This document outlines the design of Florida Algebra 1-A, Semester A, as well as the coverage of the Florida B.E.S.T. Standards: Mathematics within the course.

Florida B.E.S.T. Standards: Mathematics for Algebra 1A

## UNIT 1: THE REAL NUMBER SYSTEM (DAYS 1 – 25)

In this unit, you will apply properties of operations to rational numbers, explore rational and irrational numbers, and use algebraic expressions to describe and solve problems.

| Lesson/*Florida* Standards | Lesson Objective |
|---|---|
| **Syllabus and Orientation** | Review the Student Orientation and Course Syllabus at the beginning of this course. |
| **Add, Subtract, Multiply, and Divide Rational Numbers to Solve Real-World Problems**<br>*MA.K12.MTR.3.1, MA.K12.MTR.7.1, ELD.K12.ELL.MA.1* | Use the four operations to solve real-world and mathematical problems that contain rational numbers. |
| **Real Numbers**<br>*MA.K12.MTR.2.1, MA.K12.MTR.3.1, MA.K12.MTR.5.1* | Use decimal expansion to understand the real number system. |
| **Expressions**<br>*MA.K12.MTR.3.1, MA.K12.MTR.4.1, MA.K12.MTR.5.1, MA.K12.MTR.7.1, MA.912.AR.1.1* | Use expressions to model and solve problems. |
| **Clarifying Big Ideas: Variables** | Explore the different ways variables can be used. |
| **Equivalent Expressions**<br>*MA.K12.MTR.5.1, MA.K12.MTR.7.1, MA.912.AR.1.1* | Rewrite expressions in different forms to show how quantities are related. |

## UNIT 2: LINEAR EQUATIONS (DAYS 26 – 54)

In this unit, you will develop the skills necessary to solve multistep linear equations.

| Lesson/*Florida* Standards | Lesson Objective |
|---|---|
| **Linear Equations**<br>*MA.K12.MTR.3.1, MA.912.AR.1.1, MA.912.AR.2.1* | Solve one-step and two-step linear equations in one variable. |
| **Clarifying Big Ideas: Equal Sign and Balance** | Evaluate misunderstandings about the equal sign and balance. |

| Lesson/*Florida* Standards | Lesson Objective |
|---|---|
| **Applications of Ratio and Percent**<br><br>*MA.K12.MTR.3.1, ELD.K12.ELL.MA.1, MA.912.AR.1.1, MA.912.AR.2.1* | Use proportional relationships to solve ratio and percent problems. |
| **Solving Linear Equations**<br><br>*MA.K12.MTR.3.1, MA.912.AR.1.1* | Solve multistep linear equations in one variable. |
| **Solving Advanced Linear Equations**<br><br>*MA.K12.MTR.3.1, MA.912.AR.1.1, MA.912.AR.2.1* | Rearrange and solve advanced linear equations in one variable. |

## UNIT 3: EQUATIONS AND INEQUALITIES (DAYS 55 – 72)

In this unit, you will further develop the skills necessary to solve linear equations and inequalities and absolute value equations in real-world and mathematical contexts.

| Lesson/*Florida* Standards | Lesson Objective |
|---|---|
| **Solving Literal Equations**<br><br>*MA.K12.MTR.1.1, MA.K12.MTR.5.1, MA.K12.MTR.7.1, MA.912.AR.1.1, MA.912.AR.1.2* | Solve literal equations and formulas for a specified variable. |
| **Clarifying Big Ideas: Algebra and Reasoning** | Consider ways to justify solutions. Explore the difference between showing a procedure and showing your thinking. |
| **Solving Linear Inequalities**<br><br>*MA.K12.MTR.2.1, MA.K12.MTR.7.1, MA.912.AR.2.6* | Solve multistep linear inequalities in one variable and graph the solution set. |
| **Solving Compound Inequalities**<br><br>*MA.K12.MTR.2.1, MA.K12.MTR.7.1, MA.912.AR.2.6* | Solve and graph one-variable compound inequalities. |
| **Absolute Value Equations**<br><br>*MA.K12.MTR.6.1, MA.K12.MTR.7.1, MA.912.AR.4.1* | Solve one-variable absolute value equations. |

## UNIT 4: FUNCTIONS (DAYS 73 – 90)

In this unit, you will become familiar with how functions can describe relationships between quantities. You will also use function notation to model real-world problems.

| Lesson/*Florida* Standards | Lesson Objective |
|---|---|
| **Graphing Relations**<br><br>*MA.K12.MTR.2.1, MA.K12.MTR.5.1, ELA.K12.EE.1.1, ELA.K12.EE.3.1, MA.912.AR.2.4, MA.912.F.1.3, MA.912.F.1.8* | Identify variables in real-world situations and model the relationships graphically. |
| **Functions**<br><br>*MA.K12.MTR.2.1, ELA.K12.EE.1.1, MA.912.AR.2.4, MA.912.F.1.3* | Identify functions in multiple representations and relate the domains and ranges. |
| **Function Notation**<br><br>*MA.K12.MTR.4.1, MA.K12.MTR.7.1, MA.912.AR.2.4, MA.912.F.1.2* | Use function notation to describe relationships between quantities and interpret function notation accurately to solve problems. |
| **Unit Activity: Functions**<br><br>*MA.K12.MTR.1.1, MA.K12.MTR.2.1, MA.912.AR.2.4, MA.912.F.1.2* | Use function notation to describe relationships between quantities and interpret function notation accurately to solve problems. |