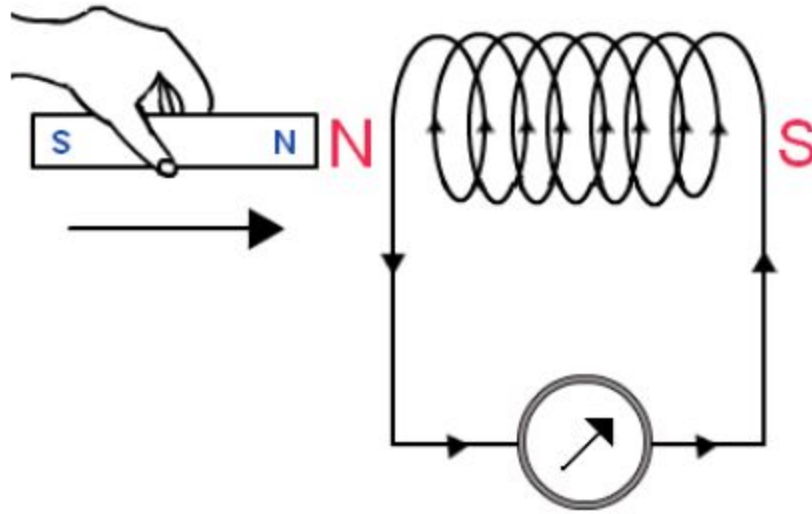


Electromotive Force



How to harness the power of Superman to maximize worldwide welfare...

[Superman](#)

The moving magnet in the coil with cause a current. We did this in the lab. The same is true for a wire dropping through a magnetic field.

$$F = Eq \quad | \quad V = Ed$$

$$\therefore V = \frac{Fd}{q}$$

since $\vec{F}_B = \vec{B}q\vec{v}$ we now have $emf = \frac{\vec{B}\vec{v}qd}{q} = \vec{B}\vec{v}d$.

How quickly must a $\frac{1}{2}$ m wire travel through a $4\mu\text{T}$ magnetic field in order to induce a voltage of 1V?

Hint: 500,000 m/s

8.1.1 pg 302: 1-3