Work, Energy and Power

- When an object is moved by applying a force, energy is transferred.
- The energy is transferred from the person or the system that is applying the force.
- If there is no resistive force against the motion, then the transferred energy goes on to increase some form of energy of the object that is being moved. This would generally be the kinetic energy, the gravitational potential energy, the elastic potential energy or a combination of these energies of that object.
- For example, when a person pushes a box along a horizontal floor, energy is transferred from the person to the box, and it goes on to increase the kinetic energy of the box. (Chemical energy from the person gets transformed as kinetic energy of the box.)
- When energy is transferred this way, we say "Work is done".
- The amount of work that is done is measured by looking at the amount of energy that is transferred.

  Hence, the formula,

  Work Done = Energy Transferred
- Through further analysis, it can be shown that the Work Done can also be calculated using the formula,

  Work Done = Force x Distance Moved in the Direction of the Force