

Problem Solving Rubric: Grade 10

This work is intended to support students in becoming **confident** and **independent** problem solvers who are comfortable making attempts and taking risks when presented with novel situations.

	Distinguished	Proficient	Learning
Understanding (10%)	<ul style="list-style-type: none"> States the problem clearly and identifies important information and underlying issues; clearly defines the problem and outlines necessary objectives 	<ul style="list-style-type: none"> Adequately defines the problem and identifies important information 	<ul style="list-style-type: none"> Needs assistance to identify important information or get started; problem is defined incorrectly or too narrowly. Key information is missing or incorrect.
Strategic Planning (30%)	<ul style="list-style-type: none"> Evidence of careful analysis Evidence of a clear and concise plan to solve the problem, with alternative strategies 	<ul style="list-style-type: none"> Evidence of analysis Evidence of an adequate plan to solve the problem 	<ul style="list-style-type: none"> Little evidence of a coherent plan to solve the problem, or evidence of a plan that is not adequate
Implementation (30%)	<ul style="list-style-type: none"> Provides a logical interpretation of the findings and clearly solves the problem, offering alternative solutions Uses subject-area strategies, tools, and knowledge Applies procedures and follows the plan to conclusion. Attends to precision and records all work to allow for backtracking 	<ul style="list-style-type: none"> Provides an adequate interpretation of the findings and solves the problem Uses subject-area strategies, tools, and knowledge Applies procedures and follows the plan to conclusion. Attends to precision 	<ul style="list-style-type: none"> Applies inappropriate procedures or only partially applies correct procedures Needs reminders to use subject-area strategies, tools, or knowledge to solve problems. Does not interpret the findings/reach a conclusion.
Communication (10%)	<ul style="list-style-type: none"> Clearly and concisely articulates the problem-solving process and describes how it was applied to the current problem Uses a representation that is exceptional in its mathematical precision Comprehensive record of process and data. Includes detailed information to allow repetition based only on written notes. Explains why certain information is essential to the solution 	<ul style="list-style-type: none"> Describes the problem-solving process Uses a representation that clearly depicts the problem Process and data are summarized and organized, but may lack some details or some explanation necessary for repetition Explains why procedures are appropriate for the problem 	<ul style="list-style-type: none"> Requires assistance to describe the problem solving processes Uses a representation that gives some but not all important information about the problem Notes aren't organized and results cannot be easily found. Experiments or other work cannot be repeated because of lack of information. Needs assistance to assess why procedures or techniques were applied to the problem
Answer (10%)	<ul style="list-style-type: none"> Correct solution of problem and made a general rule about the solution or extended the solution to a more complex situation or partial credit for solution that is incorrect but has a strong justification 	<ul style="list-style-type: none"> Correct solution with justification or partial credit for solution that is incorrect but has a strong justification 	<ul style="list-style-type: none"> Copying or computational error, partial answer, no answer statement, answer labeled incorrectly, perhaps no answer or wrong answer based on an inappropriate plan
Reflection (10%)	<ul style="list-style-type: none"> Evidence of reflection on problem solving processes, and evaluation of how well they worked; willingness to make changes when necessary Critical reflection on problem-solving techniques, strategies, and results. Identifies those most helpful to self. Offers clear insights regarding self-knowledge 	<ul style="list-style-type: none"> Evidence of reflection on problem solving processes by thinking about what I did well and what I can do better. Can identify problem-solving techniques that are most helpful, but may not be able to clearly summarize self-knowledge. 	<ul style="list-style-type: none"> Difficulty revealing insights about own learning. Difficulty discussing relevance of problem-solving techniques.