|  | **Advanced** | **Proficient** | **Developing** | **Emerging** |
| --- | --- | --- | --- | --- |
| Mathematical **Understanding** | Proficient Plus:   * Uses relationships among mathematical concepts | * Demonstrates an understanding of concepts and skills associated with task * Applies mathematical concepts and skills which lead to a valid and correct solution | * Demonstrates a partial understanding of concepts and skills associated with task * Applies mathematical concepts and skills which lead to an incomplete or incorrect solution | * Demonstrates little or no understanding of concepts and skills associated with task * Applies limited mathematical concepts and skills in an attempt to find a solution or provides no solution |
| Problem Solving | Proficient Plus:   * Problem solving strategy is efficient | * Problem solving strategy displays an understanding of the underlying mathematical concept * Produces a solution relevant to the problem and confirms the reasonableness of the solution | * Chooses a problem solving strategy that does not display an understanding of the underlying mathematical concept * Produces a solution relevant to the problem but does not confirm the reasonableness of the solution | * A problem solving strategy is not evident or is not complete * Does not produce a solution that is relevant to the problem |
| **Communication**  **and**  **Reasoning** | Proficient Plus:   * Reasoning is organized and coherent * Consistent use of precise mathematical language and accurate use of symbolic notation | * Communicates thinking process * Demonstrates reasoning and/or justifies solution steps * Supports arguments and claims with evidence * Uses mathematical language to express ideas with precision | * Reasoning or justification of solution steps is limited or contains misconceptions * Provides limited or inconsistent evidence to support arguments and claims * Uses limited mathematical language to partially communicate thinking with some imprecision | * Provides little to no correct reasoning or justification * Does not provide evidence to support arguments and claims * Uses little or no mathematical language to communicate thinking |
| **Representations**  **and**  **Connections** | Proficient Plus:   * Uses representations to analyze relationships and extend thinking * Uses mathematical connections to extend the solution to other mathematics or to deepen understanding | * Uses a representation or multiple representations, with accurate labels, to explore and model the problem * Makes a mathematical connection that is relevant to the context of the problem | * Uses an incomplete or limited representation to model the problem * Makes a partial mathematical connection or the connection is not relevant to the context of the problem | * Uses no representation or uses a representation that does not model the problem * Makes no mathematical connections |