Assessing Student Work on Extension Projects

This assessment tool was informed and inspired by many sources: the Common Core Standards for Mathematical Practice (NGA & CCSSO, 2010), the Process Standards of the National Council of Teachers of Mathematics (NCTM, 2000), the five Proficiency Strands in *Adding it up* (Kilpatrick, 2001), and a rubric in *Extending the challenge in mathematics* (Sheffield, 2003).

You may design your own scoring system. I use a 5-point scale in each category.

5	evidence of learning beyond the level of course standards
4	evidence of learning at the level of course standards
3	evidence of learning approaching the level of course standards
2	evidence of learning below the level of course standards
1	evidence of learning significantly below the level of course standards
0	little or no evidence of progress toward meeting course standards

In my classes, students who are new to the extensions often receive 2s and 3s at first. As the school year progresses, they receive mainly 3s and 4s with an occasional 5. Students and parents appreciate the opportunity to identify specific areas of strength and goals for improvement. However, no numerical scoring system will ever replace the value of a few thoughtful written comments related to students' ideas!

Of course, you may also incorporate other criteria such as legibility, organization, mechanics (spelling, punctuation, and grammar), etc. However, your scoring system should reflect the central goal of mathematical learning.

adapted from the introduction to the *Advanced Common Core Math Explorations* series
by Jerry Burkhart. Prufrock Press: 2015.

Name _____ Assignment_____

Criterion	Description	Score
Depth of Understanding	• Know the *why* behind the *how*. • Understand the meanings of concepts. • Recognize and use connections between ideas.	
Problem Solving	• Create and use effective problem solving strategies. • Verify your results. • Solve the problem more than one way.	
Elaboration and Communication	• Give thorough, clear, concise explanations. • Use words, calculations, and diagrams effectively. • Support your explanations with examples.	
Generalizations and Reasoning	• Recognize, analyze, and extend patterns. • Make and test predictions. • Use logic to evaluate claims and justify conclusions.	
Correctness and Precision	• Give correct answers stated with appropriate precision. • Calculate accurately and efficiently. • Use mathematical vocabulary correctly and precisely.	
Originality and Extensions	• Invent ideas and strategies that were not taught. • Find ideas and strategies that are rarely discovered. • Propose new ideas or questions to study.	
Effort and Perseverance	• Show consistent effort. • Make progress appropriate to your understanding. • Persist through difficulties.	

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