



Weekly Sheet for PHY\$IC\$ 1

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Physics 1

Week #T2-9 More Momentum With Some Bio thrown in

February School Wide Memory Verse:

Romans 5:1-5 New International Version (NIV)

¹ Therefore, since we have been justified through faith, we have peace with God through our Lord Jesus Christ, ² through whom we have gained access by faith into this grace in which we now stand. And we boast in the hope of the glory of God. ³ Not only so, but we also glory in our sufferings, because we know that suffering produces perseverance; ⁴ perseverance, character; and character, hope. ⁵ And hope does not put us to shame, because God's love has been poured out into our hearts through the Holy Spirit, who has been given to us.

Homework/Classwork: (All homework is due the next class day unless indicated.)

	<u>In Class</u>	<u>Homework Due in this Class</u>
<u>This Monday</u>	<u>Momentum, Thermo Practice</u>	#32
<u>Tuesday</u>		#33 Finish Punch-line Packet
<u>Wednesday</u> Not HS1	<u>Lab/Demo TBA</u> <u>Practice for Test</u>	#34
<u>Thursday</u> HS1 Double	<u>Test Thermo</u>	#34(HS1) #35
<u>Friday</u>	<u>No Class on Fridays</u>	<u>NA</u>
<u>Next Week</u>		#36

Tests/Due Dates: Momentum Quiz Thursday

Topics/Content/Skills: Collisions, Momentum, Kinetic Energy, Begin Life Science

Skills:

Review- Momentum:

- Remember Temperature is the average kinetic energy of the molecules of a what makes up something- like the air, a tree, an ice cube, etc. When you get to absolute zero you get _____
- Kinetic Energy = $\frac{1}{2} \text{ Mass } \times (\text{velocity})^2$ A scalar (just a quantity with a unit); Momentum (p)= **Mass x Velocity** A vector (a _____ with a _____)
- Elastic (bounce) and Inelastic (Stick) Collisions
- Recoil (Collisions in reverse)
 - How Rockets work
 - How Shotguns work

Life Science Month- February- Have a Heart... (an advanced Organizer)

- What is Biology? _____
- What are Genetics? _____

- Deoxyribonucleic acid is what? _____
- Why is it important? _____
- What are some Interesting Issues we face today regarding Life Science? _____
- What are some Controversies? _____
- The 19th Century- The Century of Thermodynamics- The steam engine, etc.
- The 20th Century was the Century of Atomic Physics- The Nuclear age, and semi-Conductor- The microchip
- The 21st Century is looking to be the Century of Biology and genetics- Cloning, Stem Cells, The human genome, etc.
- People to Know: Dolly, Mendel, Punnet (squares), Darwin (We will discuss in class) If Parents want to know what we teach about Evolution... At this point we do not discuss this in detail.
- Things to Know, Genetic Probability, Weighted probability
- Parts of a Cell.

Projects-Science Olympiad Topic Challenge.

Name: _____

PhET Collision Lab

Directions: Go to PhET and find the Collision Lab. Create all of the following situations. Use data to back up your answers

Part 1

Scenario #1:

Elastic collision between balls of Equal Mass

Scenario #2:

Elastic collision Mass of balls are Unequal.

Make sure the 1d box is checked. Setup both scenarios and make a hypothesis about initial and final momentums in each scenario.

Use the data table below for the following: mass, velocity and momentum of each ball before and after.

Scenario #1	Before				After			
	K. Energy	M	V	P	M	V	P	K. Energy
Ball 1								
Ball 2								
Total								

What is the relationship between the initial and final momentums/ Energies?

Describe the motion of the balls before and after the collision?

Scenario #2	Before				After			
	K. Energy	M	V	P	M	V	P	K. Energy
Ball 1								
Ball 2								
Total								

What is the relationship between the initial and final momentums/ Energies?

Describe the motion of the balls before and after the collision?

Part 2

Scenario #3:

In-Elastic collision between balls of Equal Mass

Scenario #4:

In-Elastic collision Mass of balls are Unequal.

Use the data table below for the following: mass, velocity and momentum of each ball before and after.

Scenario #3	Before				After			
	K. Energy	M	V	P	M	V	P	K. Energy
Ball 1								
Ball 2								
Total								

What is the relationship between the initial and final momentums/ Energies?

Describe the motion of the balls before and after the collision?

Scenario #4	Before				After			
	K. Energy	M	V	P	M	V	P	K. Energy
Ball 1								
Ball 2								
Total								

What is the relationship between the initial and final momentums/ Energies?

Describe the motion of the balls before and after the collision?

Summary: Describe the main ideas learned in this activity regarding initial and final total momentum in elastic collisions, and inelastic collisions.
