

Grade 5 Mathematics

The grade 5 mathematics assessment presents a variety of items representing the six strands of the Wisconsin Model Academic Standards for Mathematics: Mathematical Processes (*Reasoning, Communication, Connections, Representation, Problem Solving*), Number Operations and Relationships, Geometry, Measurement, Statistics and Probability, and Algebraic Relationships. Assessment items in each category may appear without context and within the context of real-world situations. All test items are either selected-response (multiple-choice) or constructed response format. Some items require the use of mathematical tools including a set of pattern blocks, a ruler with 1/8 inch and millimeter intervals, and a calculator (four-function calculator availability is required for most sessions of the test). Students performing at each level draw on a broad range of mathematical knowledge while applying skills and strategies to solve real-world and nonroutine mathematical problems. Each proficiency level presumes mastery at previous levels.

Advanced

Score range: 505 and above

At the beginning of fifth grade, students performing at the Advanced level are able to justify mathematical processes used to solve problems that involve all four operations, including two-step problems involving equalities and inequalities. They represent fractions with pictures and add fractions with like denominators. Students compare and describe two and three-dimensional figures, identify parallel and perpendicular lines, and compare shapes with one or more lines of symmetry. They identify and describe plotted points on the first quadrant of a coordinate grid. Students convert within a system of measurement and determine area and perimeter. Students determine median, mode and range, and determine probability using data from a chart or table. Students describe and extend patterns including one and two-step numeric and geometric patterns.

Proficient

Score range: 463–504

At the beginning of fifth grade, students performing at the Proficient level defend the mathematical strategies used to solve one-step problems and use mathematical terminology to explain their thinking. Students use addition and subtraction with regrouping, as well as multiplication and division facts to solve two-step problems. They identify equivalent fractions and add and subtract fractions with common denominators. Students compare and identify perspectives of three-dimensional figures and plot points on the first quadrant of a coordinate grid. They select appropriate units and tools of measurement, measure to the nearest 1/4 inch or centimeter, and convert within systems of measurement. Students determine area and perimeter of two-dimensional shapes, find the median, mode and range of a set of data, and determine probability using tables. They identify rules, extend numeric and geometric patterns, and use order of operations to solve two-step problems.

Basic

Score range: 445–462

At the beginning of fifth grade, students performing at the Basic level use some mathematical terminology to explain processes used to solve problems. Students solve problems using addition and subtraction with and without regrouping, as well as multiplication facts. They make change, round monetary amounts to the nearest dollar, and identify fractions of $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$ represented in pictures. They identify attributes of two and three-dimensional figures, identify simple nets (flat patterns), and compose and decompose two-dimensional figures with pattern block shapes. Students read, interpret, and use tools of measurement to determine length, weight and temperature, measure to the nearest $\frac{1}{2}$ inch or centimeter, and describe the difference between perimeter and area. Students read and interpret simple bar graphs and design simple representations of probability. Students recognize and extend simple numeric and geometric patterns, and, without the use of a calculator, solve one-step multiplication and division equations with a missing variable. Students apply order of operations and use the commutative or associative property to solve problems with single digits.

Minimal Performance

Score range: 444 and below

At the beginning of fifth grade, students performing at the Minimal Performance level communicate simple mathematical ideas used to solve problems. Students read number lines, order numbers using place value concepts, translate word forms of numbers to numeric forms, and add monetary amounts. They construct two-dimensional figures by combining pattern block shapes and locate ordered pairs on a first quadrant coordinate grid. They read, interpret and use tools of measurement to the nearest inch or centimeter and may determine perimeter and area. They may read and interpret bar graphs. Students may be able to solve inequalities using single-digit addition and subtraction, use the commutative property of addition of single-digit numbers, and identify simple geometric and numeric patterns involving addition and subtraction.