

Name: _____ # _____

Date: _____ Block: _____

Glass and Soil

1. Sketch the line fractures which might occur in a pane of glass when shot through by a bullet. Label the radial and concentric fractures.
2. When a bullet passes through a piece of glass a distinct pattern is formed by the cracks. Are these cracks similar in plain glass and tempered glass? Why or why not.
3. When two holes are placed in a pane of glass in close proximity to one another, it is possible to identify the order of penetration. Illustrate this phenomenon and explain which fracture began first and why?
4. Two soil samples are given to you to compare. You must ultimately give a report identifying the samples as the same soil or different soil. Describe a procedure which could be taken to compare these two soil samples.

Identify each of the following statements as true or false.

- ___ 1. By examining a bullet hole in a pain of glass it is possible to identify the size of the penetrating bullet.
- ___ 2. By examining a bullet hole in a pain of glass it is impossible to identify the direction of the bullet.
- ___ 3. When an object begins to penetrate a pain of glass concentric fractures are the first to form.
- ___ 4. A bullet passing through a pain of glass will not cause the glass to shatter.
- ___ 5. A non-bullet projectile passing through a pain of glass will always cause the glass to shatter.
- ___ 6. Radial fracture lines form on the surface opposite that of the penetrating force.
- ___ 7. Concentric fracture lines form on the surface opposite that of the penetrating force.
- ___ 8. Radial and Concentric fracture lines appear only in tempered glass.
- ___ 9. Most soils can be differentiated and distinguished by their gross appearance using a side-by-side visual comparison.
- ___ 10. Artificial material is irrelevant when performing soil comparisons.
- ___ 11. For a concentric fracture, the perpendicular end always faces the surface on which the force originated.
- ___ 12. A fracture sometimes terminates at an existing line of fracture.
- ___ 13. Soil can be easily compared wet, moist, or dry.
- ___ 14. There are very few minerals (a couple of hundred) which can be found in soil.
- ___ 15. It is not possible to individualize soil to any one location under any circumstances.
16. The following has been determined using a balance and a graduated cylinder. Make the correct calculations needed for finding information to build a density column using the three substances below. Then explain how to assemble the column. Also explain why the column should be assembled in this way.
- 10.0 ml of dawn was found to have a mass of 12.37 g
 20.0 ml of styling gel was found to have a mass of 22.25 g
 4.25 g of moose was found to occupy 5.0 ml of volume