|  | **Advanced** | **Proficient** | **Developing** | **Emerging** |
| --- | --- | --- | --- | --- |
| Mathematical**Understanding** | Proficient Plus:* Uses relationships among mathematical concepts or makes mathematical generalizations
 | * 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 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
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| Problem Solving | Proficient Plus:* Problem solving strategy is well developed or 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
 | * Problem solving strategy displays a limited 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
* Does not produce a solution that is relevant to the problem
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| **Communication****and****Reasoning** | Proficient Plus:* Reasoning or justification is comprehensive
* Consistently uses precise mathematical language to communicate thinking
 | * Demonstrates reasoning and/or justifies solution steps
* Supports arguments and claims with evidence
* Uses mathematical language to communicate thinking
 | * 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 | * Provides no correct reasoning or justification
* Does not provide evidence to support arguments and claims
* Uses 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
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