Action and Reaction Forces Versus Balanced Forces

Because action and reaction forces are equal and opposite, they may be confused with balanced forces. Keep in mind that balanced forces act on a single object, while action and reaction forces act on different objects.

Balanced Forces If you and a friend pull on opposite sides of a backpack with the same amount of force, the backpack doesn’t move, because the forces acting on it are balanced. In this case, both forces are exerted on one object—the backpack.

Action and Reaction As you drag a heavy backpack across a floor, you can feel the backpack pulling on you with an equal amount of force. The action force and the reaction force are acting on two different things—one is acting on the backpack, and the other is acting on you.

The illustration below summarizes Newton’s third law. The girl exerts an action force on the boy by pushing him. Even though the boy is not trying to push the girl, an equal and opposite reaction force acts upon the girl, causing her to move as well.