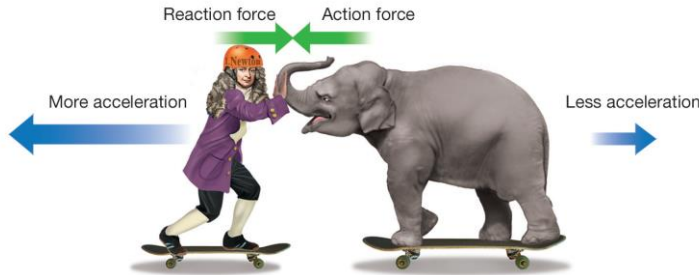


PFC2 Chapter 4 Section 1 Guided Reading

1. What is Newton's third law?
2. In the illustration below, the elephant and Sir Isaac Newton are standing on skateboards. Their feet are not touching the ground. If the elephant pushes on Newton, who will accelerate fastest? Explain your answer using Newton's third law.



3. A simple way to state Newton's first law is:
For every action force, there is a _____ equal in
_____ and opposite in _____.
4. Forces always come in _____.
5. Your foot kicks a soccer ball. Name a pair of action-reaction forces.
6. Why don't the action and reaction forces in your answer to question 5 cancel each other out?
7. Copy the five guidelines for finding actions and reaction forces. The guidelines are found in the bullet points on page 78.
8. Do the Your Turn problems on page 78. Check your solutions against the answers provided at the end of the chapter.
9. Write the equation for momentum. Label each variable in the equation as shown on page 79.

10. Like inertia, momentum measures a moving object's _____ to changes in its motion. However, momentum includes the effects of _____ and _____ as well as mass.
11. A change in an object's momentum depends on the _____ and also on the _____ the force is applied.
12. Write the equation for impulse. Label each variable in the equation as shown on page 80.
13. Write the definition of impulse in words from the vocabulary box on page 80.
14. Do the Your Turn problems on page 80. Show your work. Check your solutions against the answers provided at the end of the chapter.
15. The law of conservation of momentum states that if interacting objects in a system are not acted on by outside forces, the total amount of momentum in the system _____.
16. Do the Your Turn problems on page 82. Show your work. Check your solutions against the answers provided at the end of the chapter.