

DNA: The Building Blocks

DNA is a short notation for **Deoxyribosenucleic Acid**. DNA is located in all living things. It holds all the information about who we are. DNA knows how to make copies of itself through a process called **replication**.

COOL FACTS

- Nearly every one of the trillions of cells in your body contains DNA.
- Your DNA is different from every other person in the world, unless you are an identical twin. Then your twin and you share the same DNA.
- Your DNA holds the information about what you look like. Your DNA determines your eye color, hair color, and many other characteristics.
- If we combined the DNA from all of our trillions of cells in our bodies, it would be over 1 trillion meters long. That means if we stretch our DNA from the Earth to the Sun it can go up and back 5 times!!!
- You can extract DNA from any thing that was alive, even bananas!!!



FAQ's

Q: What does DNA look like?

A: DNA is in the shape of a double helix. A double helix looks like a spiral stair case. The steps of the staircase are formed when two chemicals called bases combine together. There are four bases in DNA, A,C,T, and G. When forming the steps only A can combine with T and C can combine with G.

Q: How big is DNA?

A: DNA is very small; from one side of a step in the double helix to the other side is only 2 nanometers. DNA in our cells is close to a meter long it contains 3,000,000,000 "steps". Luckily DNA is very thin and folds easily to fit into your cells.

Q: How does DNA make copies of itself?

A: When your cells divide your DNA divides also, your DNA splits down the middle in to the strands that make up the stair case. As the strands divide they each form a new staircase of DNA. This process is called replication.

Q: During replication how does DNA know what order to put the bases in?

A: The order of the bases is determined by the strand that splits off from a previous strand of DNA. Because only A can combine with T on the opposite strand and G can combine with C, your DNA knows the order of bases in the opposite strand of DNA it makes. For instance if your DNA splits and the order of the bases is AGCT then the opposite strand it will form a stair case with has to be TCGA.

RELEVANCE TO OUR LIVES: DNA helps to define who we are and how we are different from one another. DNA links us to our mothers and our fathers. We pass our DNA on to our children. DNA helps to solve crimes and cure diseases. It can be said that DNA is everywhere!!!!

RESOURCES:

DNA Information Helix: <http://www.thetech.org/exhibits/online/genome/info2.html>

Kids Genetics: <http://genetics.gsk.com/kids/dna01.htm>

How does DNA Evidence Work: <http://www.howstuffworks.com/dna-evidence.htm>

Build a DNA Molecule: <http://gslc.genetics.utah.edu/units/basics/builddna/>

Extracting DNA from onions:

http://www.scienceyear.com/text_only/outthere/dna/activity.html