Categories of Thinking

Procedural Thinking
-follow a set of rules (e.g., algorithm) to solve a problem
-know how to apply strategies, skills and knowledge (more than basic number facts)

Conceptual Thinking
-identify and/or apply the key ideas of the math
-the "know" and "do" of the curriculum
-recognize mathematical ideas
-communicate mathematical knowledge accurately (with depth, clarity and precision)

Representative Thinking
-use of concrete materials and manipulatives to show our understanding
-make connections, understand concepts and see relationships
-interpret, visualize and communicate mathematical ideas

Structural Thinking
-"structures" (e.g., venn diagram, t-chart, way of thinking, model) that lead/organize ideas to produce output
-make connections between ideas/concepts
-generalize patterns (e.g., adding zero to the right of a number = multiply by the power of 10)

Communicative Thinking
-communicate your thinking/ideas/reasons to others
-understand vocabulary and concepts to determine importance
-consider audience and context

Connective Thinking
-connection between ideas, concepts and strands
-understand the context of the problem
-understand mathematical relationships

Constraint Thinking
-apply mathematical concepts and relationships to solve a problem with parameters
-reason and select methods to approach a given problem