

**Has anyone ever told you that you have features from your mother, father or an aunt, uncle, a grandmother or grandfather?**

**Do you have a sibling that you look like or are you completely different?**

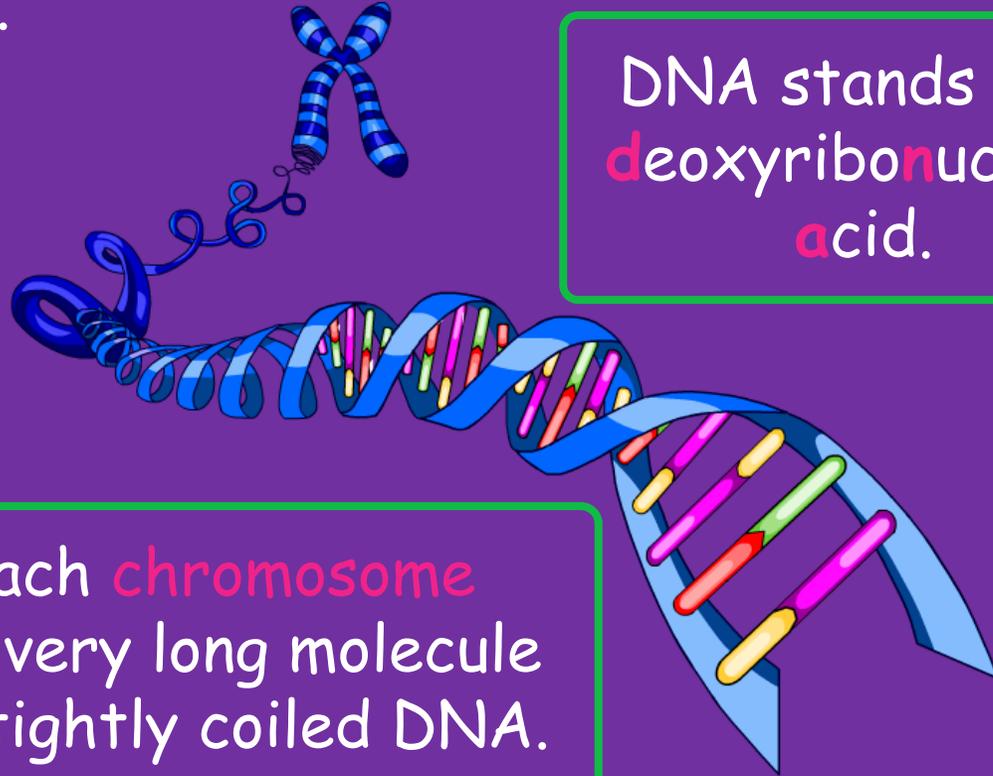
**Talk or write down similarities and differences with you and your family.**

**Let's find out about DNA!**



# What is DNA?

Chromosomes and their genes are made of a molecule called **DNA**.



DNA stands for **deoxyribonucleic acid**.

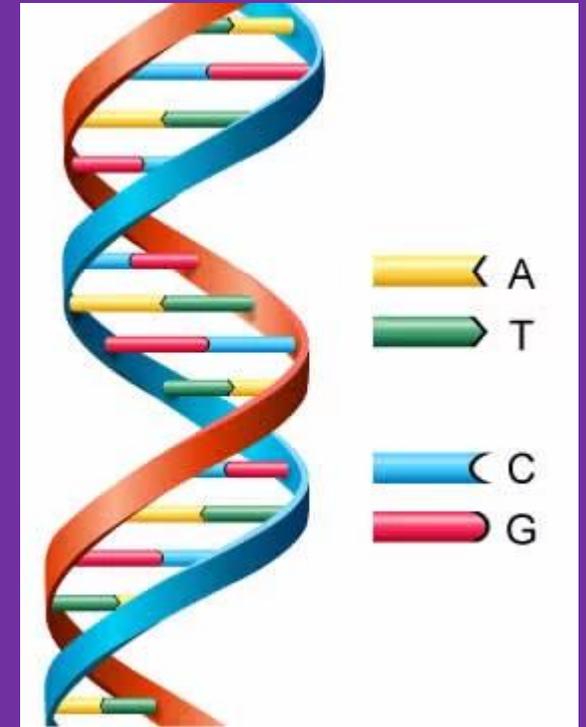
Each **chromosome** is a very long molecule of tightly coiled DNA.

The DNA molecule looks like a twisted ladder this spiral shape is called a **DOUBLE HELIX**

DNA molecules carry the code that controls what cells are made of and what they do.

**DNA acts like a recipe holding the instructions telling all living things how to develop and function.**

- **Your DNA contains genes. Your genes code your characteristics like eye colour and hair colour.**
- **A gene is a stretch of DNA on a chromosome that has the instructions for making a protein.**

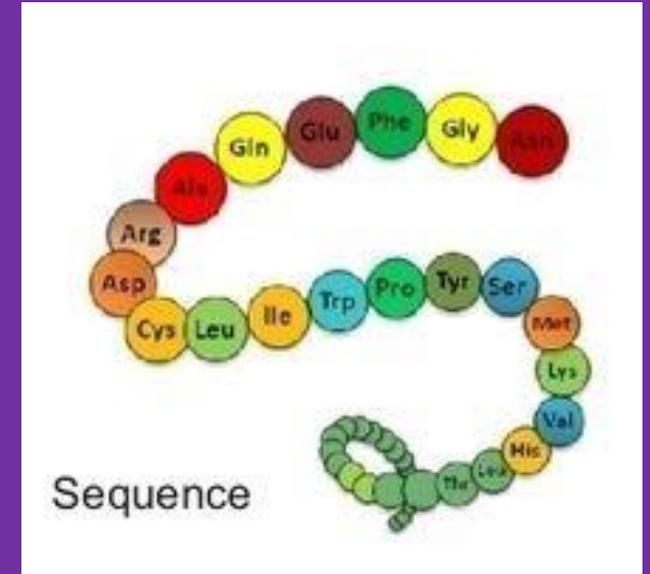




You are made of  
**proteins.**

There are **100,000**  
different proteins in  
your body.

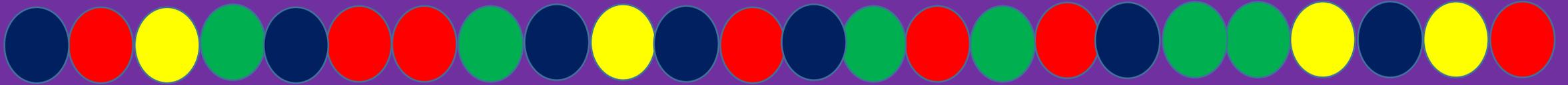
- Each **protein** is a long chain of amino acids.
- The longest protein in your body is made up of over **34,000** amino acids.



There are **20** different amino acids.

DNA tells your body how to build proteins.

DNA is like a computer code.



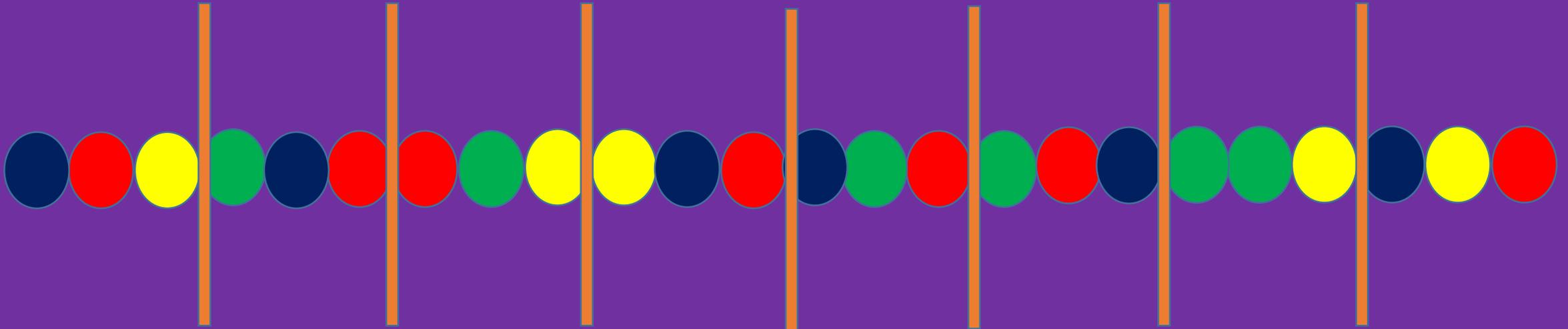
It is a long string of 4 different things.

Each 3 colours = 1 amino acid.

Your DNA is **3,000,000,000** links long.

# The code that translates DNA to amino acids

Red	Red	Red	Phenylalanine	Red	Yellow	Red	Serine	Red	Green	Red	Tyrosine	Red	Blue	Red	Cysteine
Red	Red	Yellow		Red	Yellow	Yellow		Red	Green	Yellow		Red	Blue	Yellow	
Red	Red	Green	Leucine	Red	Yellow	Green	Proline	Red	Green	Green	Stop	Red	Blue	Green	Stop
Red	Red	Blue		Red	Yellow	Blue		Red	Green	Blue		Red	Blue	Blue	
Yellow	Red	Red		Yellow	Yellow	Red		Yellow	Green	Red	Histidine	Yellow	Blue	Red	Arginine
Yellow	Red	Yellow		Yellow	Yellow	Yellow		Yellow	Green	Yellow		Yellow	Blue	Yellow	
Yellow	Red	Green	Yellow	Yellow	Green	Yellow	Green	Green	Glycine	Yellow	Blue	Green			
Yellow	Red	Blue	Yellow	Yellow	Blue	Yellow	Green	Blue		Yellow	Blue	Blue			
Green	Red	Red	Isoleucine	Green	Yellow	Red	Threonine	Green	Green	Red	Asparagine	Green	Blue	Red	Serine
Green	Red	Yellow		Green	Yellow	Yellow		Green	Green	Yellow		Green	Blue	Yellow	
Green	Red	Green		Green	Yellow	Green		Green	Green	Green	Lysine	Green	Blue	Green	Arginine
Green	Red	Blue	Green	Yellow	Blue	Green	Green	Blue	Green	Blue		Blue			
Blue	Red	Red	Valine	Blue	Yellow	Red	Alanine	Blue	Green	Red	Aspartic Acid	Blue	Blue	Red	Glycine
Blue	Red	Yellow		Blue	Yellow	Yellow		Blue	Green	Yellow		Blue	Blue	Yellow	
Blue	Red	Green		Blue	Yellow	Green		Blue	Green	Green	Glutamic Acid	Blue	Blue	Green	
Blue	Red	Blue		Blue	Yellow	Blue		Blue	Green	Blue		Blue	Blue	Blue	



Valine - Serine - Tryosine - Arginine - Aspartic Acid - Methonine - Asparagine - Alanine

**Now have a go at decoding the DNA on the sheet!**