

# AMUSEMENT PARK PHYSICS GLOSSARY

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**LONGITUDINAL WAVE:** A wave that vibrates or oscillates in the same direction that the wave pattern is moving (example: sound wave).

**MASS:** The amount of material a body contains. A quantitative measure of the inertia of a body.

**MEDIUM:** stuff that a wave travels through (i.e. air, water)

**MOMENTUM:** The product of mass times velocity.

**NEWTON'S LAWS OF MOTION:** Physical laws governing the motion of bodies (at speed much less than the speed of light) expressed in terms of force, mass, and acceleration.

**PERIOD:** The amount of time for one complete wave oscillation to pass a point in space.

**POTENTIAL ENERGY:** Energy of a body associated with its position.

**POWER:** Rate of work done per unit time.

**SIMPLE HARMONIC MOTION:** Repetitive vibration about an equilibrium position in which a restoring force is proportional to the displacement from equilibrium (example: pendulum, oscillating spring).

**SPEED:** The magnitude of velocity.

**TRANSVERSE WAVE:** A wave in which the vibration or oscillation is perpendicular to the direction that the wave pattern is moving (example: stadium wave football cheer).

**VELOCITY:** The magnitude and direction of the time rate of change of position.

**WAVELENGTH:** The distance between successive crests or troughs of a wave.

**WEIGHT:** A force proportional to the mass of a body. Measurement of the gravitational attraction of a body to the Earth.

**WEIGHTLESSNESS:** A condition under which a body feels no net force proportional to its mass.

**WORK:** Product of the magnitude of force on a body times the distance through which the force acts.

## Useful Conversion Factors

1 in = 2.54 cm	1 J = 2.78 x 10 <sup>-7</sup> kWhr = 9.5 x 10 <sup>-4</sup> BTU
1 km = 0.621 miles	1 W = 1J/s = 1.3 x 10 <sup>-3</sup> horsepower
1 liter = 0.264 gal	1 W = 1.3 x 10 <sup>-3</sup> horsepower
1 hr = 3600 sec	1 g = 9.8 m/s <sup>2</sup> = 32 ft/s <sup>2</sup>
1 fortnight = 1.728 x 10 <sup>6</sup> sec	1 N = 0.225 lbf
1 m/s = 3.6 km/hr = 2.24 mi/hr	1 atm = 1 x 10 <sup>5</sup> Pa = 14.7 lb/in <sup>2</sup>
1 Cal = 1 kcal = 1000 cal = 4186J	1 kg/liter H <sub>2</sub> O = 8.35 lb/gal H <sub>2</sub> O