

Name _____



NEWTON'S LAWS OF MOTION



Newton's First Law of Motion

Newton's First Law of Motion, also known as the law of inertia, is a fundamental concept in physics. It tells us that an object at rest will remain at rest, and an object in motion will keep moving in the same direction at the same speed unless an outside force acts upon it. In simpler terms, objects like to stay the way they are—whether they are moving or not—unless something pushes or pulls them.

Example: Imagine you have a toy car on a smooth, flat surface. If you give it a gentle push, the car will roll forward, but eventually, it will slow down and stop. This happens because of Newton's First Law. The car's initial motion wanted to keep going, but friction with the surface and air resistance gradually slowed it down.

Real-world application: Think about riding your bicycle. When you stop pedaling, the bike eventually comes to a halt. That's because the bike, just like the toy car, has inertia. To keep moving, you have to keep pedaling to overcome the forces trying to slow you down.

Questions

1. What does Newton's First Law of Motion state?
2. Give an example of an object at rest following this law.
3. Explain why a car slows down when you take your foot off the gas pedal.
4. How is Newton's First Law related to riding a bicycle?
5. Why is friction important in understanding this law?