Minnesota Department of Education

Mathematics MCA-Modified Achievement Level Descriptors (ALDs) Grades 5-8

Grade 5

Does Not Meet the Modified Achievement Standards (Grade 5)

Students at this level succeed at few of the most fundamental mathematics skills of the Minnesota Academic Standards. The following are some of the skills these students demonstrate.

- **Number and Operation:** Order numbers expressed in decimals to two places; solve addition and subtraction problems involving decimals to two places.
- **Algebra:** Identify the operation required in a simple mathematical situation.
- **Geometry and Measurement:** Identify nets for simple three-dimensional figures.
- **Data Analysis:** Count to find the median of a short, ordered list consisting of an uneven number of items.

Partially Meets the Modified Achievement Standards (Grade 5)

Students at this level partially meet the mathematics skills of the Minnesota Academic Standards. The following are some of the skills these students demonstrate:

- **Number and Operation:** Find 0.1 more than a number and 0.1 less than a number; solve multi-step problems involving addition, subtraction, and multiplication.
- **Algebra:** Extend number patterns; represent mathematical situations using simple number sentences.
- **Geometry and Measurement:** Find the surface area of a three-dimensional shape represented by a net.
- **Data Analysis:** Find the median of a short, ordered list of one and two-digit numbers.

Meets the Modified Achievement Standards (Grade 5)

Students at this level meet the mathematics skills of the Minnesota Academic Standards. The following are some of the skills these students demonstrate:

- **Number and Operation:** Order fractions; express quotients as whole numbers with remainders.
- **Algebra:** Solve an equation or inequality with a variable.
- **Geometry and Measurement:** Identify faces of three-dimensional figures.
- **Data Analysis:** Find mean, median and range of data comprised of one and two-digit numbers; read line and bar graphs using whole numbers.

Exceeds the Modified Achievement Standards (Grade 5)

Students at this level exceed the mathematics skills of the Minnesota Academic Standards. The following are some of the skills these students demonstrate:

- **Number and Operation:** Recognize equivalent fractions; divide numbers with dividends up to three-digits.
- **Algebra:** Apply order of operations to solve problems.
- **Geometry and Measurement:** Find volume and surface area of rectangular prisms.
- **Data Analysis:** Find mean, median and range of data comprised of two and three-digit numbers; interpret line and bar graphs.

Grade 6

Does Not Meet the Modified Achievement Standards (Grade 6)

Students at this level succeed at few of the most fundamental mathematics skills of the Minnesota Academic Standards. The following are some of the skills these students demonstrate.

- **Number and Operation:** Recognize that ratio notation may take different forms (e.g., ¼, 1 out of 4).
- **Algebra:** Apply function rules in graphs.
- **Geometry and Measurement:** Identify complementary, right, and supplementary angles.
- **Data Analysis:** Distinguish between theoretical and experimental probability.

Partially Meets the Modified Achievement Standards (Grade 6)

Students at this level partially meet the mathematics skills of the Minnesota Academic Standards. The following are some of the skills these students demonstrate:

- **Number and Operation:** Use multiplication to solve rate and ratio problems.
- **Algebra:** Apply function rules in graphs and tables.
- **Geometry and Measurement:** Solve problems involving complementary and supplementary angles.
- **Data Analysis:** Represent probabilities as fractions.

Meets the Modified Achievement Standards (Grade 6)

Students at this level meet the mathematics skills of the Minnesota Academic Standards. The following are some of the skills these students demonstrate:

- **Number and Operation:** Convert between ratios, fractions, and percents to solve problems.
- **Algebra:** Determine the value of a variable in an equation.
- **Geometry and Measurement:** Find the measure of a missing angle in a triangle.
- **Data Analysis:** Use a tree diagram to determine sample space.

Exceeds the Modified Achievement Standards (Grade 6)

Students at this level exceed the mathematics skills of the Minnesota Academic Standards. The following are some of the skills these students demonstrate:

- **Number and Operation:** Convert a percent to a fraction in lowest terms.

- **Algebra:** Use equations involving variables to solve problems.
- **Geometry and Measurement:** Decompose polygons into triangles to find measure of interior angles.
- **Data Analysis:** Calculate experimental probabilities and express the results as fractions.

Grade 7

Does Not Meet the Modified Achievement Standards (Grade 7)

Students at this level succeed at few of the most fundamental mathematics skills of the Minnesota Academic Standards. The following are some of the skills these students demonstrate.

- **Number and Operation:** Locate positive and negative rational numbers that are integers on a number line.
- **Algebra:** Identify proportional relationships in real-world situations.
- **Geometry and Measurement:** Determine change of scale in similar geometric figures.
- **Data Analysis:** Identify median in an unordered data set.

Partially Meets the Modified Achievement Standards (Grade 7)

Students at this level partially meet the mathematics skills of the Minnesota Academic Standards. The following are some of the skills these students demonstrate:

- **Number and Operation:** Add positive and negative rational numbers that are integers.
- **Algebra:** Recognize linear functions in graphical representation.
- **Geometry and Measurement:** Use scale factors to solve problems with similar geometric figures.
- **Data Analysis:** Determine mean, median and range for given data; understand simple probability expressed in fractional form.

Meets the Modified Achievement Standards (Grade 7)

Students at this level meet the mathematics skills of the Minnesota Academic Standards. The following are some of the skills these students demonstrate:

- **Number and Operation:** Use the properties of arithmetic as well as order of operations to solve problems.
- **Algebra:** Determine slope from graphical presentations.
- **Geometry and Measurement:** Graph reflections and translations on a coordinate grid.
- **Data Analysis:** Compare mean, median and range for a data set; understand simple probability in fractions, decimals and percents.

Exceeds the Modified Achievement Standards (Grade 7)

Students at this level exceed the mathematics skills of the Minnesota Academic Standards. The following are some of the skills these students demonstrate:

- **Number and Operation:** Represent absolute value as distance on a number line.
- **Algebra:** Recognize how the graph of a function changes when the unit rate changes.

- **Geometry and Measurement:** Use length ratios to calculate area of similar geometric figures.
- **Data Analysis:** Calculate the impact of inserting or deleting a data point on the mean and median of a data set; calculate probability as a fraction of sample space.

Grade 8

Does Not Meet the Modified Achievement Standards (Grade 8)

Students at this level succeed at few of the most fundamental mathematics skills of the Minnesota Academic Standards. The following are some of the skills these students demonstrate.

- **Number and Operation:** Generate equivalent expressions involving scientific notation.
- **Algebra:** Apply order of operations to generate equivalent expressions.
- **Geometry and Measurement:** Identify the Pythagorean Theorem.
- **Data Analysis:** Identify simple patterns in a data set.

Partially Meets the Modified Achievement Standards (Grade 8)

Students at this level partially meet the mathematics skills of the Minnesota Academic Standards. The following are some of the skills these students demonstrate:

- **Number and Operation:** Recognize perfect squares under 100.
- **Algebra:** Evaluate simple expressions by substituting whole numbers.
- **Geometry and Measurement:** Recognize that the Pythagorean Theorem applies only to right triangles.
- **Data Analysis:** Generalize the properties of the line of best fit.

Meets the Modified Achievement Standards (Grade 8)

Students at this level meet the mathematics skills of the Minnesota Academic Standards. The following are some of the skills these students demonstrate:

- **Number and Operation:** Evaluate expressions involving positive integer exponents.
- **Algebra:** Solve algebraic equations at specified values of their variables.
- **Geometry and Measurement:** Apply the Pythagorean Theorem to find the length of a missing side of a right triangle.
- **Data Analysis:** Identify the line of best fit and make predictions about the data set.

Exceeds the Modified Achievement Standards (Grade 8)

Students at this level exceed the mathematics skills of the Minnesota Academic Standards. The following are some of the skills these students demonstrate:

- **Number and Operation:** Identify the square root of a positive integer.
- **Algebra:** Evaluate algebraic expressions involving absolute values.
- **Geometry and Measurement:** Use the Pythagorean Theorem to find the distance between two points in a coordinate system.
- **Data Analysis:** Estimate rate of change based on line of best fit.