FAIRBANKS MUSEUM & planetarium

Force and Motion: Newton's Three Laws

Teachers: Leila Nordmann and Hannah Buckner

April 20, 2020

The following websites and instructions represent additional resources for continued study of the topics covered in our "Force and Motion: Newton's Three Laws" online class. All materials on each website are the property of each individual website owner and have been reviewed by a Fairbanks Museum & Planetarium educator.

- Washington Post Article on Newton and Coronavirus:
  https://www.washingtonpost.com/history/2020/03/12/during-pandemic-isaac-newton-had-work-home-too-he-used-time-wisely/

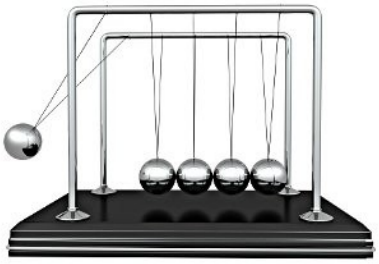
- Annus Mirabilis or the Year of Wonders Information:
  https://www.nationaltrust.org.uk/woolsthorpe-manor/features/year-of-wonders

Raw egg vs boiled egg and using your finger to stop the motion. Boiled egg is solid and raw egg is liquid. The raw eggs shows inertia or the egg's resistance to change motion since it will still want to move (liquid) even once you stop the outside (shell) of the egg. Same principle applies with you in a car, a seatbelt stops your inertia or you continuing to move if the car stops immediately. Otherwise, you are like the liquid in the egg and will continue to move.

Force of gravity and objects experiencing uniform acceleration:
Trying wadding up piece of paper vs a tennis ball or similar sized but heavier object to drop from a height. See if they hit the ground at the same time. Which has more force when it hits the ground?

- Astrophysicist Explains Gravity in 5 levels of Difficulty:
  https://www.youtube.com/watch?v=QcUey-DVYjk

Newton's Cradle. See how many spheres you could add and if it will still work. You can build your own with old tennis balls or rubber, bouncy balls, a drill or Dremel (have your parents help you drill holes in the balls), string and tape. Try to set one up taped along a door jam or ceiling area. Make sure all the spheres are the same size and weight and the strings all the same length.



- Newton's Cradle explained:
  https://science.howstuffworks.com/innovation/inventions/newtons-cradle.htm