

Name: _____ Date: _____ Period: _____

MOMENTUM WORKSHEET ANSWER SHEET

1. What is Momentum? What is meant by Conservation of Momentum?

Momentum is the quantity of motion. The equation for Momentum is Mass x Velocity. Conservation of Momentum means that momentum is conserved when two objects interact if an outside force does not interfere. An example of an outside force is Friction.

2. What is the Momentum of a parked car?

A parked car does not have momentum. Momentum is a vector quantity...it has magnitude and direction. A parked car does not have motion/velocity, therefore, does not have Momentum.

3. The total momentum of two marbles before a collision is **.06 kg x m/s**. No outside forces act on the marbles. What is the **total momentum** of the marbles after the collision? Explain.

**The total momentum stays the same. .06 kg x m/s
(Law of Conservation of Momentum)**

4. What is the **Momentum** of a **920 kg** car moving at a speed of **25 m/s**?

Equation: **Momentum = Mass x Velocity**

Work: **920 kg x 25 m/s**

Answer: **23,000 kg x m/s**

5. Which has more Momentum: A **250 kg** dolphin swimming at **4 m/s** or a **350 kg** manatee swimming at **2 m/s**.

Equation: **Momentum = Mass x Velocity**

Work: **250 kg x 4 m/s = 960 kg x m/s**

350 kg x 2 m/s = 700 kg x m/s

Answer: **Dolphin**

6. A squirrel was gathering apples in a pile. When he came back to add to the pile, a seagull was eating some apples. So he threw a **5g** apple **4.6 m** in **.5** seconds at the seagull and it hit the seagull in the nose causing feathers to fly everywhere.

- a. What was the **velocity** of the apple?

Equation: **Velocity = Distance/ Time**

Work: **4.6 m / .5 seconds**

Answer: **9.20 m/s**