

**11** Skaters of masses 80 kg and 40 kg move directly towards each other and collide.

Before the collision, the heavier skater is moving to the right at a speed of  $2.0 \text{ m s}^{-1}$  and the lighter skater is moving to the left at a speed of  $1.0 \text{ m s}^{-1}$ .

After the collision, the heavier skater moves to the right at a speed of  $0.80 \text{ m s}^{-1}$ .

What is the relative speed of separation of the two skaters?

**A**  $0.6 \text{ m s}^{-1}$

**B**  $1.4 \text{ m s}^{-1}$

**C**  $2.2 \text{ m s}^{-1}$

**D**  $2.6 \text{ m s}^{-1}$