

# Lab 4 Magnetic Field

## Objectives

This virtual lab will help visualize magnetic fields generated by either a permanent bar magnet (with which students are familiar with) or a coil with current going through it, then relate to the earth's magnetic field and learn why it is important for earth and lives.

## Supplies

1. [Magnetic Field of a Bar Magnet](https://youtu.be/j8XNHIV6Qxg) (https://youtu.be/j8XNHIV6Qxg)
2. [Magnetic Field of a Coil](https://youtu.be/bq6lhafucE) (https://youtu.be/bq6lhafucE)
3. [Earth's Magnetic Field video](https://www.youtube.com/watch?v=lxWBIJ1kB7Q) (https://www.youtube.com/watch?v=lxWBIJ1kB7Q)
4. [Earth and Mars](https://www.youtube.com/watch?v=XXFVpwecixY) (https://www.youtube.com/watch?v=XXFVpwecixY)

## Procedure

Watch the videos using the links listed above and complete the worksheet below.

## Questions

1. After watching the first video, try to map the magnetic field formed by a bar magnet.



2. What conclusions can you draw from the second video? (Hint: current vs. magnetic field)

3. Do some research, and combine it with what you have learned from the second video, to explain why the earth is a big “bar magnet.”

4. Watch the third and fourth videos and try to explain why the earth’s magnetic field is important to our earth and us?

**First and last name:**

**Copyright:**

This work is licensed under a [Creative Commons Attribution 4 International License](https://creativecommons.org/licenses/by/4.0/).