

Trace Evidence

Name _____

Part A: Microscopic Evidence

1. Who is known for the principle “every contact leaves a trace”? _____

2. Microscopic evidence is also called _____ evidence.

3. How do scientists collect trace evidence? What example was shown?

4. Give examples of trace evidence shown in the video. _____

5. A _____ microscope can magnify objects up to 300,000X.

6. What is a comparison microscope? How is it used?

7. How do polarizing, fluorescent, and phase contrast microscopes help scientists see details that might be hard to see in normal lighting conditions?

8. _____ is a process used to separate an explosive into the different chemical compounds that make it up.

Part B: Hair Evidence

1. Which protein makes up our hair? _____ Where else it is found in humans?

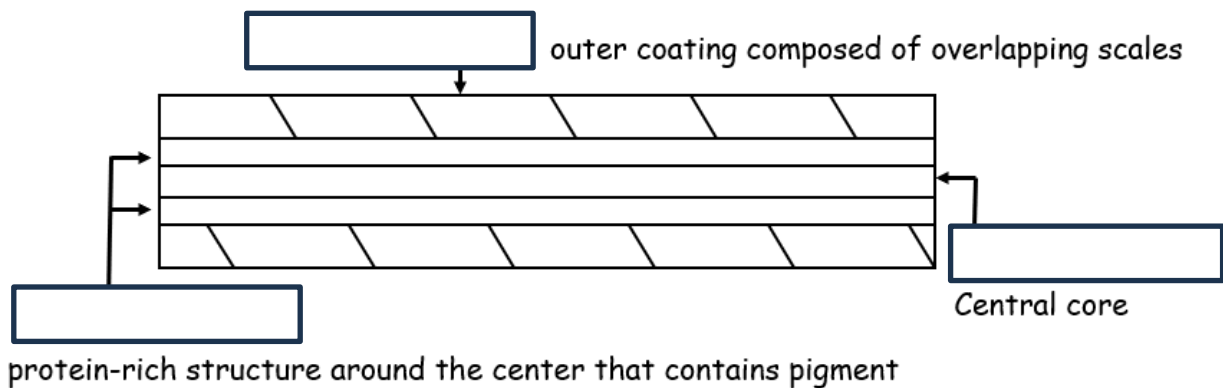
2. True or False: Humans continue to grow hair follicles up through their teenage years.

3. What must be present in a hair sample to test for DNA? _____

Do all hairs used as evidence have this structure? _____

4. What clues about an individual could we learn from the examination of hair?

5. Label the diagram below and then shade the parts to show the different components.



6. The structure of hair has been compared to a pencil with the medulla being the _____, the cortex being the _____ and the cuticle being the _____ on the outside.

Try It – Follow your teacher’s directions to create an “evidence” slide of your own hair. Examine your hair under a microscope.

1) Make a note of three details you observe in your hair sample.

2) Compare your hair sample to someone else at your table. What similarities and differences do you observe? List at least three comparisons.

Part C: Fiber Evidence

1. A fiber is the smallest unit of a _____ material that has a length many times greater than its _____.
2. _____ or multiple fiber transfers between a suspect's clothing and a victim's clothing dramatically increases the likelihood that the two individuals had physical contact.
3. Fibers from plants and animals are called _____ fibers, but they can also be _____ or man-made.
4. _____ fibers are the most commonly used plant fibers in textile materials.
5. _____ is the animal fiber most frequently used in the production of textile materials and the most common wool fibers originate from sheep.
6. List four examples of synthetic fibers. _____

Try It -Follow your teacher’s directions to examine the fiber samples provided to help you complete this section.

A. Which samples are natural fibers? Which samples are synthetic fibers?

B. What characteristics can be used to identify unknown fiber samples? _____

