

DNA Model Lab

Purpose: To construct a model of DNA.

Materials: (Per 4 persons)

Gluesticks

Scissors

1 sheet of DNA backbone (sugar/acid)

2 sheets nitrogen bases

Red, blue, yellow, and green construction paper

Procedure:

1. Cut the nitrogen bases (Adenine=A,Thymine=T,Guanine=G & Cytosine=C) out from the sheet. Cut out 4 red A's, 4 blue T's, 4 yellow G's, and 4 green C's from construction paper.
2. Next, cut out 4 pieces of sugar/acids.
3. Arrange 8 of the nitrogen bases down one column.
4. Arrange the matching 8 bases according to how they bond with the first 8 bases. Glue them together.
5. Glue these rungs of the DNA ladder to pieces of the sugar (deoxyribose) and phosphate sides that make up the backbone.
6. Connect your pieces of DNA to each other and then to other students pieces.

Questions:

1. What do the letters of DNA stand for?
2. Where would you find DNA in a real cell?
3. The building blocks of a long strand of DNA are nucleotides. Nucleotides are made up of three main parts. Name the three parts that make up a Nucleotide:
4. Which parts of DNA make up the sides or "backbone"?
5. Which parts are on the inside and make up the "rungs" of the DNA ladder?
6. Name the four nitrogenous bases in DNA:
7. What pairs of nitrogen bases link together? (e.g. what does "A" match with?)
8. What two parts of DNA are always the same for every nucleotide? Which one part can be different from one nucleotide to another?