

Hair Worksheet – Answers

1. Morphology
2. Cuticle, Cortex, Medulla
3. Special cells that have hardened and flattened while progressing from the follicle
4. Spindle-shaped cortical cells aligned in a regular array, parallel to the length of the hair.
The cortex is embedded with pigment granules that impart color to hair.
5. An estimate of the width of the hair taken up by the medulla
- 6.



and no medulla

7. The first thing to be done is an examination in a crime laboratory to establish whether the hair originates from a human or animal. If human, the hair retrieved at the crime scene should be compared with hair from suspects and victims to discover a match.
8. A hair that has been dyed or artificially colored, displays a smooth uniform color similar to tinted glass. In contrast, naturally-colored hair usually contains granules with a texture similar to picture colored by a crayon.
9. Hair is known to grow at a rate of approximately one centimeter (1 cm) per month.
10. The odds against a hair originating from another person are about 4500 to 1. The odds against two similar pubic hairs originating from two different individuals are about 800 to 1.
11. It is quite easy to identify where on a body a hair originated. Head hair has a smaller diameter than hair from the rest of the body and is more evenly colored. Hair from the legs and trunk contain more medulla than head hair, and exhibit a less uniform distribution of pigment. Pubic hairs are short, curly, and have a much more pronounced medulla. Facial hair is coarse and may have a triangular cross section, with blunt tips as a result of trimming and shaving.
12. Negroid hairs are normally kinky, containing dense, unevenly distributed pigments. Caucasian hairs are straight or wavy, with very fine to coarse pigments that are more evenly distributed when compared to Negroid hair. Sometimes a cross-sectional examination of hair may also aid in the identification of race. Cross sections of hair from Caucasians are oval to round in shape, whereas cross sections of Negroid hair are flat or oval in shape. Through DNA, specific information may be determined about the donor's racial origin.
13. The age of an individual cannot be determined from a hair examination, except with infant hair. Infant hairs are fine, short in length, and have fine pigment. DNA can be used to determine the sex of the suspect

14. A hair root found to have follicular tissue adhering to it, indicative of a hair that has been pulled out. Hair naturally falling off the body will show a bulbous-shaped root, free of adhering tissue. An important consideration is how quickly the hair is pulled out of the head. Hairs pulled quickly from the head are much more likely to have blood or skin as compared to hairs which have been removed slowly.
15. The recent development of mtDNA (mitochondrial DNA) analysis has made it possible to determine perform DNA typing on a single hair. However, the procedure is time consuming and expensive
16. Under close examination and comparison to natural fibers, synthetic fibers exhibit a uniform, un-natural texture
17. Cortex (color), cuticle (outside edge), Medulla (index, type, shape), end (root, cut, . . .)
18. Hair brush; suspects' car, bed, favorite chair, sink or drain of bath tub.