Soil Analysis Portfolio

You have been called in to perform a soil analysis on a murder case!
As you know, soil can be examined for a variety of chemical and physical properties. In this demonstration of your soil analysis skills, you will solve a "mini-mystery" by observing chemical and magnetic properties of sand.

Scenario:

A body has been found by a busy highway…investigators have determined that this is a secondary crime scene. Your task is to analyze sand found on the victim to determine which of two beaches may be the primary crime scene.

Procedure:

1. Go to: http://school.cengage.com/forensicscience/#
2. Click on launch…this will open a new window.
3. Select Chapter 12.
4. Click on "Interactivity" in the right hand corner.
5. Simply follow the directions and answer the questions.

Data:

Soil Sample (Sand)	Sulfate Test (White ppt)	Chloride Test (White ppt)	Carbonate Test (CO_2 Bubbles)	Magnetic Particles?
Beach 1				
Beach 2				
Victim's shoes				

Conclusion: Which beach is the primary crime scene? How do you know this?

1. Which chemicals did you use to test for sulfates?

2. What do you see if sulfates are present?

3. Which chemicals did you use to test for chlorides?

4. What do you see if chlorides are present?

5. Which chemicals did you use to test for carbonates?

6. What do you see if carbonates are present?

7. What does the magnet show?

8. Name at least 3 examples of how soil analysis can be useful in an investigation.

9. Conduct an internet search and find a case in which soil analysis was used to solve the case. Give a short summary of the case (5-10 sentences):

10. How did soil evidence help to solve the case?