**DNA Model**

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| You, too, can follow in the footsteps of Watson and Crick!!! This project is to design and build a model of DNA out of materials that you might find at home. |

I would suggest using wire or pipe cleaners as a framework, and using beads, clay, paint, 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. Make sure that your model correctly demonstrates the nature of the molecule, ie bases must 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.**

**Points will be distributed as follows:**

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| **KEY** |  |
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| elements of the model identified  (sugar, phosphate, 4 bases, hydrogen bonds 🡪 this means that 7 things need to be identified!) | 30 |
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| **MODEL** |  |
| “backbone” of alternating sugar and phosphates | 10 |
| bases attached to sugars (each sugar has a base) | 10 |
| **At least 10 bases** paired appropriately (A+T, C+G) | 15 |
| Hydrogen bonds shown | 10 |
| neat and **thoughtful** construction | 15 |
| 3 D 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 ten 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!! A great website to explore the molecule: http://www.pbs.org/wnet/dna/