

York High School Mathematics Department

Thinking Processes and Strategies Used in Mathematics

Analyze a problem statement for given information.

- Read and analyze verbal clues.

- Read and analyze diagrams.

- Turn given information into a correct diagram

- Break a figure or situation into component parts.

Restate the problem.

- Draw on a cognitive background for formulae, skills, or mathematical processes.

- Connect numeric and algebraic expressions with graphical models.

- Describe the situation using variables.

- Derive a formula.

Think inductively.

- Create or use a sequence of numbers, table, chart, or graph.

- Recognize and formulate numerical and visual patterns.

- Generalize from specific data.

Think deductively.

- Reason from given information to a conclusion.

- Determine when additional information is needed.

- Determine a progression of steps for a solution process.

- Use logical chains of conditional statements.

Use mathematical language.

- Decode and interpret mathematical symbols, notation, and vocabulary.

- Use the language of mathematics to express and explore problems.

Evaluate results.

- Check answers using algebraic processes.

- Determine that answers meet the problem requirements.

- Check answers for reasonableness.