

■ FOLLOW-UP

5. (UC ASSESSMENT) Introduce the SEPUP Assessment System

Use Analysis Question 2 to introduce the SEPUP assessment system to your students by modeling how the scoring guides work. Before assigning the question, introduce them to the UNDERSTANDING CONCEPTS (UC) Scoring Guide. Explain to the students how you will use the UC Scoring Guide to provide feedback on the quality of their work. Let them know that this question will be used as a model to show how the scoring guide works. If appropriate, provide each student with a UC Scoring Guide to look over and reference as they answer Analysis Question 1. Be sure that they understand that the scoring guide does not include the specific content that they should address in their question, but explains the expectations for a level 3 and level 4 response.

Begin by reviewing the criteria for each score. Make sure to point out that the scores (0-4) are based on the quality of their responses and do not correspond to letter grades. A Level 3 response is a complete and correct response. A Level 4 response assumes that the student has both achieved and exceeded the expected level of response. At the beginning of the school year, discourage students from focusing on Level 4 responses. Instead, let students know that you would like them to develop consistent Level 3 answers. It is not necessary (or even expected) that an “A” student will write Level 4 responses.

6. Students earn safety certification.

Decide upon the minimum understanding required for students to receive safety certification, meaning that they are ready to work in the classroom laboratory setting with possibly hazardous substances. You may wish to use students’ response to Analysis Question 2 to determine their readiness. Another option is to provide a sample scenario for students such as; ***You walk into science class and see a beaker filled with clear liquid spilled on the table where you***


normally sit. Your science teacher is nowhere to be found. What do you do? Ask students to write a description of the actions and safety precautions they would take to handle and clean up the clear liquid on the table. After students have demonstrated a determined level of competency, present each student with the “Safety Certification Card,” you have made from the template at the end of this activity.

Optional Student Sheets 2.3 and 2.4 invite students to consider whether they have any materials in their homes that might be hazardous. Students record information about household hazardous substances. Point out that they are required to obtain a signature of a parent or guardian before beginning the assignment and handling household hazardous materials. Explain that product labels often provide a description of the hazard and the hazardous or active ingredients are marked with warnings, such as “Caution,” “Corrosive,” “Danger,” “Explosive,” “Flammable,” “Harmful,” “Hazardous,” “Poison,” or “Warning.” You may wish to pass out the student sheets now and invite students to share their findings after Activity 4, “Hazardous Materials at Home.” You may decide to ask them to share their results in a number of ways including; classifying the substances they found at home, depicting their findings in a graph, chart, or Venn diagram and then comparing these with the findings of others in class.

SUGGESTED ANSWERS TO QUESTIONS

1. *Which substances from Student Sheet 2.1, “Classroom Substances,” fall under more than one hazard class?*

Ethanol, ammonium hydroxide, hydrochloric acid, hydrogen peroxide, and potassium hydroxide all fall under more than one hazard category.

2.  (UC ASSESSMENT) Explain in detail the safety guidelines you would follow when working with potassium hydroxide.

Level 3 Response

Since potassium hydroxide is corrosive and toxic, I would protect my eyes by wearing goggles, and protect my skin by wearing gloves and an apron. I also would not eat or drink anything if I was working with it, because since it is toxic I would not want to take any of it into my body. I would also not want to expose anybody else to it, so I would be sure to keep it in a tightly closed, labeled bottle and store it in a locked cabinet.

3. Of the substances listed on Student Sheet 2.1, which do you think poses the greatest hazard to the health of humans and animals? Explain.

Answers will likely indicate one of the substances included in more than one hazard class (hydrogen peroxide, ammonium hydroxide, potassium hydroxide, hydrochloric acid, or ethyl alcohol). A complete and correct answer will include justification to support the students' answer. This may be in the form of information from the materials cards or from Student Sheet 2.1, "Classroom Substances Venn Diagram." For example, potassium hydroxide solution poses a greater risk than neroline yara yara since potassium hydroxide is both corrosive and toxic.

4. If a shipment of sodium borate were sent to your classroom, which hazard label(s) do you think would be on the box?

Student answers are likely to say "Toxic" because it is harmful if swallowed.