

MAGNETIC FIELDS

We won't talk about until we get to relativity, but in reality magnetic effects are really the consequence of relativistic effects.

Sticking to the Classical Theory of Magnetism, though:

--a magnetic field is **NOT a modified force** field as is the case with an electric field.

--a magnetic field's **directions is DEFINED as the direction a compass points** when in the field.

Within the confines of Classical Theory of Magnetism (continued):

--a magnetic field is **generated whenever you have charge in motion**

--a magnetic field affects secondary charge in motion by generating a magnetic force on the moving charge

--the **direction of a magnetic force on moving charge** is always **perpendicular** to the plane defined by the charge's velocity vector and the magnetic field vector

By manipulating the motion of charge, one can generate a magnetic field that changes in space in both magnitude and direction

--An example: the **alternating magnetic field** that is generated by charge running onto and off of a radio transmitting antenna.