

Chapter 6

Forces and Motion



Section 3

Momentum

Essential Questions for 6-3

- How is the momentum of a moving object calculated?
- How would you explain the law of conservation of momentum?

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"Be patient, a few more strokes and I'll soon have the momentum going."

Momentum

- Dependent on the objects mass and velocity
- More momentum = harder to stop or change direction of the object
- Momentum (p) = mass in kilograms times velocity in m/s.

$$p = m \times v$$

- Momentum must have a direction, like velocity

Law of Conservation of Momentum

- When objects collide, the total amount of momentum stays the same
- Momentum before collision always = momentum after collision
 - This is called a transfer of momentum
 - Sometimes it is split between the objects
 - Sometimes one object stops and transfers all momentum to the object that was struck