

Unit 10 – Vocabulary and Equations – Magnetism & Induction

<p><u>Vocabulary:</u> previous vocabulary magnetism electromagnet permanent magnet, natural magnet lodestone ferromagnetism magnetic field (B), vector, magnetic field lines field force, magnetic field strength domain theory magnetic North Pole, geographic North Pole induction motor, generator primary coil, secondary coil magnetic south pole, dipole, geographic north pole right-hand rule Tesla (T), Coulomb (C), Amp (A) Lenz's law, Faraday's law of induction</p>	<p><u>Symbols:</u> N, V, B, A, q, v, ε, Δt</p> <p><u>Equations & constants:</u> You get these on test:</p> <p style="text-align: center;">Transformer equation: $\frac{N_1}{V_1} = \frac{N_2}{V_2}$</p> <p style="text-align: center;">$F = q v B$ $F = i L B$ $\epsilon = \frac{N \Delta(BA)}{\Delta t}$</p>
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Unit Objectives - Williams

1. Cause of magnetism and domain theory
2. $F = qvB$ and $F = ILB$: The force on a current carrying wire or charge moving through an external magnetic field
3. Magnetic fields about wires and permanent magnets
4. Magnetic induction: Faraday's Law and Lenz' Law

DuPage ROE Objectives

701. I can recognize and explain what causes magnetic fields.
702. I can identify the direction of magnetic fields.
703. I can distinguish between magnetic fields and electric fields.
704. I can understand the relationship between magnetic and electric fields.
705. I can recognize that an object must be charged and moving in a magnetic field in order to experience a magnetic force.