

Video 1: Newton's Three Laws of Motion by Bozeman Science

Newton's first law is sometimes referred to as the law of inertia. Every body remains in a state of _____ or uniform _____ unless acted on by an external _____ force.

If there was a magical place with no gravity, or friction, or air resistance, then an apple at rest will stay at _____ unless acted on by an external, unbalanced force. If the apple is pushed, it will remain in _____ forever, unless acted on by an external force.

If you are at rest, you will remain at _____ and if you are in motion, you will remain in _____ unless you get acted on by an _____ force.

Newton's second law states that the _____ of an object is directly proportional to the _____ acting on it and inversely proportional to its _____.

Equation: _____ = _____ x _____

If a weight is larger, and the same force is applied, it won't accelerate as quickly because if I have a _____ mass and I apply the same force to it, I'm going to get a _____ amount of acceleration.

If I keep the mass the same, and I apply a _____ force to it, I'm going to get a much _____ acceleration.

Newton's third law: for every _____, there is an equal and opposite _____.

If I were to push against a wall, not only am I pushing _____ a wall, but the wall is pushing _____ at me.

Try pushing against a wall when you're sitting on a skateboard and you'll find that when you push in that direction, the wall is going to push you _____ in the _____ direction.

Video 2: Newton's Three Laws With a Bicycle by TED-Ed

Things tend to keep on doing what they are already doing. So when your bicycle is stopped it stays _____, and when it is going it stays _____.

Objects in motion tend to stay in _____ and objects at rest tend to stay at _____.

Newton's First Law is also known as the law of _____, which is a fancy way of saying that moving objects don't spontaneously speed _____, slow _____, or change _____.

Newton's Second Law says that _____ is the product of _____ times _____.

To cause an object to accelerate, or speed up, a force must be applied. The _____ force you apply, the _____ you accelerate. And the more _____ your bicycle has, and the more mass you have, too, the more _____ you have to use to accelerate at the same rate. The _____ you push down on the pedals, the _____ the force, and the _____ you accelerate.

Newton's Third Law: for every _____, there is an equal and opposite _____.

When you drop a bouncy ball and it hits the floor, it causes a _____ force on the floor. This is the _____. The floor _____ by pushing on the ball with the same force, but in the opposite direction, _____, causing it to bounce back up to you.

Since you have two bicycle tires, each one forms an _____/_____ pair with the ground. And since the Earth is really, really, really big compared to your bicycle, it barely moves from the force caused by your bicycle tires pushing _____, but you are propelled _____.