

Name _____

How Forces Shape Our World

Short Answer Key

1. A sprinter applies force to the ground with each step, propelling themselves forward. The stronger the force applied, the faster they can run.
2. During takeoff, the engines generate forward thrust force to propel the airplane down the runway. In flight, forces of lift and gravity interact to keep the airplane airborne and control its altitude.
3. Engineers use the forces of tension and compression to design bridges. Tension forces pull the materials apart, while compression forces push them together. By carefully considering these forces, engineers create bridges that can support heavy loads.
4. An example is a prosthetic limb that uses forces to mimic the movements of a natural limb. This device helps individuals with amputations regain mobility and improve their quality of life.
5. Ships use propulsion systems, such as propellers, to apply a backward force to the water. According to Newton's third law of motion, the water exerts an equal and opposite force on the ship, pushing it forward. This forward force propels the ship through the water.

