**MAGNETS and MAGNETIC FIELD**

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**Magnets and Magnetic Field**

An object which produces magnetic field is called magnet. Magnets have existed for many thousands of years and are employed by many alternative cultures throughout this point. Magnets are helpful throughout the years because of their property of holding things along simply through the force of the metal within the magnet. The word magnet came from an area in Greece called ‘Magnesia” from where great deposits of magnetite was discovered. Magnets can be a form of permanent magnet and electromagnet.

Material is magnet or not is dependent on its atomic structure. All of the universe consists of atoms and electrons. The electron moves around the atom, creating a magnetic field while doing this. The magnetic fields of certain atoms cancel each other in materials such as aluminum and copper, making the materials not magnetic, such cancelation of magnetic field is the reason we do not have a permanent field around us.

One way to produce magnetic field is by using an electromagnet a type of magnet, which is produce by moving electrically charged particles for example current carrying wire. The current in the wire generates magnetic field which can be used for many purposes like to control computer hard drive or for sorting of scrap metal.

Another way of producing a magnetic field is through using the fact that the magnetic field is the basic characteristic of every basic particles, these particles have an ingrained magnetic field surrounding them. This the reason that permanent magnets have permanent magnetic field. Permanent magnets are very useful and even come handy in day to day tasks like hanging notes on refrigerator

Magnets come in many forms and types, but irrespective of their shapes and types, each magnet has a South Pole and a North Pole. Magnetic field B is defined in terms of the magnetic field FB exerted on a moving electrically charged test particle or a magnet. Magnetic Field Lines also known as Flux Lines are imaginary lines which represent Magnetic Field's direction and strength. They go inside magnet directed from South Pole to North Pole and go out of the magnet from North to South Pole and. Density of magnetic field lines around poles is higher and there is a stronger magnetic force because of that. A magnet attracts or repels other magnets, depending on the North and South Poles ' mutual orientation. The magnets repel each other when like poles of two magnets placed together and if opposite poles are put together, they attract each other. Our Earth also has a magnetic field that is produce in its core which can be measure using a compass another magnet, compass is a bar type magnet. its needle which is also its north pole attracted toward the Artic region of earth which mean that earth acting as magnet has its south pole at Arctic region.

Magnetic field line passing through the given area plays a part in to generation of magnetic flux. Magnetic flux commonly referred to as ΦM is measure of the amount of magnetic field that passes over a particular surface. The measurement of magnetic flux is linked to the selected area.