|  | **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
 |