

MACHINES AND MOTION GLOSSARY



Westminster College

GLOSSARY

FIXED PULLEY	A pulley that does not change its location. (e.g., nailed to the side of a barn) It changes the direction of the force but does not reduce the amount of force needed. Because of friction, often more force is needed than lifting the same object without the pulley. However, it is easier to pull down (gravity helps you) than lift something, as in lifting hay to the second story of a barn. Thus the work seems easier with gravity helping.
FRICTION	The slowing of motion between two objects. Friction causes the energy of motion to change to heat energy.
GRAVITY	A force between all objects. Large objects, like the Sun, Earth, and Moon, have enough force to pull objects toward them.
INERTIA	The tendency of an object to keep doing what it already is doing unless a force changes it. Heavier objects take more force to get them moving or stop them, and therefore have more inertia than lighter objects.
LUBRICANT	Any substance that reduces friction. (oil, wax, graphite)
MASS	The amount of matter in an object. In space, objects have mass but no weight since there is no gravity. On the moon, the object's mass is the same but it weighs less as there is less gravity.
MOVEABLE PULLEY	This pulley moves up or down with the rope. It lets you do the same amount of work over a greater distance, thus reducing the amount of force needed. The greater the distance the rope is pulled, the less force is necessary to lift the weight.
NEWTON'S FIRST LAW OF MOTION	Objects at rest tend to stay at rest and moving objects continue moving unless a force is exerted on them.
PITCH	Faster vibrations produce a high sound (pitch) and slower vibrations produce a lower sound.
SIMPLE MACHINES	There are 6 simple machines that help us do work by reducing the force needed or changing the direction of the force. (lever, inclined plane, screw, wheel and axle, pulley, wedge)
WEIGHT	The pull of gravity on an object. Weight can be measured on a scale. The more mass an object has, the more weight it has on Earth.
WORK = FORCE TIMES DISTANCE	The further the distance you are from where the work is done, the less force you need. (Compare holding the hammer at the end of the handle to close to the head where the work is done. The longer the handle, the less force necessary to do the same work.)