

2012-2013 MATH Small Goal Assessment Rubric

Level 1 Novice	Level 2 Apprentice	Level 3 Practitioner	Level 4 Expert
<p>Problem Solving</p> <ul style="list-style-type: none"> No strategy is chosen, or a strategy is chosen that will not lead to a solution. Little or no evidence of engagement in the task present. <p>Reasoning and Proof</p> <ul style="list-style-type: none"> Arguments are made with no mathematical basis. No correct reasoning nor justification for reasoning is present. <p>Communication</p> <ul style="list-style-type: none"> No awareness of audience or purpose is communicated... <i>or</i> Little or no communication of an approach is evident...<i>or</i> Everyday, familiar language is used to communicate ideas. <p>Connections</p> <ul style="list-style-type: none"> No connections are made. <p>Representation</p> <ul style="list-style-type: none"> No attempt is made to construct mathematical representations. 	<p>Problem Solving</p> <ul style="list-style-type: none"> A partially correct strategy is chosen, or a correct strategy for only solving part of the task is chosen. Evidence of drawing on some previous knowledge is present, showing some relevant engagement in the task. <p>Reasoning and Proof</p> <ul style="list-style-type: none"> Arguments are made with some mathematical basis. Some correct reasoning or justification for reasoning is present with trial and error, or unsystematic trying of several cases. <p>Communication</p> <ul style="list-style-type: none"> Some awareness of audience or purpose is communicated, and may take place in the form of paraphrasing of the task... <i>or</i> Some communication of an approach is evident through verbal/written accounts and explanations, use of diagrams or objects, writing, and using mathematical symbols... <i>or</i> Some formal math language is used, and examples are provided to communicate ideas. <p>Connections</p> <ul style="list-style-type: none"> Some attempt to relate the task to other subjects or to own interests and experiences is made. 	<p>Problem Solving</p> <ul style="list-style-type: none"> A correct strategy is chosen based on mathematical situation in the task. Planning or monitoring of strategy is evident. Evidence of solidifying prior knowledge and applying it to the problem solving situation is present. <p>Note: Must have a correct answer.</p> <p>Reasoning and Proof</p> <ul style="list-style-type: none"> Arguments are constructed with adequate mathematical basis. A systematic approach and/or justification of correct reasoning is present. This may lead to... <ul style="list-style-type: none"> ➤ clarifying the task. ➤ exploration of mathematical models. ➤ noting patterns, structures and regularities. <p>Communication</p> <ul style="list-style-type: none"> A sense of audience or purpose is communicated Communication of an approach is evident through a methodical, organized, coherent sequenced and labeled response. Formal math language is used throughout the solution to share and clarify ideas. <p>Connections</p> <ul style="list-style-type: none"> Mathematical connections or observations are recognized. <p>Representation</p> <ul style="list-style-type: none"> Appropriate and accurate mathematical representations are constructed and refined to solve problems or portray solutions. 	<p>Problem Solving</p> <ul style="list-style-type: none"> An efficient strategy is chosen and progress towards a solution is evaluated. Adjustments in strategy, if necessary, are made along the way, and/or alternative strategies are considered. Evidence of analyzing the situation in mathematical terms, and extending prior knowledge is present. <p>Note: Must have a correct answer.</p> <p>Reasoning and Proof</p> <ul style="list-style-type: none"> Deductive arguments are used to justify decisions and may result in formal proofs. Evidence is used to justify and support decisions made and conclusions reached. This may lead to... <ul style="list-style-type: none"> ➤ testing and accepting or rejecting of a hypothesis or conjecture. ➤ explaining mathematical models. ➤ generalizing and extending the solution to other cases. <p>Communication</p> <ul style="list-style-type: none"> A sense of audience and purpose is communicated Communication at the Practitioner level is achieved, and communication of argument is supported by mathematical properties. Precise math language and symbolic notation are used to consolidate math thinking and to communicate ideas. <p>Connections</p> <ul style="list-style-type: none"> Mathematical connections or observations are used to extend the solution. <p>Representation</p> <ul style="list-style-type: none"> Abstract or symbolic mathematical representations are constructed to analyze relationships, extend thinking, and clarify or interpret phenomenon.