

Mathematics Proficiency Score Standards 1997-2002

<i>Proficiency Level</i>	Proficiency Descriptors
Advanced	<ul style="list-style-type: none"> • Demonstrates all the characteristics of proficient performance; consistently exhibits superior performance, especially in problem solving and mathematical communication. • In data analysis, draws information from multiple sources and infers solutions, providing data-based conclusions. • When solving real-world, non-routine problems, employs multiple strategies, where applicable, as well as shows in-depth reasoning. • Displays a highly developed sense of number and number relations and an understanding of number theory and the properties of numbers and operations. <p><i>(scale scores 659 and above)</i></p>
Proficient	<ul style="list-style-type: none"> • Consistently exhibits mastery of basic conceptual knowledge, skills, and problem solving. • Applies the four fundamental operations with whole numbers, adds and subtracts decimals and fractions, and determines the reasonableness of answers. • In geometry identifies two-and three-dimensional figures, congruence of figures; uses physical models to examine relationships. • Analyzes data from visual displays and applies it to solve problems. • Uses appropriate tools, understands appropriate units, and measures length to a specified degree of accuracy. <p><i>(scale scores 623 to 658)</i></p>
Basic	<ul style="list-style-type: none"> • Demonstrates a good portion of expected conceptual knowledge and skills but may not be as proficient in applying them to problem solving situations. • Solves simple one-step story problems, • Mathematical computation is limited to addition and subtraction of whole numbers, simple basic multiplication

	<p>facts, and addition of decimals without regrouping.</p> <ul style="list-style-type: none"> Recognizes, fills-in and extends numerical and geometric patterns. Reads a ruler and a thermometer. <p><i>(scale scores 581 to 622)</i></p>
Minimal Performance	Limited achievement. Evidence of major misconceptions or gaps in the knowledge and skills tested.

Middle Level **Mathematics** at Grade 8

<i>Proficiency Level</i>	Proficiency Descriptors
Advanced	<ul style="list-style-type: none"> Consistently demonstrates very high levels of conceptual understanding, numerical, geometric and measurement skills, and problem solving ability. Accurately applies computational skills with whole numbers, fractions, decimals, percents and integers to the solution of non-routine problems. Uses knowledge of statistical techniques and theory of probability to establish conclusions and infer future events. Communicates in a thorough and logical manner about solution strategies, the validity of their own conjectures, and the inferences of others. <p><i>(scale scores 750 and above)</i></p>
Proficient	<ul style="list-style-type: none"> Demonstrates mastery of computational and estimation skills with decimals, fractions, and integers and applies these skills to the solution of two-step problems. Shows ability to work with various kinds of visual displays of data, using them to support conclusions. Applies measurement skills to determine perimeter and area in both customary and metric units. Demonstrates competent analysis, solving, and evaluation of solutions to real world problems by using appropriate symbols, tables, graphs, and algebraic expressions. <p><i>(scale scores 718 to 749)</i></p>
Basic	<ul style="list-style-type: none"> Demonstrates somewhat competent conceptual knowledge

	<p>and skills.</p> <ul style="list-style-type: none"> • Performs basic operations on whole numbers, decimals, and some fractions. In data analysis, works with bar and line graphs and determines possible outcomes of given events. • In geometry and measurement, recognizes most two- and three-dimensional figures, identifies congruence and similarity, and solves simple indirect measurement problems with physical models. • Works backward and uses guess-and-check as techniques to solve problems. <p><i>(scale scores 674 to 717)</i></p>
Minimal Performance	Limited achievement. Evidence of major misconceptions or gaps in the knowledge and skills tested.

High School **Mathematics** at Grade 10

<i>Proficiency Level</i>	Proficiency Descriptors
Advanced	<ul style="list-style-type: none"> • Consistently demonstrates in-depth understanding of conceptual knowledge, problem solving skills and ability to communicate in a thorough, logical, and articulate fashion. • Utilizes tools of data analysis, probability, and statistics to thoroughly examine data, make inferences, and draw conclusions. • Demonstrates use of a wide variety of high level algebraic, geometric and measurement skills. • Uses direct and indirect reasoning, gives examples while solving problems, makes conjectures, and/or judges the validity of the inferences of other persons. <p><i>(scale scores 782 and above)</i></p>
Proficient	<ul style="list-style-type: none"> • Consistently demonstrates the ability to apply conceptual knowledge and skills to a variety of problems. • Shows mastery of computation with and without calculators and estimates computations in real-life situations. • Other numerical skills include working with patterns, ratio and proportion, formulas, and translating amongst equivalent forms such as exponents, fractions, decimals, percents, and scientific notation.

	<ul style="list-style-type: none"> • Uses data presented in graphical form to rationalize and support arguments, inferences or conclusions. • Works with probability of simple events, communicating about it with fractions, decimals and percents. • Competent demonstration of measurement skills, including facility with scale drawings, are well developed. <p><i>(scale scores 744 to 781)</i></p>
Basic	<ul style="list-style-type: none"> • Demonstrates somewhat competent success with most conceptual knowledge and skills, although level of mastery is less than that of proficient performance. • Supports conclusions with some clarity. • Somewhat competent with the basic operations with whole numbers, decimals, fractions, and percents. • Uses appropriate measuring tools to obtain direct measurements, and ratio and proportion for indirect measurements. • Algebraic skills include pattern recognition, substitution to solve equations and formulas, interpretation and use of expressions, and solution of one-step equations. • Works backwards and uses guess-and-check to solve problems. <p><i>(scale scores 716 to 743)</i></p>
Minimal Performance	Limited achievement. Evidence of major misconceptions or gaps in the knowledge and skills tested.