

Mathematics Problem Solving Official Scoring Guide

Apply mathematics in a variety of settings. Build new mathematical knowledge through problem solving. Solve problems that arise in mathematics and in other contexts.
Apply and adapt a variety of appropriate strategies to solve problems. Monitor and reflect on the process of mathematical problem solving.

Process Dimensions	**6/ 5	4	3	*2 / 1
Making Sense of the Task <i>Interpret the concepts of the task and translate them into mathematics.</i>	The interpretation and/or translation of the task are <ul style="list-style-type: none"> • thoroughly developed and/or • enhanced through connections and/or extensions to other mathematical ideas or other contexts. 	The interpretation and translation of the task are <ul style="list-style-type: none"> • adequately developed and • adequately displayed. 	The interpretation and/or translation of the task are <ul style="list-style-type: none"> • partially developed, and/or • partially displayed. 	The interpretation and/or translation of the task are <ul style="list-style-type: none"> • underdeveloped, • sketchy, • using inappropriate concepts, • minimal, and/or • not evident.
Representing and Solving the Task <i>Use models, pictures, diagrams, and/or symbols to represent and solve the task situation and select an effective strategy to solve the task.</i>	The strategy and representations used are <ul style="list-style-type: none"> • elegant (insightful), • complex, • enhanced through comparisons to other representations and/or generalizations. 	The strategy that has been selected and applied and the representations used are <ul style="list-style-type: none"> • effective and • complete. 	The strategy that has been selected and applied and the representations used are <ul style="list-style-type: none"> • partially effective and/or • partially complete. 	The strategy selected and representations used are <ul style="list-style-type: none"> • underdeveloped, • sketchy, • not useful, • minimal, • not evident, and/or • in conflict with the solution/outcome.
Communicating Reasoning <i>Coherently communicate mathematical reasoning and clearly use mathematical language.</i>	The use of mathematical language and communication of the reasoning are <ul style="list-style-type: none"> • elegant (insightful) and/or • enhanced with graphics or examples to allow the reader to move easily from one thought to another. 	The use of mathematical language and communication of the reasoning <ul style="list-style-type: none"> • follow a clear and coherent path throughout the entire work sample and • lead to a clearly identified solution/outcome. 	The use of mathematical language and communication of the reasoning <ul style="list-style-type: none"> • are partially displayed with significant gaps and/or • do not clearly lead to a solution/outcome. 	The use of mathematical language and communication of the reasoning are <ul style="list-style-type: none"> • underdeveloped, • sketchy, • inappropriate, • minimal, and/or • not evident.
Accuracy <i>Support the solution/outcome.</i>	The solution/outcome is correct and enhanced by <ul style="list-style-type: none"> • extensions, • connections, • generalizations, and/or • asking new questions leading to new problems. 	The solution/outcome given is <ul style="list-style-type: none"> • correct, • mathematically justified, and • supported by the work. 	The solution/outcome given is <ul style="list-style-type: none"> • incorrect due to minor error(s), or • a correct answer but work contains minor error(s) • partially complete, and/or • partially correct 	The solution/outcome given is <ul style="list-style-type: none"> • incorrect and/or • incomplete, or • correct, but <ul style="list-style-type: none"> ○ conflicts with the work, or ○ not supported by the work.
Reflecting and Evaluating <i>State the solution/outcome in the context of the task.</i> <i>Defend the process, evaluate and interpret the reasonableness of the solution/outcome.</i>	Justifying the solution/outcome completely, the student reflection also includes <ul style="list-style-type: none"> • reworking the task using a different method, • evaluating the relative effectiveness and/or efficiency of different approaches taken, and/or • providing evidence of considering other possible solution/outcomes and/or interpretations. 	The solution/outcome is stated within the context of the task, and the reflection justifies the solution/outcome completely by reviewing <ul style="list-style-type: none"> • the interpretation of the task • concepts, • strategies, • calculations, and • reasonableness. 	The solution/outcome is not stated clearly within the context of the task, and/or the reflection only partially justifies the solution/outcome by reviewing <ul style="list-style-type: none"> • the task situation, • concepts, • strategies, • calculations, and/or • reasonableness. 	The solution/outcome is not clearly identified and/or the justification is <ul style="list-style-type: none"> • underdeveloped, • sketchy, • ineffective, • minimal, • not evident, and/or • inappropriate.

**6 for a given dimension would have most attributes in the list; 5 would have some of those attributes.

*2 for a given dimension would be underdeveloped or sketchy, while a 1 would be minimal or nonexistent.