

PPAT® Assessment

Library of Examples – Math

Task 2, Step 1, Textbox 2.1.1: Selecting a Single Assessment

Below are two examples of written responses to Textbox 2.1.1 as excerpted from the portfolios of two different candidates. The candidate responses were not corrected or changed from what was submitted. One response was scored at the Met/Exceeded Standards Level and the other response was scored at the Does Not Meet/Partially Met Standards Level. This information is being provided for illustrative purposes only. These excerpts are not templates for you to use to guarantee a successful score. Rather, they are examples that you can use for comparison purposes to see the kinds of evidence that you may need to add to your own work.

The work you submit as part of your response to each task must be yours and yours alone. Your written commentaries, the student work and other artifacts you submit, and your video recordings must all feature teaching that you did and work that you supervised.

Guiding Prompt for Task 2, Textbox 2.1.1

- Provide an in-depth description of the assessment. Provide a rationale for choosing or designing the assessment based on its alignment with the standards and learning goal(s) that meet the students' needs.
- What data did you use to establish a baseline for student growth related to this lesson's learning goal(s)?
- Describe the rubric or scoring guide you have selected or designed. How does it align to your learning goal(s)? How will you communicate its use to your students?
- What evidence of student learning do you plan to collect from the assessment? How will you collect the data? Provide a rationale for your data-collection process.

Example 1: Met/Exceeded Standards Level

- Before creating my assessments, I created four learning goals based off the West Virginia Tree College and Career Readiness Standards for High School Algebra 1 and the National Council of Teachers of Mathematics (NCTM). The specific state standards used are: 1) M.A1HS.16, explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; 2) M.A1HS.14, solve systems of linear equations exactly and approximately focusing on pairs of linear equations in two variables; 3) M.A1HS.8, rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations; 4) M.A1HS.13, prove that given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions; 5) M.A1HS.6, create equations in two or more variables to represent relationships between quantities. The National Standards were nearly identical to the state standards I had chosen. For the 1st standard, I developed the learning goal for students

to identify the correct solution to the system and visually represent that $f(x)$ equals $g(x)$ by drawing a graph and seeing it visually. For the 2nd standard which applied to all of my learning goals, I had 4 questions to solve and estimate answers. The 3rd was used to complete the substitution method, and the 4th standard, students solved systems by elimination and plugged answers back in to show the elimination method works. The final standard had three-word problems where students had to create formulas based on the word problem, solve for the solution, and put it into context. The test was comprised of 4 questions for each of the first three learning goals and 3 questions for the final learning goal. This is an appropriate number of questions for an honors freshman math class where they have an hour and a half to complete their test. Each question directly relates to the learning goal with which they were associated. For example, questions one through four were having students working on graphing the systems to see that the solutions occurred when the graphs were the same value to ensure I am assessing learning goals 1 and 2 by identifying where x and y are the same and finding the exact solution or approximating the solution when the points of intersection are not on whole numbers. Questions 5 through 8 reveals student's knowledge of learning goal 2 because students will again find the exact solutions to systems of equations using the substitution method. This relates to standards 1, 2, and 3 because students will have to show they know that they can replace a variable for what that same variable equals in the other equation to solve. They will also be isolating a variable of interest in order to complete this substitution. Questions 9 through 12 aligned with learning goal three where students had to solve the systems of equations using the elimination method. Through this, students would again be solving for exact solutions as related to standard 2 and they would also show their ability of the 4th standard where they have complete operations to prove that taking an equation and a multiple of another and adding them together would produce the solution. The final three questions relate to learning goal 4 where students must create equations in at least two variables that represent relationships between quantities. Students will read problems that had two variables, creating the equations that represent the relationship of the variables in that situation, and solving for the solutions. This relates to standard 5 and causes students to use their critical thinking skills to solve for the solutions and figure out how to take situations and put it into a format that makes it easy to solve.

- b. I gave a pre-assessment to establish baseline data. I wanted this to be a valid measure of my student's baseline data so each question was clearly aligned with my goals. I also had two questions of varying forms for the first three learning goals in order to ensure I was measuring my student's knowledge of the learning goal. I based whether they accomplished mastery of the learning goal by setting up a rubric based on three factors, the proper arrangement of the formulas, the correct work to solve, and the correct answer identified. I believe these three ways of evaluating the assessment measure the student's knowledge of the subject matter and the ability to apply that knowledge. I used the same criteria while making the rubric for the post-assessment. This pre-assessment did not cover the whole depth that my post-assessment covered. I looked at all of the pre-assessment and used the same scoring guide as my post-assessment in terms of what I was looking for, but I did not use the same rubric because it is specific to the types of questions on the post-assessment. I used the same scale for mastery of the learning goals. This data helped me create my lesson around what my students knew and what I would need to go over for the first time or as a review. For example, questions 1 through 4 required student's knowledge of how to put equations in slope-intercept form and graph them. This was a unit we had covered previously. Some still struggled with the

information as I could tell from the pre-assessment. This told me that I would need to spend some extra time working on how to put equations into slope-intercept form and graph them. This was also good for my students as they would get to review the information and extend it further. As seen on the chart, my pre-assessment let me know that my students do not know how to work with systems of equations. My students averaged a 52% mastery for the first learning goal and a 1.9% on the 4th learning goal. The other two learning goals had a 0% average. This data gave me a good idea that we would have to start at the beginning and review a few concepts that were previously learning.

- c. I created a rubric to evaluate each learning goal. My goal was to have students attain mastery so I outlined what would denote mastery for each learning goal on my rubric. This was based on my criteria for the learning goals, so I was looking at those three details. The first learning goal denoted 3 out of 4 as mastery. For the second and third learning goals, I set 4 out of 6 as mastery. There were more steps to these and the possibility for more calculation errors, so I decided on 6 for the number of points. Finally, for learning goal four, I chose 3 out of 5 points to denote mastery because the word problems had an extra step of creating the formulas before solving. Each level is outlined in the rubric that clearly defines what has to be done for each point value. While teaching each part of the lesson, I expressed to my students everything they would have to show on their test to let me know they knew how to solve the problems. When I gave my students their study guide, I told them again what I expected and showed them all of the details they would need to include when going over the study guide. I will also remind them before the test that what I am looking for is in the instructions.
- d. The evidence of student learning is going to come straight from my pre-assessment and post-assessment. I will compare how my students did on the pre-assessment to their post-assessment looking at the attainment of mastery for each learning goal individually. I will be able to see their exact point value with my learning goals chart, and I will get overall data from the entire class by seeing the percentage of students who attained mastery for each goal, and those who did not. This will allow me to easily see what how well my students learned the information, and what I should do differently next time to help students better understand a certain learning goal. Using this comparison, it is easy to see on a bar graph how many of my students attained mastery of each learning goal. This comparison allows me to easily assess my students' knowledge and how much they have learned.

Refer to the [Task 2 Rubric](#) for Textbox 2.1.1 and ask yourself:

In the candidate's description of selecting the assessment, where is there evidence of the following?

- The standards, learning goals, and student needs
- The baseline date used
- The rubric or scoring guide and its alignment to the standards and learning goals
- Communication of the rubric to the students
- How the student learning will be collected
- The rationale for the data collection process

Why is the candidate's response detailed and tightly connected?

Example 2: Did Not Meet/Partially Met Standards Level

- a. The assessment will be a combination of the student's homework problems and a quiz that they will take on the section. The points from these two assignments will be combined and the score they receive when combined will be used to compare against baseline data. The assessment will all deal with solving equations with variables on both sides. There will be problems that students will get a solution, problems with no solution. Problems where students need to recognize it as an identity, and word problems that students must convert to an equation to solve. This assessment aligns with the Common Core Standard A-CED.A.1 by having students solve linear equations. It also incorporates content literacy as students must read the word problems and convert those problems into a linear equation.
- b. The students took a pre-section quiz which was used for baseline data. The quiz was made up of two sections. One section students were asked to solve equations with variable on both sides. The other sections students were asked to say whether the equation had no solution, was an identity, or had a solution.
- c. The homework is worth 20 points and the quiz is worth 5 for a total of 25 points on the assignment. The homework will be graded on the answer they get and the work they show. The quiz will only be graded on the answers. By grading the work I will be able to assess whether or not the students are grasping the concept of the standard, solving linear equations. Students understand that they must know the process in order to be able to do more difficult problems.
- d. The assessment will provide evidence of student learning. The key is making sure that the students understand the process and how they got their answer. The assessment score will be matched against the baseline data to show student growth.

Refer to the [Task 2 Rubric](#) for Textbox 2.1.1 and ask yourself:

In the candidate's description of selecting the assessment, where is there evidence of the following?

- The standards, learning goals, and student needs
- The baseline data used
- The rubric or scoring guide and its alignment to the standards and learning goals
- Communication of the rubric to the students
- How the student learning will be collected
- The rationale for the data collection process

Why is the candidate's response partial?

Suggestions for Using These Examples

After writing your own rough draft response to the guiding prompts, ask the question, "Which parts of these examples are closest to what I have written?" Then read the 4 levels of the matching rubric (labeled with the textbox number) and decide which best matches your response. Use this information as you revise your own written commentary.

Lastly, using your work and/or these examples as reference, consider what you believe would be appropriate artifacts for this textbox.

