

Grade 8 Mathematics ISAT Proficiency Level Descriptors

Advanced

In the area of mathematics, eighth grade students typically performing at the Advanced level consistently demonstrate a **thorough understanding** of grade-level skills. These students

- demonstrate thorough understanding of place value, the numeration system, and estimation.
- perform challenging calculations.
- demonstrate firm understanding of measurement related to two- and three-dimensional figures.
- apply multiple conversions between units of measure in problem-solving situations.
- use rates, proportions, ratios, and map scales in challenging problem-solving situations.
- translate, evaluate and simplify complex numerical and algebraic expressions and equations.
- solve challenging two-step equations and inequalities.
- extend, describe, and model challenging patterns presented in multiple formats.
- apply advanced geometric concepts related to size, shape, and spatial relationships.
- interpret, translate between, and recognize uncommon relationships of different types of data displays.
- demonstrate understanding of theoretical and experimental probability in complex situations.

Proficient

In the area of mathematics, eighth grade students typically performing at the Proficient level demonstrate a **general understanding** of grade-level skills. These students

- demonstrate general understanding of place value, the numeration system, and estimation.
- perform grade-level calculations.
- understand measurements related to two- and three- dimensional figures.
- use conversions between units of measurement in problem situations.
- use rates, proportions, ratios, and map scales in problem solving situations.
- identify properly constructed dimensional analysis conversions.
- translate, evaluate, and simplify numerical and algebraic expressions and equations.
- solve one- and two- step equations and inequalities.
- extend, describe, and model patterns.
- represent data in a table, as a graph, and as a mathematical relationship.
- apply geometric concepts related to size, shape, and spatial relationships.
- demonstrate an understanding of plotting points on a coordinate grid.
- read, interpret, and make predictions given information from tables, charts, and graphs.
- organize information into data displays.
- determine measures of central tendency.
- demonstrate understanding of theoretical and experimental probability.

Basic

In the area of mathematics, eighth grade students typically performing at the Basic level demonstrate a **limited understanding** of grade-level skills. These students

- demonstrate limited understanding of place value, the numeration system, and estimation.
- perform simple calculations.
- demonstrate limited understanding of measurement related to two- and three-dimensional figures.
- convert simple units of measurement.
- show limited understanding of ratios, scales, proportions, and dimensional analysis.
- translate, evaluate, and simplify basic numerical and algebraic expressions and equations.
- solve simple one-step equations and inequalities.
- extend simple patterns.
- apply simple geometric concepts.
- have limited understanding of plotting points on a coordinate grid beyond the first quadrant.
- read basic displays of data.
- demonstrate limited understanding of measures of central tendency.
- recognize basic concepts of simple probability.