

Grade 7 RICAS Mathematics Achievement Level Descriptors

Student results on the RICAS assessments are reported according to four achievement levels:

- **Exceeding Expectations**
A student who performed at this level exceeded grade-level expectations by demonstrating mastery of the subject matter.
- **Meeting Expectations**
A student who performed at this level met grade-level expectations and is academically on-track to succeed in the current grade in this subject.
- **Partially Meeting Expectations**
A student who performed at this level partially met grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should consider whether the student needs additional academic assistance to succeed in this subject.
- **Not Meeting Expectations**
A student who performed at this level did not meet grade-level expectations in this subject. The school, in consultation with the student's parent/guardian, should determine the coordinated academic assistance and/or additional instruction the student needs to succeed in this subject.

The descriptors included in the table below illustrate the knowledge and skills students demonstrate on RICAS at each level. Knowledge and skills are cumulative at each level. No descriptors are provided for the *Not Meeting Expectations* achievement level because students' work at this level, by definition, does not meet the criteria of the *Partially Meeting Expectations* level.



Grade 7 RICAS Achievement Level Descriptors – General Performance

Grade 7	Partially Meets Expectations <i>On RICAS, a student at this level:</i>	Meeting Expectations <i>On RICAS, a student at this level:</i>	Exceeding Expectations <i>On RICAS, a student at this level:</i>
Conceptual Understanding and Procedural Knowledge	<ul style="list-style-type: none"> • demonstrates partial understanding of the numeration system • performs some calculations and estimations • identifies examples of basic math concepts • reads and constructs graphs, tables, • and charts 	<ul style="list-style-type: none"> • demonstrates solid understanding of the numeration system • performs most calculations and estimations • defines concepts and generates examples and counterexamples of concepts • represents data and mathematical relationships in multiple forms • (e.g., equations, graphs) 	<ul style="list-style-type: none"> • connects concepts from various areas of mathematics, and uses concepts to develop generalizations • performs complex calculations and estimations • selects the best representations for a given set of data and purpose
Problem Solving	<ul style="list-style-type: none"> • applies learned procedures to solve routine problems 	<ul style="list-style-type: none"> • applies learned procedures and mathematical concepts to solve a variety of problems, including multi-step problems 	<ul style="list-style-type: none"> • generates unique strategies and procedures to solve non-routine problems
Mathematical Reasoning	<ul style="list-style-type: none"> • applies some reasoning methods to solve simple problems 	<ul style="list-style-type: none"> • uses a variety of reasoning methods to solve problems • explains steps and procedures 	<ul style="list-style-type: none"> • uses multiple reasoning methods to solve complex problems • justifies strategies and solutions
Mathematical Communication	<ul style="list-style-type: none"> • identifies and uses basic mathematical terms 	<ul style="list-style-type: none"> • uses various forms of representation (e.g., text, graphs, symbols) to illustrate steps to a solution 	<ul style="list-style-type: none"> • uses various forms of representation (e.g., text, graphs, symbols) to justify solutions and solution strategies

Grade 7 RICAS Achievement Level Descriptors – Content Specific

Grade 7	Partially Meets Expectations <i>On RICAS, a student at this level:</i>	Meeting Expectations <i>On RICAS, a student at this level:</i>	Exceeding Expectations <i>On RICAS, a student at this level:</i>
The Number System	<ul style="list-style-type: none"> Represents addition and subtraction on a horizontal and vertical number line Operates with rational numbers 	<ul style="list-style-type: none"> Recognizes situations in which opposite quantities combine to make zero Operates with rational numbers in mathematical and real world problems Translates between rational numbers and decimals 	<ul style="list-style-type: none"> Translates from repeating decimal form of a rational number to fraction form Interprets quotient and remainder of rational numbers Applies properties of operations as strategies to add, subtract, multiply and divide
Ratios and Proportional Relationships	<ul style="list-style-type: none"> Recognizes a proportional relationship Uses ratios and proportionality to solve simple mathematical problems, including percent problems 	<ul style="list-style-type: none"> Represents a proportional relationship by equations Sometimes uses ratios and proportionality to solve multi-step mathematical and real world problems, including percent problems Interprets the meaning of any point on a graph of a proportional relationship 	<ul style="list-style-type: none"> Consistently uses ratios and proportionality to solve multi-step mathematical and real world problems, including percent problems
Expressions and Equations	<ul style="list-style-type: none"> Uses properties of operations to add and subtract linear expressions Solves simple mathematical problems using numerical and algebraic expressions and equations Identifies simple arithmetic and geometric sequences from tables, graphs, words and expressions. Extends patterns in simple arithmetic and geometric sequences from tables, graphs, words and expressions. 	<ul style="list-style-type: none"> Uses properties of operations to expand linear expressions Uses properties of operations to factor linear expressions Given a real-world problem, rewrites expressions in different forms to show understanding of the problem Interprets the solution of an inequality in a real-world problem Solves multi-step mathematical and real-world problems using numerical and algebraic expressions and equations 	<ul style="list-style-type: none"> Uses properties of operations to factor linear expressions and interprets the result in the context of a problem Justifies solutions to multi-step problems Analyzes patterns and determines expressions for simple arithmetic and geometric sequences using tables, graphs, words and expressions

Grade 7 RICAS Achievement Level Descriptors – Content Specific

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Expressions and Equations		<ul style="list-style-type: none"> • Fluently converts between different forms • Create equations and inequalities to solve problems • Graphs the solutions of an inequality 	
Geometry	<ul style="list-style-type: none"> • Draws triangles with given conditions • Applies the formulas to find the circumference of circles • Applies the formulas to find the area of two-dimensional figures, including circles • Recognizes attributes of angles (supplementary, complementary, vertical, adjacent) 	<ul style="list-style-type: none"> • Constructs triangles with given conditions and describes some of their attributes • Describes the shape of the two-dimensional face of the figure that results from slicing three-dimensional figures. • Solves problems involving the relationship between area and circumference of circles • Solves problems involving the surface area and volume of three-dimensional shapes • Solves mathematical problems involving scale drawings • Solves multi-step problems using attributes of angles (supplementary, complementary, vertical, adjacent) 	<ul style="list-style-type: none"> • Finds unknown supplementary, complementary, vertical, and adjacent angles by solving equations

Grade 7 RICAS Achievement Level Descriptors – Content Specific

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Statistics and Probability	<ul style="list-style-type: none"> • Makes inferences about a population by examining the sample population • Visually compares two populations based on measures of center and variability • Differentiates between representative and non-representative samples • Identifies probability as a number between 0 and 1 • Finds probabilities of simple events 	<ul style="list-style-type: none"> • Uses random sampling to draw inferences about a population • Recognizes the probabilities of 0 through 1 as likely, unlikely, or neither. • Develops probability models and uses it to find probabilities of events • Finds probabilities for compound events using organized lists, tables, and tree diagrams 	<ul style="list-style-type: none"> • Evaluates probability models • Designs and uses a simulation to generate frequencies for compound events • Computes the differences of the centers as a multiple of the measure of variability for two populations