**Human Respiratory System**

We breathe in air and out air which is rich in carbon dioxide. The air we breathe in contain oxygen which is transported to all parts of the body and ultimately to each cell. In the cells, oxygen in the air helps in the breakdown of food and release energy this process is known as respiration.

**It consists of the:**

* Nose.
* Mouth.
* Throat (pharynx)
* Voice box (larynx)
* Windpipe (trachea)
* Airways (bronchi)
* Lungs.

**circulatory system**

The circulatory system, which is made up of the heart and blood vessels, supports the respiratory system by bringing blood to and from the lungs. Blood goes from the heart to the lungs to get oxygen. The lungs are part of the respiratory system. heart then pumps oxygenated blood through arteries to the rest of the body.

The circulatory system helps deliver nutrients and oxygen from the lungs to tissues and organs throughout the body. It also helps remove carbon dioxide and waste products

**immunity**

The capability of the body to fight against infection owing to the presence of specific antibodies is called immunity. There are three types of immunity are innate, adaptive, and passive

Immunity will prevent you from getting sick. For example, a person who has had chickenpox or has been immunized against chickenpox is immune from getting chickenpox again

**Disease**

A disease can be defined as any disturbance in the structure or function of any organ or part of the body. It may be caused due to the attack lack of nutritious diet/balanced diet and lack of public health services or weaken immune system.

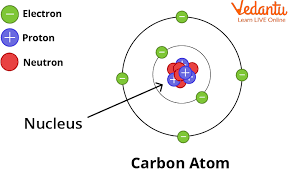
Diseases are often known to be medical conditions that are associated with specific signs and symptoms.

Types of disease

* Viral infections. e.g Flu
* Bacterial infections e.g Typhoid
* Fungal infections e.g Skin allergy
* Parasitic infections. e.g Intestine worms

**Structure of atom**

The smallest part of a substance that cannot be broken down chemically. Each atom has a nucleus (center) made up of protons (positive particles) and neutrons (particles with no charge). Electrons (negative particles) move around the nucleus. the nucleus contains more that 99.9% of the mass of the atom.

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**Physical and chemical changes**

In a physical change the appearance or form of the matter changes but the kind of matter in the substance does not. However in a chemical change, the kind of matter changes and at least one new substance with new properties is formed

Examples of physical change

* Breaking a bottle.
* Melting an ice cube.
* Breaking a bottle.

Examples of chemical change

* Burning of paper
* Boiling an egg.
* Baking a cake.

**Chemical Bond**

The molecules are made of two or more atoms joined together by some force acting between them. The force is termed as a chemical bonds. Thus, a chemical bond is defined as a force that acts between two or more atoms to hold them together as a stable molecule.

In this process, atoms can share or give up electrons from their outermost shell to bond and create a new homogeneous substance.

Types of chemical bond

* Ionic Bond. ...
* Covalent Bond. ...
* Hydrogen Bond. ...
* Metallic Bond. ...

Force and Motion

The push or pull experienced by an object when it interacts with another object results in the change of state, either from rest or from uniform motion.

Force is an external agent capable of changing a body's state of rest or motion.

Force is represented by letter “ F”, its unites are Newton

Formula of force F = ma.

M = mass of body

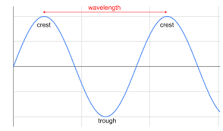
A = acceleration of body

Motion is a change in position of an object over time. Motion is described in terms of displacement, distance, velocity, acceleration, time and speed.

waves and energy

When the water on the surface of the ocean rises and falls alternately they are called as waves. Waves are formed when wind scrape across the ocean surface. The stronger the wind blows the bigger the wave becomes. During a storm the winds blowing at a very high speed and form huge waves.

A wave is a disturbance that moves energy from one place to another. A wave consists of Crest & Trough. The distance between two crest or trough is called wavelength



heat and temperature

Heat is the form of energy that is transferred between two substances at different temperatures. The direction of energy flow is from the substance of higher temperature to the substance of lower temperature. Heat is measured in units of energy, usually calories or joules.

Examples of sources of heat energy are the Sun, electrical appliances, burning wood and friction.

Temperature is the measure of hotness or coldness expressed in terms of any of several scales, including Fahrenheit and Celsius. Temperature indicates the direction in which heat energy will spontaneously flow—i.e., from a hotter body (one at a higher temperature) to a colder body (one at a lower temperature)

**earth and space**

**Earth**, our home planet, is a world unlike any other. The third planet from the sun, **Earth** is the only place in the known universe confirmed to host life. Scientists think Earth formed billions of years ago. Four planets in the solar system are bigger than Earth. Three planets are smaller

Space, also known as outer space, is the area directly outside of Earth's atmosphere. Space technically begins at the Kármán Line, which is about 100 km or 62 miles above the Earth. Unlike Earth, there is no air in space, which is why astronauts have to wear high-tech spacesuits to travel there.

Astronomy is the study of everything in the universe beyond Earth's atmosphere. That includes objects we can see with our naked eyes, like the Sun , the Moon , the planets, and the stars . It also includes objects we can only see with telescopes or other instruments, like faraway galaxies and tiny particles