Neat DNA Facts

DNA is an abbreviation for deoxyribonucleic acid

Nearly 2 meters of DNA is located in the nucleus of every cell in our body!

The base pairs that make up DNA bind together to form the classic double helix.

We have over 3 billion base pairs in our DNA!

DNA is a code for what our body needs to make to survive, such as proteins, enzymes, and hormones!

Our DNA is organized into chromosomes. We have 23 chromosomes from each parent, so 46 in total!

Every persons DNA is 99.9% similar to that of another person! It is the 0.1% differences that give us a unique DNA fingerprint.

According to most estimates, the % of the chimpanzee genome that is the same as the human genome: 98.5%

# Sponsors

Edible DNA

Make a DNA model that you can eat!

Materials

- **Licorice**
- **Coloured mini marshmallows OR fruit**
- **Toothpicks**

What is DNA?
What is its structure?

DNA is an abbreviation which stands for *d*eoxyribo*n*ucleic *a*cid. DNA is present in all living things. Also, the structure of the DNA molecule is the same in all living things. When isolated from a cell and stretched out, DNA looks like a twisted ladder (double helix). The sides of the DNA ladder are called the backbone and the rungs of the ladder are pairs of small chemicals called bases.
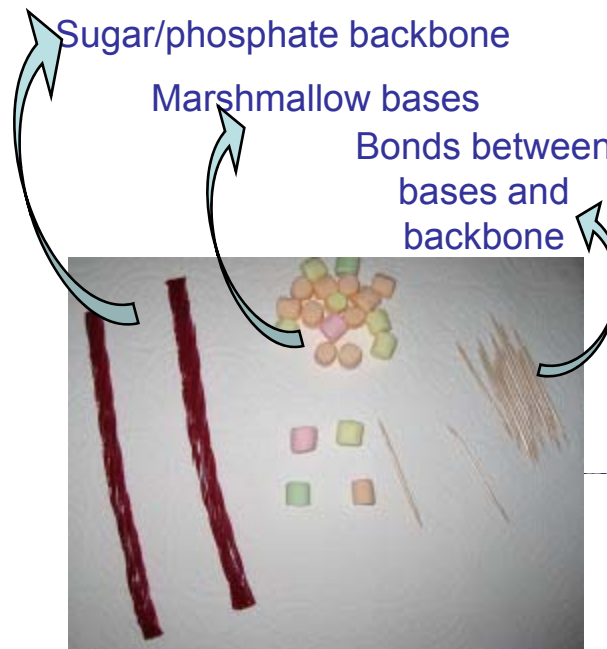
Backbone

Chemical Bases

C G
A T
A T
G C
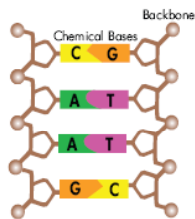
There are 4 chemical bases in DNA:
Adenine (A)
Thymine (T)
Guanine (G)
Cytosine (C)

A always binds with T, and G with C

Make an edible DNA model

Sugar/phosphate backbone

Marshmallow bases

Bonds between bases and backbone

Guanine (G) = Green
Cytosine (C) = Pink
Adenine (A) = Yellow
Thymine (T) = Orange

For a healthier alternative try using fruit instead of marshmallows!

Guanine (G) = Green grape

Cytosine (C) = Purple grape

Adenine (A) = Yellow pineapple

Thymine (T) = Red strawberry

1. Create one DNA strand by attaching the marshmallows with a toothpick to one licorice piece.

- Place toothpicks into the licorice
- Push the marshmallow or fruit onto the toothpick close to the licorice, leaving enough room for the second matching DNA strand to be attached

For the adventurous….
create the following DNA strand:
T A C G T A T G A A A C

2. Add the matching base pairs.
Do you remember how the base pairs partner up?

3. Complete your DNA model.
Attach the other backbone (licorice) so your model looks like a ladder.

4. Carefully twist your DNA model so that it looks like a double helix. Enjoy!