

Grade 7 Mathematics

The grade 7 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 protractor, a ruler with 1/16 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. *The descriptions provide examples, rather than a complete list, of knowledge and skills students may demonstrate at each level.*

| Performance Level | WKCE-CRT Performance Level Descriptions and Scale Score Ranges |
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| Advanced 555 and above | <p>At the beginning of the year, students at the Advanced level demonstrate in-depth understanding of academic knowledge and skills tested on the WKCE-CRT by:</p> <ul style="list-style-type: none"> • providing clear, detailed justifications or explanations regarding mathematical problem solving strategies used to solve problems. • comparing, ordering, adding and subtracting decimals to the thousandth place. • applying proportional reasoning to problem solving situations involving whole numbers, fractions and decimals. • comparing and ordering fractions with different denominators. • applying concepts of least common multiple, prime and composite numbers. • calculating percentages and converting between fractions and decimals with and without calculators. • subtracting mixed numbers with unlike denominators. • characterizing and describing three-dimensional figures based on geometric attributes. • differentiating between similar and congruent figures. • applying knowledge of ordered pairs to determine the correct location in the first quadrant. • converting units of weight and length within the US customary system of measurement when a conversion table is or is not provided. • solving liquid capacity problems requiring multiple steps within the US customary system when a conversion table is provided • estimating length to the nearest $\frac{1}{4}$ inch. • measuring angles greater than 90° with a protractor. • calculating distances on a map when given a scale. • applying knowledge of the geometric attributes of squares and rectangles to determine area or perimeter. • finding the mean and mode of a given set of data within context. • creating a stem-and-leaf plot when given a set of data. • interpreting and extracting data from a stem-and-leaf plot. • determining the probability of an event based on a simulation when given a set of data. • explaining a numerical sequence using pictures and numbers. |

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| | <ul style="list-style-type: none"> • solving two-step equations with coefficients. • solving three-step algebraic problems involving order of operations. |
| Proficient 504 –554 | <p>At the beginning of the year, students at the Proficient level demonstrate competency in the academic knowledge and skills tested on the WKCE-CRT by:</p> <ul style="list-style-type: none"> • providing clear but limited justifications or explanations regarding mathematical problem solving strategies. • comparing and ordering decimals written out to the hundredths place. • demonstrating knowledge of place value to ten thousands place and hundredth place. • estimating addition problems involving addends up to six digits. • identifying a transformation of a figure involving a rotation on or off a grid. • analyzing grids to identify if coordinates have been plotted accurately. • graphing coordinates on a first quadrant coordinate grid. • solving problems involving two-step conversions within the US customary system. • measuring angles using a protractor. • estimating measurement of length to the nearest whole unit. • using a ruler and key to determine the distance between two points on a map. • evaluating data in a single bar graph or circle graph to support a hypothesis. • determining the likelihood of an independent event in a real-world context. • stating the probability of a simple experiment with a fraction. • describing a rule used in a functional relationship. • using the associative and commutative properties and order of operations to evaluate and solve equivalent expressions. |
| Basic 480 –503 | <p>At the beginning of the year, students at the Basic level demonstrate some academic knowledge and skills tested on the WKCE-CRT by:</p> <ul style="list-style-type: none"> • providing clear but limited explanations regarding mathematical problem solving strategies. • applying concepts of divisibility to solve problems using a calculator. • using addition and subtraction to solve real-world problems involving monetary amounts. • determining fractional parts when given a shaded area. • identifying similar and congruent figures. • selecting the appropriate units of measurement. • determining area and perimeter of squares and rectangles given length and width. • creating a single bar graph from a given set of data. • extracting and interpreting data from single bar graphs and circle graphs. • determining the number of possible combinations possible when given a set. • describing and analyzing functional relationships between two variables. • extending numeric patterns. |

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| | <ul style="list-style-type: none"> • solving problems involving algebraic equations with one variable. • evaluating numerical expressions to identify equivalent expressions using the associative and commutative properties. |
| Minimal Performance 479 and below | <p>At the beginning of the year, students at the Minimal level demonstrate very limited academic knowledge and skills tested on the WKCE-CRT by:</p> <ul style="list-style-type: none"> • identifying mathematical problem solving strategies used to solve simple problems. • communicating mathematical ideas using words, pictures, and numbers. • comparing and ordering whole numbers less than 100,000. • calculating addition and subtraction of two numbers up to 100,000. • identifying attributes of three-dimensional geometric shapes using the vocabulary such as face, side, edge and base. • plotting an ordered pair in the first quadrant of a four quadrant coordinate grid. • solving one-step conversion problems involving US customary units of measure, given a conversion table. • estimating length to the nearest $\frac{1}{2}$ inch. • determining the perimeter of a rectangle with the length of sides given. • interpreting information from a single bar graph. • predicting the outcome of a simple event such as a coin toss. • extending a numeric pattern. • describing an algebraic equation in word form. • identifying the commutative property. |