# NCTM 2019 - Using Letter-Writing to Deepen Mathematical Understandings – DeLeeuw, Willingham, Hawthorne, Eisenreich

## Figural Pattern Rubric

#### **Exploration**

- A. Process
  - 0: Unclear method, or method that would not lead to correct solution
  - 1: Incomplete solution
  - 2: Clear, thoughtful method leading to complete solution
- B. Identification and description of patterns
  - 0: None
  - 1: Partial
  - 2: Complete

#### Communication

- C. Presentation
  - 0: Unclear work
  - 1: Clear description of work in some places but not in others
  - 2: Easily understood, neat, well-organized
- D. Inclusion of multiple representations—words, pictures, tables, numerical expressions, algebraic expressions, etc.
  - 0: None
  - 1: Partial
  - 2: Complete
- E. Relation and comparison between different representations
  - 0: None
  - 1: Partial
  - 2: Complete
- F. Correct use of mathematical terminology and symbols
  - 0: None
  - 1: Partial
  - 2: Complete

### **Quantitative Explanations**

- G. Identification of quantities represented by numbers and variables
  - 0: None
  - 1: Partial
  - 2: Complete
- H. Explanation of relationships of quantities represented by expressions and equations
  - 0: None
  - 1: Partial
  - 2: Complete