Key Terms

complex machine a machine that combines two or more simple machines

efficiency output work divided by input work

energy the ability to do work

gravitational potential energy energy acquired by doing work against gravity

ideal mechanical advantage the mechanical advantage of an idealized machine that loses no energy to friction

inclined plane a simple machine consisting of a slope

input work effort force multiplied by the distance over which it is applied

joule the metric unit for work and energy; equal to 1 newton meter (N m)

kinetic energy energy of motion

law of conservation of energy states that energy is neither created nor destroyed

lever a simple machine consisting of a rigid arm that pivots on a fulcrum

mechanical advantage the number of times the input force is multiplied

mechanical energy kinetic or potential energy

output work output force multiplied by the distance over which it acts

potential energy stored energy

power the rate at which work is done

pulley a simple machine consisting of a rope that passes over one or more grooved wheels

screw a simple machine consisting of a spiral inclined plane

simple machine a machine that makes work easier by changing the amount or direction of force required to move an object

watt the metric unit of power; equivalent to joules per second

wedge a simple machine consisting of two back-to-back inclined planes

wheel and axle a simple machine consisting of a rod fixed to the center of a wheel

work force multiplied by distance

work–energy theorem states that the net work done on a system equals the change in kinetic energy