**8th Grade Science Homework Menu Week #16**

Directions: You are to perform the following tasks on SEPARATE SHEETS OF PAPER and submit on Friday, February 13th. Each task is worth a specific amount of points. You NEED TO COMPLETE 20 POINTS worth of Homework to receive full credit.

**1. Define the following terms: (5 Points)**

a. inertia

 b. momentum

 c. claim

 d. evidence

 e. reasoning

 f. Newton’s 1st Law of Motion

 g. Newton’s 3rd Law of Motion

2. **Momentum Problems (5 Points)**

*Complete these momentum practice problems on a separate sheet of paper:*

 1. A ping-pong ball has 2 kgm/s of momentum when thrown 8 m/s. Find the mass of the ball.

2.A 25 kg cart has 125 kgm/s of momentum. How fast is the cart going?

 3. An object is going 22 m/s and is 3 kg. What is the object’s momentum?

 4. A 75 kg speed skater is moving forward at 16 m/s. What is her momentum?

 5.What is the momentum of a seated 8.5 kg passenger on a train that is stopped?

3. **Inertia Problems (5 Points)**

Of each of the pairs below, which has more inertia? How do you know?

 1. Dog/Airplane 2. Marble/Bowling Ball 3. Feather/Textbook

 4. Baseball, Golf ball 5. Car/Truck

4. **Free Body Diagram Problems (5 Points)**

 1. Two boys push on a box. One pushes with a force of 125 N to the east. The other exerts a force of 165 N to the north. Draw and label the free body diagram with the correct forces and their value in Newtons. Then solve for the net force.

 2. While flying due east with a force of 120 N, a hot air balloon is also carried west with a force of 45 N by the wind. Draw and label the free body diagram with the correct forces and their value in Newtons. Then solve for the net force.

 3. Wind is blowing with a force of 45 N East toward the front of a plane whose engine is propelling it with a force of 155 N West. Draw and label the free body diagram with the correct forces and their value in Newtons. Then solve for the net force.

5. **Claims, Evidence, Reasoning Practice** **(5 points)**



Using the graph above, what claims can be made about global average temperature and carbon dioxide concentrations over time? Use Evidence to support your claims.

Claim #1: Temperature and carbon dioxide have increased over the last 100 years.

Evidence to support the claim:

Claim #2:

Evidence to support the claim:

Claim #3:

Evidence to support the claim: