

## Free Body Diagrams

The Free Body Diagrams Interactive consists of 12 verbal descriptions for which free-body diagrams must be correctly drawn. The 12 descriptions are shown below.

Verbal Description
1. A rightward force is applied to a crate to push it across the floor at a constant speed. Ignore air resistance.
2. A rightward force is applied to a dresser to accelerate it to the right across the bedroom floor. Ignore air resistance.
3. A rightward-moving car is skidding to a stop across a level roadway with locked wheels. Ignore air resistance.
4. A football is moving upward and rightward towards the peak of its trajectory. Ignore air resistance.
5. The cabin of a small freight elevator is secured to a motor by a cable and is moving upward with a constant speed. There is no contact between the cabin and the elevator shaft. Ignore air resistance.
6. A downward-moving skydiver is falling with a constant speed.
7. A hockey puck glides to the right across the ice at a constant speed. Ignore air resistance.
8. A sledder has reached the bottom of a hill and is coasting to the right while slowing down along the loosely-packed snow. Ignore air resistance.
9. A football, originally kicked at an 40-degree angle to the horizontal, is at the peak of its trajectory. Ignore air resistance.
10. A downward-moving skydiver who has just opened the parachute is slowing down. (Diagram the forces on the skydiver/parachute combination.)
11. The cabin of a small freight elevator is secured to a motor by a cable and is moving upward while slowing down. There is no contact between the cabin and the elevator shaft. Ignore air resistance.
12. A softball player does a head-first dive and is sliding to the right across the infield dirt. Ignore air resistance.