

Name: _____ Math XXX Quiz #

Use the following rating scale to answer the questions before and after each quiz problem:

Definitely not confident	Not confident	Undecided	Confident	Definitely Confident
1	2	3	4	5

Before solving a problem, indicate how confident you are that you can solve it correctly.	REMEMBER: Show all your work and read each question's directions.	After you solve each problem, indicate how confident you are that you solved it correctly.
1 . 2 . 3 . 4 . 5	1.	1 . 2 . 3 . 4 . 5
1 . 2 . 3 . 4 . 5	2.	1 . 2 . 3 . 4 . 5

5. How confident are you now that you can correctly solve a similar item? (Circle one) 1 2 3 4 5

6. Now use the strategy to solve the alternative problem. You should be able to find one in your book. If you can't find one, email me and I will give you the number of a similar problem.

7. How confident are you that you can correctly do a similar quiz problem in the future? (Circle one) 1 2 3 4 5

8. What do you still need to do to master this kind of problem?

—————→ **Quiz Problem #**_____

1. a. How much time did you spend studying for this topic area? _____

b. How many practice problems did you do in this topic area in preparation for this quiz?

(Check one): 0 to 5 5 to 10 10+

c. What did you do to prepare for this quiz problem?

2. After you solved this problem on the quiz, was your confidence rating too high? Yes No

3. Explain (a) *What* kind of error you made (see Common Errors List) and (b) *Why* you think you made the error?

4. Now re-do the original quiz problem, fixing the issue that caused your error(s) on the quiz.

5. How confident are you now that you can correctly solve a similar item? (Circle one) 1 2 3 4 5

6. Now use the strategy to solve the alternative problem. You should be able to find one in your book. If you can't find one, email me and I will give you the number of a similar problem.

7. How confident are you that you can correctly do a similar quiz problem in the future? (Circle one) 1 2 3 4 5

8. What do you still need to do to master this kind of problem?

Quizzes and Quiz Corrections Activity

Adapted from templates created by Lawrence Morales at Seattle Central Community College.

Estimated levels of time and energy required for:

Faculty to prepare this activity:	Medium
Students to participate in this activity:	Medium/High
Faculty to analyze/process the data collected:	Medium
Group Facilitation skills required:	None

Description:

This is an assessment activity that consists of frequent short (two question) quizzes and subsequent corrections made by the student after the quiz is graded. The authors have given quizzes with frequencies ranging from twice a week to daily. Each problem is graded either correct or incorrect without any corrections given by the instructor on the original quiz if the problem is incorrect. If a student does not answer both questions correctly, that student is required to complete the quiz correction form for their incorrect problems before they can earn **any points** for the quiz. The correction format instructs students to identify their error(s), rework the problem, and identify and rework a similar problem. Upon completing the corrections (accurately), the student earns full credit for the quiz. If a problem is redone incorrectly on the corrections form, the student is instructed to repeat the process again or is given partial credit for the quiz.

Resources Needed:

- None

Templates/Handouts Available:

- Quiz form template
- Quiz corrections form

Purpose:

This task is a formative assessment that provides students with a low-risk opportunity to assess their understanding, and to correct their work to earn full credit. The instructor is informed about the level of student understanding and the students are able to calibrate their self-efficacy and study skills and improve their ability to categorize problems.

Learning Goals:

- Perseverance with a task
- Recognition of similar types of problems
- Self-efficacy (gauge ability to complete a problem and to assess the accuracy of their work)
- Self-analysis of study techniques and their efficacy
- Repetition of the subject material to develop mastery of the concepts

Suggestions for Use:

This task can be used at any mathematical level. We have found that choosing problems in which we know from previous experience that students frequently make mistakes is the most effective way to write the quizzes. The instructor should emphasize that the problems are chosen so that students can make a mistake and learn from the corrections process in a low-risk environment before the students are required to do similar problems in the higher-stakes situation of an exam.

Step-by-step Procedure:

1. Select two quiz problems that are representative of the material you wish to assess. Try to select problems that students generally have issues with, such as problems in which students make the same type of mistake consistently. Make sure that the problems are simple enough to be completed in no more than about 5 minutes each, making the entire quiz about ten minutes in length.
2. The first time that the instructor gives a quiz using this format, all of the self-assessment numbers and their purpose should be carefully explained.
 - a. To the left of each problem will be an array of numbers from 1-5. Students should read the problem and indicate their confidence that they will be able to complete the problem successfully. The students circle the number (1 is lowest confidence and 5 is highest confidence) before attempting to solve the problem.
 - b. To the right of each problem is another array of numbers from 1-5. After completing the problem, the students should indicate their confidence that they worked the problem correctly by circling the appropriate number.
 - c. Students should not agonize over which number to circle, but rather should quickly choose the number that corresponds with their first instinct. The confidence ratings are designed to help students gauge their self-efficacy, and will be used when the quiz correction forms are completed.
 - d. The instructor should carefully explain what “no grade yet” means, i.e., that at least one of the problems is incorrect, and that the student will need to complete a quiz correction form for the missed problem(s) in order to earn **any** credit for the quiz.
3. When giving the quiz, the instructor should remind students to complete the pre- and post-problem self-assessments.
4. The instructor should then grade the quizzes. A correct problem should be indicated with a check mark (or something similar that is understood by the students as indicating a correct problem). An incorrect problem should be indicated with an "x" (or something similar that is understood by the students as indicating an incorrect problem). Do not highlight an error or mark an incorrect problem in any other way than to indicate that the problem is incorrect. (Of course, this instruction may be something of a judgment call. The instructor may wish to indicate that the error was simply notational or something similar so that students are not misled into thinking that they were confused about the underlying concept rather than having made a much simpler error.) At the top of the page a student receives full credit if both problems are answered correctly. Otherwise, the instructor writes “no grade yet” at the

top of the page. Students will then be expected to complete the quiz correction form in order to earn credit. Students receive **no grade or credit** for the quiz unless the problems they solved incorrectly the first time are corrected.

5. The instructor may set a deadline before which quiz corrections must be returned, or may allow students to return the corrected quizzes as soon as they have figured out their problem. When grading the quiz corrections, the instructor must be certain that students have worked the problem correctly, as well as correctly completing the additional problem that they have selected. Some things for the instructor to consider, as the corrections are being graded are:
 - a. Will you provide the correction forms? (This is not suggested, as providing the correction form involves a lot of paper!) If not, where will the students access the forms?
 - b. How similar to the original problem does the additional problem need to be? Will there be a penalty for using an insufficiently similar problem? How will the "similar" problem be chosen?
 - c. Are students allowed to create their own additional problem, or must they have to find it in the book or elsewhere?
 - d. If the student does part of the corrections incorrectly, will they earn partial credit or do they have to repeat the process again?
 - e. What happens to a student's grade if the corrections are turned in late or not at all?

Pros:

- Students gain skills in classifying similar types of problems, and recognizing when to use the same problem solving strategies
- Students reflect on and learn from their mistakes because the corrections are required
- Students are encouraged to pay attention to the reasons for getting the problem wrong, to think about their study methods, and to make a plan to be successful when similar problems are attempted in the future.

Cons:

- Some students use the ability to do corrections as an excuse not to study. This generally backfires, as they then must complete the longer quiz correction process.
- Some students will not turn in any quiz corrections. Failing to turn in quiz corrections can severely impact their grade, depending on the percentage of their grade that is based on quizzes. Students may also then try to turn in all of their quiz corrections at the end of the term (if no deadline was set), creating a large amount of grading for the instructor.
- The grading load is higher than for standard quizzes. The initial grading process is very quick because the problems are simply designated either right or wrong, but the subsequent grading of the corrected quizzes can take more time. Also, there may be backlogs of quiz corrections that students turn in late.
- Students may complain that they are not getting useful feedback from the instructor. Be prepared to explain why the feedback is minimal.
- Students may complain that this activity is too much work. Be prepared to explain the justification to them.

Caveats:

- If you are not following the book linearly and instruct students to find similar problems in the book when they need to do their quiz corrections, you may need to direct them to the appropriate sections in the book.
- When a student asks the instructor for a similar problem, the instructor should provide, if possible, a range of problems from which to choose. Sometimes, however, the instructor may simply be forced to make up a similar problem for the student if none in the book are appropriate.