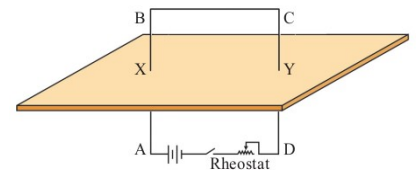




2 Magnetic Effect of Electric Current

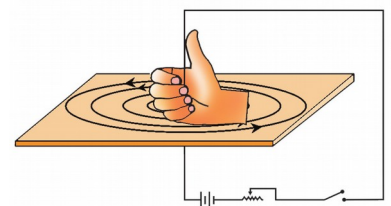
A magnetic field around a straight conductor - Speciality

- ◆ A magnetic field is developed around a current carrying conductor.
- ◆ The shape of the magnetic field around it is circular.
- ◆ The direction of the magnetic field can be found out using
 - * The Right Hand Thumb Rule &
 - * The Right Hand Screw Rule



Right Hand Thumb Rule of James Clark Maxwell.

* Imagine you are holding a current carrying conductor with the right hand in such a way, that the thumb points in the direction of the current. The direction in which the other fingers encircle the conductor gives the direction of the magnetic field.



Right Hand Screw Rule

* If a right hand screw is rotated in such a way that its tip advances along the direction of the current in the conductor, then the direction of rotation of the screw gives the direction of the magnetic field around the conductor.

Assignment

1. Current is passed from south to north through a conductor placed below a freely pivoted needle.
 - a) To which direction will the north pole of the magnetic needle turn?
 - b) Which is the rule used to arrive at this inference?
 - c) State the rule.
 - d) If the current flows in the conductor in the East West direction, What do you guess about the deflection of the magnetic needle? Explain.