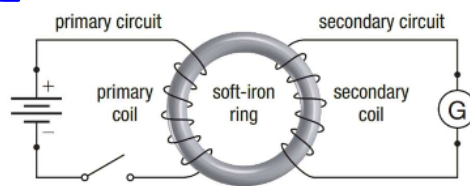


SPH3U 13.1 Electromagnetic Induction**1. Discovery**

Induction:	one action causes another action.
Chapter 12:	current can cause a magnetic field.
Chapter 13:	can magnets induce an electric current?
stationary magnet	no.
moving magnet	yes! proved by Michael Faraday, 1831.
Law of electromagnetic induction:	any change in the magnetic field near a conductor induces a voltage (and a current) in the conductor.

Faraday's ring:	current in the left loop induces a magnetic field, which induces a current in the right loop <u>when it changes</u> (when the left circuit is turned on/off)
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**2. Factors affecting induction**

Coiled conductor:	coils increase current (vs. straight)
Number of loops:	↑ loops, ↑ current.
Change in magnetic field:	faster change in field, ↑ current.
Magnetic field strength:	stronger field, ↑ current.

3. Applications of electromagnetic induction

Induction cooking:	heats metal pots by induction.
Metal detectors:	detect induced currents.
Induction chargers:	coils in charger and device (eg. cell phones).

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