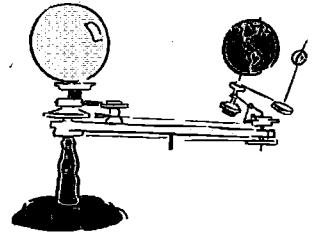


Force and Motion: Facts

Motion makes the world go 'round. Motion makes the moon go 'round too. In fact, motion makes lots of things go. When we think of motion we often think of cars, bicycles, kids running, basketballs bouncing and airplanes flying. But motion is so much more. Motion is important to our lives and impacts so many things that we do. Motion is the changing of position or location. But motion requires a force to cause that change. Let's learn about force and motion and the effects of these physical laws in our world.



What is Force?



Force is just a fancy word for pushing or pulling. If I push on something or pull on it, then I am applying a force to it. Force makes things move or, more accurately, makes things change their motion. Two natural forces that we have experienced are the force of gravity and magnetic forces.

These two forces act at a distance and do not require direct contact between the objects to function. Gravity produces a force that pulls objects towards each other, like a person towards the ground. It is the force that keeps the Earth revolving around the sun and it's what pulls you toward the ground when you trip.

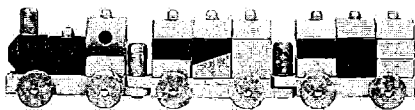
Magnetism produces a force that can either pull opposite ends of two magnets together or push the matching ends apart. A magnet also attracts objects made of metal.



What is Inertia?

Inertia is actually not a force at all, but rather a property that all things have due to the fact that they have mass. The more mass something has the more inertia it has. You can think of inertia as a property that makes it hard to push something around.

What is Friction?



Friction is a force that happens when objects rub against one another. Say you were pushing a toy train across the floor. It doesn't take much effort or force, because the toy is light. Now say you try to push a real train. You probably can't do it because the force of friction between the train and the ground is more intense. The heavier the object, the stronger the force of friction.

Speed

Measures how fast an object is moving in a given amount of time



Velocity

Velocity is the speed of an object in one direction. If an object turns a corner, it changes its velocity because it is no longer moving in its original direction.