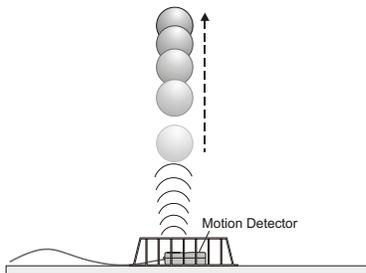


Names: _____

Conservation of Energy Investigation

Planning and Carrying Out Investigations, Analyzing & Interpreting Data, Engaging in Argument from Evidence

Learning Target: I can use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative position of particles (objects). (HS-PS3-2) I can create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known. (HS-PS3-1)



You will be given the following materials: computer, USB Motion Detector, small sports ball, Logger Pro software.

With these materials you must develop and implement a plan to determine if energy is conserved for a ball tossed vertically upward.

Your investigation plan must include:

- A method to measure the velocity and height of the ball at 3 different times during its vertical movement.
- A method to measure the mass of the ball.
- A method to calculate and compare the kinetic energy, gravitational potential energy and total mechanical energy of the ball.

While you won't be writing a formal lab report, you will be using the graphic organizer on the back to collect your thoughts, observations, and data.

*If there are additional energies that you could not measure, please discuss them in the "further questions" part of the organizer. *

Use the space below to sketch and write ideas that you group has about what materials to use and how to use them to answer the question above:

Conservation of Energy Investigation

Name: _____

I can collect and analyze data to support the claim that the total mechanical energy of a vertically tossed ball is conserved. (HS-PS3-1 & HS-PS3-2)

Materials

Planning and Carrying Out Investigations

Analyzing & Interpreting Data

Engaging in Argument from Evidence

What I did with the materials...

What I noticed and/or measured...

What I think is true and have evidence to support...

Why I think my claim is true...

Further questions, concerns, and investigations