

Thinking, Inquiry, and Problem Solving

Thinking, Inquiry, and Problem Solving examines the student's ability to apply the steps of the inquiry process, to solve problems that require several steps, and to use reasoning to infer, conclude, and justify their position.

	Level 1	Level 2	Level 3	Level 4
Formulation and defense of hypothesis/conjecture	A hypothesis is created but variables may be identified incorrectly and/or insufficient links are made to problem.	A hypothesis is created but connection to variables and/or problem is weak.	Variables are identified correctly and expressed hypothesis relates to problem.	Clear hypothesis that relates to given variables and context of problem.
Creation of a model (algebraic, graphical, geometric, physical, technological) to solve a problem	A model / plan was used that addresses few aspects of the problem.	A model / plan was used that addresses some aspects of the problem.	An appropriate plan was used.	An appropriate plan was used that integrates all aspects of the problem/context.
Selection and sequencing of a variety of tools and strategies to solve a problem	The student selects a few appropriate tools and uses them to make a limited attempt to solve the problem	The student selects some appropriate tool and uses them to solve some of the problem.	The student selects appropriate tools and uses them to solve most of the problem.	The student selects appropriate tools and incorporates them in execution of a plan to solve problem and verify solution.
Justification of reasoning and/or conclusion	Reasoning is evident but lacks consistency.	Reasoning is evident and logical in parts of the problem.	Reasoning is logical and consistent within context.	Reasoning is logical and consistent and relates to broader context.
Making Conclusions and Inferences	Conclusions are somewhat connected with work but are not supported.	Conclusions are consistent with work but are not fully supported.	Conclusions are supported by evidence and integrate aspects of the problem.	Conclusions are supported, integrate all aspects of the problem, and are convincing.