Booklet : Ballistic Pendulum

A website is created to provide students the maximum support possible to complete the booklet.
Website | https://barisciencelab.tech/L4BallisticPendulum.html

Do Now: Ballistic Pendulum

An experiment is done by the teacher to help students understand the Do Now visually.

Q1. Mr. Bari drops a tennis ball (0.05 kg) and a dumbbell (5 kg) from 2 meters above the ground. Find the following right before the object hits the ground:

	Tennis Ball	**Dumbbell**
Mass		
Time		
Velocity		
Momentum		

Q2.

Find momentum of the tennis ball just before hitting the glass	Find momentum of the tennis ball before It hit the ground
	

Find momentum of the dumbbell before	Find momentum of the dumbbell just before hitting the glass
	

Q3. What causes the change in momentum?

Big Idea

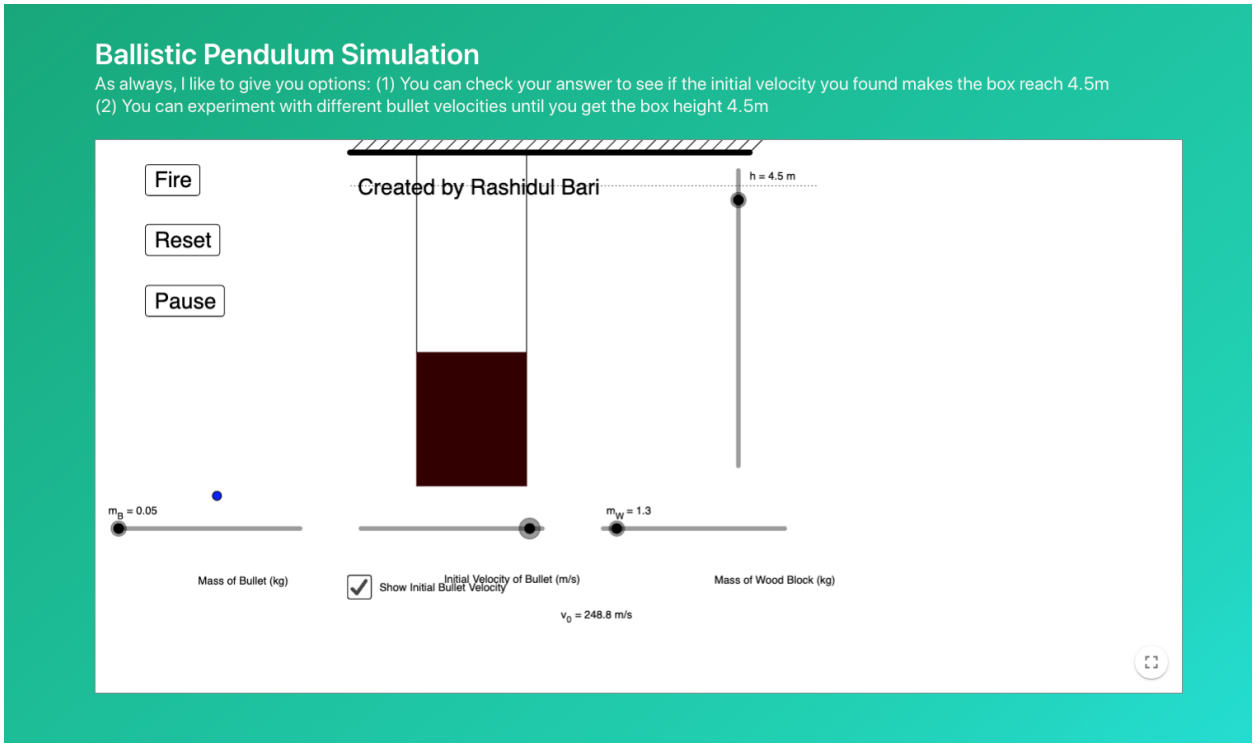
A simulation is created by the teacher to help students understand the Big Idea.

Q1. A 0.05 kg bullet strikes a 1.3 kg box and displaces it by a height of 4.5 m. After hitting the box, the bullet becomes embedded and remains inside the box. Find the velocity of the bullet-block system after it's hit.

(a) 6.76 m/s
(b) 5 m/s
(c) 9.39 m/s
(d) 7.67 m/s

Now use the above velocity (of the bullet-block system) to find the bullet's velocity before it hit the box.

(e) 196.76 m/s
(f) 100.07 m/s
(g) 209.39 m/s
(h) 253.53 m/s



You have 3 ways to answer the multiple choice challenges above: You can (1) Use No Hints and persevere, (2) Use the Small Hint, (3) Use the Big Hint, or (4) Use the Hands-On Simulation.

Exit Slip: A video is made top help student with the Exit Slip

Mr. Bari (100 kg) throws a ball (1 kg) with a speed of 5 m/s. Use conservation of momentum (which is Newton's 3rd law) to show that momentum before and momentum after is 0.

Homework: Mr. Bari throws an apple in the air and it returns to his hand. Does this action satisfy conservation of momentum?