Distinguish, differentiate, compare and explain what is the differences between electric and magnetic forces. Comparison and Difference.
Electric and magnetic forces between a pair of objects do not require that the objects be in contact. The sizes of the forces in each situation depend on the properties of the objects and their distances apart and, for forces between two magnets, on their orientation relative to each other.

Differences Between Electric and Magnetic Forces

1. The electric force acts in the direction of the E field, whereas the magnetic force acts perpendicular to the B field.
2. The electric force acts on a charged particle whether or not it is moving, whereas the magnetic force acts on a charged particle only if it is moving.
3. The electric force does work in displacing a charged particle, whereas the magnetic force does no work when a charged particle is displaced.
Magnetic forces could include:
1. The force between two permanent magnets.
2. The force between an electromagnet and steel paperclips.
3. The force exerted by one magnet versus the force exerted by two magnets.

Electric and Magnetic Forces in Everyday Life

Many devices used in everyday life rely on electric and magnetic forces to operate. Lets identify electric and magnetic forces in everyday life:

Electric Force Examples

Electroplating and anodizing: Metals coated with an oxide layer for protection by way of an attractive force caused by electrical current flow.
Powder coating: A coating of charged powder particles are attracted to an oppositely charged object.
Party trick -sticky balloon: Rubbing a balloon against your hair will create enough static charge to make the balloon stick to a wall.

Magnetic Force Examples

There is a natural magnetic field surrounding us all the time; the Earthâ□□s magnetic field. A compass detects the Earthâ□□s magnetic field. A needle is moved by the magnetic force, so that one end points north and the other end points south.
A door catch is a simple device that uses the magnetic force of attraction to hold a door closed.
Computer hard drives use magnetism to store the data on a rotating disk.
An industrial application of magnetic force is an electromagnetic crane that is used for lifting metal objects.
There are applications of magnetic force in medical science. X-ray and scanning devices rely on electromagnetic action. MRI scanners are Magnetic Resonance Imaging devices, and they are used in hospitals to create 3D images of body parts.
Electric motors use the electromagnetic force between a magnet and a current carrying coil to produce movement.
Electric generators use the electromagnetic force between a magnet and a moving coil to generate electrical energy.
Loudspeakers use an electric current flowing through a coil to generate a magnetic field. This field interacts with the field of a permanent magnet to make a diaphragm move and produce sound.