

Glossary

A

absorption spectrum a diagram or graph that indicates the wavelengths of radiant energy that a substance absorbs (p. 764)

acceleration the rate at which velocity changes over time; an object accelerates if its speed, direction, or both change (p. 48)

accuracy a description of how close a measurement is to the correct or accepted value of the quantity measured (p. 16)

adiabatic process a thermodynamic process in which no energy is transferred to or from the system as heat (p. 341)

alternating current an electric current that changes direction at regular intervals (p. 718)

amplitude the maximum displacement from equilibrium (p. 376)

angle of incidence the angle between a ray that strikes a surface and the line perpendicular to that surface at the point of contact (p. 452)

angle of reflection the angle formed by the line perpendicular to a surface and the direction in which a reflected ray moves (p. 452)

angular acceleration the time rate of change of angular velocity, usually expressed in radians per second per second (p. 900)

angular displacement the angle through which a point, line, or body is rotated in a specified direction and about a specified axis (p. 899)

angular momentum for a rotating object, the product of the object's moment of inertia and angular velocity about the same axis (p. 907)

angular velocity the rate at which a body rotates about an axis, usually expressed in radians per second (p. 900)

antinode a point in a standing wave, halfway between two nodes, at which the largest displacement occurs (p. 393)

average velocity the total displacement divided by the time interval during which the displacement occurred (p. 43)

B

back emf the emf induced in a motor's coil that tends to reduce the current in the coil of the motor (p. 720)

beat the periodic variation in the amplitude of a wave that is the superposition of two waves of slightly different frequencies (p. 430)

binding energy the energy released when unbound nucleons come together to form a stable nucleus, which is equivalent to the energy required to break the nucleus into individual nucleons (p. 794)

blackbody radiation the radiation emitted by a blackbody, which is a perfect radiator and absorber and emits radiation based only on its temperature (p. 752)

buoyant force the upward force exerted by a liquid on an object immersed in or floating on the liquid (p. 275)

C

calorimetry an experimental procedure used to measure the energy transferred from one substance to another as heat (p. 314)

capacitance the ability of a conductor to store energy in the form of electrically separated charges (p. 602)

center of mass the point in a body at which all the mass of the body can be considered to be concentrated when analyzing translational motion (p. 904)

centripetal acceleration the acceleration directed toward the center of a circular path (p. 235)

chromatic aberration the focusing of different colors of light at different distances behind a lens (p. 511)

coefficient of friction the ratio of the magnitude of the force of friction between two objects in contact to the magnitude of the normal force with which the objects press against each other (p. 138)

coherence the correlation between the phases of two or more waves (p. 527)

components of a vector the projections of a vector along the axes of a coordinate system (p. 90)

compression the region of a longitudinal wave in which the density and pressure are at a maximum (p. 408)

Compton shift an increase in the wavelength of the photon scattered by an electron relative to the wavelength of the incident photon (p. 760)

concave spherical mirror a mirror whose reflecting surface is an inward-curved segment of a sphere (p. 455)

constructive interference a superposition of two or more waves in which individual displacements on the same side of the equilibrium position are added together to form the resultant wave (p. 390)