

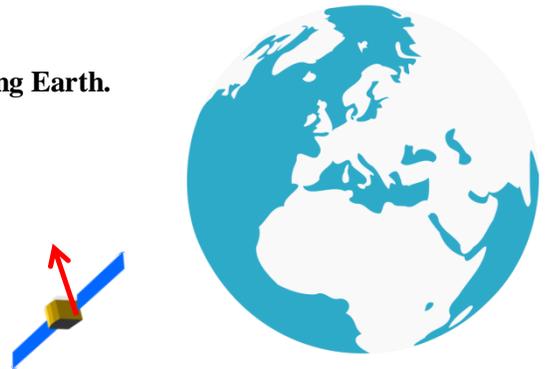
Newton's First and Second Laws Homework

Concepts: Forces Acting on Masses and Newton's First and Second Laws

1. Write a paragraph of at least 25 words using Newton's first law to help you explain why a seatbelt can help save your life if you get into a car accident.

2. Draw an arrow (vector) to show the direction of the velocity of the object in motion in the following images. The first example has been done for you.

Example:
A satellite orbiting Earth.



A biker going down a mountain.



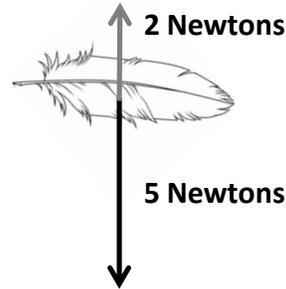
A soccer player kicking a soccer ball.



Name: _____ Date: _____ Class: _____

3. A boy lets go of a feather. The feather is acted upon directly downward by the force of gravity with 5 Newtons and by the force of air resistance in the opposite direction (upwards) with 2 Newtons. The net force on the feather is ____.

- A. 3 Newtons upward
- B. 8 Newtons downward
- C. 3 Newtons downward
- D. 8 Newtons upward



4. A satellite in deep space is on a mission to Neptune. It fires its engines to change its velocity toward Neptune at a speed of 200 kilometers per hour. Suddenly, the engines stop working. After a few minutes, what is the velocity of the satellite?

- A. 100 kilometers per hour, towards Neptune
- B. 200 kilometers per hour, towards Earth
- C. 100 kilometers per hour, towards Earth
- D. 200 kilometers per hour, towards Neptune