



Section 3 ■ The Third Law of Motion

Directions: Choose the term from the list below that is best described by each statement. Write the term to the left of each statement.

conservation of momentum	reaction
Newton's third law of motion	momentum
velocity	mass action

- _____ 1. When one object exerts a force on a second object, the second object exerts a force that is equal in size and opposite in direction.
- _____ 2. The backward “kick” of a rifle that is fired is an example of a(n) _____ force.
- _____ 3. The total amount of momentum of a group of objects does not change unless outside forces act on the objects.
- _____ 4. Air rushing out of the neck of a balloon causes the balloon to move. The air that comes from the balloon is an example of a(n) _____ force.
- _____ 5. In the equation $p = m \times v$, p represents _____.
- _____ 6. Momentum has direction because _____ has direction.
- _____ 7. Momentum is a property a moving object has because of its _____ and velocity.

Directions: Think for a minute about Newton's third law of motion. Can you remember any event when you experienced this law? If so, draw a diagram below to show the action-reaction forces. If you can't remember an event that you experienced, try to think up one and draw it below.

8.



Directed Reading for
Content Mastery

Key Terms Forces

Directions: Determine whether the italicized term makes each statement true or false. If the statement is true, write the word **true** in the blank. If the statement is false, write in the blank the term that makes the statement true.

- _____ 1. Objects fall toward Earth at a rate of 9.8 m/s^2 because of *centripetal force*.
- _____ 2. $F = ma$ represents Newton's *second* law of motion.
- _____ 3. Acceleration toward the center of a curved or circular path is called *gravitational* acceleration.
- _____ 4. In $p = mv$, p represents *position*.
- _____ 5. The force of gravity acting upon an object is the object's *mass*.
- _____ 6. *Friction* is the force that opposes motion between surfaces that touch each other.
- _____ 7. To every action force there is an equal and opposite reaction force is *the law of conservation of momentum*.
- _____ 8. According to *the law of conservation of momentum*, momentum lost equals momentum gained.
- _____ 9. The force keeping a ball on a string moving in a circle is *rolling friction*.
- _____ 10. Anything that is thrown or shot through the air is *weightless*.
- _____ 11. Microwelds are the source of *momentum* between two surfaces pressed together.
- _____ 12. Air resistance acts in the *opposite* direction to that of an object in motion.
- _____ 13. Terminal velocity is the *highest* velocity that a falling object will reach.