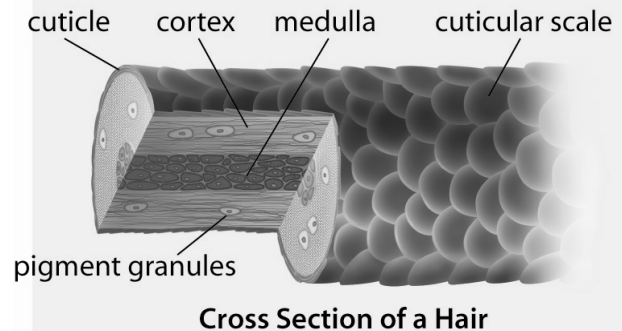


Thought Lab 4.4: Homologies of Hair

Purpose: Investigate variations in the functions of mammalian hair.

Procedure

1. Work in small groups of three or four.
2. Each person in your group should choose a different type of mammalian hair from the following list:
 - a) the stout, strong hairs of a porcupine
 - b) the dense underfur, or underhairs, of a sea otter
 - c) the vibrissae (“whiskers”) of a cat
 - d) the thick mane of a lion
 - e) the long, thick hair of a woolly mammoth
 - f) the horn of a rhinoceros, which is made of densely packed hair
 - g) the “scales” of a pangolin, which are modified hairs
 - h) the soft, fluffy qiviut (fur) of a muskox
3. Conduct research to investigate the structure of the hair you have chosen. Research how the animal’s lifestyle and habitat might explain the particular function(s) of its hair.



Analysis

1. Based on the information you collected and your understanding of natural selection,
 - a) hypothesize how the structure of the hair is related to abiotic conditions in an animal’s environment
 - b) write a hypothesis stating how the variations might have arisen from the basic hair structure of a common mammalian ancestor
2. Present your findings to the others in your group in a written or oral report, a computer presentation, or another form that is easily shared.
3. Write a statement that describes one similarity and one difference in the adaptations of the hair studied by the members of your group.