

Answer Key

READING STUDY GUIDE B

1. Definition—a force that resists the motion between two surfaces in contact; Characteristics—makes some tasks more difficult, most activities would be impossible without it; Examples—force that makes a heavy box hard to push; Nonexamples—gravity
2. The materials the surfaces are made of affect the friction between the surfaces. When the surfaces are in motion, the frictional force stays the same. The more the surfaces are pushed together, the greater the friction between the surfaces.
3. The sidewalk would create more friction than the snow, because there is more friction between the sled's runners and a concrete than runners and snow.
4. More friction between the heavy object and the floor.
5. No, it will not take more force. Friction does not depend on the area of contact between two surfaces. The only difference between the two positions is area of contact. The weight remains the same.
6. When two surfaces are rubbed together, the individual molecules in their surfaces are agitated. As the molecules move faster, the temperature of the object increases. Some examples include the heat produced by rubbing hands together and the heat produced by a gasoline engine.
7. Fluid: Definition—a substance that can flow easily; Characteristics—doesn't maintain a fixed shape; Examples—gasses, liquids, air, water; Nonexamples—solids. Air Resistance: Definition—friction due to air; Characteristics—depends on surface area and the speed of an object; Examples—resistance to a skydiver; Nonexamples—friction between a box and the ground
8. Terminal velocity is the maximum falling speed of an object. It is reached when the air resistance equals gravity.