

Name: _____

Block: _____



DNA Model Activity

D = deoxyribo

N = nucleic

A = acid



DNA contains the information for carrying out all of the activities of a cell. How this information is coded or passed from cell to cell was at one time unknown. To break the code, you will do a paper lab to determine the structure of DNA and show how the genetic code is carried. You and each member of your class will color molecules called **nucleotides**. DNA is made up of repeating units of nucleotides.

Directions

- Color the nucleotides using the legend.
 - Label the nucleotides (sugar, phosphate, or A, G, T, C base).
1. Look at the nucleotides. What are the three common parts of a nucleotide?
 - 1.
 - 2.
 - 3.
 2. What is one part of a nucleotide that differs among the four different nucleotides?
 3. List the four different types of nitrogen bases.
 - 1.
 - 2.
 - 3.
 - 4.
- Cut out the nucleotides.
 - Manipulate the nucleotide pieces until you find the best fit. Join the nucleotide molecules in your group like a puzzle.
 - Use tape to connect and reinforce the molecules. You now have a molecule of DNA.
4. In the space below, explain where the nucleotide molecules connect to each other.
 5. A real DNA molecule consists of thousands of these pairs of nucleotides. What is the pairing arrangement of the nitrogen bases?

_____ pairs with _____ and _____ pairs with _____

6. Are there always going to be an equal number of adenine and thymine in a molecule? Why?
7. Are there always going to be an equal number of guanine and cytosine molecules in a molecule of DNA? Why?
8. Scientists abbreviate the nitrogen bases by using the first letter of each base, so:

A always binds to _____

C always binds to _____

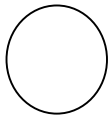
The structure of DNA is actually in a double helix arrangement. Double helix means that the two long chains of nucleotides are arranged in a spiral-like twisted ladder.

9. The sides of the ladder are made up of alternating _____ and _____ molecules. The steps of the ladder are made up of _____ held together by _____ bonds.

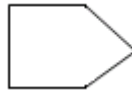
Bring your molecule to the front of the room and join it to the molecules of your classmates. We now have one large DNA molecule!



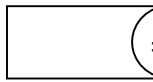
Legend



= orange



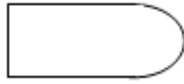
= blue "A"



= purple "C"



= yellow



= green "G"



= red "T"

