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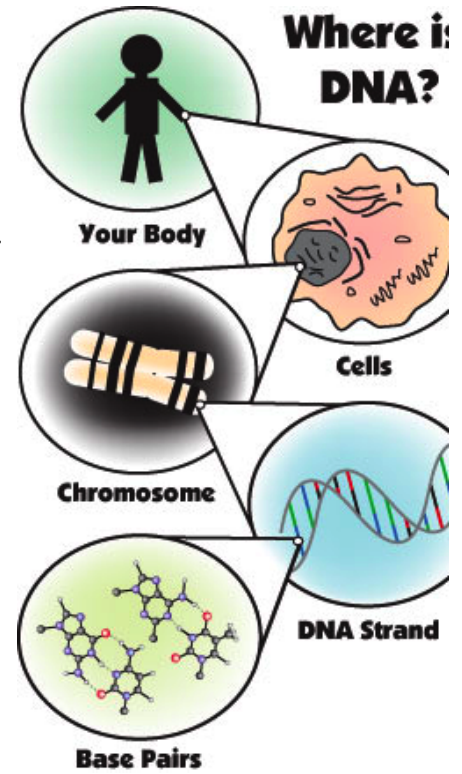
Discovering DNA Structure

D = deoxyribo

N = nucleic

A = acid

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



1.) Look at your nucleotide and the nucleotides of your partner. What are the **THREE** common parts of a nucleotide?

2.) What is the **ONE** part of a nucleotide that differs among the four **DIFFERENT nucleotides** in your group?

3.) List the four different kinds of nitrogen bases.

4.) Fit the nucleotide pieces until you find the best fit. Join the nucleotide molecules in your group together like a puzzle.

5.) Glue your pieces on to the construction paper Ms. S gave you.

6.) In the space below, explain **WHERE** the nucleotide molecules connect to each other.

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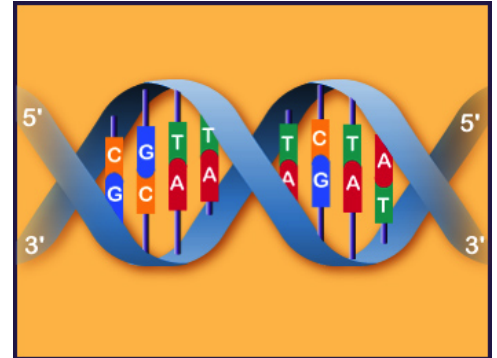
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7.) A real DNA molecule consists of THOUSANDS of these pairs of **nucleotides**. What is the pairing arrangement of nitrogen bases?

_____ pairs with _____ and _____ pairs with _____

8.) Are there always going to be an EQUAL number of **adenine** and **thymine** nucleotides in a molecule? Why?

9.) Are there always going to be an EQUAL number of **guanine** and **cytosine** molecules in a molecule of DNA? Why?



10.) Scientists abbreviate the nitrogen bases by using the first letter of each base. So,

A always binds to _____

G always binds to _____

11.) In the space below, use the letters to show the sequence (order) of the bases in the **DNA** molecule that your group constructed. Begin at the top left side of your molecule.

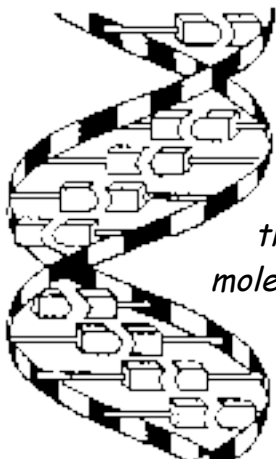
_____ goes with _____

_____ goes with _____

12.) Below the letter, write the **base** that will go with the other base.

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

****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 a twisted ladder.

• *Bring your molecule to the front of the room and join it to the molecules of the other groups. We now have one large DNA molecule.*

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