

This week, we will continue our discussion of energy.

We will introduce the concept of potential energy-- which is related to the work done by a conservative force, and also the concept of total mechanical energy-- which is defined as the sum of the kinetic and potential energies.

We will demonstrate that the total mechanical energy of a system remains constant if only conservative forces are acting.

This is known as the Principle of Conservation of Mechanical Energy.

We will also see how the work done by any non-conservative forces causes the total mechanical energy of the system to change, usually causing mechanical energy to be lost from the system.

Finally, we will see how graphs of a system's potential energy, as a function of position, provide an elegant way of understanding the behavior of the system for a given value of the total mechanical energy.