

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
<p>Making Sense of the Task <i>Interpret the concepts of the task and translate them into mathematics.</i></p>	<p>The interpretation and/or translation of the task are</p> <ul style="list-style-type: none"> thoroughly developed and/or enhanced through connections and/or extensions to other mathematical ideas or other contexts. 	<p>The interpretation and translation of the task are</p> <ul style="list-style-type: none"> adequately developed and adequately displayed. 	<p>The interpretation and/or translation of the task are</p> <ul style="list-style-type: none"> partially developed, and/or partially displayed. 	<p>The interpretation and/or translation of the task are</p> <ul style="list-style-type: none"> underdeveloped, sketchy, using inappropriate concepts, minimal, and/or not evident.
<p>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></p>	<p>The strategy and representations used are</p> <ul style="list-style-type: none"> elegant (insightful), complex, enhanced through comparisons to other representations and/or generalizations. 	<p>The strategy that has been selected and applied and the representations used are</p> <ul style="list-style-type: none"> effective and complete. 	<p>The strategy that has been selected and applied and the representations used are</p> <ul style="list-style-type: none"> partially effective and/or partially complete. 	<p>The strategy selected and representations used are</p> <ul style="list-style-type: none"> underdeveloped, sketchy, not useful, minimal, not evident, and/or in conflict with the solution/outcome.
<p>Communicating Reasoning <i>Coherently communicate mathematical reasoning and clearly use mathematical language.</i></p>	<p>The use of mathematical language and communication of the reasoning are</p> <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. 	<p>The use of mathematical language and communication of the reasoning</p> <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. 	<p>The use of mathematical language and communication of the reasoning</p> <ul style="list-style-type: none"> are partially displayed with significant gaps and/or do not clearly lead to a solution/outcome. 	<p>The use of mathematical language and communication of the reasoning are</p> <ul style="list-style-type: none"> underdeveloped, sketchy, inappropriate, minimal, and/or not evident.
<p>Accuracy <i>Support the solution/outcome.</i></p>	<p>The solution/outcome is correct and enhanced by</p> <ul style="list-style-type: none"> extensions, connections, generalizations, and/or asking new questions leading to new problems. 	<p>The solution/outcome given is</p> <ul style="list-style-type: none"> correct, mathematically justified, and supported by the work. 	<p>The solution/outcome given is</p> <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 	<p>The solution/outcome given is</p> <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.
<p>Reflecting and Evaluating <i>State the solution/outcome in the context of the task.</i></p> <p><i>Defend the process, evaluate and interpret the reasonableness of the solution/outcome.</i></p>	<p>Justifying the solution/outcome completely, the student reflection also includes</p> <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. 	<p>The solution/outcome is stated within the context of the task, and the reflection justifies the solution/outcome completely by reviewing</p> <ul style="list-style-type: none"> the interpretation of the task concepts, strategies, calculations, and reasonableness. 	<p>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</p> <ul style="list-style-type: none"> the task situation, concepts, strategies, calculations, and/or reasonableness. 	<p>The solution/outcome is not clearly identified and/or the justification is</p> <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.