

Name _____

DNA Model Project

DUE DATE: No later than November 21st

I would suggest using wire or pipe cleaners as a framework, and using beads, candies with holes, colored marshmallows, or some other item that you can support on the framework to represent sugars, phosphate groups, and the four nitrogenous bases. That means you need six different colors or shapes, and a way to hold them together and support them. You also need to show that the DNA strands are anti-parallel and that they are joined by the appropriate number of bonds between bases. Bases must also be attached to the sugars, not the phosphates, and base pairing rules must be followed. Finally, the model must show the helical shape of DNA.

Here is a great site where you can explore the molecule

<http://www.pbs.org/wnet/dna/>

Your model must be accompanied by a key that has your name and a title, plus a representation of each different part of your model identified as to which structural part it represents.

Points will be distributed as follows:

on time-submitted by _____	10
this sheet turned back in for scoring	05

KEY

name and model title	10
all elements of the model identified (see "Model" below)	10

MODEL

"backbone" of alternating sugar and phosphates	10
bases attached to sugars (each sugar has a base)	10
bases paired appropriately (A+T, C+G) (at least 15)	15
appropriate number of hydrogen bonds between base pairs	10
anti-parallel backbone	10
helical shape with accurate twist	10

TOTAL	100
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If you have any questions about structure or using materials that you have, please ask. I do not expect this to be an expensive project, so use what you have. I have had great models using pasta (uncooked), jelly beans, gumdrops, toothpicks, pipe cleaners and a variety of beads. So be creative with this model! Do not use anything that will spoil or create a mess. Do not make it too big. Remember, you have to get it to school in one piece. Do not buy a model kit...it will not be detailed enough to get you a good grade. Your model should be between six and twelve inches long, depending on what it is made of. It should have a minimum of fifteen base pairs represented. If you have an idea that doesn't fit this description, please check with me first to make sure it will work and you will get maximum points. Have fun!! We will have it hanging from the ceiling for at least the next quarter. A great seasonal decoration!