

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 (505 and above)

At the beginning of fifth grade, students performing at the Advanced level solve, justify and communicate mathematical ideas and details using pictures, words and symbols. Students use the four basic operations to solve two-step problems involving equalities and inequalities, demonstrate facility with multiplication facts and solve real-world problems with US currency in real-world situations. They represent fractions with pictures and add fractions with like denominators. Students compare and describe attributes of 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 a first quadrant coordinate grid. Students use appropriate units of measure to the nearest $\frac{1}{4}$ inch or centimeter, estimate length through observation and direct measurement, convert within a system of measurement, and determine area and perimeter. Students determine median, mode and range, and probability using data from charts and tables. Students describe and extend one and two-step numeric and geometric patterns, and demonstrate understanding of equalities and inequalities using $<$, $>$ and $=$ when solving one-step problems.

Proficient (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 using words, pictures, numbers and symbols. Students solve number sentences using addition and subtraction with regrouping, as well as basic multiplication and division facts. They identify multiples of a number and equivalent fractions, add and subtract fractions with common denominators, and calculate change using US currency. Students compare attributes of three-dimensional figures and plot points on a first quadrant coordinate grid. They select appropriate units and tools of measurement, measure to the nearest $\frac{1}{4}$ inch or centimeter, convert within a system of measurement, and determine

area and perimeter of two-dimensional figures. Students find median, mode and range of a set of data and determine probability using tables. Students identify rules to extend numeric and geometric patterns involving one and two-step problems, and use order of operations to solve two-step problems.

Basic
(445-462)

At the beginning of fifth grade, students performing at the Basic level communicate simple mathematical ideas by using mathematical terminology to explain their reasoning. Students solve basic addition and subtraction number sentences with and without regrouping, use basic multiplication facts to solve real-world problems, and make change and round money to the nearest dollar. They identify fractions of $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{8}$ represented with pictures. Students identify attributes of three-dimensional shapes using terms such as face, edge vertex and base; compose and decompose two dimensional figures with pattern block shapes; and identify simple nets (flat patterns). Students read, interpret and use tools of measurement to determine length (to the nearest $\frac{1}{2}$ inch or centimeter), weight and temperature. They describe the difference between perimeter and area. Students read and interpret simple bar graphs and may design simple representations of probability. Students recognize and extend simple numeric and geometric patterns and, without the use of a calculator, solve simple one-step multiplication and division equations with one missing variable. They may use the associative and commutative properties and order of operations to solve problems with single digits.

Minimal Performance
(444 and below)

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