

Unit: 5. MOTION AND FORCES

VOCABULARY

acceleration	the rate at which an object changes its velocity
acceleration due to gravity (g)	the acceleration experienced by masses in a gravitational field, the value of which varies with the strength of that field
centripetal acceleration	an acceleration which is directed towards the center of a curved path which causes an object to follow the curved path
centripetal force	force required to make an object move in a circular path
coefficient of friction	the ratio of the force necessary to move an object (or keep it moving) and the normal force
derived unit	unit of measurement obtained by combining metric units
diagonal	a straight line from corner to corner in a parallelogram
directly proportional	a description applied to the relationship between variables: when one variable increases, the other also increases
displacement	the straight-line distance between two points; a measurement of the net change in position
distance	the length along a path between two points
drag	friction between a solid and a liquid or gas
friction	a force that resists motion
force	an effect that changes the motion (velocity or direction) of an object with mass
gravity	the force that objects exert on each other because of their mass
inertia	the property of matter that resists change in velocity
inversely proportional	a description applied to the relationship between variables: when one variable increases, the other decreases

law of conservation of momentum	the principle which states that the total momentum of a system is constant
line of best fit	a line that best represents the trend of the data
momentum	the mass of an object multiplied by its velocity
newton	the unit of force in the metric system
normal force	the force that presses two surfaces together and is directed perpendicular to the contact surface; on a level surface its magnitude is equal to the force of the object's weight but in the opposite direction
Pythagorean theorem	In any right triangle, the square of the hypotenuse is equal to the sum of the squares of the sides.
relative motion	the continuous change of position of a body with respect to a second body or reference point
resultant	the net magnitude and direction of two or more combined vectors
rolling friction	force that opposes a rolling object
scalar	a quantity that has magnitude only
sliding or kinetic friction	force that opposes a sliding object
slope	the change in the y variable compared to the change in the x variable between two points on a graph
speed	measure of the rate at which an object changes position
starting or static friction	force that opposes the start of motion
variable	a quantity that changes during an experiment
vector	a measurement that has both magnitude (a numerical value) and direction
velocity	rate and direction at which an object moves

weight

a force that develops when a mass is accelerated by gravity; stated
as $F_w = mg$