

Contact & Non-Contact Forces

Reading for Information

A force is a push or pull that is applied to an object. Sometimes it is very obvious when a force is being applied: if the force is big enough, it will cause a change in the object's motion. This can mean that the object starts to move, speed up, slow down or change direction. Sometimes the forces that are being applied are harder to see: when you push on a wall the wall usually doesn't move, but a force is still being applied!

Contact forces: must touch an object before they can make something happen. Some examples of contact forces are when an object is physically being pushed or pulled and contact is made on that object. You can see many examples of contact forces – a child pushing on their bike pedals, a bat striking a ball, a snowplow pushing a pile of snow – all those are contact forces. Some contact forces may not be quite as easy to observe. One example would be air resistance. Whenever an object is falling toward the earth, there is air resistance which keeps it from falling faster and faster. A skydiver that jumps out of an airplane uses this concept when he opens his parachute. His parachute increases his air resistance and that helps slow his fall to the ground. Another contact force that might not be readily observable is friction. Friction occurs whenever two surfaces slide across each other. Smooth surfaces slide more easily and have less friction while rough surfaces generally have more friction when they slide across each other.

Non-Contact forces: are a push or pull that occur without any physical contact happening. Gravity is a non-contact force that acts on all objects – pulling them toward the earth. Any object you drop will eventually fall to the earth. The magnetic force is also a non-contact force. The magnetic force can be a push or a pull - depending on whether you bring the same poles or opposite poles of a magnet near each other. Also, the electrical force is considered a non-contact force. Electricity is caused by the movement of electrons through a wire. These electrons stream through an electrical circuit, but do not come in contact with each other as they travel.



