

Problem Solving Rubric

This scale evaluates the process employed in response to a problem-solving task. It takes into consideration the level of student knowledge and understanding with respect to the given problem solving task; the selection and implementation of appropriate procedures and/or strategies; and the accuracy of the solution obtained.

4 - Response is characterized by all of the following:

- The student selects and implements relevant concepts and procedures/strategies needed to solve this problem.
- The student considers all constraints of the problem situation.
- The solution and all relevant work is correct; or, there is a mistake due to some minor computational or copying error.

3 - The student selects appropriate procedures/strategies to solve this problem; however, the response/solution is not entirely correct because one of the following is apparent:

- There is evidence the student has a misconception or has failed to consider a relevant concept needed to solve the problem correctly.
- The student fails to consider a constraint of the problem situation.
- The student has considered an irrelevant variable or failed to consider a relevant variable.
- The response/solution is generally correct; however, from the information provided it is not completely clear how the student arrived at this solution.

2 - The student selects appropriate procedures/strategies to solve this problem; however, the response/solution is not correct because one or more of the following are:

- There is evidence that the student has several misconceptions or has failed to consider several relevant concepts needed to solve the problem correctly.
- The student fails to consider several constraints of the problem situation.
- The student has also considered several irrelevant variables or failed to consider several relevant variables.
- The student did not carry the procedures/strategies far enough to reach a solution.
- The response/solution is generally correct; however, there is no information showing how the student arrived at this response/solution.

1 - An incomplete and/or incorrect response/solution is provided evidencing an attempt to solve the problem. In addition, one or more of the following are apparent:

- The student did consider a constraint or variable of the problem situation.
- The student understands some concepts relevant to the problem task.
- The student selected a totally inappropriate procedure/strategy.

0 - Response is characterized by the following:

- It is blank.
- The student response only repeats information in the problem task.
- An incorrect solution/response is given and no other information is shown.
- The solution/response and supportive information is totally irrelevant to the problem task.

Reference:

National Center for Research on Evaluation, Standards, and Student Testing (CRESST)