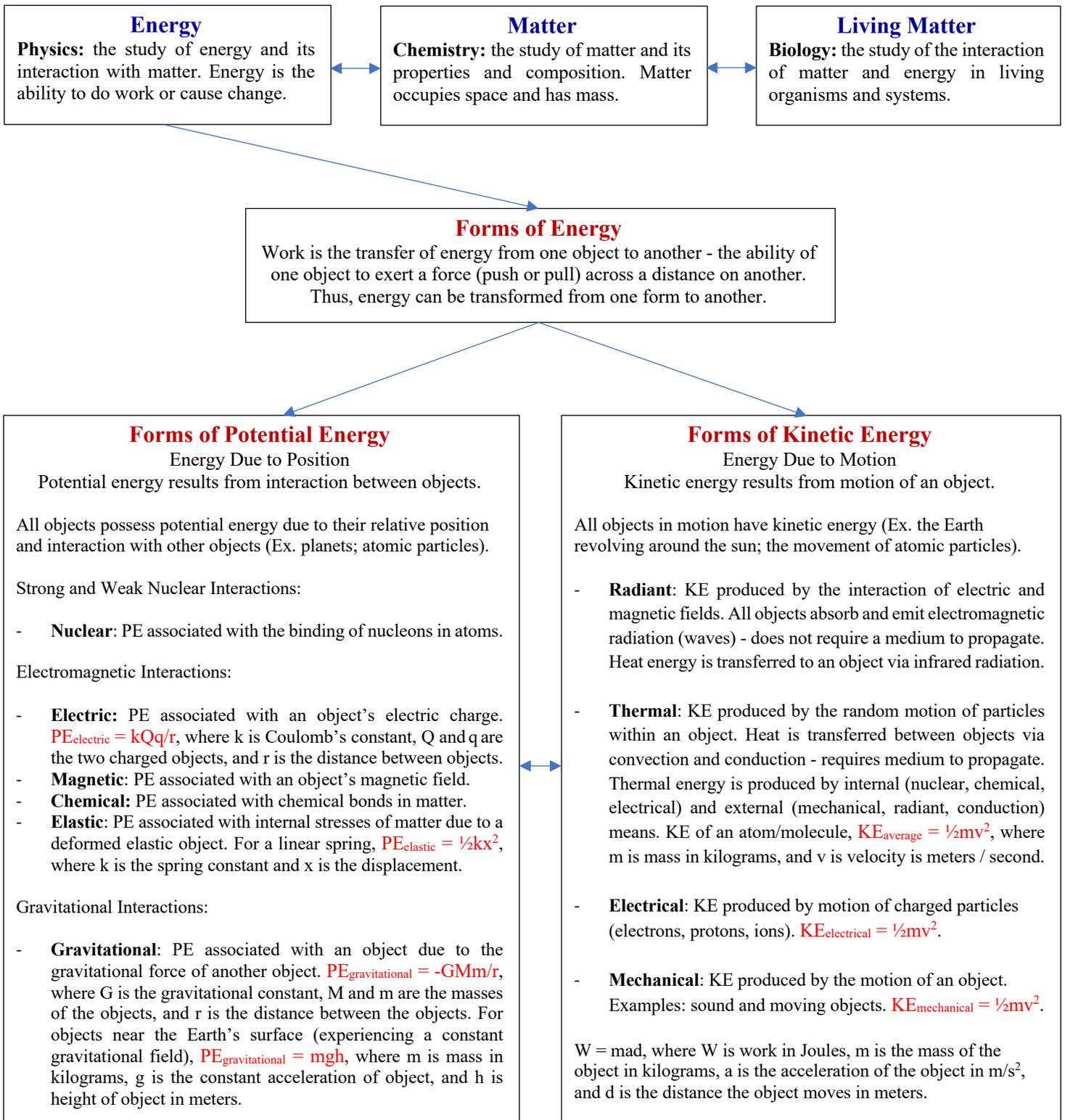


Classification of Energy

Patrick Blessinger (2018)



Conservation of Energy: total energy of an isolated (closed) system is constant over time – energy and momentum are conserved. Total energy is the sum of its potential and kinetic energies. Example: chemical energy in gasoline in a car is transformed to thermal and mechanical kinetic energy.

Energy-Mass Equivalence: a given mass has an equivalent amount of energy and vice versa. Per $E = mc^2$, mass is a form of concentrated energy. Converting one gram of mass completely into energy will produce about $9 * 10^{13}$ Joules of energy – this is enough energy to power a 100-watt lightbulb for 30,000 years. All forms of energy are measured in Joules - one Joule is equal to $1 \text{ kg m}^2 / \text{s}^2$.