OPERATING INSTRUCTIONS

AND SUGGESTED ACTIVITIES

AMPÈRE'S RULE APPARATUS

AMPR01

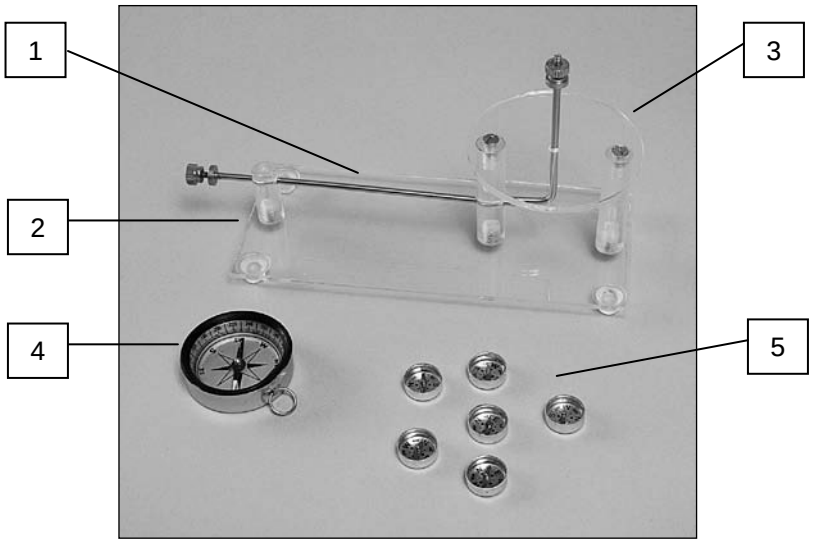

Figure 1

DESCRIPTION

Ampère's Rule Apparatus (*Figure 1*) is used to investigate the direction of the magnetic field generated by an electric current in a straight wire. It consists of a thick brass wire (1) bent at right angles to form two straight sections, one horizontal and one vertical. The ends of the wire have screw terminals for attaching wires to connect the apparatus to a current source. The wire is mounted on an insulating stand (2) with a circular platform (3) surrounding the vertical section of the wire. A large compass (4) and six small plotting compasses (5) are supplied for investigating the magnetic field of the wire.

BACKGROUND

The French physicist André-Marie Ampère (1775 – 1836) investigated the magnetic field generated by an electric current flowing in a conductor and discovered that its direction is always at right angles to the direction of the current flow. The result of this property is that the shape of the magnetic field of a straight current-carrying wire is a series of concentric circles around the wire. Ampère's Rule (also called Ampère's Right Hand Rule) is a way of remembering the relationship between the directions of the