Worksheet: Newton's 3rd Law & Momentum Period_____ Date_____

(Frameworks Code)

Part A: Answer the following questions in the spaces provided:

1. How does the diagram illustrate Newton's 3rd law of motion? In your answer, compare the force of the foot kicking the soccer ball with the force of the soccer ball on the foot. Draw arrows to represent the **size** and **direction** of the action force and reaction force. _____

_____

_____

2. If a force that propels a cannonball forward is 500 N, how much force will move the cannon backwards? Explain. _____
3. What is momentum? _____
4. How do you calculate momentum? _____
5. Explain the law of conservation of momentum. _____

_____

6. What does it mean to say that momentum is *conserved*? _____

_____

7. Could an elephant have the same momentum as a golf ball? Explain. _____

_____

Part B: Solve the following momentum problems in the space provided. Show all your work and include labels.

8. What is the momentum of a 20 kg dog running at a speed of 8 m/s?

9. What is the momentum of a 2-kg toy truck that moves at 10 m/s?

10. What is the momentum of a 2000-kg truck that moves at 10 m/s?

11. Which of the 2 trucks in questions 9 & 10 has more momentum? Why? _____

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