Directions for Modeling an Actual DNA Sequence

See instructor to be assigned a genetic disease. Then, create a report for display next to your model. Your display can be creating as a miniature poster using a manila folder as the structure. Include the following information:

- The name of the genetic disease
- Information about the genetic disease. Start your research at this site: http://www.tylermedicalclinic.com/diseases.html but include additional information and photographs as necessary.

You also need to include information about the gene associated with the genetic disease and the protein which that gene encodes. To get this information, visit http://www.ncbi.nlm.nih.gov/sites/entrez?db=gene. This site is managed by the National Center for Biotechnology Information and the National Institutes of Health. Any time a federally funded genetic researcher discovers something about a gene, they must publish that information to this website.

In the search bar along the top of the page, select GENE from the drop down menu and type in the name of the genetic disease and hit the "GO" button. A list of search results will be returned. The links are to information about the gene associated with the disease. Select the link next to the first result. In your report, include:

- The name of the gene
- The gene symbol
- The chromosome on which the gene is located (info found on search results page)
- The species from which gene was sequenced
- A description of the protein coded for by this gene (includes information included on this page, but be sure to include additional information and photographs as necessary). For full points, you will be asked to verbally explain the function of the protein encoded by the gene. So, don't just write a bunch of information that doesn't make sense to you! Try to explain the function of the protein to at a high school IB Biology student level. Ask instructor if you need help!!

Click through the links under the "Bibliography; GeneRIFs: Gene References Into Function" lists. These are links to scientific papers that describe the gene and the disease it is associated with. This will provided additional information for you to include in your description of the disease.

Scroll down towards the end of the page until you find the heading: NCBI Reference Sequences (RefSeq). Click a GENOMIC sequence (either GenBank or FASTA). The resulting page will provide the entire DNA sequence for 1 strand of the gene (you can figure out the sequence of the complementary strand). You may need to scroll down the page to see the sequence. Often time, the DNA sequence is hundreds or thousands of nucleotides long. Remember, you only need to model the first 10 nucleotide pairs (the first 25 for additional points). In your report, include the first 500 DNA sequence for the gene associated with your assigned genetic disease.