

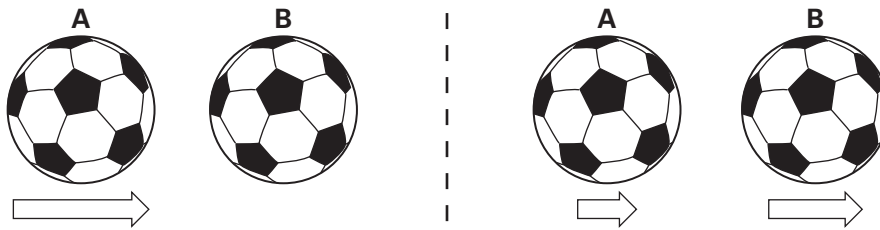
## SECTION

FORCES TRANSFER MOMENTUM.

**2.4** Challenge and Extension**BIG IDEA** Forces change the motion of objects in predictable ways.**KEY CONCEPT** Forces transfer momentum.

**Momentum in Collisions** Momentum is equal to the mass of an object times its velocity. When two objects collide, momentum is conserved. The objects transfer momentum from one to another, but the total momentum of the system is conserved.

The drawing shows a collision between two soccer balls. The table summarizes the mass and velocity of each ball before and after the collision.



	Before Collision		After Collision	
	Ball A	Ball B	Ball A	Ball B
<b>Mass</b>	0.43 kg	0.43 kg	0.43 kg	0.43 kg
<b>Velocity</b>	0.78 m/s	0 m/s	0.12 m/s	
<b>Momentum</b>				

- Which ball, either before or after the collision, is not moving? How do you know?  
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- Which values in the table should be the same to show that the momentum of the two balls is conserved?  
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- Fill in the five missing values in the table.
- In the soccer ball example, we ignore an outside force that is acting on the balls. What force is that? How does it affect the parts of this system?  
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