

Basic concepts of science

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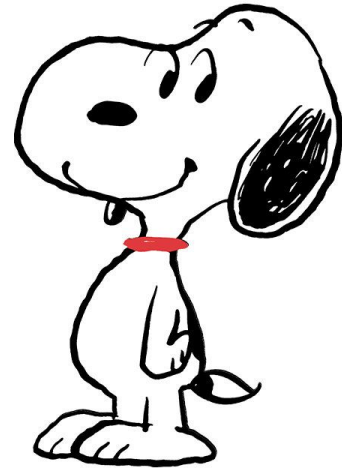
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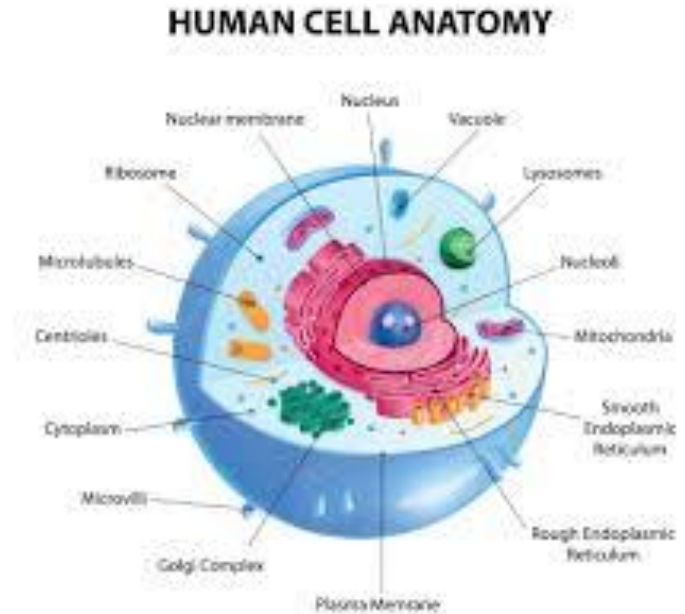
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Cells

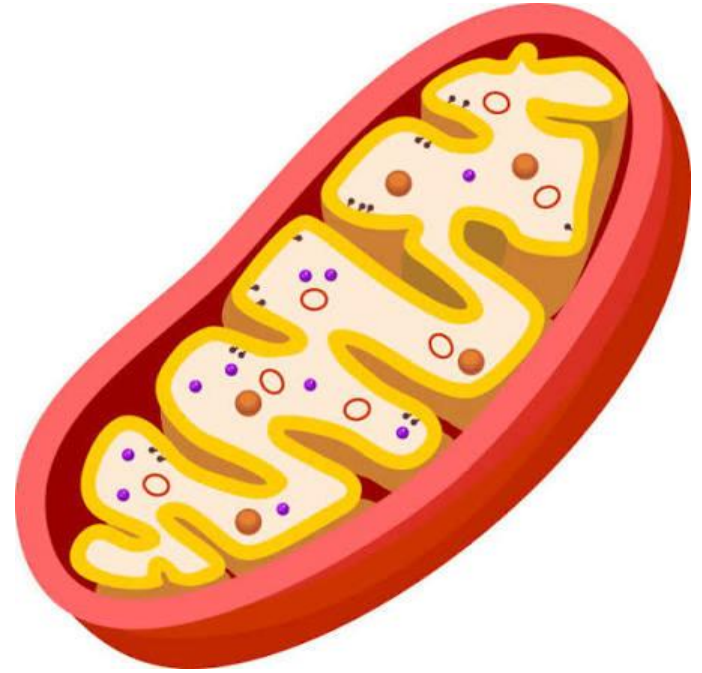
Cells are the building blocks of all human life.

A cell is the smallest unit that can live on its own and that makes up all living organisms and the tissues of the body. There are 100 trillion cells in the human body.



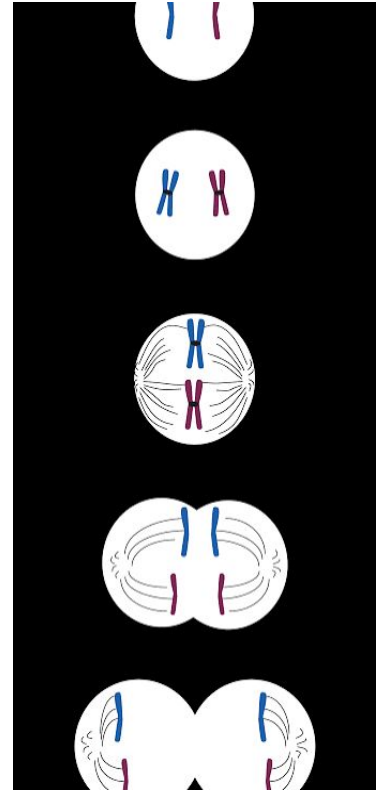
Mitochondria

Mitochondria are parts of cells that generate most of the chemical energy needed to power the cells' biochemical reaction.



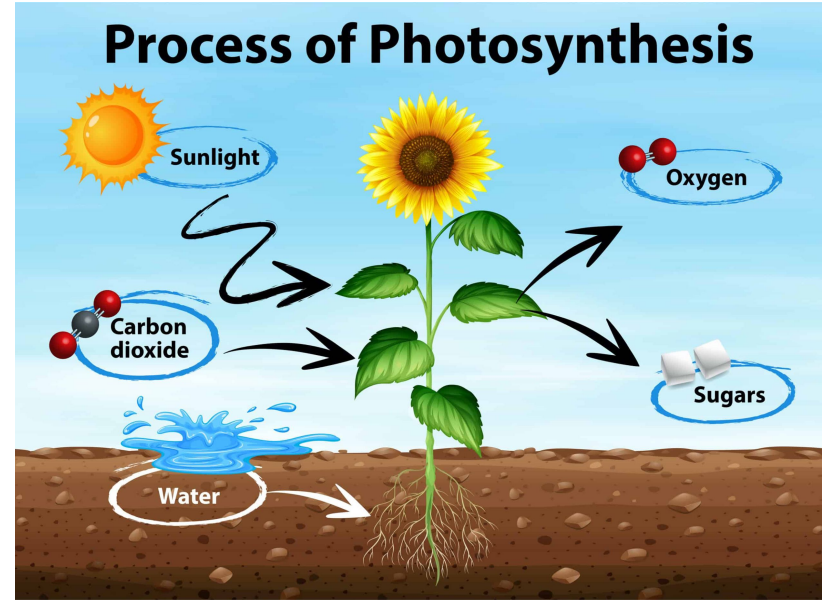
Mitosis

Mitosis is the process when one cell divides into two exact same copies of itself. Mitosis helps with growth (which helps when babies grow up by making more cells), repair (it fixes scratches or broken skin), and replacement (which means making new blood cells when the old ones are worn out) .



Photosynthesis

It's a special process where green plants use sunlight, water and air to make their own food. It absorbs energy from the sun with help from chlorophyll in leaves. Absorbs water from soil with the help of the roots. Absorbs air through pores in the leaves.



Organism

An organism is an individual living thing such as human, animal, plant, or fungus. To be alive it must do these things.

Growing: will get big or change overtime

Reproduce: make babies or reproduce itself

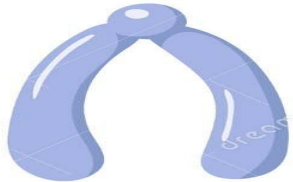
Energy: eat food, drink water, or get sunlight

Responds: reacting to things (such as sunlight)

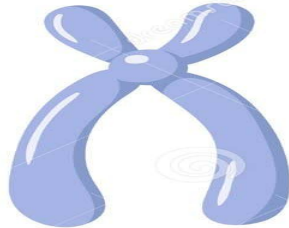


Chromosome

They're tiny thread like instruction manuals inside your cells that tell your body how to grow and what traits to have. Each manual holds thousands of genes that decide things like your hair color and your height. It's what makes you unique!



Telocentric



Acrocentric



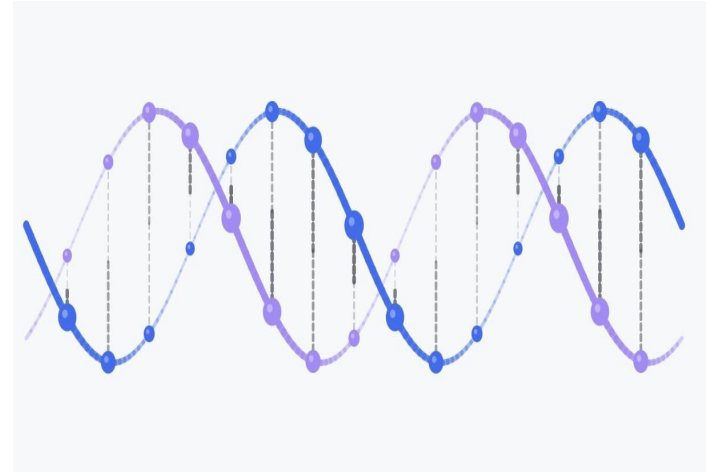
Submetacentric



Metacentric

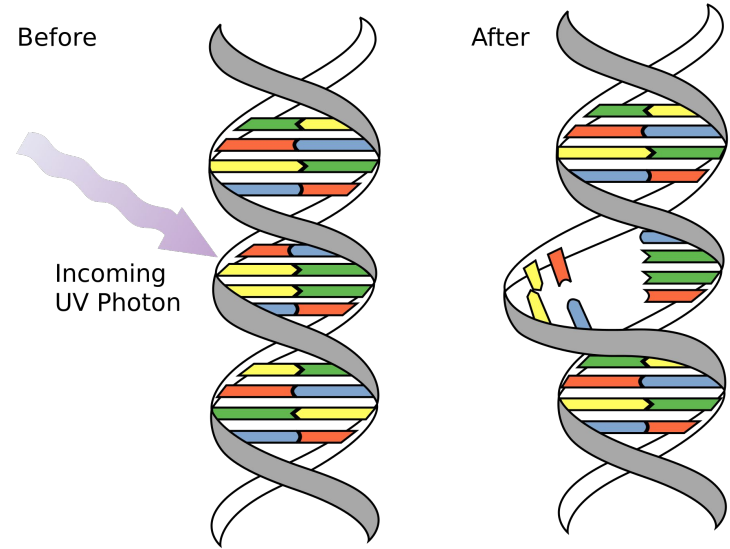
DNA

Think of it as an instruction book, telling you what to do. DNA makes you unique. You might have big eyes or a small nose, believe or not. That design was made by your DNA. Half of your DNA is from your mom and half is from your dad which is why you might be tall like your mom and handsome like your dad. Besides humans, animals, plants and lots of other creatures have DNA too.



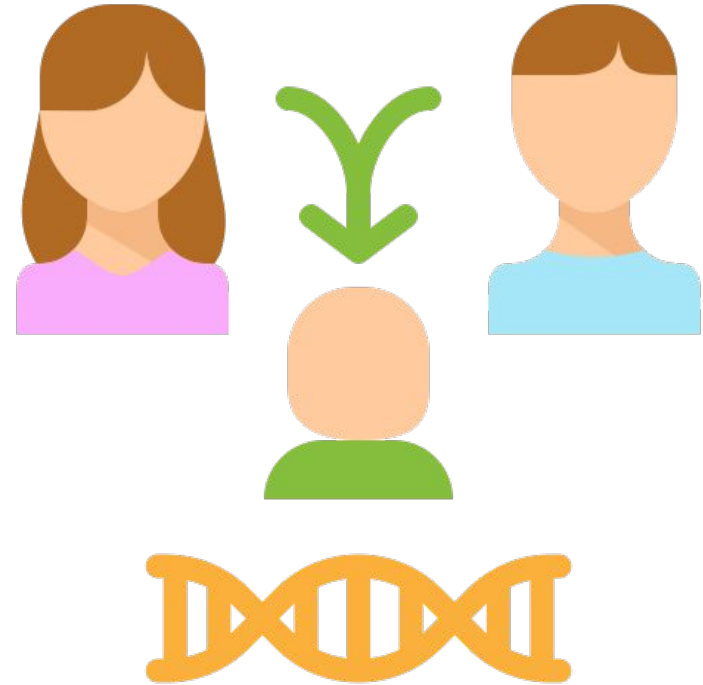
Mutation

It's a natural, random change in a living things DNA. It also decides your traits. It can happen when a living cell divides and copies their DNA, which where a tiny typo can occur by mistake. Some mutations happen when the DNA is made.



Hereditary

Heredity is when living things pass down physical traits or features to their children. It works through genes which are smaller parts of your DNA. So you might be tall like your dad but have small eyes like your mom.



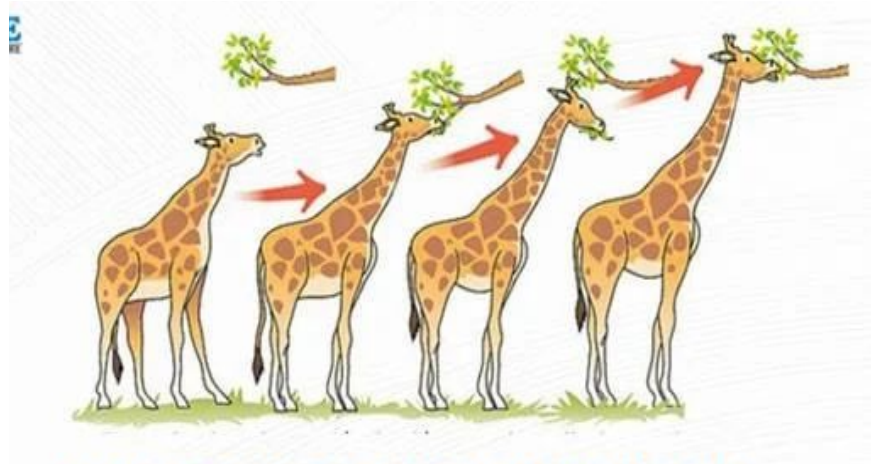
Natural selection

Natural selection is nature's process deciding which plants and animals survive and reproduce based on how well they fit in their environment. It helps them adapt over time. Example: Peppered moths can be light colored or dark colored . Back then when tree bark was light colored, light moths blended in and be safe, while dark moths stood out and eaten. As a result the population had many light moths and very few dark moths.



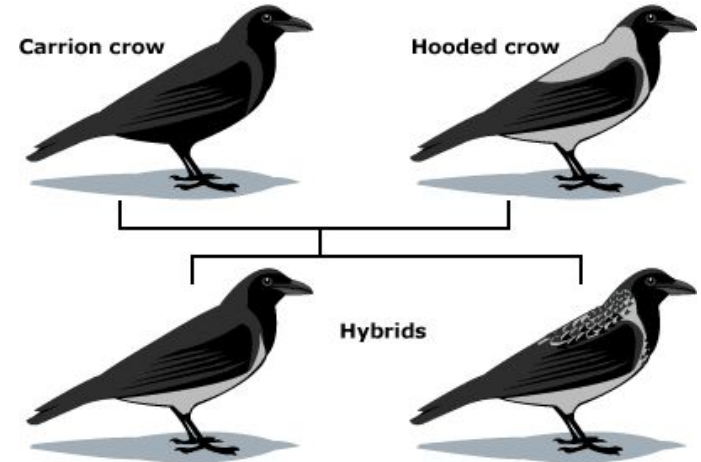
Adaptation

An adaptation is a special body part or behaviour that helps a living thing survive in their habitat. For example, a giraffe's neck is long so they can eat the leaves on the trees. Birds migrate to the south in the winter to find food and to live.



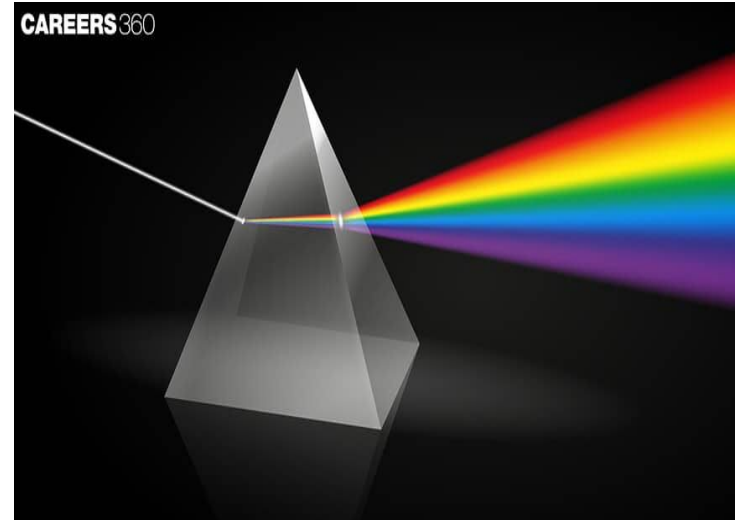
Species

Where a group of living things that are very similar to each other can have babies. Members of the same species share the same look, traits, and family background. Ex: A house cat and a lion both have claws and whiskers, but they are different species because a house cat can't have babies with a lion.



Light

Light is a kind of energy that travels in a straight line and lets us see the world around us. Light comes from the sun, stars, and lightning. Did you know that light can travel over 180,000 miles per hour!



Gravity

It's an invisible pulling force that keeps our feet on the ground and stops us from floating into space. You can't see gravity, but it's always working. Gravity keeps us safe. It pulls objects down to earth so people can walk, run, and play. Example: if you drop a pencil, it falls because of gravity.

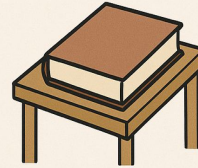


Inertia

An object that keeps doing the same movement until some kind of force steps in to change it. For an example, if an object stays still then it will stay unless you push the object forward. If an object, then the object is moving in the same direction same speed unless you stop it.

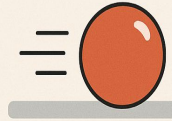
TYPES OF INERTIA

Inertia of Rest



A book on a table won't move unless pushed.

Inertia of Motion



A ball rolling keeps rolling unless something slows it.

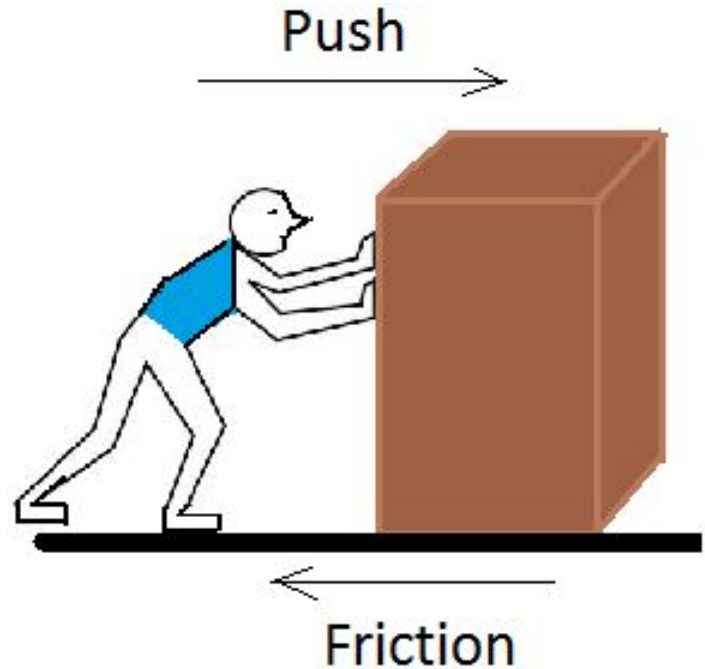
Inertia of Direction



A car turning quickly makes you lean sideways

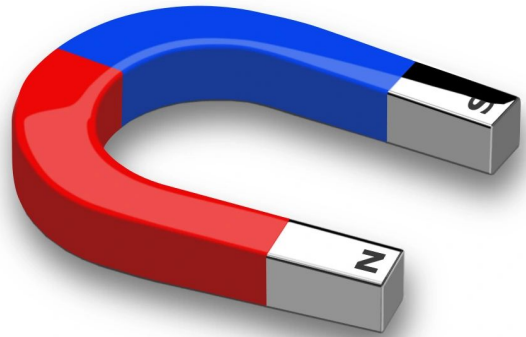
Friction

It's a helpful invisible force that happens 2 objects/things rub together and try to slow each other down. Friction is helpful because it stops objects, from slipping allows us to move safely. It also allows car tires to start, brake, and turn. An example is when your hands are cold, you rub them fast to make your hands warm.



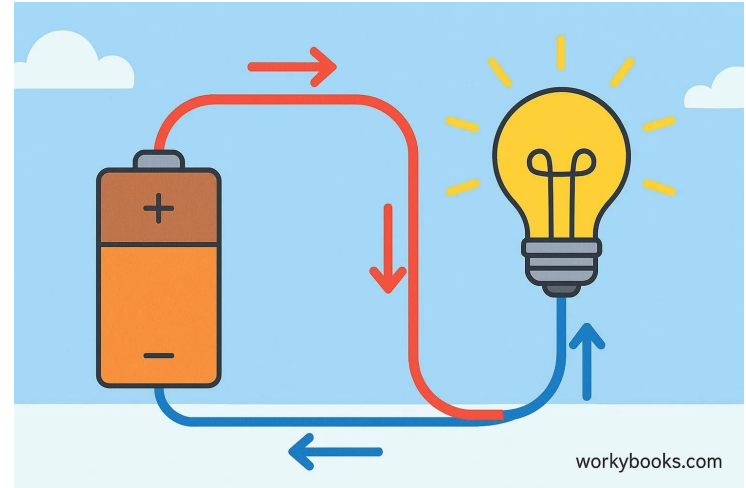
Magnetism

Magnetism is when an invisible force is pushing and pulling some kind of metal. Think about this as a magnet. Magnets can pull and push another magnet. Each magnet has a north and South Pole: North and South pull together, South and South and North and North push back.



Electricity

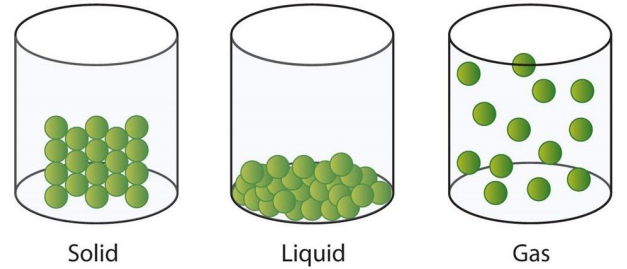
Electricity is a form of energy created when tiny, invisible particles called electrons move in the same direction together. Everything in the world is made out of atoms. Around every atom are smaller parts called electrons, which carry a ring negative charge. When a group of these electrons flow together, they create electricity. Example: when you flip a switch to turn on a light bulb, electrons flow through a wire to light up the room.



Matter

Matter is anything that weighs and takes up space. Most things in this world are made up of matter. For an example, trees, rocks, water, air, eraser, houses, and leaves are all made of matter. Matter is made out of atoms. Things such as feeling, dreams and light are not made out of matter. There are three states of matter: Solids, liquids and gas.

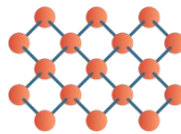
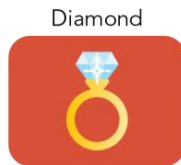
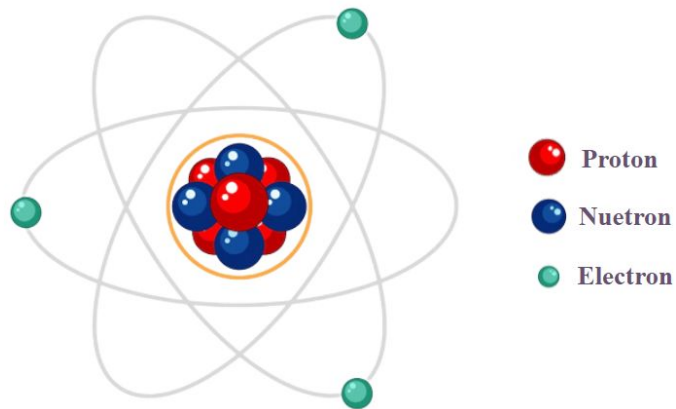
STATES OF MATTER



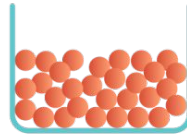
Atom

Tiny particles called atoms are the basic building block of all matter. Everything you see, touch and breathe. Atoms are so small that you can't even see them with a microscope. Atoms are like tiny Lego bricks, there're also basic building blocks to build structures and any creation, just like atoms.

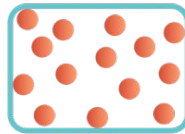
Structure of Atom



Atoms in a solid



Atoms in a liquid

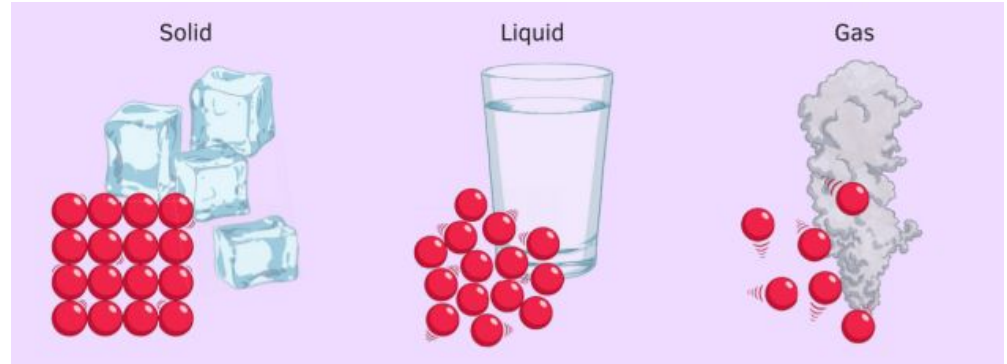


Atoms in a gas

Particle

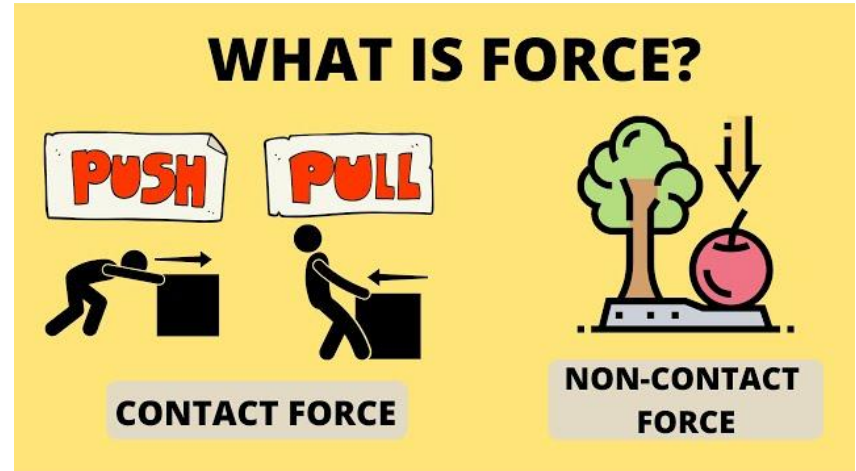
Particles are a very small part of matter. Particles are everywhere. Think about the chair you sit on. That's made of particles. Particles are basically a smaller version of atoms or matter.

Particle in its three forms:



Force

Is to push or pull an object. Force can make things stop, change direction, or sometimes change shape. Force happens when two objects interact. Once the interaction stops, the force stops too. An example is when kicking a soccer ball, when your foot hits the ball it makes a push force to make it fly through the air.

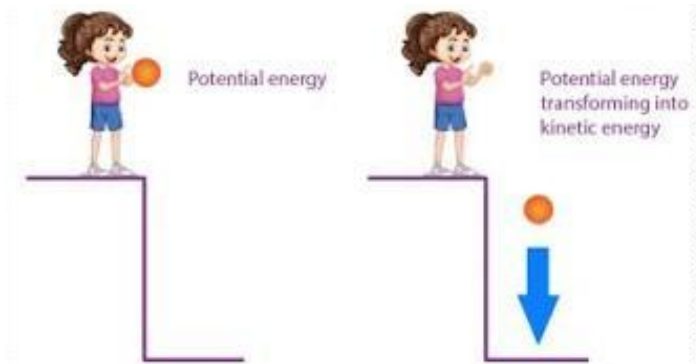
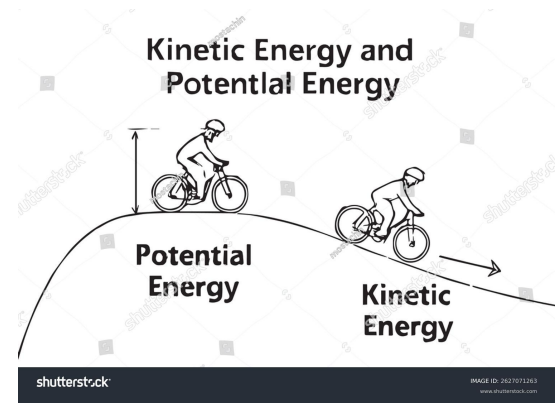


Energy

Energy is a power that makes things move, create changes and work. There are two main types of energy:

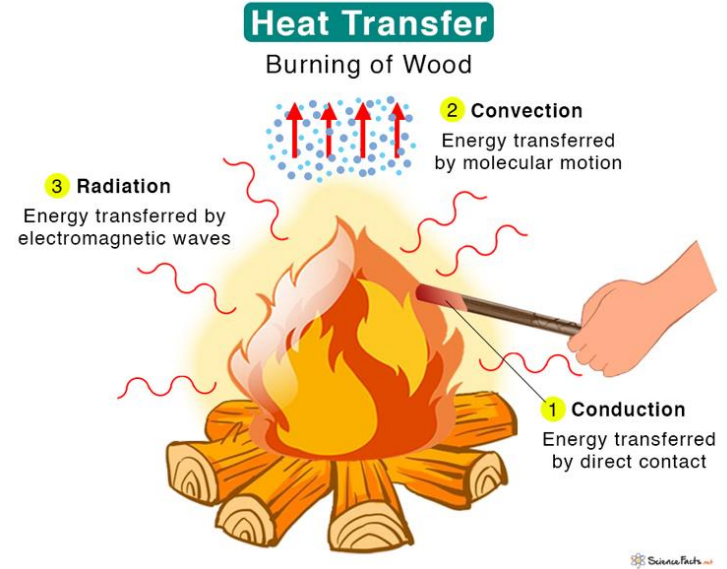
- Potential Energy is a stored energy that is waiting to be used
- Kinetic Energy is the energy of motion.

Energy is all over the world, so we should be glad that it exist.



Heat

It's a form of energy that moves from a warmer object to a cooler object, making things feel warm or hot. It flows from one object to another because of the difference in temperature. The cool object absorbs the energy and becomes warmer. Heat travels in 3 ways: conduction, convection and radiation. Conduction is the flow of heat in side of an object ex: heating water in a teakettle. Radiation is the energy that moves from one place to another ex: the sun.

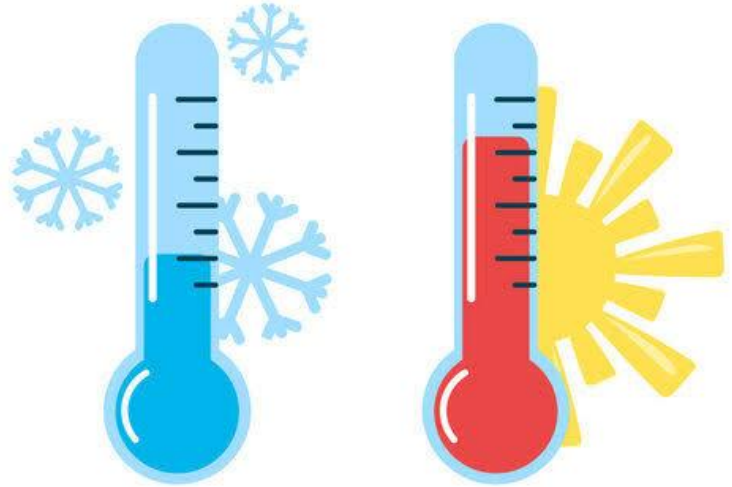


Temperature

the degree or amount of heat or cold present in a substance or object, compared to something else.

Temperature can be expressed using a comparative scale and shown by a thermometer.

Temperature can also be perceived by your senses (especially through touch).





THE ENDDDDDD

