

DNA 3-D Model & Research Project

What to Do

Students will have to do research on the DNA double-helix. You will be able to present the required research in the form of a creative brochure. Finally, create a free-standing 3-D model of the DNA double helix. Be creative when you present the 3D model of a DNA double helix.

Part 1: DNA Research Project: You will be able to present the required information for your project in the form of a **Brochure**. Write information in full sentences. Information must be presented creatively. Make sure you have name, date, SLEs, CCSS, and power standards. Please refer to the requirement list often when completing your written section. **The report is worth 60 points.**

The brochure must be colorful, neat, and contain the following required information: shape of the DNA molecule, what is DNA, where is DNA found, a picture of where the DNA is found, what do the DNA initials stand for, what are the four letters in the DNA molecule stand for, what do the letters represent, what type exist between the bases, what does the backbone of the double helix consist of, how many strands make up a DNA molecule, which base is not found in DNA, what is a DNA mutation, Name two common DNA mutations, on what chromosomes are these mutations found, what is a control gene, five ways that DNA is use today, 2 pictures of how its use, name of person/persons who created the DNA model, when and where the model of DNA was created, picture of scientist/s who create it, how many different type of bases are there in a molecule of DNA, write the complementary base pairs for the DNA sequence shown in brochure template, four pictures of you and your partner building DNA model, name of both partners, due date, SLEs, power standards, and CCSS.

See attached brochure template to see how to place the information on the brochure. You will be creating 2 pages, which will ultimately be glued back-to-back, resulting in a tri-fold brochure with a total of 6 panels.

You may use the internet (see websites listed below), science books, or other reference sources. **DO NOT USE WIKIPEDIA-YOU MUST USE RELIABLE SOURCES.**
CHECK YOUR INFORMATION!!!!

DNA Internet Websites:

http://www.pbs.org/wgbh/nova/genome/dna_sans.html - information

<https://ghr.nlm.nih.gov/primer/mutationsanddisorders/genemutation>

<https://www.pbslearningmedia.org/resource/tdc02.sci.life.gen.hgp/human-genome-project/?#.WnAIZKinHIU> – video for information

<https://www.dna-worldwide.com/resource/160/history-dna-timeline>

<https://www.pbslearningmedia.org/resource/tdc02.sci.life.cell.genecontrl/gene-control/?#.WnAI0ainHIU> – video for information.

<http://www.exploredna.co.uk/the-importance-dna.html>

Part 2: Build a free-standing **3D model** of the DNA double-helix.

Requirement

1. Your DNA model should be 3-Dimensional and include sugar molecule, phosphate molecules, hydrogen bond, the four nitrogen bases paired correctly.
2. You need to label all the parts of the DNA model: the sugars, phosphate, hydrogen bond, adenine, thymine, cytosine, and guanine.
3. Make sure you include a key explaining the parts of the DNA model. It needs to have names, date, SLEs, CCSS, and power standards.
4. Maximum model dimensions: **2 ft. x 2 ft** (Projects need to fit in classroom).
5. Decorate your DNA model creatively (Be unique and colorful).
6. A suggestion for what a 3D model of DNA looks like is provided.
7. **The model is worth 40 points.**
8. **Due Date Check Web Calendar.**



Good Luck & Have Fun!!!!