

LESSON 26

End-of-Module Assessment



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In this lesson, you will conduct an inquiry that requires you to carefully follow instructions. You will also have to make and record accurate measurements and observations.

INTRODUCTION

This lesson is designed to assess how much you have learned while working on the module *Properties of Matter*. The assessment consists of two parts: a performance assessment (Inquiry 26.1) and a written assessment.

OBJECTIVES FOR THIS LESSON

Use your knowledge and skills to complete an assessment of what you have learned during the module *Properties of Matter*.

Getting Started

- 1.** Your teacher will assign a set of materials and a balance to you and your lab partner. Make sure you have all the apparatus listed in the materials list.
- 2.** You may refer to your Student Guide and science notebook for Inquiry 26.1. You may talk to your lab partner, but do not share information or results with other pairs of students. Answer questions on your own.
- 3.** Your teacher will explain when and how to do the written assessment.

MATERIALS FOR LESSON 26

For you

- 1 copy of Student Sheet 26.1: Performance Assessment
- 1 copy of Student Sheet 26: Written Assessment
- 1 pair of safety goggles

For you and your lab partner

- 1 jar of solid A
- 1 bottle of clear solution C
- 1 250-mL beaker
- 1 250-mL beaker containing about 50 mL of water
- 1 lab scoop
- 3 test tubes
- 1 metric ruler
- 1 black permanent marker
- 3 labels
- Access to an electronic balance

Inquiry 26.1 Performance Assessment

PROCEDURE

1. You have 35 minutes to complete this part of the assessment.
2. In this inquiry, you need to measure mass accurately. Be careful not to spill solids or liquids after you have measured their mass. If you do, start the experiment again. If you make a mistake or spill anything, you may request replacement items from your teacher.
3. Use the black permanent marker and labels to label the three test tubes (A, B, and C) in the beaker.
4. Put one level lab scoop of solid A into test tube A (see Figure 26.1). Stand the test tube in the beaker.
5. Pour water to a depth of about 4 cm into test tube B. Use the ruler to measure the depth. Stand the test tube in the beaker.
6. Pour the clear solution from the bottle labeled C, to a depth of about 4 cm in test tube C. Stand the test tube in the beaker.



Figure 26.1 Put one lab scoop of solid A into test tube A.

SAFETY TIP

Wear your safety goggles at all times during the inquiry.

7. Carry the beaker and test tubes to the balance.
8. Measure the mass of the apparatus (see Figure 26.2). Record your result in Table 1 (under “Before Mixing Contents of Tube A and Tube B”) on Student Sheet 26.1.
9. Remove the beaker and test tubes from the balance. Return to your place.
10. *Without spilling any*, pour the water from test tube B into test tube A (see Figure 26.3). Return test tube B to the beaker.



Figure 26.2 Measure the mass of the beaker and the three tubes on the balance.



Figure 26.3 *Without spilling any*, add the water from test tube B to test tube A.

- 11.** Gently shake test tube A from side to side as shown in Figure 26.4. It is very important that you do not place your fingers or thumb over the top of the test tube. Be very careful not to spill any of the liquid. Continue to shake the tube until all the blue crystals dissolve.
- 12.** Return the test tube to the beaker.
- 13.** Remeasure the mass of the beaker and test tubes. Record the mass in Table 1 (under “After Mixing Contents of Tube A and Tube B”) on the student sheet. Calculate any changes in mass and enter your answer in the appropriate place on the table.
- 14.** Look carefully at the mixture in the test tube. Answer the following question in Step 2 on Student Sheet 26.1: What are three properties of solid A?
- 15.** Carefully pour the contents of test tube C into test tube A. Again, be sure not to spill anything. Return the test tubes to the beaker.

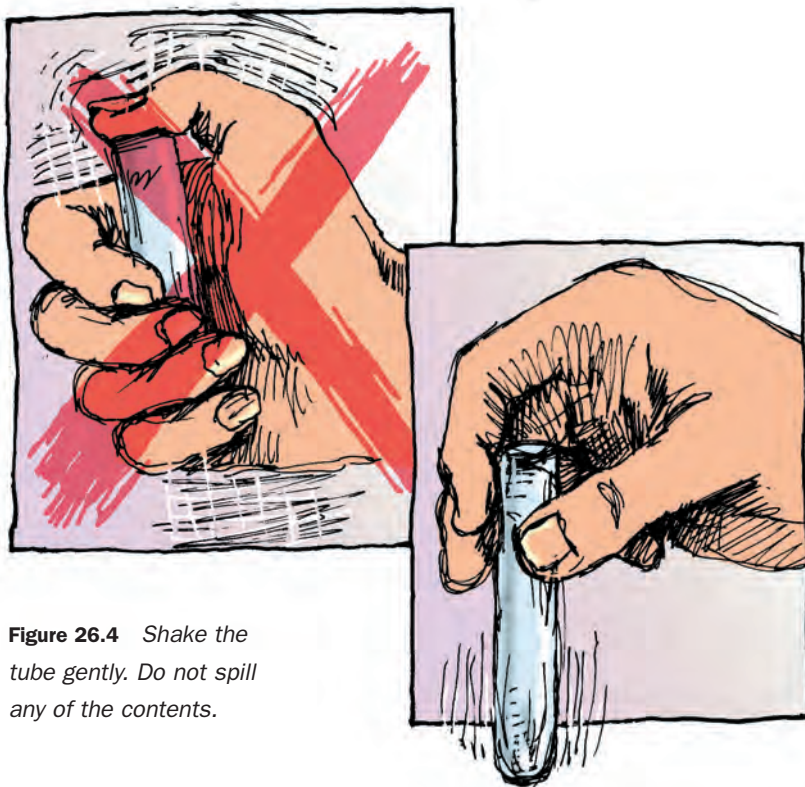


Figure 26.4 Shake the tube gently. Do not spill any of the contents.

- 16.** Answer the following questions in Step 3 on the student sheet: What did you observe when you mixed the contents of test tube A and test tube C? What evidence was there that a chemical reaction took place?
- 17.** Return to the balance and remeasure the mass of your apparatus. Record the mass in Table 1 (under “After Mixing Contents of Tube A and Tube C”) on the student sheet. Calculate any changes in mass and enter your answer in the appropriate place on the table.
- 18.** Answer the following questions in Step 4 on the student sheet: Was there any change in the mass of the apparatus when you made the solution? Was there any change in the mass after you mixed the two solutions together? Explain these results.
- 19.** Dispose of the contents of your test tubes and rinse them with tap water.
- 20.** Return to your place and check your answers.