

**URBANDALE COMMUNITY SCHOOL DISTRICT  
CURRICULUM FRAMEWORK OUTLINE**

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<b>SUBJECT:</b>	<b>Mathematics</b>	
<b>COURSE TITLE:</b>	<b>Algebra IA</b>	
<b>PREREQUISITES:</b>	<b>None</b>	<b>2 Credits/2 Semesters</b>

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**COURSE DESCRIPTION:**

Algebra I A is the first year of the two year course sequence of Algebra I A and B. This course is designed for students who want to take algebra but find the abstract concepts difficult to grasp and need additional time to refine skills and build confidence. Algebra I A allows students to cover the same curriculum as students in first semester Algebra 1. Students will be able to spend more time on each concept and will have more time to practice and demonstrate skills that will develop and internalize the abstract concepts presented in algebra.

**STANDARDS AND COURSE BENCHMARKS WITH INDICATORS:**

**In order that our students may achieve the maximum benefit from their talents and abilities, the students of Urbandale Community School District's Algebra I course should be able to...**

**Standard I: Understand real and complex number systems.**

**Benchmark: Use properties of rational and irrational numbers (Iowa Core: HSN.RN.3)**

Indicators: Know and justify that the sum or product of two rational numbers is rational.  
Know and justify that the sum of a rational number and an irrational number is irrational.  
Know and justify that the product of a nonzero rational number and an irrational number is irrational.

**Standard II: Understand quantities.**

**Benchmark: Reason quantitatively and use units to solve problems. (Iowa Core: HSN.Q.A.1, 2, 3)**

Indicators: Interpret units in the context of the problem.  
Use units to evaluate the appropriateness of the solution.  
Choose the appropriate units for a specific formula.  
Determine and interpret appropriate quantities when using modeling.  
Determine the accuracy of values based on their limitations in the context of the situation.

**Standard III: Understand the use of expressions.**

**Benchmark: Interpret the structure of expressions. (Iowa Core: HSA.SSE.A.1a, 1b, 2)**

Indicators: Interpret and identify the parts of an expression, such as terms, factors, coefficients, and exponents.

**Standard IV: Create equations.**

**Benchmark: Create equations that describe numbers or relationships. (Iowa Core HSA.CED.A. 1, 2, 3, 4)**

Indicators: Write and solve one variable equations.  
Write and solve one variable inequalities.  
Create equations in two or more variables to represent relationships between quantities.  
Use equations and inequalities to model real world applications and check reasonableness of answers.  
Solve for an appropriate variable in a formula.

**Standard V: Demonstrate reasoning with equations and inequalities.**

**Benchmark: Understand solving equations as a process of reasoning and explain the reasoning. (Iowa Core: HSA.REI.A.1)**

Indicators: Justify each step in solving an equation.

**Benchmark: Solve equations and inequalities in one variable. (Iowa Core: HSA.REI.B.3, 4a, 4b)**

Indicators: Solve linear equations in one variable, including equations with coefficients represented by letters.  
Solve linear inequalities in one variable, including inequalities with coefficients represented by letters.

**Standard VI: Understand functions.**

**Benchmark: Understand the concept of a function and use function notation. (Iowa Core: HSF.IF.A. 1, 2, 3)**

Indicators: Demonstrate understanding that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range.  
Demonstrate an understanding of function notation and evaluate functions for inputs in their domains.  
Interpret statements that use function notation in terms of a context.  
Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers.

**Benchmark: Build a function that models a relationship between two quantities.**  
**F.BF.1a, 1b, 2**

Indicators/Success criteria:

- Determine an explicit expression from a context.
- Create new functions using arithmetic operations.

**Standard VII: Understand statistics & probability.**

**Benchmark: Summarize, represent, and interpret data on a single count or measurement variable. (Iowa Core: HSS.ID.A. 1, 2, 3)**

- Indicators: Represent data with plots on the real number line (dot plots, histograms, and box plots).
- Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.
- Interpret differences in shape, center, and spread in the context of data sets, accounting for possible effects of extreme data points (outliers).

**Benchmark: Summarize, represent, and interpret data on two categorical and quantitative variables. (Iowa Core: HSS.ID.B. 5, 6a, 6b, 6c)**

- Indicators: Summarize categorical data for two categories in two-way frequency tables.
- Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies).
- Recognize possible associations and trends in the data.
- Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.
- Fit a function to the data; use functions fitted to data to solve problems in the context of the data.
- Use given functions or choose a function suggested by the context.
- Emphasize linear, quadratic, and exponential models.
- Informally assess the fit of a function by plotting and analyzing residuals.
- Fit a linear function for a scatter plot that suggests a linear association.

**Benchmark: Interpret linear models. (Iowa Core: HSS.ID.C. 7, 8, 9)**

- Indicators: Compute (using technology) and interpret the correlation coefficient of a linear fit.
- Distinguish between correlation and causation.

No student enrolled in the Urbandale Community School District shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination in the District's programs on the basis of race, color, creed, sex, religion, marital status, ethnic background, national origin, disability, sexual orientation, gender identity, or socio-economic background. The policy of the District shall be to provide educational programs and opportunities for students as needed on the basis of individual interests, values, abilities and potential.

