

Genetics

DNA

1. What do the letters DNA stand for?

2. Two scientists are given credit for discovering the structure of DNA. What is the name of those two scientists?

_____ and _____

They determined that the shape of the molecule was a

_____.

3. DNA is a polymer, which means that is made up of many repeating single units (monomers). What are the monomers called?

4. Draw the basic structure of a monomere with its three parts.

5. The “backbone” of the DNA molecule is made up of two components, what are these?

c. _____

d. _____

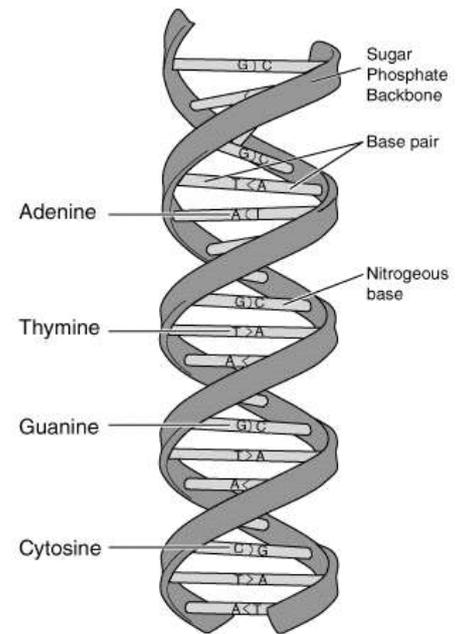
6. There are four different variations of these monomers (four different bases), what are the names of those bases?

a. _____

b. _____

c. _____

d. _____



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7. These bases are of two different types of molecules: purines and pyrimidines. Purines have _____ ring(s) in their structure, and pyrimidines have _____ ring(s) in their structure.

8. The two bases that are purines are:

a. _____

b. _____

9. The two bases that are pyrimidines are:

a. _____

b. _____

10. Chargaff's rule states that the DNA of any species contains equal amounts of _____ and _____ and also equal amounts of _____ and _____.

11. Based on this information, scientist could predict that the base _____ pairs with _____ and the base _____ pairs with _____ in the formation of the DNA molecule. This is called **complementary base pairs**. Thus one strand of DNA is complementary to the other strand (opposite/matching).

12. The bases are paired by _____ bonds along the axis of the molecule.

13. Write the complementary sequence to following DNA strand:

A A T T C G C C G G T A T T A G A C G T T

14. What is gene?

15. What is difference between exons and introns?

exons _____

introns _____