**Magnets and Magnetic field notes**

<https://www.youtube.com/watch?v=s94suB5uLWw>

Magnets have a north and south pole – two of the same poles will repel each other, while opposite poles attract.

Only certain materials can be magnets, like iron. And other materials can be attracted to magnets like cobalt, nickel, and iron.

There is a magnetic field around Earth and a compass will align itself with Earth’s magnetic field.

If you chop a bar magnet in half, you don’t end up with one north magnet and one south magnet—you end up with 2 magnets, each with its own north pole and south pole. This means that the magnetic field lines surrounding a magnet always form closed loops.

We measure magnetic fields using a unit called a tesla, which is one Newton/Amere-meter.

An electric current produces a magnetic field.

When current runs through a wire, the magnetic field that it produces surrounds the wire. The field lines are running counterclockwise.

1st right hand rule- take right hand and point your thumb in the direction of the electric current. Now curl your fingers. The direction your fingers are curing is the way the magnetic field lines are pointing. You can use this rule to find the direction of the current in the wire.

A magnet exerts a force on a current running through a wire. – This is what is protecting us from harmful radiation from the sun.

\*\* You do not need to know any of these formulas from this video, we will not be doing much math in this portion of the unit\*\*