

## PPAT® Assessment

### Library of Examples – Science

#### Task 4, Step 1, Textbox 4.1.2: Instructional Strategies

Below are two examples of written responses to Textbox 4.1.2 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 Prompts for Task 4, Textbox 4.1.2

- How do you plan to use academic content language to advance the understanding of the concept being taught in this lesson? Provide a rationale.
- How do you plan to engage students in critical thinking to promote student learning? Provide a rationale.
- How do you plan to use questioning skills to promote student learning? Provide a rationale.
- How do you plan to integrate literacy into the content you will teach to promote student learning? Provide a rationale.

#### Example 1: Met/Exceeded Standards Level

- The lesson will begin with a review of the assignment from the previous day, in which, students defined most of the academic content language necessary to advance in the unit. I will provide each answer using appropriate language. The focus of this lesson is to simplify the combined gas law when different variables are held constant and compare the relationship between the variables. I will use content language when reading practice problems aloud and presenting a strategy to solve the problems. I will identify and label the variables given, determine which variable is held constant and which variable we are solving for. I will show how to use the constant variable to simplify the equation. I will underline the verb used in each question to indicate a change occurring and how to use this information to label the variables. Students can advance their understanding as they read and analyze the verb used in the problem statement, compare it to their result, and apply it to the content of gas laws. For example, if the verb listed is “expanding” and we are solving for volume 2, students should anticipate  $V_2$  to be larger than  $V_1$ . As I set up

each equation I will list and compare the units the variables are in and indicate how to cancel them. Another important factor of this lesson is to be able to use academic language when analyzing the results. Variables multiplied together have an indirect relationship, which means as one decreases the other increases and vice versa. Variables divided by each other have a direct relationship which, means they follow the same direction and as one increases so does the other. Students can advance their understanding by comparing this relationship between variables to verify their results.

- b. I will engage students to think critically during a demonstration of elastic collisions. I will present 2 different bouncy balls and demonstrate how 1 ball returns to the same approximate starting position when dropped while the other remains close to the ground when dropped. I will engage students in a critical thinking discussion over energy transfer occurring and the different velocities of the balls before and after hitting the ground. This demonstration will be used to promote student learning, by providing a visual representation of gas collisions under ideal conditions. Students will also be exposed to images representing gas particles and their movement in the textbook. These methods will promote learning and meet student needs through written and verbal descriptions in conjunction with pictures and physical models of these invisible atoms.
- c. I will use questioning skills as we review the previous lesson by inviting students to share their answers. This promotes student learning by hearing the answers given in their own words to describe the content. I will use questioning while teaching the new content by guiding students to discover different ways to simplify the combined gas law equation. For example, I will begin by asking students how to simplify the equation if a variable is held constant, then I will rephrase the question and ask students how to simplify the equation if a variable such as volume was held at one liter. In this way students will recognize the constant variable can be dropped from the equation. Learning a strategy of how to simplify the equation promotes student learning because instead of asking students to memorize multiple different equations they can use a deeper understanding of the combined gas law to solve for each type of equation and problem conditions. I plan to use guided questions when assisting students as they work independently on the practice problems. Instead of answering their questions, I will redirect students with a new question to help them reach the answer.
- d. I will integrate literacy into the lesson by having students read a section in their textbook to introduce the unit. Students will complete a guided reading handout that will incorporate the content specific terms, symbols, equations, and definitions necessary to advance understanding. This will promote student learning by building muscle memory when students put pencil to paper and record the information. Students can work at an individualized pace to complete the assignment and later use the information they gathered as a reference tool for future assignments.

**Refer to the [Task 4 Rubric](#) for Textbox 4.1.2 and ask yourself:**

- Where is the rationale that supports the candidate's plan for using academic content language, engaging students in critical Thinking, using questioning skills, and integrating literacy?
- Why is the evidence clear?

**Example 2: Did Not Meet/Partially Met Standards Level**

- a. Academic content knowledge for this lesson is built upon each mini-lesson which includes specialized vocabulary and technical vocabulary for mathematical processes. These are explicitly taught with each lesson, process, skill, equation, etc. and it is vitally important that it is important for students to utilize the terminology so that when read as a problem on a college placement exam or other assessment, they clearly understand what is expected. Utilizing Marzano’s Building Academic Vocabulary is the strategy our district utilizes as part of our K-12 strategy. Academic content language is vitally important as students in this geographical area begin school with insufficient vocabulary and it remains deficient. –
- b. The problem solving portion of this lesson, in addition to synthesizing the information to be able to independently balance an equation is critical thinking. Breaking down each portion of the process into sub-objectives is essential so students are not overwhelmed or become frustrated. Scaffolding their instruction so they experience success in each step of the process is key to promoting student learning.
- c. Questioning skills are guided by definite aims in each part of this lesson and must be purposeful during instruction. When teaching, strategies that engage students in the essential elements of effective instruction to keep students continuously engaged and focused on specific learning objectives (identified mini-goals). Identifying specific learning outcomes, anticipatory set, relevant material selection, and prompt, relevant feedback.

**Refer to the [Task 4 Rubric](#) for Textbox 4.1.2 and ask yourself:**

- Where is the rationale that supports the candidate’s plan for using academic content language, engaging students in critical Thinking, using questioning skills, and integrating literacy?
- Why is the evidence minimal?

**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.