

Detailed Description of Quiz Correction Assignment

1) Diagnosis Phase (DP) – Identify what went wrong.

In this phase you need to correctly identify your errors, and diagnose the nature of your difficulties as they relate to specific physics principles or concepts, a problem solving procedure, or beliefs about the nature of science and learning science.

Please note that an incorrect diagnosis or a merely descriptive work (such as simply noting the places where you made mistakes) is unacceptable. You need to analyze your thinking behind your mistakes, and explain the nature of these difficulties. Hence, in this phase you need to identify why you answered the way you did, where your understanding might have been weak, what you found difficult, what knowledge or skills you were missing that prevented you from correctly completing the solution, etc.

Poor Diagnosis	Good Diagnosis
No description of thinking behind difficulty <ul style="list-style-type: none"> • "I was confused." • "I thought it would be 5 N." • "I picked the wrong equation." • "I didn't remember to use $F=ma$." 	Focuses on reasons for actions <ul style="list-style-type: none"> • "I thought that the larger velocity would mean the larger force." • "I knew it was angular momentum, but I didn't apply it correctly – I neglected the angular momentum of the ball about the pivot point of the rod."

2) Generalization Phase (GP) – Learn from your mistakes by generalizing beyond the specific problem.

In this phase you need to identify what deeper physics understanding you have gained from your diagnosis. By carefully thinking about the particular aspects that were problematic to you in approaching the question/problem, and correlating them with the correct solution, you should develop a better understanding of the basic physics principles. In your writing you should identify this new understanding and describe how it will prevent you from having similar problems in the future. Please note that merely stating the correct solution, by copying or paraphrasing the instructor's solution for a question is unacceptable. You are expected to generalize beyond the specific problem to discuss the general principles of physics.

In your writing you are very welcome to identify not only your understanding of your mistakes, but also your appreciation for the aspects of your thinking that were already correct and successful in your original attempt. It is hoped that you will hold on to the good elements you already have and add new good ones by doing these corrections.

Poor Generalization	Good Generalization
Focuses on generic activity <ul style="list-style-type: none"> • "I learned to read the question carefully." • "I learned to pick the right equations before solving a problem." 	Generalizes beyond the specific problem <ul style="list-style-type: none"> • "I learned that the acceleration does not depend on the velocity. This is consistent with Newton's second law, which says that the acceleration depends only on the net force and the total mass."
Focuses only on the specific problem <ul style="list-style-type: none"> • "I learned that the amount of work from A to B is the same as the amount of work from B to C." 	