

Tiverton High School
School-wide Problem Solving Rubric

Academic Expectations: *Students will be able to analyze, interpret, and evaluate information critically
Students will be able to solve problems independently and collaboratively*

Course: _____ Teacher: _____ School Year _____
Assignment: _____

	4 Proficient with Distinction	3 Proficient	2 Partially Proficient	1 Substantially Below
Understanding	<ul style="list-style-type: none"> Clearly defines the problem, situation, or task Categorizes <u>relevant</u> information needed to solve the problem Clearly identifies the intended outcome, variable, or solution to the problem 	<ul style="list-style-type: none"> Defines the problem, situation, or task Identifies relevant information needed to solve the problem Identifies the intended outcome, variable, or solution to the problem <p>M(PRP)-HS-1</p>	<ul style="list-style-type: none"> Defines problem, situation, or task <u>with some accuracy</u> Identifies <u>most</u> of the relevant information needed to solve the problem Identifies <u>most</u> components of the intended outcome or solution 	<ul style="list-style-type: none"> Unable to define problem Unable to identify relevant information Unable to identify intended outcome
Reasoning	<ul style="list-style-type: none"> Selects strategies/processes that are <u>sophisticated or innovative</u> and appropriate for the situation or task Identifies, <u>evaluates, and analyzes</u> information/resources needed Sets up work in a logical and <u>efficient</u> manner 	<ul style="list-style-type: none"> Selects strategies/process appropriate to the problem, situation or task Identifies all required information/resources needed Sets up work in a logical manner <p>M(PRP)-HS-2.</p>	<ul style="list-style-type: none"> Selects <u>basic</u> strategies/process appropriate for the situation or task Identifies <u>some</u> required information/resources needed Sets up work in a <u>somewhat</u> logical manner 	<ul style="list-style-type: none"> Selects <u>inappropriate</u> strategies/process for the situation or task Unable to identify information/resources needed Unable to set up work in a logical manner
Solution	<ul style="list-style-type: none"> Gathers <u>relevant</u> evidence/data needed Correctly implements strategies selected using appropriate <u>and accurate</u> representations or models Data is organized and labeled <u>concisely</u> <u>All calculations</u> are correct throughout process, solution is correct 	<ul style="list-style-type: none"> Gathers evidence/data needed Correctly implements strategies selected using appropriate representations or models Data is organized and labeled appropriately 1-2 minor errors made throughout process, solution is relevant to problem, situation, or task <p>M(CCR)-HS-2</p>	<ul style="list-style-type: none"> Gathers <u>some</u> evidence/data needed Implements strategies selected using appropriate representations or models, with <u>some accuracy</u> Data is <u>somewhat</u> organized and labeled appropriately Major errors made throughout process, <u>solution irrelevant</u> 	<ul style="list-style-type: none"> Unable to gather evidence/data needed Implements strategies selected with <u>little to no</u> accuracy Data <u>is not</u> organized and labeled appropriately Significant errors made and/or solution not evident
Communication and Reflection	<ul style="list-style-type: none"> Explains <u>and justifies</u> the strategies or processes selected Makes <u>extensive and</u> relevant connections to previous learning or similar problems Reflects on the <u>validity</u> of the outcome Reflects on design of plan and implementation, <u>noting areas that could have been improved upon or alternate strategies that could have been used</u> Uses <u>precise</u> labels and/or terminology 	<ul style="list-style-type: none"> Explains the strategies or process selected Makes relevant connections to previous learning or similar problems Reflects on the outcome Provides a complete reflection of design of plan and implementation Uses labels and/or terminology appropriately <p>M(CCR)-HS-1</p>	<ul style="list-style-type: none"> <u>Some explanation</u> of strategies or process selected Makes <u>some</u> connections to previous learning or similar problems <u>Some</u> reflection on outcome <u>Some</u> reflection on design of plan and implementation Uses <u>some</u> labels and/or terminology 	<ul style="list-style-type: none"> <u>Little or no explanation</u> of strategies or process selected Makes <u>little or no</u> connections to previous learning or similar problems <u>Little to no</u> reflection on outcome <u>Little to no</u> reflection on design of plan and implementation <u>Few to no</u> labels and/or terminology

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Problem Solving Student Rubric Guide

	3 Proficient	Student Notes/Examples
Understanding	<ul style="list-style-type: none"> • Defines the problem, situation, or task • Identifies relevant information needed to solve the problem • Identifies the intended outcome, variable, or solution to the problem <p>M(PRP)-HS-1</p>	
Reasoning	<ul style="list-style-type: none"> • Selects strategies/processes appropriate to the problem, situation or task • Identifies all required information/resources needed • Sets up work in a logical manner <p>M(PRP)-HS-2.</p>	
Solution	<ul style="list-style-type: none"> • Gathers evidence/data needed • Correctly implements strategies selected using appropriate representations or models • Data is organized and labeled appropriately • 1-2 minor errors made throughout process, solution is relevant to problem <p>M(CCR)-HS-2</p>	
Communication and Reflection	<ul style="list-style-type: none"> • Explains the strategies or processes selected • Makes relevant connections to previous learning or similar problems • Reflects on the outcome • Provides a complete reflection of design of plan and implementation • Uses labels and/or terminology appropriately <p>M(CCR)-HS-1</p>	

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Course _____ Teacher _____ School Year _____

Assignment _____

Student Name _____ Date _____

		Proficiency Criteria		Score			
Understanding Score ____	Defines the problem, situation, or task	4	3	2	1		
	Identifies relevant information needed to solve the problem	4	3	2	1		
	Identifies the intended outcome, variable, or solution to the problem	4	3	2	1		
Reasoning Score ____	Selects strategies/processes appropriate for the situation or task	4	3	2	1		
	Identifies all required information/resources needed	4	3	2	1		
	Sets up work in a logical manner	4	3	2	1		
Solution Score ____	Gathers evidence/data needed	4	3	2	1		
	Correctly implements strategies selected using appropriate representations or models	4	3	2	1		
	Data is organized and labeled appropriately	4	3	2	1		
	1-2 minor errors made throughout process, solution is relevant to problem	4	3	2	1		
Communication and Reflection Score ____	Explains the strategies or process selected	4	3	2	1		
	Makes relevant connections to previous learning or similar problems	4	3	2	1		
	Reflects on the outcome	4	3	2	1		
	Provides a complete reflection on design of plan and implementation	4	3	2	1		
	Uses <i>appropriate</i> labels and/or terminology	4	3	2	1		
Rubric Score= _____ Grade= _____							

Scoring Guide:

Proficient with Distinction 64-58 Proficient 57-48 Partially Proficient 47-42 Below 41-32 Substantially Below 31-0

After receiving their initial grade, students will be provided one opportunity to revise their work to demonstrate progress towards proficiency. Revised work must be completed within one week. The initial grade will be averaged with the new grade. The final revised score may not exceed 80%.

For grading purposes, the grade for this work will be calculated by multiplying the rubric score by 1.67.

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For Teacher Use
Alignment to
GSEs and RIDE Applied Learning Standards

<p>Mathematics GSEs</p>	<p>M(PRP)–HS–1 Students will use problem-solving strategies to investigate and understand increasingly complex mathematical content and be able to:</p> <ul style="list-style-type: none"> • Expand the repertoire of problem-solving strategies and use those strategies in more sophisticated ways <p>M(CCR)–HS–1 Students will communicate their understanding of mathematics and be able to:</p> <ul style="list-style-type: none"> • Explain and justify their thinking and develop increasingly sophisticated questions for given problem-situations. <p>M(CCR)–HS–2 Students will create and use representations to communicate mathematical ideas and to solve problems and be able to:</p> <ul style="list-style-type: none"> • Choose appropriate representations and mathematical language (e.g., spreadsheets, geometric models, algebraic symbols, tables, graphs, matrices) to present ideas clearly and logically for a given situation. • Find representations that model essential features of a mathematical situation (e.g., cost of postage can be modeled by a step-function). • Use representations as a primary means for expressing and understanding more abstract mathematical concepts. <p>M(PRP)–HS–2 Students will use mathematical reasoning and proof and be able to:</p> <ul style="list-style-type: none"> • Expand the repertoire of proof techniques and use those techniques in more sophisticated ways. • Use informal and formal reasoning and proof to explain and justify conclusions. • Formalize mathematical arguments through the use of deductive reasoning. • Use the principle of mathematical induction. <p>M(CCR)–HS–3 Students will recognize, explore, and develop mathematical connections and be able to:</p> <ul style="list-style-type: none"> • Explain multiple approaches that lead to equivalent results when solving problems.
<p>RIDE Applied Learning Standards</p>	<ul style="list-style-type: none"> • <i>Problem Solving</i> • <i>Reflection and Evaluation</i>