

## The Magnetic Field and its Properties

Name: \_\_\_\_\_ T.A. \_\_\_\_\_

Partners: \_\_\_\_\_

Course Number: \_\_\_\_\_ Section Number: \_\_\_\_\_ Date: \_\_\_\_\_



### 1. Static case

Pick up various magnets, and discuss the basic properties:

Pick up random-shaped magnets. How do you determine N- and S-poles?

- **Experiment – Magnetic Field I**

Pick up magnets of three different shapes. Put a magnet under iron sands, and sketch the pattern of the magnetic field.

Questions:

- ▲ Did you obtain the predicted magnetic field lines?

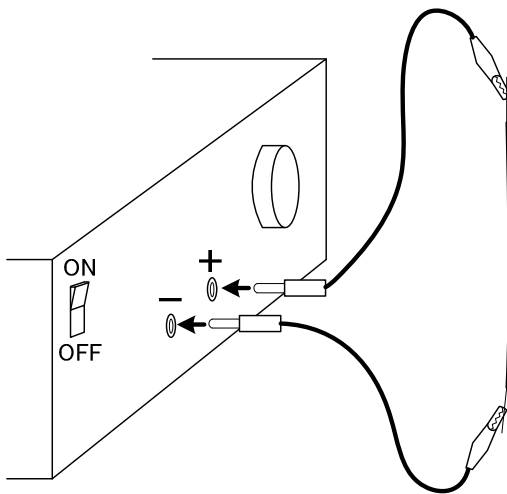
**2. Magnetic field produced by a current**

Discuss how you find the direction of current flow.

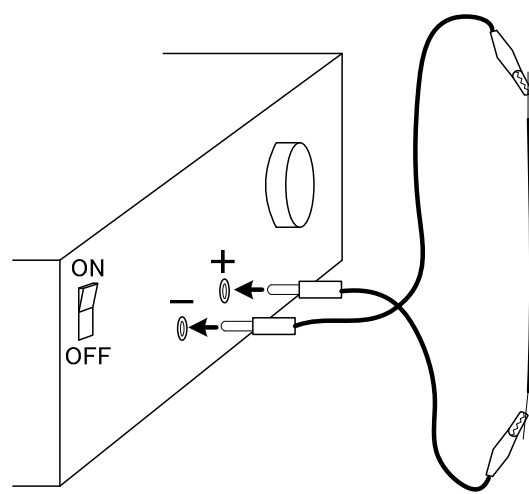
Discuss how you find the direction of the magnetic field created by the above current.

• **Experiment – Magnetic Field II**

Using a compass, find the direction of the magnetic field. Sketch the directions of current and those of the compass. **(Do not use more than 3 A for the current source.)**



Case 1



Case 2

Questions:

▲ Did you obtain the predicted result?

From the results, conclude about the magnetic field produced by a current.