# 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/j8XNHlV6Qxg) (https://youtu.be/j8XNHlV6Qxg)
2. [Magnetic Field of a Coil](https://youtu.be/bq6IhapfucE) (https://youtu.be/bq6IhapfucE)
3. [Earth’s Magnetic Field video](https://www.youtube.com/watch?v=lxWBlJ1kB7Q) (https://www.youtube.com/watch?v=lxWBlJ1kB7Q)
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.

| To draw with pen/mouse, click here and press enter. Within the ribbon menu, click Insert and select Shapes and the Scribble line. Use callouts to make labels. Other options: copy and paste, upload or attach your drawing or contact instructor for a non-drawing option. |
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1. What conclusions can you draw from the second video? (Hint: current vs. magnetic field)

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1. 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.”

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

| Click or tap here to enter text. |
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## **First and last name:**

Click or tap here to enter text.

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