

Demonstrate the transfer of energy to combine energy and create a greater force.

BACKGROUND DATA:

 ___ 1. **DO NOT DO #6-7 of THE ENERGY TRANSFER LAB in the SCIENCE CLASSROOM.** Ask where.

Work in a group of 2-4, but each should do & record your own data.

 ___ 2. Measure the height of your "arm-out Level" in centimeters. _____ **Record on the graph.**
 ("Arm-out level " is the height of the **center of the ball** when you hold it straight out.)

 ___ 3. **Use your extended "arm-out level" when you drop any ball for this lab.**

___ 4. To measure a ball bounce,

a) Have a helper hold a meter stick (or 2) next to where you will drop the ball.

 b) Extend your arms out. Add no force. **Drop** the ball.

 c) **Measure** the bounce height in cm. **Record ball ID and height.** _____

 d) **Add to the graph. Label. Include a Key. Identify the ball with an ID#.**

 Height in
Centimeters

Key

 ___ 5. Use "arms-out level" to measure the bounce height of each. **Record ID & height.** Graph.

a) Tennis ball1 _____ b) Ping pong ball1 _____ c) Tennis ball2 _____ d) Ping pong ball2 _____

ENERGY TRANSFER LAB: ASK WHERE:

 ___ 6. **Practice: ASK WHERE.** ___ Hold a tennis ball in arms-out position.

 ___ Have a helper hold a ping pong ball directly on the **top center** of the tennis ball.

___ Drop so they fall together. You may need someone else to hold the meter stick.

___ 7. Measure: e) Ping pong ball on tennis ball _____ f) Tennis ball on ping pong ball _____

g) Ping pong on ping pong _____ h) Tennis on Tennis _____

Analyze:

___ 8. Before the balls dropped they had p _____ energy. As they fell, they had k _____ energy in the form of m _____ energy. The _____ ball had the most energy.

___ 9. The energy of the _____ ball transferred to the _____ ball. The _____ ball showed the greatest effect, likely because it had the (least or greatest?) (mass or volume?).

___ 10. Write one thing you found out about energy transfer?

___ 11. Write one way to use this transfer. Explain.

(??? ASK: Try other balls outside.....Record Data)