The total energy contained in an object is identified with its [mass](http://en.wikipedia.org/wiki/Mass), and energy cannot be created or destroyed. When [matter](http://en.wikipedia.org/wiki/Matter) (ordinary material particles) is changed into energy (such as energy of motion, or into radiation), the **mass** of the system does not change through the transformation process. However, there may be mechanistic limits as to how much of the matter in an object may be changed into other types of energy and thus into [work](http://en.wikipedia.org/wiki/Work_(thermodynamics)), on other systems. Energy, like mass, is a [scalar](http://en.wikipedia.org/wiki/Scalar_(physics)) physical quantity. In the [International System of Units](http://en.wikipedia.org/wiki/International_System_of_Units) (SI), energy is measured in [joules](http://en.wikipedia.org/wiki/Joule), but in many fields other units, such as [kilowatt-hours](http://en.wikipedia.org/wiki/Kilowatt-hour) and [kilocalories](http://en.wikipedia.org/wiki/Kilocalorie), are customary. All of these units translate to units of work, which is always defined in terms of forces and the distances that the forces act through.

