



Monster Building with DNA

Supplies:

1. Copies of each of the [4 DNA strips](#) (A, B, C and D) – each strip should be a different color. (I.e. A is on pink paper, and B is on blue paper etc.)
2. Envelopes for the Strips. Each envelope (1 per girl) needs at least 8 RANDOM Strips. You can add more for selection. DNA is in two parts, so you can put in 16 strips. Girls will use 8.
3. Copies of [eyes](#), [body shapes](#), [feet](#), [mouths](#) and [tops of heads](#). Depending on time, you may need to cut these out, so they are ready for the girls.
4. [Monster Trait Chart](#)
5. Glue Sticks
6. Scissors
7. Markers
8. Construction Paper to build your monster on

Directions:

1. Each girl needs a monster DNA envelope with strips of DNA. (You will need at least 8 strips)
2. Determine the specific traits of your monster by pulling out the DNA strips one at a time, for each monster part.
3. Compare the sequence on your DNA strip to the Monster Trait Chart, to see how your monster looks.
4. Start with the shape of your monster body and glue it to your paper.
5. Now figure out what color your monster body is.
6. Next figure out what color eyes your monster has.
7. How many eyes do you need?
8. Now what mouth does your monster have?
9. What color will your monster's feet be?
10. How many feet do they have?
11. Last is the top of your monster's head.
12. Glue your monster parts to your paper as you build the monster.
13. Tape your strips of DNA together as you build. DNA is in long strands like this, which wrap into a double helix coil.



Why does it work?

A set of instructions called “DNA” is like a kind of recipe for the traits that make up all living creatures. Long strands of DNA contain information grouped into smaller segments (genes). Like a recipe, the DNA strand contains the ingredients and the order that they should come together. The differences in our DNA strands are what make each of us different. We have different color hair and eyes, our hair is curly or straight, we are short or tall, and so on. All DNA is made up of only four (4) nucleic bases.

(cytosine (C), guanine (G), adenine (A), or thymine (T).) Each species has a different sequence of these nucleic bases to create our differences. When bonding cytosine always bonds with guanine, and adenine always bonds with thymine.

****Rosalind Franklin, who earned her PhD in chemistry in 1945, was the female responsible for “photo 51” in 1952. This x-ray image is what allowed Watson and Crick the discovery of the Double-Helix structure of DNA. Unfortunately the prestige of Franklin’s work was not celebrated while she was alive. Watson and Crick received a Noble prize in 1962. Rosalind had passed away in 1958 from ovarian cancer.****