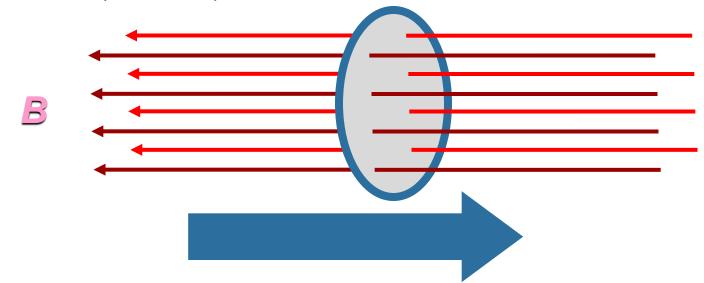
Faraday's Law: $emf = \oint \vec{E} \cdot d\vec{\ell} = -\frac{d\Phi_B}{dt}$

In Practical Words:

1) When the flux Φ_B through a loop changes, an *emf* is induced in the loop.

- 2) The *emf* will make a current flow if it can (like a battery).
- 3) The current that flows induces a new magnetic field.

4) The new magnetic field opposes the change in the original magnetic field that created it. (Lenz' Law)



 $\Phi_B \equiv \int \vec{B} \cdot d\vec{A}$

where