

# CCSS MATHEMATICAL PRACTICES RUBRIC

	MP1 Make Sense of Problems & Persevere in Solving Them MP5 Use Appropriate Tools Strategically (Previous Math Process: Problem Solving)	MP2 Reason Abstractly & Quantitatively MP8 Look for & Express Regularity in Repeated Reasoning (Previous Math Process: Reasoning & Proof)	MP3 Construct Viable Arguments & Critique Reasoning of Others MP6 Attend to Precision (Previous Math Process: Communication)	MP7 Look for & Make Use of Structure (Previous Math Process: Connections)	MP4 Model With Mathematics (Previous Math Process: Representation)
<b>Novice 1</b>	<p>No strategy is chosen, or a strategy is chosen that will not lead to a solution.</p> <p>Little or no evidence of engagement in the task present.</p>	<p>Arguments are made with no mathematical basis.</p> <p>No correct reasoning nor justification for reasoning is present.</p>	<p>No awareness of audience or purpose is communicated.</p> <p>or</p> <p>Little or no communication of an approach is evident or Everyday, familiar language is used to communicate ideas.</p>	<p>No connections are made or connections are mathematically or contextually irrelevant</p>	<p>No attempt is made to construct mathematical representations.</p>
<b>Apprentice 2</b>	<p>A partially correct strategy is chosen, or a correct strategy for only solving part of the task is chosen.</p> <p>Evidence of drawing on some relevant previous knowledge is present, showing some relevant engagement in the task.</p>	<p>Arguments are made with some mathematical basis.</p> <p>Some correct reasoning or justification for reasoning is present.</p>	<p>Some awareness of audience or purpose is communicated,</p> <p>Some communication of an approach is evident through verbal /written accounts and explanations, use of diagrams or objects, writing, and using mathematical symbols.</p> <p>or</p> <p>An attempt is made to use formal math language. One formal math term or symbolic notation is evident.</p>	<p>A mathematical connection is attempted but is partially incorrect or lacks contextual relevance</p>	<p>An attempt is made to construct mathematical representations to record and communicate problem solving but is not accurate</p>
<b>Practitioner 3</b>	<p>A correct strategy is chosen based on mathematical situation in the task.</p> <p>Planning or monitoring of strategy is evident.</p> <p>Evidence of solidifying prior knowledge and applying it to the problem solving situation is present.</p> <p>Note: The practitioner must achieve a correct answer.</p>	<p>Arguments are constructed with adequate mathematical basis.</p> <p>A systematic approach and/or justification of correct reasoning is present. This may lead to...</p> <ul style="list-style-type: none"> <li>• clarification of the task.</li> <li>• exploration of mathematical phenomenon.</li> <li>• noting patterns, structures and regularities.</li> </ul>	<p>A sense of audience or purpose is communicated.</p> <p>Communication of an approach is evident through a methodical, organized, coherent sequenced and labeled response.</p> <p>Formal math language is used to share and clarify ideas. At least two formal mat terms or symbolic notations are evident in any combination.</p>	<p>A mathematical connection is made. Proper contexts are identified that link both the mathematics and the situation in the task.</p> <p>Some examples may include one or more of the following:</p> <ul style="list-style-type: none"> <li>-clarification of the mathematical or situational context</li> <li>-exploration of mathematical phenomenon in the context of the broader topic in which the task is situated</li> <li>-noting patterns, structures, and regularities</li> </ul>	<p>An appropriate and accurate Mathematical representation is constructed and refined to solve problems or portray solutions.</p>
<b>Expert 4</b>	<p>An efficient strategy is chosen and progress towards a solution is evaluated.</p> <p>Adjustments in strategy, if necessary, are made along the way, and / or alternative</p>	<p>Deductive arguments are used to justify decisions and may result in formal proofs.</p> <p>Evidence is used to justify and support decisions made and conclusions reached.</p>	<p>A sense of audience and purpose is communicated.</p> <p>Communication at the Practitioner level is achieved, and communication of argument is</p>	<p>Mathematical connections are used to extend the solution to other mathematics or to a deeper understanding of the mathematics in the task.</p>	<p>An appropriate mathematical representation is constructed to analyze relationships, extend thinking, and clarify or interpret phenomenon.</p>

	<p>strategies are considered. Evidence of analyzing the situation in mathematical terms, and extending prior knowledge is present. Note: The expert must achieve a correct answer.</p>		<p>supported by mathematical properties. Precise math language and symbolic notation are used to consolidate math thinking and to communicate ideas. At least one of the math terms or symbolic notations is beyond grade level</p>	<p>Some examples may include one or more of the following:</p> <ul style="list-style-type: none"><li>● testing and accepting or rejecting a hypothesis or conjecture</li><li>● explanation of a phenomenon</li><li>● generalizing and extending the solution to other cases</li></ul>	
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