

The Math Fundamentals Problem of the Week Scoring Rubric — **Horsin' Around** (posted 17 December 2007)

For each category, choose the level that *best describes* the student's work.

	Novice	Apprentice	Practitioner	Expert
Problem Solving				
Interpretation	Does not show much understanding of the problem.	Shows some understanding of the math in the problem. Completes part of the problem.	Understands that Zachary spends equal time riding his horse and walking. Understands that the total trip is 50 miles. Answers the question: How long does it take Zachary to complete the journey?	Solves the main problem correctly. Understands the Extra and answers the questions: How many miles does Zachary ride? How many miles does he walk? Achieves at least Practitioner in Strategy.
Strategy <i>(NB: based on their interpretation of the problem)</i>	Does not know how to set up the problem. OR Shows no evidence of strategy. OR Strategy didn't work.	Tries a strategy that makes sense, but isn't enough to solve the whole problem, OR doesn't apply it systematically. OR Verifies a correct answer, but fails to explain how they found it.	Picks a sound strategy. Approaches the problem systematically, achieving success through skill, not luck. Chosen strategy accounts for any answer(s) that changed after checking our answers. Guess-and-Check approach must involve good reasoning and informed guessing.	Does one or more of these: Uses two different strategies. Uses a good Extra strategy. Uses an unusual or sophisticated strategy, e.g., effective and appropriate use of technology or algebra.
Accuracy <i>(NB: based on chosen strategy)</i>	Has made many errors. OR Shows no math.	Some work is accurate. May have one or two errors. OR Shows very little arithmetic.	Work on main problem is accurate and contains no arithmetic or record keeping mistakes.	Not available for this problem.
Communication				
Completeness <i>(NB: an incorrect solution can be complete)</i>	Writes very little to explain how the answer was achieved.	Describes the steps but does not include calculations or numbers. OR Shows calculations without rationale or explanation.	Explains most of the steps taken to solve the problem and the rationale for them. Includes key calculations with rationale. Verifies the answer ("explain ... how you know your answer is correct."), especially when using an algebraic approach. Explanation accounts for any answer(s) that changed after checking our answers.	Explains strategy for Extra. Does one or more of these: Includes useful extensions and further explanation of concepts or patterns. Provides exceptional insight into the problem. Includes a table of data.
Clarity <i>(NB: incomplete and incorrect solutions can be explained clearly)</i>	Explanation is very difficult to read and follow.	Explanation isn't totally unclear, but another student wouldn't be able to follow it easily. Spelling errors/typos make it hard to understand.	Attempts to make explanation readable by a peer. Uses level-appropriate math language, including correct units: miles, hours, miles per hour. Shows effort to use good formatting, spelling, grammar, typing. Errors don't interfere with readability.	Formatting makes ideas exceptionally clear. Answer is very readable and appealing, might include a helpful diagram. (A diagram alone doesn't qualify for Expert status.)
Reflection <i>(See list below.)</i>	Does nothing reflective.	Includes one reflective thing.	Includes two reflective things.	Includes 3 or more reflective things or does an exceptional job with 2 of them.
	The items to the right are considered reflective, and could be in the solution OR in the comment they leave after viewing our answer:	<ul style="list-style-type: none"> • Revises and improves the submission. • Checks the answer using a different method. • Explains a hint she/he would give someone. 	<ul style="list-style-type: none"> • Reflects on the reasonableness of the answer. • Connects the problem to prior knowledge/experience. • Describes any errors made and how she/he found and corrected them. 	<ul style="list-style-type: none"> • Comments on AND explains the ease or difficulty of the problem. • Explains where she/he is stuck. • Summarizes the process used.