# Grade 8 Mathematics MCA-III Achievement Level Descriptors

## Number and Operation

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|---|---|
| 899 | **Meets State Standard** |
| 861 | |
| 850 | |
| 840 | **Does Not Meet State Standard** |
| 801 | |

**Exceeds the Standard**   Conceptual understanding of real numbers.

**Meets the Standard**   Recognizes real numbers in various forms; compares real numbers; generates equivalent expressions involving rational numbers in routine problems/situations, including scientific notation.

**Partially Meets the Standard**   Recognizes familiar rational and irrational numbers.

**Does Not Meet the Standard**   Recognizes fractions and terminating decimals as rational numbers.

## Algebra

**Exceeds the Standard**   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 the Standard**   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 the Standard**   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 the Standard**   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.

## Geometry & Measurement

**Exceeds the Standard**   Conceptual understanding of the Pythagorean Theorem and applies it in non-routine problems; understands and applies slopes of parallel and perpendicular lines graphically and symbolically.

**Meets the Standard**   Applies the Pythagorean Theorem to solve problems; identifies parallel lines graphically and symbolically; partial connection of slope with perpendicular lines.

**Partially Meets the Standard**   Substitutes numbers in the Pythagorean Theorem to determine hypotenuse; partial connection of slope with parallel lines.

**Does Not Meet the Standard**   Recognizes the equation for the Pythagorean Theorem; recognizes parallel or perpendicular lines on a graph.

## Data Analysis & Probability

**Exceeds the Standard**   Given a data set, student determines the line of best fit and interprets the data; assesses reasonableness of predictions in non-routine situations

**Meets the Standard**   Given a data set, student identifies the line of best fit and interprets the data; makes predictions about the data set.

**Partially Meets the Standard**   Given a data set, student identifies the line of best fit and makes statements about the general trend of the data.

**Does Not Meet the Standard**   Generalizes the properties of the line of best fit of a graphed data set; displays data using scatterplots.