

ENVISION SCHOOLS GRADUATION PORTFOLIO PERFORMANCE ASSESSMENT: *Mathematics Problem Solving Application*

Scoring Dimension	Developing	Proficient	Advanced
<p>PROBLEM SOLVING STRATEGIES</p> <p><i>What is the evidence that the student understands the problem and the mathematical strategies that can be used to arrive at a solution?</i></p>	<ul style="list-style-type: none"> • The student work reflects a partial understanding of the mathematical challenge/problem. • There is limited use of the problem information initially provided. • Oversimplified solution strategies are developed. 	<ul style="list-style-type: none"> • The student work reflects an understanding of the mathematical challenge/problem. • All relevant problem information initially provided is used. • Appropriate solution strategies are identified and developed. 	<ul style="list-style-type: none"> • The student work reflects a deep and insightful understanding of the mathematical challenge/problem. • All relevant problem information initially provided plus additional deduced information is used. • Appropriate solution strategies are identified, related to the challenge/problem, and developed.
<p>REASONING AND PROOF</p> <p><i>What is the evidence that the student can apply mathematical reasoning/procedures in an accurate and complete manner?</i></p>	<ul style="list-style-type: none"> • There are major gaps in the logic of the solution steps • An incomplete solution to the given problem is provided. • The work includes major computational or procedural errors. 	<ul style="list-style-type: none"> • There is a sequential and logical application of solution steps. • A complete and correct solution to the given problem is provided. • The work includes minor computational or procedural errors. 	<ul style="list-style-type: none"> • There is a sequential, logical, and efficient application of solution steps. • A complete and correct solution to the given problem is thoroughly explained. • The work includes no computational or procedural errors.

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<p>CONNECTIONS</p> <p><i>What is the evidence that the student understands the relationships between the concepts, procedures, and/or real-world applications inherent in the problem?</i></p>	<ul style="list-style-type: none"> • Examples of relationships between concepts, procedures, and real-world applications are included. • Limited connections are made between the problem and similar problems. • There is limited identification of possible sources of error** in the solution <p><i>**Sources of error may be operations done to make the solution fit real-world applications, e.g., rounding, sampling, best fit, simplified assumptions</i></p>	<ul style="list-style-type: none"> • Patterns and relationships between concepts, procedures, and real-world applications are explained. • Clear connections are made between the problem and similar problems. • Possible sources of error** in the solution are identified. 	<ul style="list-style-type: none"> • Patterns and relationships between concepts, procedures, and real-world applications are explained and are used to support mathematical arguments and rationales. • A general strategy for solving a family of problems is developed and evaluated. • Possible sources of error** in the solution are identified and explained.
<p>COMMUNICATION AND REPRESENTATION</p> <p><i>What is the evidence that the student can communicate mathematical ideas to others?</i></p>	<ul style="list-style-type: none"> • The work is presented in a clear manner, but is not always precise. • The visual representations are vague or incomplete. • The representations are somewhat helpful in clarifying the text. 	<ul style="list-style-type: none"> • The work is presented in a clear and precise manner. • The visual representations are essentially accurate, but not completely clear or always appropriately labeled. • The representations help clarify the solution. 	<ul style="list-style-type: none"> • The work is presented in a clear, precise, and convincing manner. • All visual representations are accurate, clear, and complete. • The representations clearly communicate the meaning of the explored mathematical concepts or relationships.