Basics of Energy - Definitions

Energy

A measurement of matter based on the capacity for matter to perform tasks (*do things, i.e. Work*) to other forms of matter

Kinetic Energy

The energy matter based on the movement of matter in space as *heat* or *speed* (velocity)

Potential Energy

The stored energy of matter based on the physical connections, location, or interaction with other forms of matter

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Basics of Energy – Math Stuff

Kinetic & Potential Energy

$$KE = \frac{1}{2} m V^2 \qquad PE = mgh$$

KE = Kinetic Energy **h** = Height (*m*) **m** = Mass (*g*)
PE = Potential Energy **g** Force **v** = Velocity (*m/s*)

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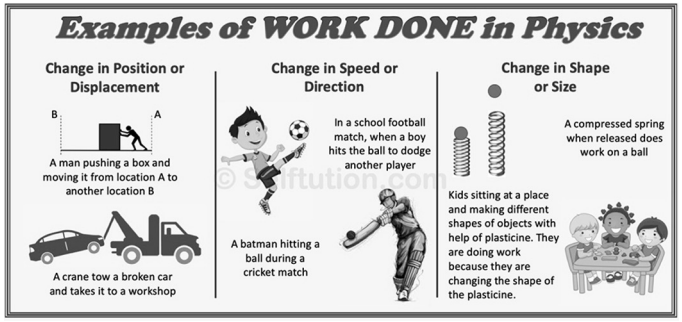
Using Energy – Work and Power



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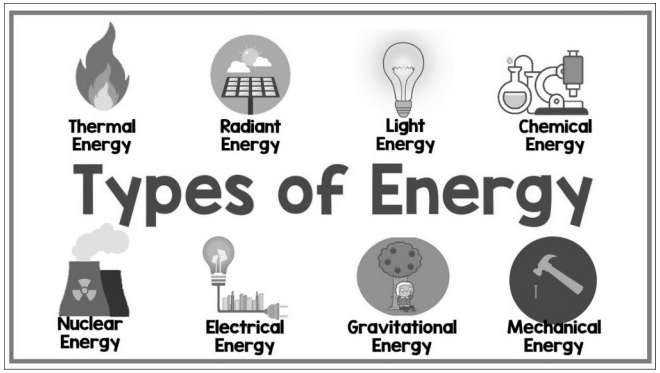

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Forms of Energy

Thermal Energy

Heat, the energy given off due to the interaction of different forms matter, which causes a change in speed (*i.e. temperature*)

Radiant + Light Energy

Energy flow through the movement of light in space, normally due to heat (*infrared radiation*), nuclear energy (*nuclear radiation*), of visible light (*light energy*)

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Forms of Energy

Chemical Energy

Energy given off due to the change of the physical connections/structure of matter.

Nuclear Energy

Energy given off due to the breakdown of atoms themselves, the smallest form of matter

Electrical Energy

Energy flow due to the movement of electrons, the smallest fundamental parts of an atom

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Forms of Energy

Gravitational Energy

Energy given off by the interaction of mass with the spin/rotation of the earth

Mechanical Energy

Energy flow due to the movement and interaction (*collisions*) of particles directly with each other

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