

# Glass Fragment Lab Handout

## Directions:

In this lab, you will be required to note physical characteristics of individual glass fragments as well as determine their density. For each glass fragment, try to use a descriptive physical property that will distinguish one fragment from the next (for example, color).

In order to determine the density ( $d = m/v$ ), use the following outline:

1. Weigh each glass fragment (in grams).
2. For each sample, determine the volume (in milliliters) by first adding 20 mL of water into a graduated cylinder. Next, add the glass fragment and note the volume of the water in the graduated cylinder. From this measurement, subtract 20 mL. This is the volume of the glass fragment.
3. To find the density, divide the mass by the volume.

Fill out the chart with your observations.

Physical Characteristics    Mass (in grams)    Volume (in mL)    Density

Crime Scene #1.

Crime Scene #2

Suspect #1

Suspect #2

Window

Plexiglas.

Mirror

Light Bulb

Tempered Glass

Other types of glass(list here):

Answer the following questions:

1. List three methods used by forensic scientists to analyze glass fragments. (3 pts)
2. Describe the difference between physical and chemical properties. (2 pts.)
3. What chemicals are used to make glass? (1 pt.)
4. Where would a crime scene technician look for glass fragments? (1 pt.)
5. Describe the glass making process. What changes in this process result in the difference between windows and tempered glass? (2 pts.)
6. Why is laminated glass used for the windshields of vehicles? (1 pt.)
7. What type of glass is suspect #1?
8. What type of glass is suspect #2?
9. What type of glass is crime scene #1?
10. What type of glass is crime scene #2?

11. Which vehicle do you believe was involved in the crime (suspect #1 or suspect #2)?
12. Where could the other sample from the crime scene have come from? (2 pts.)
13. List five examples of physical characteristics.
14. Does density change depending on the size of the sample? Why or why not? (2 pts.)