

4 Lecture - PHY101

Important Subjective

What is force in physics?

Answer: Force is any influence that can cause an object to undergo a change in motion. It can be a push, a pull, or any other effect that produces acceleration.

What are the units of force?

Answer: The units of force are newtons (N).

What is Newton's first law of motion?

Answer: Newton's first law of motion, also known as the law of inertia, states that an object at rest will remain at rest, and an object in motion will continue to move at a constant velocity, in a straight line, unless acted upon by an external force.

What is Newton's second law of motion?

Answer: Newton's second law of motion states that the acceleration of an object is directly proportional to the net force acting on the object and inversely proportional to its mass. Mathematically, it can be expressed as $F = ma$, where F is the net force, m is the mass of the object, and a is the acceleration of the object.

What is the relationship between force and acceleration?

Answer: The greater the force applied to an object, the greater its acceleration will be, and the greater the mass of the object, the smaller its acceleration will be.

What is the SI unit of mass?

Answer: The SI unit of mass is kilogram (kg).

What is Newton's third law of motion?

Answer: Newton's third law of motion states that for every action, there is an equal and opposite reaction.

How can Newton's third law of motion be applied in everyday life?

Answer: Newton's third law of motion can be seen in everyday life, such as when we walk on the ground. When we push our foot down on the ground, the ground pushes back on our foot with an equal and opposite force, allowing us to walk forward.

What is the difference between weight and mass?

Answer: Weight is the force exerted on an object due to gravity, while mass is a measure of the amount of matter in an object.

How do Newton's laws of motion help in the design of vehicles?

Answer: Newton's laws of motion are important in the design of vehicles, as they help engineers understand the forces acting on the vehicle and how it will respond to those forces. This allows for the design of safer and more efficient vehicles.