

Appendix I

Rubrics

Students' writing about mathematics tells teachers a great deal about their understanding of terms and concepts. Answers to constructed-response questions allow teachers to see students' thinking and to determine the level at which they understand math skills and concepts. Scoring open-ended tasks is more difficult than scoring traditional multiple-choice tests but offers teachers more insight into students' strengths and weaknesses. The following rubrics are intended to provide some options for scoring students' constructed-response math tasks.

Rubric 1

This rubric is general enough to be used for a variety of math tasks.

4	The student demonstrates an in-depth understanding of the mathematics.
	<ul style="list-style-type: none">■ Information is correct and complete.■ Explanation, description, or justification is clear.■ Writing may include details and/or examples.
3	The student demonstrates considerable understanding of the mathematics.
	<ul style="list-style-type: none">■ Information/explanation is correct.■ Minor computational errors may be present.■ Explanation, description, or justification may lack clarity and details.
2	The student demonstrates limited understanding of the mathematics.
	<ul style="list-style-type: none">■ Information and/or explanation are incomplete.■ Significant computational errors may occur.
1	The student demonstrates little understanding of the mathematics.
	<ul style="list-style-type: none">■ Information is incorrect.■ Explanation, description, or justification is unclear or incorrect.
0	No attempt was made.

Rubric 2

This problem-solving rubric scores for correctness of the answer and clarity of the explanation on a four-point scale rather than a five-point scale as in Rubric 1. The language in this rubric is geared toward students.

3	Your response demonstrates a complete understanding and analysis of the problem.
	<ul style="list-style-type: none">■ Your answer is correct.■ You applied a reasonable strategy.■ Your explanation and/or justification is clear, developed, and logical.■ You supported your answer with numbers and information as appropriate.
2	Your response demonstrates a limited understanding and analysis of the problem.
	<ul style="list-style-type: none">■ Your answer may contain some errors.■ You partially applied a reasonable strategy.■ Your explanation and/or justification is partially developed, logically flawed, or missing.■ Supporting numbers and information may be missing.
1	Your response indicates a lack of understanding of the problem.
	<ul style="list-style-type: none">■ Your answer is incorrect.■ Your strategy is not evident or not reasonable for the problem.■ Your explanation, description, or justification is missing or incorrect.■ No supporting information is presented.
0	There is no response.

Rubric 3

This rubric is a bit simpler and is an option for scoring primary students' work when there are fewer written explanations and less detail.

3	The student work demonstrates a clear understanding of the mathematics.
	<ul style="list-style-type: none">■ The answer is correct. Minor errors may be evident.■ The words, pictures, and/or numbers indicate an understanding of the math concepts.
2	The student work demonstrates a partial understanding of the mathematics.
	<ul style="list-style-type: none">■ The answer is partially correct.■ The words, pictures, and/or numbers indicate a partial understanding of the math concepts.
1	The student work demonstrates an insufficient understanding of the mathematics.
	<ul style="list-style-type: none">■ The answer is incorrect.■ The words, pictures, and/or numbers indicate a lack of understanding of the math concepts.
0	There is no response.