



Electromagnetic Induction Lab (LT)

PSI Physics

Name:_____ **Period:**_____ **Date:** _____

Objectives:

- Discover the different attributes that affect magnetic induction

Materials:

- One solenoid with at least 20 loops and another solenoid with a greater amount of loops
- One multi-meter
- Two metal clips
- One bar magnet

Procedure:

There are two different questions for you to investigate.

Question 1: What happens when a magnet is dropped through a wire coil?

1. Attach the coil of wire to the voltmeter using the metal clips. Set the voltmeter measure in millivolts.
2. Take the magnet and move it through the coil of wire. Record your observation below. Then, answer the question.

Observation:

Answer:

Question 2: What happens to the induced voltage if a magnet is moved through a coil of wire at a faster pace?

1. Attach the multi-meter to the coil of wire, and move a bar magnet through it. Then, move the bar magnet through it at a faster speed.
2. Record your observation below. Then, answer the question.

Observation:

Answer:



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Analysis and Application:

1. Using the equation for electromagnetic induction, explain your results for Question 1 & 2.
2. If a stronger magnet was used, would the induced voltage become greater or smaller? Why?
3. If a coil that contained a larger amount of loops was used, would the induced voltage become larger or smaller? Why?