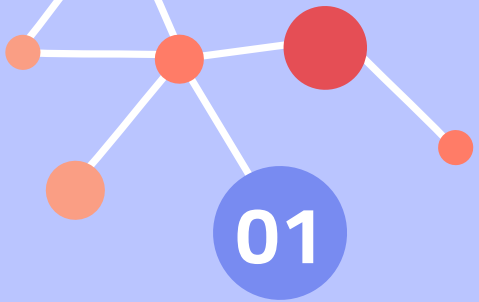
WHY CAN'T WE SEE A LADDER IN OUR CELLS?

UPPER ELEMENTARY

GROUP 10

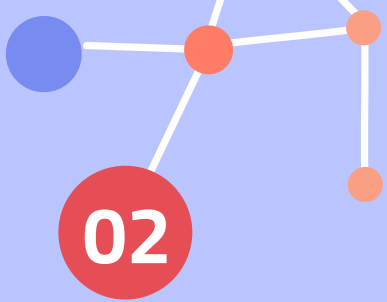
Introduction!

We are all students from Old Dominion University.
We are currently taking Genetics and would like to share some information with you.



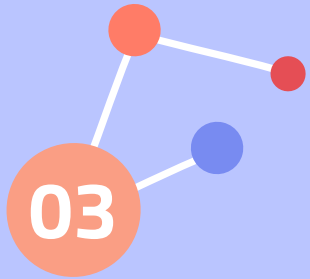
What is DNA

A general understanding of what DNA is.



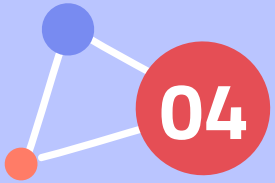
WHY IS DNA IMPORTANT?

Understanding of why DNA is significant for humans



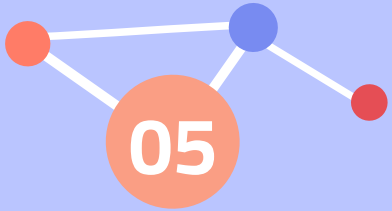
DNA STRUCTURE

How is DNA made



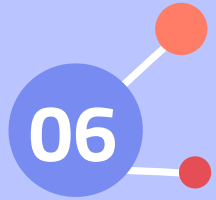
HOW CAN WE SEE DNA?

What tools and processes are used to see DNA



THE “LADDER”

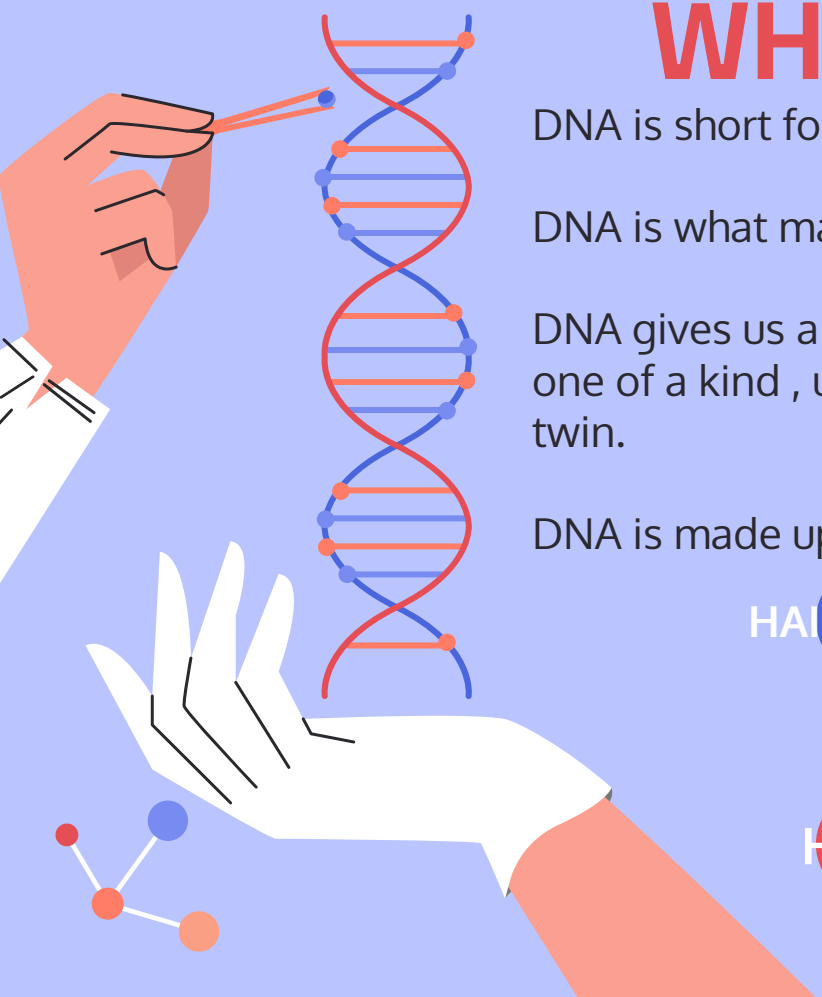
What is a ladder and can we see this within our cells?



WHAT CAN DNA DO FOR US?

Exploring what DNa can be used for

WHAT IS DNA



DNA is short for Deoxyribonucleic acid

DNA is what makes us, US !

DNA gives us a special code that makes us one of a kind , unless you're an identical twin.

DNA is made up of chemical bases!

HAIR COLOR

EYE COLOR

EAR LOBES

HEIGHT

NOSE SHAPE

FEET SIZE

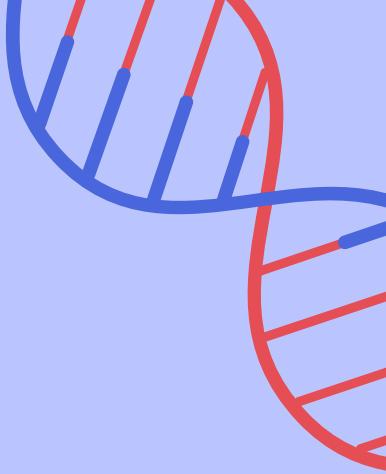
Erin

WHY IS DNA IMPORTANT?

- DNA contains the instructions needed for a living thing to develop, survive, and reproduce.
- DNA can make copies of itself, which is important when making new cells.
- DNA makes you, you. It determines the way you look (hair color, eye color, height).

QUICK QUESTION

WHAT DOES DNA STAND FOR ? **Choose 1 answer**

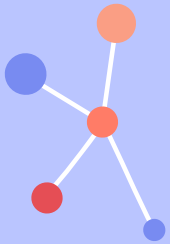


A DO NOT AWAKE

B DONUTS NEVER ANGRY

C DEERS NEED ALARMS

D DEOXYRIBONUCLEIC ACID



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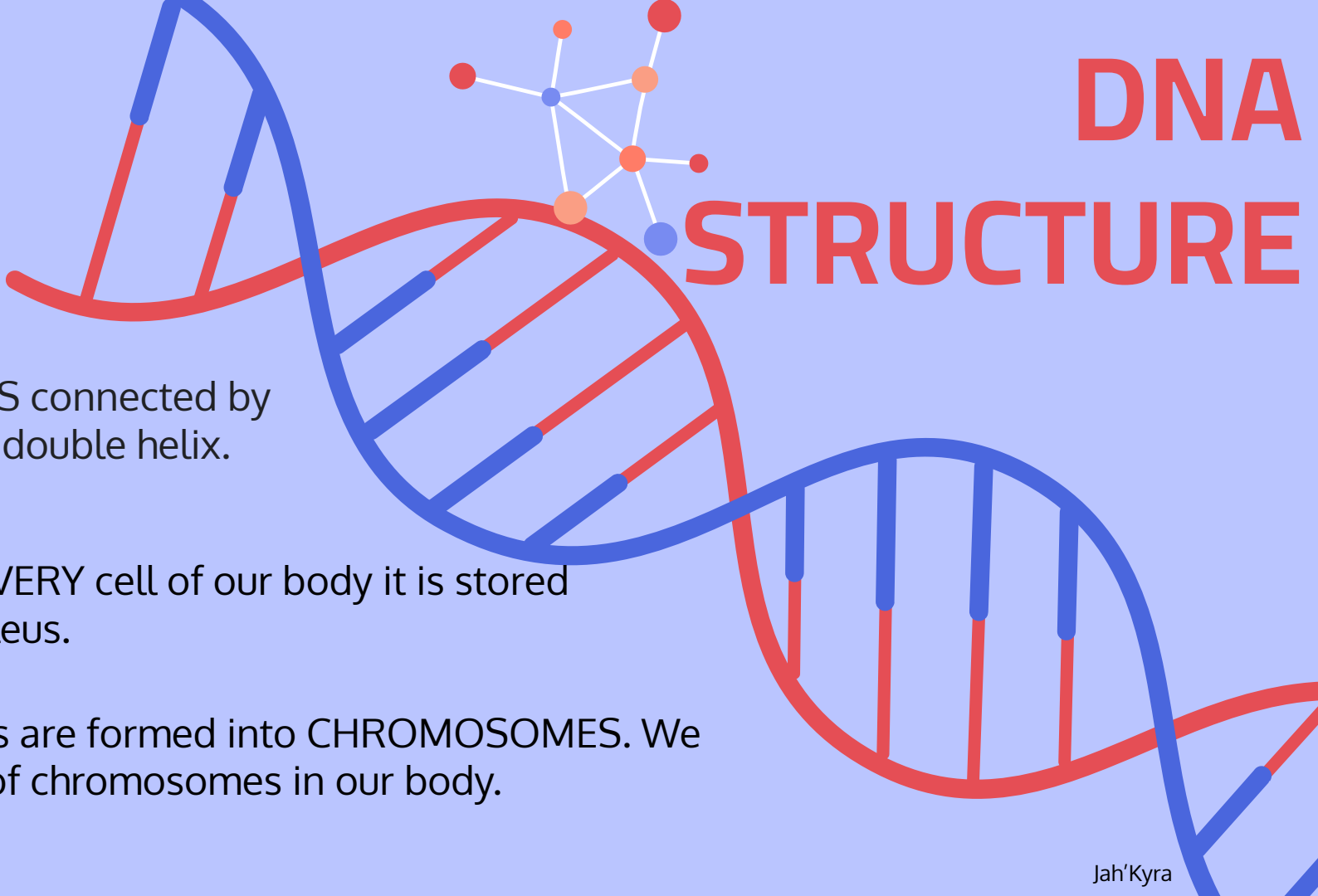


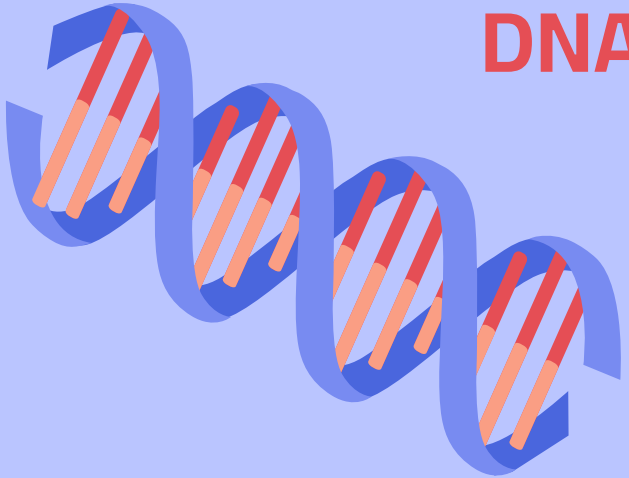
TWO STRANDS connected by rods to form a double helix.

DNA lives in EVERY cell of our body it is stored within the nucleus.

DNA structures are formed into CHROMOSOMES. We have 23 pairs of chromosomes in our body.

Jah'Kyra

DNA is a Double Helix



- Each side of the double helix rotates in an opposite direction to the other
- The molecule twists into its spiral shape to compact itself
  - The shape is then held by chemical bonds on both the backbone and the ‘rungs’

- The rungs of the ladder are made of nucleotides
  - They are the molecules that make up your genes
- There are 4 different nucleotides: A, C, G and T
  - These become important when DNA is replicated

Taryn

What tools are used in DNA

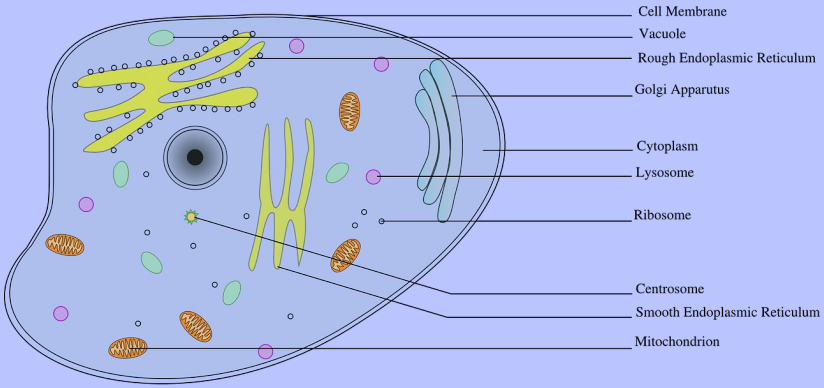
- Scientist use Genome editing technologies. It enables scientists to make changes in physical traits, like eye color and disease risk. Scientists use different technologies to do this. These replace the DNA where it is cut.
- Researchers have been able to view a strand of DNA through an electron microscope by stringing it between microscope silicon pillars. The DNA helix could only be viewed by x ray crystallography which is a technique that throws x rays at a crystallized strand of DNA and constructs an image from the reflected rays.

By Brittany M

Britney H

What is a cell?

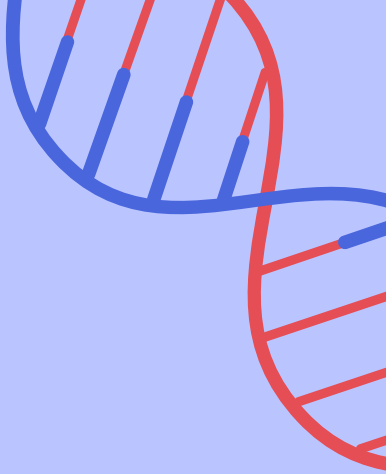
- Basic building block of all living things
- Provides structure for the body
- Over a trillion cells in the human body
- Contain several organelles
- Reproduction?



Cross Section of an Animal Cell

QUICK QUESTION

HOW CAN WE SEE DNA STRUCTURES? **Choose 1 answer**

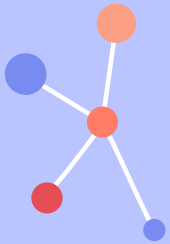


A WITH OUR NAKED EYE

B WITH A MAGNIFYING GLASS

C WITH AN ELECTRON MICROSCOPE

D WITH SPECIAL GLASSES



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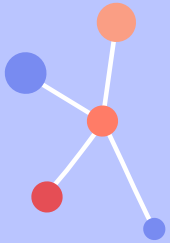
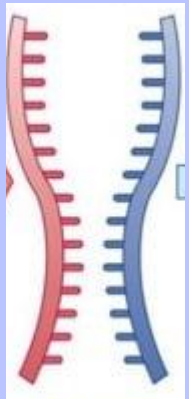
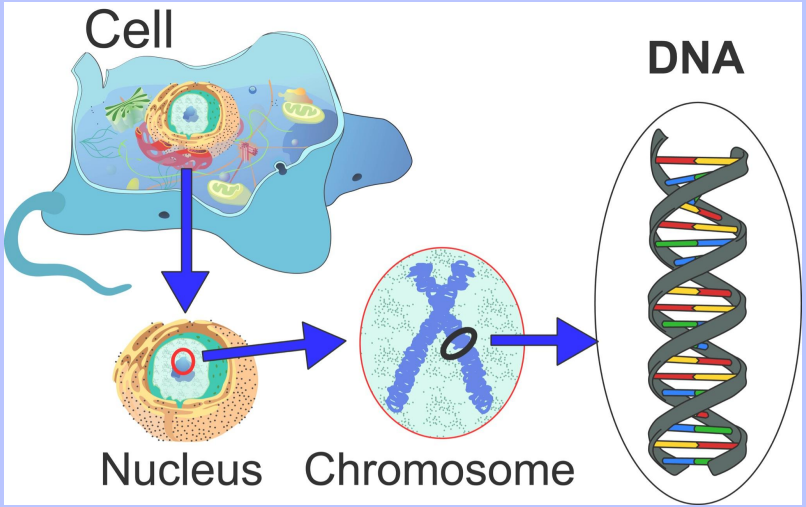


THE "Ladder"

DNA is made of two polynucleotide chains. These polynucleotides are parallel to each other like a ladder.The ladder is known as a double helix.



Why Can't we see the Ladder?



- Too small for our eyes to see
- Cell -> Nucleus -> Chromosome -> DNA
- Human hair is 40,000x larger than DNA

Kiera

WHAT CAN DNA DO FOR US?

- MAKES US, US
- HELPS FINDS CRIMINALS
- IDENTIFIES DISEASES
- IDENTIFY MUMMIES
- FAMILY HISTORY
- HELP UNDERSTAND CROPS AND PLANTS

QUICK QUESTION

WHAT CAN DNA HELP US WITH ?**Choose 1 answer**

A IDENTIFYING CRIMINALS

B BETTER UNDERSTAND CROPS AND PLANTS

C HELP UNDERSTAND OUR FAMILY HISTORY

D ALL OF THE ABOVE

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THANKS!
QUESTIONS?

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