Name _____

Forces in Motion

Forces can change the motion of an object. When a net force acts on an object, it can make the object speed up, slow down, or change direction. This relates to Newton's Second Law, which tells us that the acceleration of an object depends on the net force applied to it.

Example: Picture a rocket blasting off into space. The rocket engines produce a powerful force that propels the rocket upward. As the rocket's fuel burns, it becomes lighter, and this affects the net force acting on it, causing it to accelerate.

Real-world application: When you push a skateboard, you apply a force that causes it to speed up. If you want it to slow down or stop, you apply an opposite force by dragging your foot on the ground, which is an example of Newton's laws in action.

Questions

1. How do forces change the motion of an object?

2. What determines the acceleration of an object according to Newton's Second Law?

3. Describe the motion of a rocket as an example.

4. How can you make a skateboard speed up or slow down using forces?

5. Explain how forces are involved in stopping a moving bicycle.