
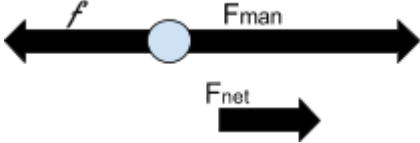



Forces Words to Know

Word	Definition	Example
force	A push or pull that involves an interaction between two objects and causes a change in an object's motion	A foot kicking a soccer ball
vector	An arrow that represents the direction and strength of a force (push/pull)	
net force	The sum of all of the forces of acting on an object	
net zero	A net force of zero that could result from adding together all of the forces acting on an object	
gravity/weight	A noncontact force, represented by the symbol g or w , that pulls an object toward the center of Earth	The force that pulls you down to the ground when you jump out of a plane
normal force	When one object is resting on another object, the object underneath exerts an upward force (perpendicular to the surface) that keeps the two objects separated from each other. If an object is resting on a surface, the normal force is opposite of weight (gravity). The normal force is as strong as it has to be to keep an object from falling through the surface.	A pencil doesn't fall through the desk it's resting on because of normal force.
acceleration	As change in motion represented by the symbol a Acceleration occurs in the <i>same</i> direction as the net force.	The force that pulls you down to the ground when you jump out of a plane
mass	The amount of stuff that makes up an object	Everything that exists takes up space and therefore has mass.
motion	The act of moving	A ball rolling down a hill
speed	The amount of distance that an object travels over time without regard to direction. Speed is represented only with a number; direction doesn't matter.	A car travels 25 miles per hour (mph).

Word	Definition	Example
frictional force	A force caused when the small bumps on the surface of an object make contact with bumps on the surfaces of other objects. The interaction between two surfaces creates a <i>pushing force</i> in the <i>opposite</i> direction of an object's motion. This force is called <i>friction</i> .	A toy car slows down and eventually stops over carpet because of friction.
rolling friction	A frictional force that resists motion when an object rolls over another object or surface	A toy car rolling down a ramp
sliding friction	A frictional force that acts in the opposite direction of motion when one object with a flat surface slides across another flat surface	Pushing a file cabinet across the floor
static friction	A frictional force that opposes the <i>intended</i> direction of motion, such as the sliding of an object when it isn't moving yet	A baby trying to push a box full of books
fluid friction (draft force)	A motion-resisting force that occurs when the molecules of a fluid interact with each other, or when a fluid interacts with other matter. Fluid friction is the resistance you feel when you move through a fluid like water or air.	A fish swimming through water
velocity	The speed of an object in a particular direction	Car A travels to the right at 25 mph. Car B travels to the left at 50 mph. Car C travels to the right at 50 mph.
contact force	A force exerted when two objects are physically touching	A hand pushes a cart. A child pulls a rope.
noncontact force	A force exerted from a distance that doesn't require two objects to touch	Gravity (weight) Magnetic forces Electrical (static) forces