ESL 8.0 MATHEMATICS
AY 2006 – 2007

8.0 A CVU graduate uses a variety of mathematical methods and appropriate technology to solve problems.

Standard of Performance	Exceeds the Standard	Achieves the Standard	Nearly Achieves the Standard	Little Evidence or Below the Standard
8.1 Mathematical Skills	Both with and without a calculator, consistently and accurately performs operations, rounds, and estimates using numbers in a variety of forms; understands, applies and converts between a variety of measurement systems.	With the use of a calculator, consistently and accurately performs operations, rounds, and estimates using numbers in a variety of forms; accurately converts between a variety of measurement systems; verifies that answers are reasonable; understands and applies appropriate techniques of measurement.	With guidance, performs operations and rounds; understands and applies simple techniques of measurement.	Is not yet able to use numbers, measurement, or operations in a variety of forms.
8.2 Mathematical Language	Uses the language of mathematics to express mathematical ideas and mathematical thinking succinctly; recognizes the mathematical ideas and communicates them in the organization of the solution.	Accurately uses the language of mathematics to express mathematical ideas and mathematical thinking; communicates organized mathematical thinking.	Inconsistently uses the language of mathematics to express mathematical ideas and mathematical thinking; communicates mathematical thinking.	Is not yet able to use the language of mathematics to express mathematical ideas or mathematical thinking.

8.3 Mathematical Reasoning	Defines problems in mathematical terms and applies a variety of appropriate and efficient strategies to solve problems; builds new mathematical knowledge through problem solving; incorporates appropriate and efficient mathematical concepts to find and verify solutions	Defines problems in mathematical terms and applies a variety of appropriate strategies to solve problems; builds new mathematical knowledge through problem solving; incorporates appropriate mathematical concepts to find and verify solutions	With assistance, defines problems in mathematical terms; applies strategies to solve problems with varying degrees of effectiveness.	Is not yet able to define problems in accurate mathematical terms and/or find solutions to the problems.
8.4 Data Analysis and Probability	Formulates sophisticated questions and experiments that will answer them; collects, organizes and displays data relevant to the question; uses sophisticated methods to analyze data; develops and evaluates inferences and predictions that are based on data; utilizes technology appropriately to display and analyze data.	Formulates questions that can be addressed with data; collects, organizes and displays relevant data to answer them; selects and uses appropriate probability relationships and statistical methods to analyze data; develops and evaluates inferences and predictions that are based on data; utilizes technology appropriately to display and analyze data.	Given questions, can collect, organize and display relevant data; makes predictions based on the data; determines the probability of a simple event and makes predictions based on theoretical and experimental outcomes; uses technology to display data.	Is not able to collect, organize, and or analyze data.
8.5 Algebraic Functions	Understands patterns, relations, and functions; analyzes relations by investigating their properties; solves equations and uses mathematical models with ease.	Generalizes patterns; represents and analyzes mathematical situations using algebraic symbols; uses mathematical models to represent and understand relationships.	Generalizes simple patterns; uses mathematical models to represent and understand simple relationships.	Is not able to generalize patterns or analyze relationships.

8.6 Geometric Relationships	Analyzes properties of geometric objects; develops mathematical arguments about geometric relationships; describes spatial relationships using coordinate geometry and algebra; applies transformations and uses symmetry to analyze mathematical situations; uses geometric modeling to solve problems; constructs representations of geometric objects using a variety of tools; visualizes three-dimensional objects and spaces from different perspectives.	Analyzes properties of geometric objects; develops mathematical arguments about geometric relationships; describes spatial relationships using coordinate geometry and algebra; applies transformations and uses symmetry to analyze mathematical situations; constructs representations of geometric objects using tools; uses geometric modeling to solve problems.	Identifies properties of simple geometric objects; describes spatial relationships using coordinate geometry; uses symmetry to describe mathematical situations; constructs representations of geometric objects using tools; uses geometric modeling to solve simple problems.	Is not yet able to identify properties of two- and three-dimensional geometric objects, describe spatial relationships and/or draw representations of objects.
8.7 Mathematical Applications	Makes sophisticated connections among mathematical ideas: articulates the interconnection of mathematical ideas; utilizes mathematical applications in a variety of contexts.	Recognizes and uses connections among mathematical ideas; understands how mathematical ideas interconnect; recognizes and applies mathematics in other contexts.	Recognizes the connections among simple mathematical ideas; applies mathematics in simple contexts.	Is not yet able to demonstrate mathematical connections.