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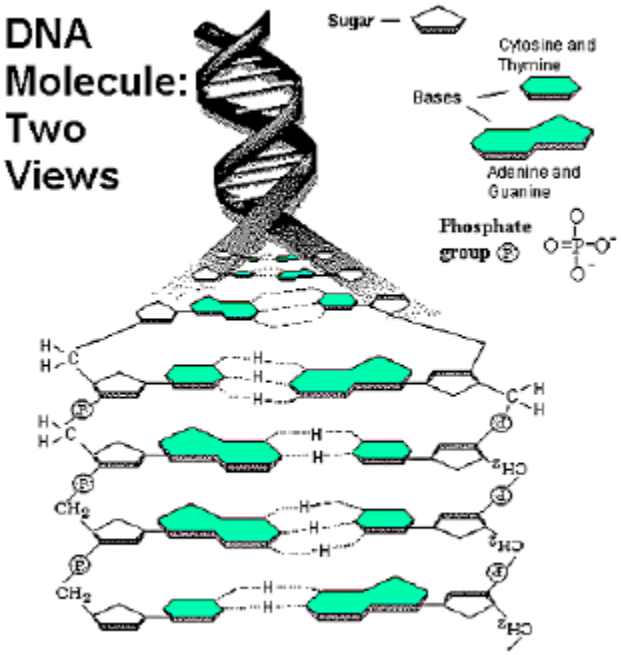
DNA Structure Worksheet

Use your DNA structure notes and Chapter 17 to answer these questions

1. What do the letters DNA stand for?



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

3. The "backbone" of the DNA molecule is made up of two alternating components, what are these?

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

5. 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.

6. The two bases that are purines are _____ and _____. These bases are comprised of _____ rings.

7. The two bases that are pyrimidines _____ and _____. These bases are comprised of _____ rings.

8. 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).*

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

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10. Draw the basic structure of a nucleotide with its three parts.

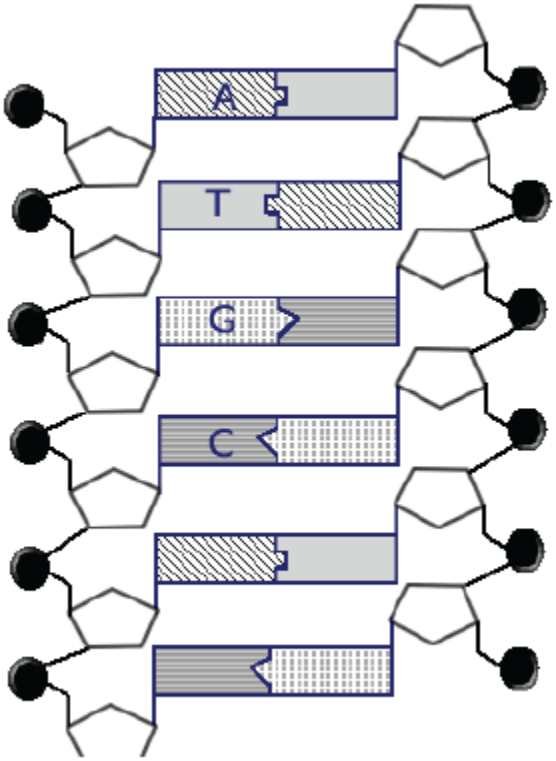
11. Write the complementary sequence to following DNA strand:

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

| | | | | | | | | | | | | | | | | | | | |

12. **Use the image at the right to complete the follow:**

Circle a nucleotide.
Label the sugar and phosphate.
Label the bases that are not already labeled



13. On the Following Page, color the DNA structure.

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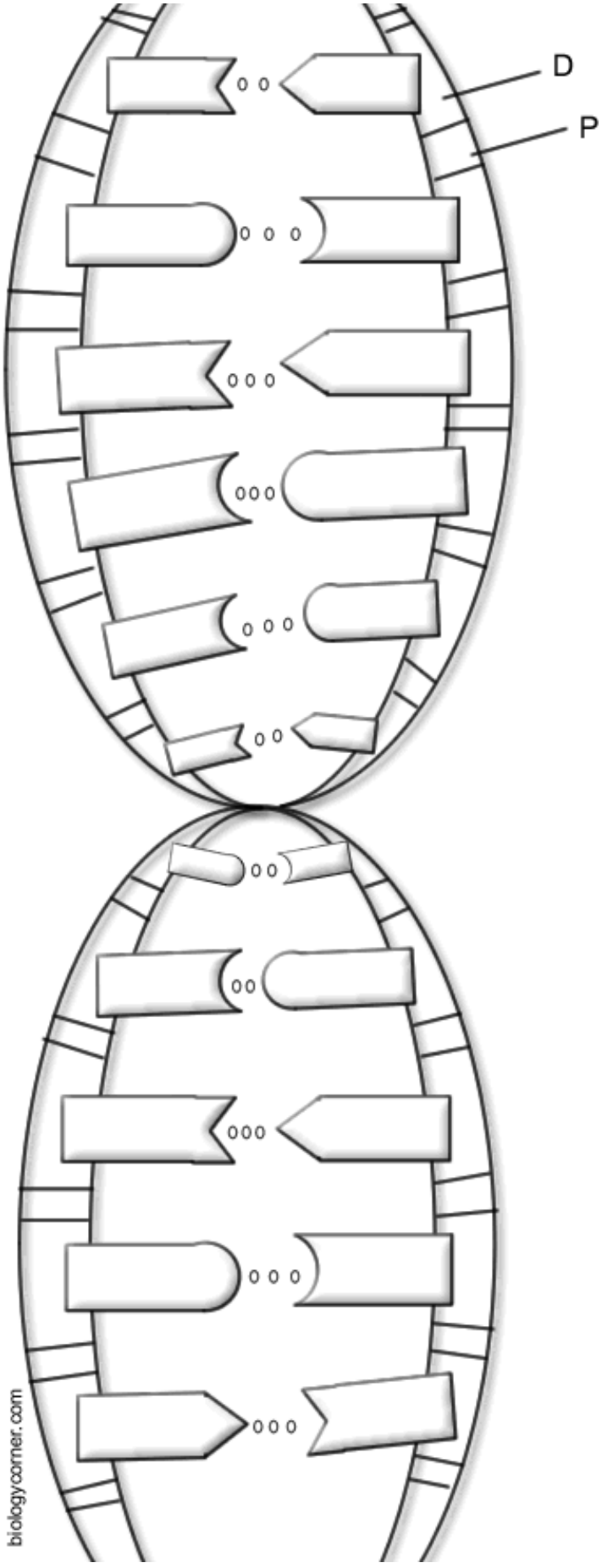

Step 1:

Color Each Deoxyribose sugar RED

Color Each Phosphate group BLUE

Step 2:

Color the thymines ORANGE.

Color the adenines GREEN.

Color the guanines PURPLE.

Color the cytosines YELLOW.

Step 3:

Color the _____ hydrogen bonds between A and T BLACK

Learve the ____ hydrogen bonds between G and C WHITE