What Do We Mean by “Algebraic Thinking”?

* Represent, analyze, and generalize a variety of patterns with tables, graphs, words, and when possible, symbolic rules
* Relate and compare different forms of representation for a relationship
* Identify functions as linear or nonlinear and contrast their properties for tables, graphs, or equations
* Develop an initial conceptual understanding of different uses of variables
* Explore relationships between symbolic expressions and graphs of lines, paying particular attention to the meaning of intercept and slope
* Use symbolic algebra to represent situations and to solve problems, especially those that involve linear relationships
* Recognize and generate equivalent forms for simple algebraic expressions and solve linear equations
* Model and solve contextualized problems using various representations, such as graphs, tables, and equations
* Use graphs to analyze the nature of changes in quantities in linear relationships

 *Principles and Standards for School Mathematics* (NCTM, 2000)