Forensic Science Notes Guide  
Unit 3: Analysis of Glass

Key Terms:

- glass  
- amorphous  
- silicon dioxide  
- formers  
- fluxes  
- stabilizers  
- obsidian  
- soda-lime glass  
- leaded glass  
- tempered glass  
- laminated glass  
- refractive index  
- Becke line  
- radial fracture  
- concentric fracture  
- density

1. What does it mean if something is “amorphous” and how does that affect the way glass breaks?

2. What is the main ingredient in glass and what is its chemical name?

3. Describe the 3 categories of substances found in all glass and state their function. Give an example of each.

   a. Formers:

   b. Fluxes:

   c. Stabilizers:
4. Describe each type of glass:
   a. Obsidian
   b. soda-lime glass
   c. leaded glass
   d. tempered glass
   e. laminated glass

5. What type of evidence (class or individual) is glass usually considered to be? Why?

6. What is the formula for calculating density?

7. How can you find the volume of a fragment of glass using a graduated cylinder?

8. What is refractive index? What is the name for the lines you see when you put glass in a liquid with a different refractive index?
9. For the following glass fracture patterns
   a. draw an example
   b. indicate if it forms first
   c. specify which side of the glass it will form on in relation to the destructive force that created it

   radial

   concentric

10. What is the “4 R Rule” regarding conchoidal lines? Indicate which side the impact came from on the picture. Assume these conchoidal lines were on the side of a radial crack.
11. How can analyzing radial fractures help you determine the sequence of multiple bullet holes?

12. Compare and contrast the entrance and exit holes of glass that has been shot with a bullet. Which side does shattered glass usually land on?