

Lab 1: Safety and Laboratory Techniques

Student Name:

Course ID/Section:

Date:

Answer the questions and report your data in this fillable PDF using the observations and results you recorded in your lab manual while performing the experiments. Save the completed PDF file with your last name and lab number and submit the report as directed by your instructor. (For example: jones_lab1.pdf)

Consider the Concepts

1. Describe **three** safety risks not present in a school lab environment that you must consider when performing science experiments at home.

Part 1: Safety

2. Select all of the lab kit items that must be used in every experiment involving chemicals to minimize health risks from chemical exposure:

- Gloves
- Safety Glasses
- Absorbent Pad
- Apron

3. Explain how studying the lab manual procedure prior to performing an experiment can reduce safety risks.

4. Place the following activities in the numerical order they should be performed if a chemical splashes onto your sleeve during an experiment.

- Call your doctor or 911 if pain or skin irritation is significant or persists.
- Wash the contaminated clothing.
- Remove the contaminated clothing.
- Wash the area where the contaminated clothing contacted skin.
- Consult the MSDS and follow instructions for skin exposure.

Part 2: Equipment and Measurements

5. Which item(s) should be used to accurately measure liquid volumes? Select all that apply.

- 250 ml beaker
- 100 ml beaker
- 100 ml graduated cylinder
- 10 ml graduated cylinder
- 3 ml graduated pipette
- 1 tsp measuring spoon

6. Your lab kit does not contain a measurement tool to determine mass. The mass of solid chemicals with known density (mass per volume) can be estimated by measuring volume in which lab kit item(s)? Select all that apply.

- 250 ml beaker
- 100 ml beaker
- 100 ml graduated cylinder
- 10 ml graduated cylinder
- 3 ml graduated pipette
- 1 tsp measuring spoon

7. List the lab kit item(s) that can be used to determine if a hot water bath is the appropriate temperature during an experiment.

8. Where should you measure volume of a liquid?

- at its highest point in the meniscus
- at its lowest point in the meniscus
- halfway between the highest and lowest points

9. From what vantage point should you measure volume of a liquid?

- at eye level with the top of the container
- at eye level with the top of the liquid
- looking upward as you hold the container up to the light

Experiment Photographs

10. In future experiments, your instructor may direct you to take and submit photographs of your experiments in progress or at completion. To practice uploading photographs, paste 1 or 2 photos of YOU with your eScience lab kit box (if it has arrived) as directed by your instructor.

To upload photos, click inside an empty square below and browse to find and select your photo file. The photo will appear inside the box. *If you receive an error message, you may need to re-size your photo and then try again. If needed, a tutorial for re-sizing an image is available in the online Lab 1 sidebar.*

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