

MATHEMATICS STANDARD:

③ Reasoning

“All students will think logically and reflectively, using relevant and reliable information, in order to analyze, present and explain a mathematical relationship, situation, problem or solution.”

Rationale:

Inductive and deductive reasoning are required separately and in concert in all areas of mathematics. Conjecturing and demonstrating the logical validity of these conjectures are the essence of the creative act of doing mathematics. Students must learn that mathematics is not simply memorizing rules and procedures, but that mathematics makes sense and is logical and enjoyable.

Key Elements: All students will:

- * Draw logical conclusions.
- * Use models, known facts, properties, and relationships to explain and validate their reasoning.
- * Create and evaluate mathematical conjectures and arguments by applying deductive and inductive reasoning.
- * Make logical judgements and construct valid arguments.