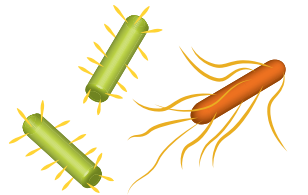


DNA Extraction Activity



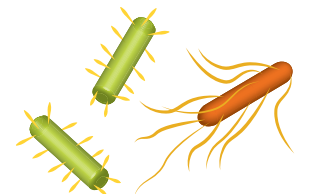
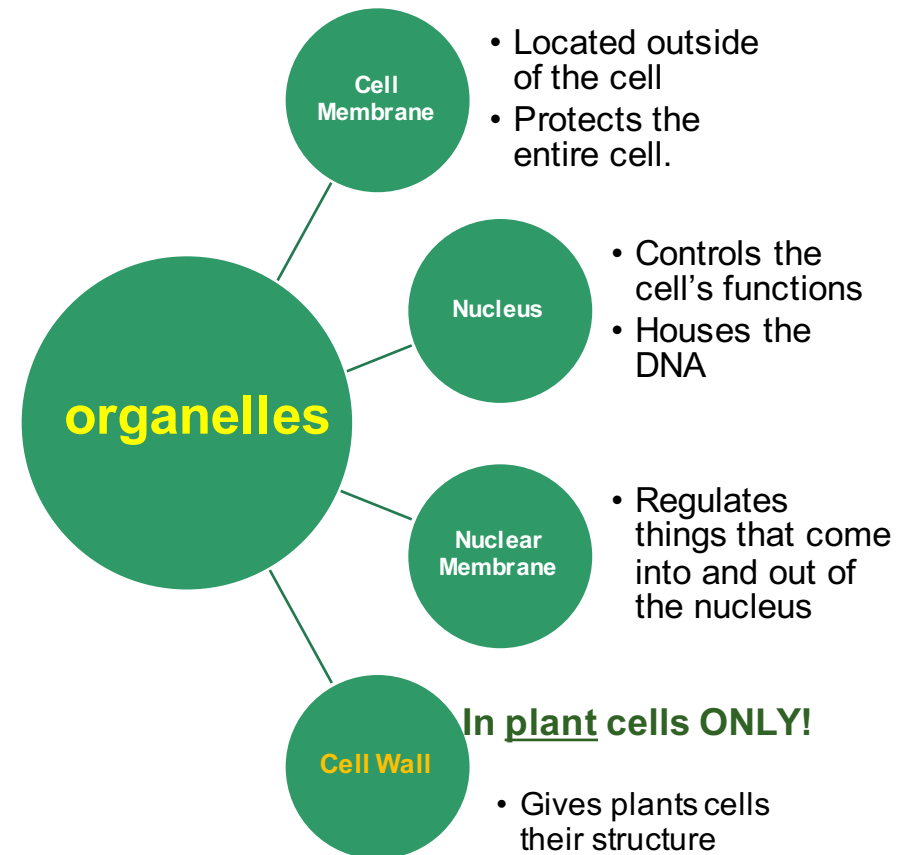
Cells: A Component of All Living Things

Both plants and animals:

- Are composed of tiny particles called cells.
- Cells have many organelles that perform specific functions.
- Some of those organelles include, but are not limited to:



In both plant and animal cells

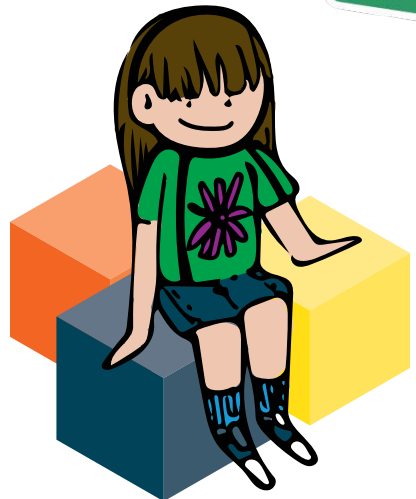
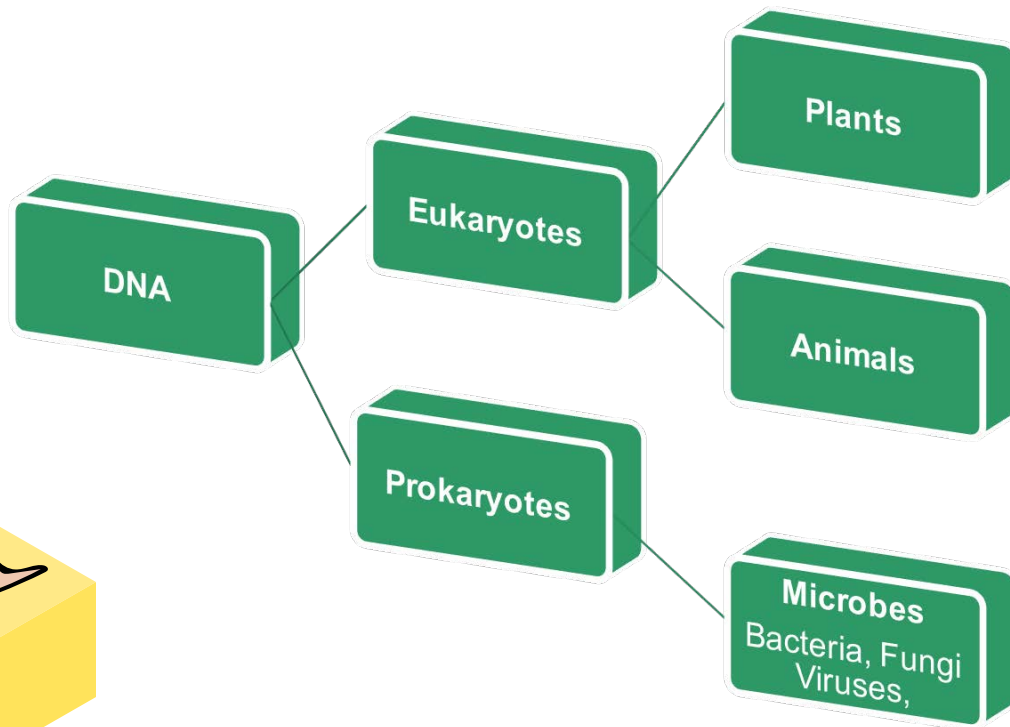


Located inside the cell is...

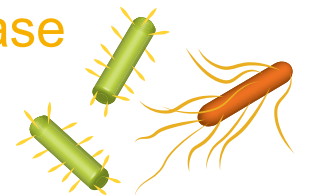
A substance that is common to ALL living things!

DEOXYRIBONUCLEIC ACID (DNA)

FUNCTIONS



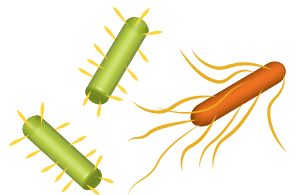
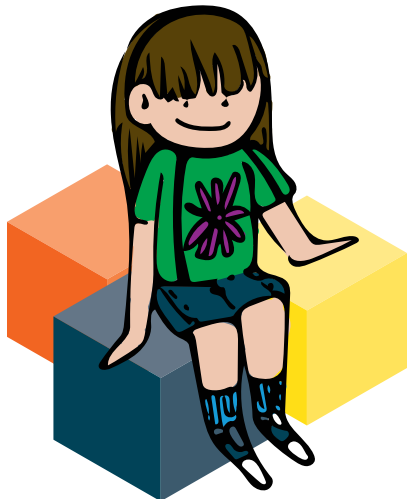
- Molecular basis of heredity - directs the synthesis of every protein and contains all the genetic information that is passed on to new cells.
- Carries the genetic information that determines gender, physical appearance, and vulnerability toward disease



Characteristics of DNA

It is extremely unique and . . .

- Has a particular shape/structure called a **double helix** that is often referred to a *twisted ladder*.
- Even though it is said that it can only be seen under a microscope, an uncoiled piece of DNA can be 2.8 inches (7.2 centimeters) long!
- Is composed of :
 - Nitrogen bases: Adenine (A), Thymine (T), Guanine (G), Cytosine (C)
 - Sugar and Phosphate groups
- Remember, all living organisms have DNA. This includes plants, microbes, and you too!



What is the Purpose of DNA Extraction?

To isolate DNA from cell organelles

- The following organelles are removed:
 - Cell membrane
 - Nucleus
 - Nuclear membrane
 - Cell wall (located in plants ONLY)

Once removed, DNA is used to:

- detect the presence of various microbes in the environment
- diagnose disease and genetic disorders
- determine identity based upon genetics

