

Grade 6 Proficiency Level Descriptors

Minimal

Students performing at the minimal level are beginning to apply their mathematics knowledge and skills. They recognize, but may have difficulty representing rational numbers. They are learning to compare and order rational numbers and identify their relationships. They are developing an understanding of prime factorization to find least common multiples and greatest common factors. They add integers with the same sign, estimate and compare some positive fractions, mixed numbers, and decimals. Students have difficulty solving simple problems involving ratios and proportions, and their ability to convert measurements within a given system is just developing. Students attempt to evaluate and simplify basic expressions and recognize basic patterns in expressions, tables, and graphs. They identify attributes and properties of line segments and are developing an understanding of angles. They inconsistently identify locations of geometric shapes after applying translations on a coordinate plane. Students are learning to convert basic measurements and decide when to estimate or use precise measurements. They are beginning to use formulas to find the circumference of a circle, the area of a circle or the surface area, and volume of a cylinder. They inaccurately write or compare the results of probability experiments as fractions or percents. Students design investigations to reach conclusions, and may be able to display the data in a circle graph. They have a limited understanding of making inferences based on data.

Partial

Students performing at the partial level inconsistently apply their mathematics knowledge and skills. They recognize and represent rational numbers as fractions, decimals, and percents, but have difficulty converting them from one form to another. They occasionally compare and describe relationships among rational numbers. Students generally find prime factorizations, but confuse least common multiples and greatest common factors. They are beginning to understand how to estimate and compute positive fractions, mixed numbers and decimals, and the addition and subtraction of integers. Students solve simple problems involving ratios and proportions, but have difficulty converting basic measurements and determining when it is appropriate to estimate or use precise measurement. They attempt to evaluate and simplify expressions and solve single-variable linear equations. Students recognize patterns in expressions, tables, and graphs, but have difficulty determining the relationships and rules. They identify and sometimes analyze attributes and properties of line segments and angles. They identify the location of geometric shapes after applying translations and reflections on a coordinate plane. Students use formulas to find the circumference and area of a circle, but are often inaccurate finding the surface area and volume of a cylinder. They may be able to write the results of probability experiments as fractions or percents, and are beginning to compare the results of experiments with theoretical probability. They design investigations to reach conclusions using statistical methods including circle graphs, and sometimes make inferences based on data.

Grade 6 Proficiency Level Descriptors

Sufficient

Students performing at the sufficient level apply mathematics knowledge and skills appropriately. They represent and convert rational numbers as fractions, decimals, and percents, and order and describe relationships among rational numbers. Students find prime factorizations, least common multiples and greatest common factors. They estimate and compute positive fractions, mixed numbers and decimals, add and subtract integers, and solve problems using ratios and proportions. They convert measurements and determine when it is appropriate to estimate or use precise measurement. Students evaluate and simplify expressions, recognize equivalent forms of expressions, and solve single-variable linear equations. They analyze algebraic expressions, tables, and graphs to determine patterns, relations, and rules. They identify and analyze attributes and properties of line segments and angles. Students identify the locations of geometric shapes after applying transformations on a coordinate plane. They derive and use formulas to find the circumference and area of a circle, and the surface area and volume of a cylinder. Students write the results of probability experiments as fractions or percents and compare results of experiments with theoretical probability. They design investigations to reach conclusions using statistical methods including circle graphs and scatter plots to make inferences based on data.

Substantial

Students performing at the substantial level consistently apply their mathematics knowledge and skills appropriately. They precisely represent and convert rational numbers as fractions, decimals, and percents, and effectively order and describe relationships among rational numbers. They easily find prime factorizations, least common multiples, and greatest common factors. They accurately estimate and compute positive fractions, mixed numbers and decimals, add and subtract integers, and solve problems using ratios and proportions. Students easily convert measurements and determine when it is appropriate to estimate or use precise measurement. They evaluate and simplify expressions, recognize equivalent forms of expressions, and solve single-variable linear equations with reliable results. Students accurately analyze algebraic expressions, tables, and graphs to determine patterns, relations, and rules. They show consistency readily analyzing attributes and properties of line segments and angles. They represent and find the locations of geometric shapes after applying transformations on a coordinate plane. They consistently derive and use formulas to find the circumference and area of a circle and to find the surface area and volume of a cylinder. Students write the results of probability experiments as fractions or percents and critically compare and analyze results of experiments with theoretical probability. They effectively design investigations to reach logical conclusions using statistical methods including circle graphs and scatter plots to make inferences based on data.