

# North Dakota Mathematics Content Standards

## High School: Algebra I Prioritized Standards

Northeast Education Services Cooperative (NESC) - 2017



## How to Read This Document

Example: HS.A-SSE.1

"HS.A-SSE.1" references the grade level followed by the course, domain and then the standard. This coding is taken directly from the North Dakota Department of Public Instruction's standards document.

## Prioritized Standards

### Seeing Structure in Expressions

Interpret the structure of expressions:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
HS.A-SSE.1	Interpret expressions that represent a quantity in terms of its context. a. Interpret parts of an expression, such as terms, factors, and coefficients. b. Interpret complicated expressions by examining one or more of their parts as a single entity.	✓	✓	✓	✓	✓	5

Write expressions in equivalent forms to solve problems:

No standards were prioritized within this cluster.

For more information about this document or the prioritization process please contact the NESC:

[nesc@nescnd.org](mailto:nesc@nescnd.org) / 701-662-7650

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## Arithmetic with Polynomials and Rational Expressions

Perform arithmetic operations on polynomials:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
HS.A-APR.1	Add, subtract, and multiply polynomials. Understand that polynomials form a system comparable to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication.	✓		✓	✓	✓	4

Understand the relationship between zeros and factors of polynomials:

No standards were prioritized within this cluster.

Use polynomial identities to solve problems:

No standards were prioritized within this cluster.

Rewrite rational expressions:

No standards were prioritized within this cluster.

## Creating Equations and Inequalities

Create equations that describe numbers or relationships:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
HS.A-CED.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.	✓	✓	✓	✓	✓	5
HS.A-CED.2	Create equations in two or more variables to represent relationships between quantities. Graph equations on coordinate axes with appropriate labels and scales.	✓	✓	✓	✓	✓	5

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## Reasoning with Equations and Inequalities

Understand solving equations as a process of reasoning and explain the reasoning:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
HS.A-REI.1	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	✓	✓	✓	✓	✓	5

Solve equations and inequalities in one variable:

No standards were prioritized within this cluster.

Solve systems of equations:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
HS.A-REI.6	Solve systems of linear equations exactly and approximately, focusing on pairs of linear equations in two variables.	✓	✓	✓	✓	✓	5

Represent and solve equations and inequalities graphically:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
HS.A-REI.10	Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane.	✓	✓	✓	✓	✓	5
HS.A-REI.12	Graph the solutions to a linear inequality in two variables as a half-plane. Graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.	✓	✓	✓	✓	✓	5

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## Interpreting Functions

Understand the concept of a function and use function notation:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
HS.F-IF.1	Understand 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. If $f$ is a function and $x$ is an element of its domain, then $f(x)$ denotes the output of $f$ corresponding to the input $x$ . The graph of $f$ is the graph of the equation $y = f(x)$ .	✓	✓	✓	✓	✓	5
HS.F-IF.2	Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.	✓	✓	✓	✓	✓	5

## Seeing Structure in Expressions

Interpret functions that arise in applications in terms of the context

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
HS.F-IF.4	Use tables, graphs, verbal descriptions, and equations to interpret and sketch the key features of a function modeling the relationship between two quantities.	✓	✓	✓	✓	✓	5
HS.F-IF.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.	✓	✓	✓	✓	✓	5
HS.F-IF.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.	✓	✓	✓	✓	✓	5

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### Analyze functions using different representations

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
HS.F-IF.7a	Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. a) Graph linear and quadratic functions and show intercepts, maxima, and minima where appropriate.	✓	✓	✓	✓	✓	5
HS.F-IF.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	✓	✓	✓	✓	✓	5

### Linear, Quadratic, and Exponential Models

Interpret expressions for functions in terms of the situation they model:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
HS.F-LE.5	Interpret the parameters in a linear, quadratic, or exponential function in context.	✓	✓	✓	✓	✓	5

### Interpreting Categorical and Quantitative Data

Interpret linear models:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
HS.S-ID.7	Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. Interpolate and extrapolate the linear model to predict values.	✓	✓	✓	✓	✓	5

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## The Real Number System

Use properties of rational and irrational numbers:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
HS.N-RN.4	Perform basic operations on radicals and simplify radicals to write equivalent expressions.	✓		✓	✓	✓	4

## Quantities (Mathematical Practices 1, 4, and 6)

Reason quantitatively and use units to solve problems:

Code	Standard	Endurance	Leverage	Readiness	Assessment	Teacher Judgement	Total Score
HS.N-Q.1	Use units as a way to understand problems and to guide the solution of multi-step problems (e.g., unit analysis). Choose and interpret units consistently in formulas. Choose and interpret the scale and the origin in graphs and data displays.	✓	✓	✓	✓	✓	5

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