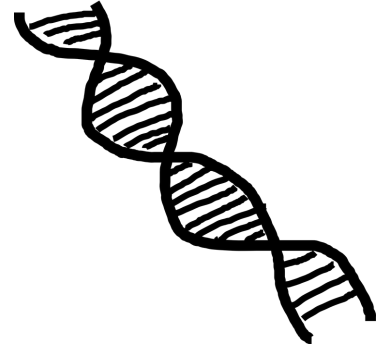


Age: 6+

# D is for... DNA

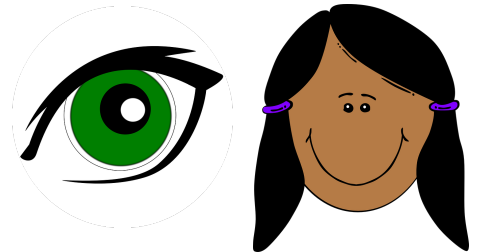


**What is DNA?** DNA (deoxyribonucleic acid) is the material that carries all the information about how we will look and function. It is a type of nucleic acid that is found in our cells. Our cells are told what to do from information that comes from DNA. This information is carried on a section of DNA, called a gene. DNA is in the shape of a double helix, similar to a twisted ladder.

There are 4 types of chemicals in DNA:

1. Adenine
2. Thymine
3. Cytosine
4. Guanine.

The makeup and order of these chemicals form **DNA**.

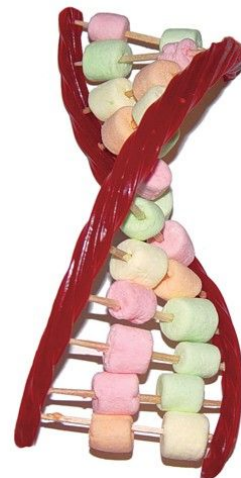


**Example:** DNA determines the color of our eyes and hair.

**Activity:** Create your own edible DNA molecule

**Materials needed:**

- Two pieces of licorice
- Colored mini marshmallows
  - 6 pink
  - 10 green
  - 4 yellow
  - 4 orange
- 12 toothpicks



### Instructions:

- Separate the marshmallows by color
- Label the color of marshmallows with the following chemicals:  
Adenine = green; Thymine = pink, Cytosine = yellow; Guanine= orange
  - The licorice will serve as the backbone to the DNA and the marshmallows will be the chemicals that make up DNA.
- Place a marshmallow on the end of a toothpick so that the point of the toothpick goes all the way through. Anchor the toothpick into the licorice backbone.
- Follow this sequence: **TACGTATGAAAC (ex. Pink, green, yellow, etc.) Top to bottom**
- **Repeat with this sequence on the other side starting at the same side: CAAAGTATGCAT**

### Job Exploration:

- **Biomedical engineer:** A biomedical engineer works with medical and biological sciences to design and create equipment, devices, and computer systems used in the healthcare field.
- **Biochemist:** A biochemist studies chemical and physical principles of biological processes. An example is the study of cell development and disease.
- **Geneticist:** A biologist who studies genetics. Geneticists study genes from plants, animals, and humans to determine how genes interact with each other, evolve, and duplicate.
- **Genetic Counselor:** Genetic counselors interpret genetic testing, provide counseling, and serve as patient advocates.



**To learn more about this activity visit:**

**<https://carnegiestemgirls.org/2017/08/03/edible-dna/>**