Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Lab # 1 Safety in the Laboratory

**Minutes:** 60

**Aim:** To understand the dangers inherent in a laboratory setting and the precautions necessary to reduce risk in the lab.

**PreLab (15 points):**

List at least 5 common safety practices previously learned in science laboratory courses:

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 4.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 5.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Method**:

1. Watch the safety video, “Accident at Jefferson High.”
2. List at least 3 additional safety practices below **(10 points):**

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1. Complete the Laboratory Dos and Don’ts Worksheet **(20 points).**
2. Complete safety map of classroom **(25 points).**
3. Read the Safety in the Laboratory Handout.
4. Complete questions (back of this sheet) **(20 points).**
5. Sign and have a parent/guardian sign the laboratory safety contracts (**10 points**; required for lab credit).

**5. Questions** **(5 points each)**

A plan is being developed for an experiment to test the effect of concentrated strong acids on a metal

surface protected by various coatings. Some safety precautions would be the wearing of chemical safety

goggles, an apron, and gloves.

1. State one additional safety precaution that should be included in the plan:

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2. What is the safest method for diluting concentrated

sulfuric acid with water?

A) add the acid to the water quickly

B) add the water to the acid quickly

C) add the acid to the water slowly while stirring

D) add the water to the acid slowly while stirring

3. Describe one laboratory safety procedure that should be used if a drop of the dilute sulfuic acid spilled on the arm of a student.

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4. A student performed a laboratory activity to observe the reaction between aluminum foil and an aqueous copper(II) chloride solution. The procedures and corresponding observations for the activities are given below:

|  |  |
| --- | --- |
| **Procedure** | **Observation** |
| In a beaker, completely dissolve5.00 g of CuCl2 in 80.0 mL of H2O. | • The solution is blue green. |
| Cut 1.5 g of Al(s) foil into smallpieces. Add all the foil to themixture in the beaker. Stir thecontents for 1 minute. | • The surface of Al(s) foil appearspartially black.• The beaker feels warm to thetouch. |
| Observe the beaker and contentsafter 10 minutes. | • The liquid in the beaker appearscolorless.• A reddish-brown solid is seen atthe bottom of the beaker.• Some pieces of Al(s) with apartially black coating remain inthe beaker. |

State one safety procedure the student should perform after completing the laboratory activity.

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