

Momentum

- **** REVIEW ****

1. Newton's First Law is *The Law of Inertia*:

An object at _____ tends to stay at _____ ,
and an object in _____ tends to stay in _____ .

2. Newton's 2nd Law of Motion: **$F = m a$**

3. Newton's 3rd Law of Motion ...

"For every _____ there is always an _____ and _____."

- **Momentum**

- a. **Momentum = mass x velocity**

- b. **In other words, do not collide with either a heavy (mass) or a fast (velocity) object!**

- **Collisions**

- c. **Elastic vs. Inelastic**

- i. _____ => bounces ... **WHAT IF A BASEBALLS WERE BIG GOLF BALLS?**

- ii. _____ => does not bounce ... **WHAT IF A BASEBALL WAS MADE OF DOUGH?**

- **Demonstrations**

- d. Gyroscope: small, large (bicycle wheel: standing, hanging, on rotating chair)

- e. Collisions: balls, bodies, hammer & nail

- f. Huge medicine ball

- g. Egg thrown against sheet

- h. Run: try right angle, on a wall

- i. Corn starch