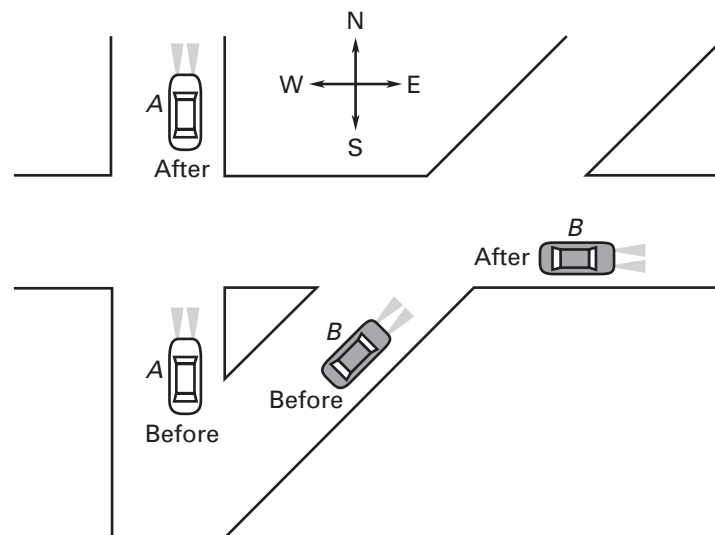


Application Lesson Opener

For use with pages 573–580

Set up: You will need: • ruler

Car A approaches an intersection at a speed of 15 miles per hour, crosses the intersection, and then, after the intersection, accelerates to a speed of 30 miles per hour. Car B approaches a different intersection at a speed of 5 miles per hour, makes a turn, and then accelerates to a speed of 25 miles per hour. In the diagram below, each car is shown before and after the intersection.



1. The velocity of a moving car can be represented by a vector, which describes both the speed and the direction of the moving car. Give the speed and direction of Car A *before* it reaches the intersection and *after* it has crossed the intersection and accelerated. Do the same for Car B. (Use north, south, east, and west for directions.)
2. The vectors at the right represent the velocity of each car *before* reaching the intersection. How do the speeds of Car A and Car B compare during that part of their trips? How is that shown by the two vectors?
3. Use a ruler to draw vectors that represent the velocity of each car *after* it has crossed the intersection and accelerated.

