Name _____

Newton's Second Law Unveiled

Short Answer Key

1. Newton's second law describes that the acceleration of an object is directly proportional to the net force acting on it and inversely proportional to its mass, as expressed by the equation F = ma.
2. A scenario could involve pushing a skateboard with a certain force, causing it to accelerate in a specific direction.
3. Friction opposes motion by acting in the opposite direction of an object's motion. It can decrease an object's acceleration by applying a force that counteracts the applied force.
4. Engineers apply Newton's second law when designing cars to ensure that they accelerate efficiently, handle well, and provide safety features for passengers.
5. Newton's second law helps explain why planets in our solar system stay in their orbits around the Sun. The gravitational force from the Sun provides the necessary centripetal force to maintain their elliptical paths.