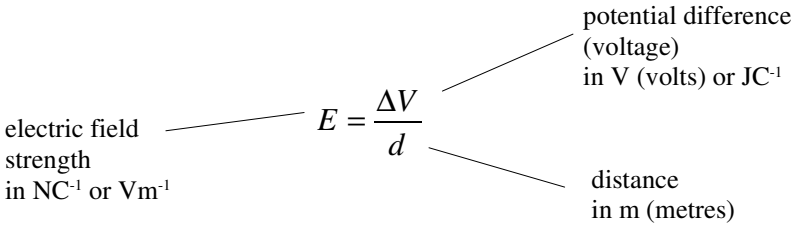
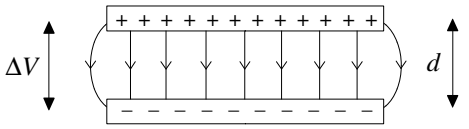
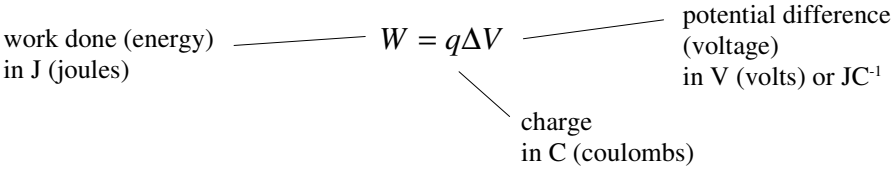
Potential Difference

Electrical potential difference is also known as voltage. It is a measurement of the energy that would be transported (work done) by a charge in an electric field.



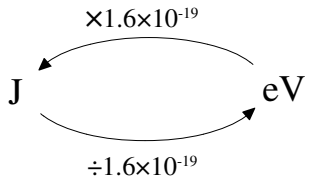


If the potential difference is 1 V, a charge of 1 C would gain 1 J by being pushed through the distance by the field, or 1 J would be required to push the charge through the distance against it.



One electron has a small charge, 1.6×10^{-19} C. For this reason a small unit of energy, "electron volt" (eV) is sometimes used. It is the energy to push an electron through 1 volt: 1.6×10^{-19} J.

To convert between joules and electron volts:



Another way to measure energy (work done) is the force applied to an object for a distance: