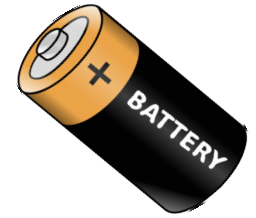
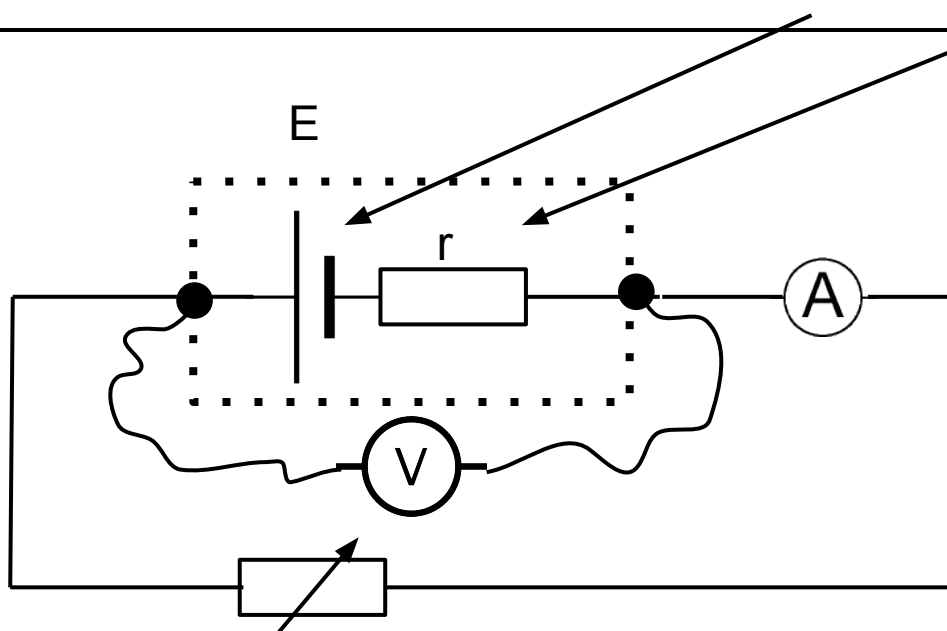


INTERNAL RESISTANCE OF A CELL



An electric cell is considered to be a source of EMF and a resistor in series with it.

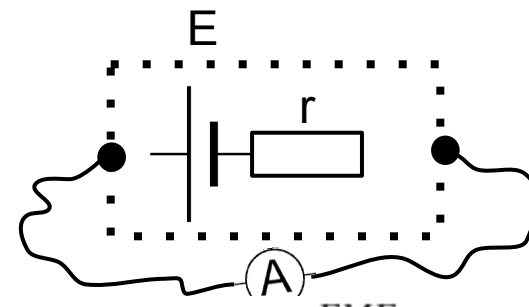
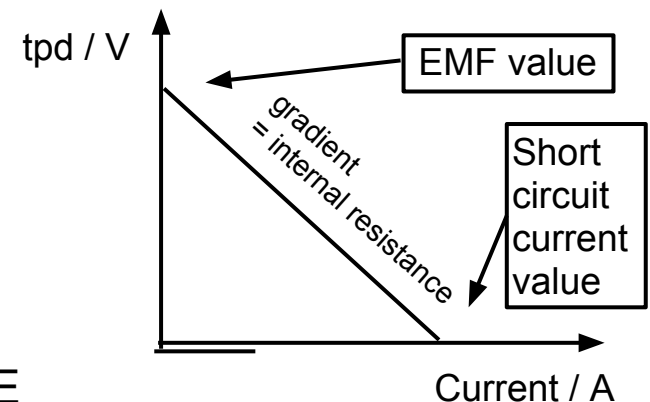


When no current is taken from the cell the voltmeter across the terminals measures the EMF of the cell.

$$\text{tpd} = \text{EMF} - \text{lost volts}$$

$$V = E - Ir$$

As more current is drawn from the cell the potential difference available at the terminals (tpd), measured by the voltmeter, decreases.



Short circuit the terminals by wire and the current is called the short circuit current

$$I_{\text{short circuit}} = \frac{\text{EMF}}{\text{internal resistance}}$$