

# Algebra MCA-III Achievement Level Descriptors

## General comments for all grade levels

Meets State Standard	<b>Exceeds the Standard</b> Students at this level of mathematics exceed the mathematics skills of the Minnesota Academic Standards. Some of the skills demonstrated very consistently may include:
Meets State Standard	<b>Meets the Standard</b> Student at this level of mathematics meet the mathematics skills of the Minnesota Academic Standards. Some of the skills demonstrated may include:
Partially Meets State Standard	<b>Partially Meets the Standard</b> Students at this level partially meet the mathematics skills of the Minnesota Academic Standards. Some of the skills demonstrated may include:
Does Not Meet State Standard	<b>Does Not Meet the Standard</b> Students at this level succeed at few of the fundamental mathematical skills of the Minnesota Academic Standards. Some of the skills demonstrated may include:

## Reflection Questions

- What patterns emerge in the Algebra Strand?
- What similarities and differences do you notice from grade to grade?
- How do the 'verbs' change at each of the 4 achievement levels?
- What can you do to assure all students meet the state standards for this strand?

399

## 3rd Grade

Meets State Standard	<b>Exceeds the Standard</b> Conceptual understanding of pattern (e.g., recognizes input-output relationship); interprets number sentences involving unknowns.
Meets State Standard	<b>Meets the Standard</b> Continues patterns to a specified term (e.g., given first three terms in a pattern, finds sixth term); represents real-world situations with a number sentence involving basic facts and an unknown.
Partially Meets State Standard	<b>Partially Meets the Standard</b> Identifies next number in a pattern; represents simple situations with a number sentence involving basic facts and an isolated unknown.
Does Not Meet State Standard	<b>Does Not Meet the Standard</b> Recognizes additive patterns in lists of numbers; recognizes basic facts represented in number sentences

499

## 4th Grade

Meets State Standard	<b>Exceeds the Standard</b> Uses multi-step rules for patterns presented in different formats; translates between real-world situations and number sentences.
Meets State Standard	<b>Meets the Standard</b> Uses a verbal rule for input-output table; recognizes an algebraic rule for a one-operation pattern; represents real-world situations with a number sentence involving an unknown.
Partially Meets State Standard	<b>Partially Meets the Standard</b> Uses a verbal rule to continue pattern; matches number sentences with an isolated unknown in situations involving only multiplication.
Does Not Meet State Standard	<b>Does Not Meet the Standard</b> Recognizes patterns in lists of numbers.

599

## 5th Grade

Meets State Standard	<b>Exceeds the Standard</b> Works fluently with patterns and/or rules involving more than one operation or complex problem; applies the commutative, associative and distributive properties; interprets inequalities using variables.
Meets State Standard	<b>Meets the Standard</b> Uses rules to generate patterns; translates between patterns and rules; applies commutative and associative properties; understands simple inequalities; represents a situation with an equation containing a variable.
Partially Meets State Standard	<b>Partially Meets the Standard</b> Recognizes patterns in a list of numbers; resorts to calculation to verify commutative and associative properties; solves verbal and simple one-step equations and inequalities by substituting a value for the unknown.
Does Not Meet State Standard	<b>Does Not Meet the Standard</b> Recognizes patterns that use skip counting; works with simple variable representations.

699

## 6th Grade

Meets State Standard	<b>Exceeds the Standard</b> Interprets equations and inequalities with multiple unknowns; understands that solving for a variable is not always the answer to the question.
Meets State Standard	<b>Meets the Standard</b> Represents relationships between varying quantities using equations and inequalities, involving variables, graphs, and verbal descriptions; uses the properties of arithmetic as well as order of operations to generate equivalent expressions and to solve problems.
Partially Meets State Standard	<b>Partially Meets the Standard</b> Solves one-step problems in straightforward situations; uses computational facts, instead of equality, to find solutions; recognizes patterns (e.g., multiplicative and additive patterns); recognizes relationships between varying quantities represented in tables, graphs, or verbal descriptions.
Does Not Meet State Standard	<b>Does Not Meet the Standard</b> Understands concept of variable as a place holder for an answer; recognizes patterns (additive) within lists of numbers; occasionally solves one-step problems in very familiar situations (money); can find missing whole number based on number facts, not algebraic properties.

799

## 7th Grade

Meets State Standard	<b>Exceeds the Standard</b> Distinguishes proportional relationships from other relationships; understands the concept of proportionality and applies it to non-routine problem solving situations; uses the properties as well as order of operations to generate equivalent algebraic expressions and solve non-routine problems; represents and solves equations involving non-routine representations
Meets State Standard	<b>Meets the Standard</b> Understands the concept of proportionality and applies to routine problem solving situations; uses properties of algebra as well as order of operations to generate equivalent algebraic expressions and solve problems; represents and solves equations involving one variable, symbolically.
Partially Meets State Standard	<b>Partially Meets the Standard</b> Matches a proportion to a given problem situation; writes algebraic expressions using the commutative and associative properties; solves equations numerically (by substitution).
Does Not Meet State Standard	<b>Does Not Meet the Standard</b> Represents simple context as a graph; relies on key words to determine operations to represent relationships; solves one-step equations in explicit situations following rote procedure, instead of the concept of equality.

899

## 8th Grade

Meets State Standard	<b>Exceeds the Standard</b> Conceptual understanding of dependent and independent variables; solves equations and inequalities and interprets solutions; represents non-routine linear situations with tables, verbal descriptions, symbols, equations, and graphs; converts between forms of a linear equation (i.e., standard, point-slope, slope-intercept); knows names of algebraic properties for justification in evaluating algebraic expressions; represents systems of linear equations provided a verbal description; solves a linear system algebraically and graphically and expresses the solution as an ordered pair.
Meets State Standard	<b>Meets the Standard</b> Recognizes a linear function in symbolic and graphic presentations; represents familiar and routine linear situations with tables, verbal descriptions, symbols, equations, and graphs and translates from one representation to another; identifies graphical properties of linear functions; generates and evaluates equivalent algebraic expressions; identifies systems of linear equations when provided a verbal description; identifies the solution of a linear system as the intersection of the two lines when given the graph; solves equations and inequalities using algebraic properties.
Partially Meets State Standard	<b>Partially Meets the Standard</b> Recognizes familiar linear functions in symbolic (using key variables) and graphic presentations; translates linear representations from an equation in slope-intercept form to a graph; identifies y-intercept and slope from graphical representation or an equation written in slope-intercept form; evaluates routine algebraic expressions; solves equations with variables using substitution.
Does Not Meet State Standard	<b>Does Not Meet the Standard</b> Recognizes linear functions in graphic presentations; translates linear representations from a table to a graph; identifies slope by counting whole number units on a graph; identifies patterns in a table of a linear function (e.g., recognizes patterns for x or y-values but not the relationship between x and y); substitutes "easy" numbers and evaluates simple expressions.