

THE CIVIC ARTS

THE COMPETENCY PROGRAM

FOUNDATIONS

Mathematics (updated 8-16-02)

Level 1	Level 2	Level 3
<p>1. Computation: Performs the basic mathematical operations (addition, subtraction, multiplication, and division) without a calculator; understands decimals and fractions</p> <p>2. Analysis: Divides material into component parts and analyzes the relationship between the parts and the whole; abstracts principles</p> <p>3. Synthesis: Finds creative solutions by reassembling parts into a new whole; applies mathematical principles to new situations of moderate difficulty and complexity</p> <p>4. Geometrical Thinking and Measurement: Understands the geometrical concepts, such as parallelism, perpendicularity, congruence, similarity, and symmetry, which underlie the three-dimensional world of buildings and moving objects</p> <p>5. Communication in Mathematical Terms: Presents mathematical results or ideas coherently and convincingly</p>	<p><i>NOTE: Both part A and part B must be demonstrated to complete validation for Mathematics at Level 2.</i></p> <p>A. Algebraic Thinking: Understands algebraic functions which relate directly to applied mathematics such as statistics, at a level equivalent to MATH 102: College Algebra</p> <p>B. Statistics: Is aware of the pervasiveness of statistics in interpreting information in the modern world; recognizes basic uses and misuses of statistical representation and inferences; demonstrates responsible use of statistics (either data which the student has assembled or data from an external source) used as supporting information; understands and employs elementary principles of probability as used in predicting such future events as election results, business forecasts, and outcomes of sporting events</p>	<p>Demonstrates superior understanding and creativity in one of the following ways:</p> <p>a. Designs and completes a project in any discipline requiring unusually sophisticated use of mathematics (statistics or some other branch) in a supporting capacity</p> <p>b. Demonstrates unusual ability to teach mathematics</p> <p>c. Completes a creative project exploring the relationship between mathematics and the arts (music, poetry, architecture) or some other area of human activity</p>