



**Energy can neither be created nor destroyed.**

It can only be transformed from one form to another. The transformation of energy can lead to a change in state or motion. Energy can also be converted to mass and vice versa.



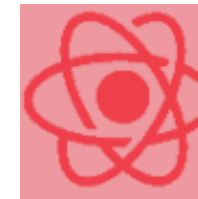
**There are four fundamental interactions/ forces in nature.**

Gravitation, electromagnetism, strong-nuclear and weak nuclear forces. All phenomena are due to the presence of one or more of these interactions. Forces act on objects and can act at a distance through respective physical field, causing a change in motion or in the state of matter.



**Earth is a very small part of the universe.**

The Universe is comprised of billions of galaxies, each of which contains billions of stars (suns) and other celestial objects. The earth is a small part of the solar system with the Sun in its centre, which in turn is a very small part of the Universe.



**All matter in the Universe is made of very small particles.**

They are in constant motion and the bonds between them are formed by interactions between them. Elementary particles as we know, form atoms and atoms form molecules. There is a finite number of types of atoms in the universe which are the elements in the periodic table.



**In very small scales, our world is subjected to the laws of quantum mechanics.**

All matter and radiation exhibit both wave and particle properties. We cannot simultaneously know the position and the momentum of a particle.



**Evolution is the basis for both the unity of life and the biodiversity of organisms (living and extinct).**

Organisms pass on genetic information from one generation to another.



**Cells are the fundamental unit of life.**

They require a supply of energy and materials. All life forms on our planet are based on this common key component.



**Earth is a system of systems which influences and is influenced by life on the planet.**

The processes occurring within this system influence the evolution of our planet, shapes its climate and surface. The solar system also influences Earth and life on the planet.